

PURUS PROJECT – A TROPICAL FOREST CONSERVATION PROJECT IN ACRE, BRAZIL VCS VERIFICATION REPORT



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Summary:

Environmental Services, Inc., (ESI) was contracted by CarbonCo, LLC, on 11 March 2015 to conduct the third monitoring period verification (01 January 2014 to 31 December 2014) of *The Purus Project: A Tropical Forest Conservation Project in Acre, Brazil* (Validated Project Description (PD) dated 28 December 2012). The Purus Project follows the framework of Reducing Emissions from Deforestation and Degradation (REDD) and is achieving Greenhouse Gas (GHG) emission reductions as well as tropical forest protection and conservation through payments for ecosystem services.

Project activities include meeting with the local communities surrounding the project area, engaging Acre state officials working on similar strategies at a regional/state level, developing a plan which will result in lowering the pressure on land and forest resources in consultation with the local community, putting into operation the REDD project implementation plan with the help of local partners and Purus Project staff, undertaking a forest carbon inventory, and modelling regional deforestation. Activities implemented as part of the project to reduce deforestation include:

- Community outreach and education;
- Employment of local community members as project forest guards or other project staff (to replace other sources of income associated with deforestation and land use);
- Agricultural extension training which will help baseline agents to increase productivity on current lands (thus reducing the pressure to expand their farms in the adjacent forest);
- Reforestation of select non-forest areas and planting woodlots (to provide alternative sources of fuelwood); and
- Sharing a portion of carbon related revenue for communities living on the Moura & Rosa property (replacing other sources of income associated with deforestation and land use).

The verification assessed the Project's compliance with the Verified Carbon Standard (VCS) Version 3 (and all associated updates), the selected methodology, and the validated PD. The method employed by ESI in the verification process was derived from all items in ESI's internal verification process, which included utilizing VCS documents and ISO 14064-3 to develop and implement a Verification & Sampling Plan. This verification assessed the GHG emission removals through Agriculture, Forestry and Other Land Use (AFOLU) criteria, specifically, REDD – Avoided Unplanned Deforestation (REDD-AUD) activities.

The scope of the verification included the GHG project implementation; physical infrastructure, activities, technologies and processes of the GHG project; GHG sources, sinks and/or reservoirs; types of GHG's; and time periods covered. The geographic verification scope was defined by the project

boundary, the carbon reservoir types, management activities, growth and yield models, inventory program, and contract periods.

The verification criteria followed the guidance documents provided by VCS and included the following: VCS Program Guide (08 October 2013, v3.5), Program Definitions (08 October 2013, v3.5), AFOLU Requirements (08 October 2013, v3.4), AFOLU Non-Permanence Risk Tool (4 October 2012, v3.2), and the VCS Methodology VM0007: "REDD Methodology Modules (REDD-MF)" v1.3 (03 May 2013) and its associated modules and tools.

A summary of all findings is included in Appendix B. There are no restrictions of uncertainty.

ESI confirms all verification activities including objectives, scope and criteria, level of assurance, monitoring and project documentation adherence to VCS Version 3 and all associated updates as documented in this report are complete. ESI concludes without any qualifications or limiting conditions that the *2014 Purus Project Monitoring Report* dated 05 November 2015 (v1.0) meets the requirements of VCS Version 3 and all associated updates.

The GHG assertion provided by CarbonCo and verified by ESI has resulted in the GHG emissions reduction or removal of 60,387 tCO₂ equivalents by the project during the verification period/reporting period (1 January 2014 to 31 December 2014). This value is net of the 11% (8,739 tCO₂ equivalents) buffer withholding based on the non-permanence risk assessment tool.

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1 INTRODUCTION

1.1 Objective

The verification objective included an assessment of compliance with VCS Version 3 and all associated updates, the selected methodology (VM0007, v1.3), and the validated Project Description (PD) *The Purus Project: A Tropical Forest Conservation Project in Acre, Brazil* dated 28 December 2012. ESI assessed the Greenhouse Gas (GHG) emission removals for the third monitoring period/verification period 01 January 2014 to 31 December 2014 through Agriculture, Forestry and Other Land Use (AFOLU) criteria, specifically, Reduced Emissions from Deforestation and Degradation – Avoided Unplanned Deforestation (REDD-AUD). ESI assessed whether the project proponent adequately addressed project emissions, unplanned reductions in carbon stocks, and any possible leakage outside of the project boundary.

1.2 Scope and Criteria

The scope of the verification included the GHG project implementation and baseline scenario; physical infrastructure, activities, technologies and processes of the GHG project; GHG sources, sinks and/or reservoirs; types of GHGs; and time periods covered. *The Purus Project: A Tropical Forest Conservation Project in Acre, Brazil* follows the REDD-AUD framework. The geographic verification scope was defined by the project boundary, the carbon reservoir types, management activities, growth and yield models, inventory program, and contract periods. The scope of the project was outlined by the Project Proponent prior to the verification and is re-defined as follows for the GHG project:

Baseline Scenario	Continued unplanned frontier deforestation - forest clearing for subsistence agriculture and cattle ranching.
Activities/Technologies/Processes	VM0007, v1.3 Avoided Unplanned Deforestation Monitoring and modelling forest resources, providing alternative sustainable economic activities for local communities, agricultural training classes.
Sources/Sinks/Reservoirs	Above-ground live tree biomass Below-ground live tree biomass Dead wood Biomass Burning - Source
GHG Type	CO ₂ – Sinks; CH ₄ and N ₂ O - Source
Time Period (state date, crediting period, verification period)	01 January 2014 – 31 December 2014
Project Boundary	The Purus Project is located in the state of Acre, Brazil, alongside the Purus River (south of Manoel Urbano, Acre) - 34,702 hectares (85,714 acres).
GHG reduction and/or removal	60,387 tCO ₂ e This value is gross of the 11% (8,739 tCO ₂

	equivalents) buffer withholding based on the non-permanence risk assessment tool
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1.3 Level of Assurance

The level of assurance was used to determine the depth of detail that the Verifier placed in the Verification and Sampling Plan to determine if there are any errors, omissions, or misrepresentations (ISO 14064-3:2006). ESI assessed the project's implementation of general principles, data collection and processing, sampling descriptions, documentation, ex post calculations, etc., to provide reasonable assurance to meet the Project Level requirements of the VCS Program. Based on the verification findings, a final evaluation statement reasonably assures that the project GHG representations are materially accurate. The evidence used to achieve a reasonable level of assurance is specified in the following sections.

1.4 Summary Description of the Project

The Purus Project is a REDD-AUD project that is achieving Greenhouse Gas (GHG) emission reductions as well as tropical forest protection and conservation through payments for ecosystem services. The project was developed by three main Project Proponents: CarbonCo, LLC, Freitas International Group, LLC ("Freitas International Group" or "Carbon Securities"), and Moura e Rosa Empreendimentos Imobiliários, LTDA ("Moura & Rosa" or "M&R"). CarbonCo, a wholly-owned subsidiary of Carbonfund.org, is responsible for managing the verification process and for financing in the early stages of project implementation.

A forest carbon inventory, modeling of regional deforestation and land-use patterns, and mitigation of deforestation pressures have been undertaken as part of the project activities. Activities to mitigate deforestation pressures range from engaging EMBRAPA (i.e., the Brazilian Agricultural Research Corporation) and SENAR (Serviço Nacional de Aprendizagem Rural) for agricultural extension training, to the patrolling of potential deforestation sites. In addition, the project aims to eventually build better houses for the local communities to improve their livelihoods.

The Purus Project is located alongside the curves of the Purus River, approximately 60 kilometers (approximately 37 miles) from the nearest city of Manoel Urbano - this distance is about 20 kilometers (or 12 miles) "as the crow flies." The forested area of the Purus property (and thus the project boundary) encompasses 34,702 hectares (i.e., approximately 85,714 acres); it is divided amongst two contiguous parcels named Seringal Itatinga and Seringal Porto Central. The two main types of vegetation strata identified within the project boundary are open forest with palm/bamboo and open alluvial forest with palm, both of which are intact, primary forest.

2 VERIFICATION PROCESS

2.1 Method and Criteria

The verification assessed the Project's compliance with the VCS Version 3 and all associated updates, the selected methodology (VM0007, v1.3), and the validated PD. The verification assessed the GHG emission removals through AFOLU criteria, specifically, REDD-APD. According to the ISO14064-3, the verification criteria are the "policy, procedure or requirement

used as a reference against which evidence is compared.” For this project, the verification criteria followed the guidance documents provided by VCS and included the following: VCS Program Guide (08 October 2013, v3.5), Program Definitions (08 October 2013, v3.5), AFOLU Requirements (08 October 2013, v3.4), AFOLU Non-Permanence Risk Tool (4 October 2012, v3.2), and the VCS Methodology VM0007: “REDD Methodology Modules (REDD-MF)” v1.3 (03 May 2013) and its associated modules and tools.

A project specific Verification and Sampling Plan was developed to guide the verification auditing process to ensure efficiency and effectiveness. The purpose of the Verification and Sampling Plan was to present a risk assessment for determining the nature and extent of verification procedures necessary to ensure the risk of auditing error was reduced to a reasonable level. The Verification & Sampling Plan methodology was derived from all items in our verification process stated above. Specifically, the sampling plan utilized the VCS guidance documents and ISO 14064-3. Any modifications applied to the Verification and Sampling plan were made based upon the conditions observed for monitoring in order to detect the processes with highest risk of material discrepancy.

Field sampling and techniques were based on the project parameters/scope and best professional judgment of the verification team in order to meet a reasonable level of assurance as directed by the professional judgment of the Lead Verifier. Because the biomass inventory was validated and has not changed, inventory plots were not selected for detailed review/re-measurement. Rather, extensive review of all remote sensing data was undertaken of the project area and leakage belt to aid the Verification Team in establishing a reasonable level of assurance regarding confirming the reported areas of ex-post disturbance (from the remote sensing analysis) for the quantification of project emissions and leakage emissions.

In addition, a risk-based approach was used for the on-the-ground field sampling effort in order to select key areas for direct observation of forest losses, leakage issues, and stated project activities. The most likely access points for anthropogenic deforestation (Purus River and the ramals) within the Project Area and leakage belt were toured in order to allow the Verification Team to establish a reasonable level of assurance regarding the implementation of project activities, and to further confirm the reported areas of ex-post disturbance.

The desktop verification component included a full review of all project documentation and calculations received from the Project Proponent as described below.

2.2 Document Review

A detailed review of all project documentation was conducted to ensure consistency with, and identify any deviation from, VCS Program requirements, the methodology (VM0007, v1.3), and the validated PD. Initial review focused on the validated PD and Monitoring Report (MR) relative to the field conditions observed and interviews with project management staff. Project details, implementation status, data and parameters, and quantification of GHG emission reductions and removals were thoroughly examined. Key supporting documents were also reviewed. These included monitoring data (i.e. remote sensing/Geographic Information System (GIS) data), land ownership documentation, carbon rights contracts, financial analyses, property boundaries, maps

and aerial images, fire-specific monitoring data, biomass and carbon calculation spread sheets, and responses to Non-conformance Requests (NCRs) and Clarification Requests (CLs).

The AFOLU Non-Permanence Risk Tool (04 October 2012, v3.2) was used by the Project Proponent to assess overall project risk. The Verification Team reviewed the Non-Permanence Risk Report provided with the verification supporting documentation and confirmed that the Project adheres to the requirements set out in the VCS AFOLU Non-Permanence Risk Tool (04 October 2012, v3.2). Each risk factor was thoroughly assessed for conformance. Any identified NCR and/or CL findings related to the AFOLU Non-Permanence Risk Tool/Report are presented in Appendix B. The final score was calculated to be 11%.

For a listing of all documents received from the client for this verification, please see Appendix A.

2.3 Interviews

The verification site visit occurred between 12 August 2015 and 18 August 2015. Onsite interviews and informal discussions were conducted with project staff, as well as members and leaders of the local communities. During interviews with the local community a few commented that they didn't fully understand the project and wanted clearer information. In most instances further discussion from ESI with the persons and/or the project proponent revealed that they had chosen not to attend the trainings or visit the headquarters for meetings. A few other individuals indicated that they understood the project, but just didn't care about the project one way or the other because they didn't need the benefits.

Additionally, during the site visit one family in particular (the Guitas, represented by the son, Antonio Sales Nunes Cardeal) stated they do not plan to change their activities and the extent of their right to ownership was somewhat in question. It is clear they have indeed continued to clear land for their cattle operations. The project proponent confirmed that community members which have been living on land adjacent to the project area and who made the land productive (e.g., by growing crops or raising animals) for ten years, have the right to be titled. To resolve ongoing disputes over land, Moura & Rosa will voluntarily recognize whatever area is currently deforested and under productive use by each family living on the Seringal Porto Central and Seringal Itatinga parcels. The project proponent believes that once the details of ownership are worked through with the Guita family and more families starting receiving title, the clearing of the project lands will cease. This is something that will be confirmed in future verifications. The majority of locals indicated that the land titling aspect of the project is a desired benefit.

In addition, we met with individuals with various roles in the project. This included an interview with Professor Willian Flores who supports the remote sensing monitoring aspect of the project for acquisition of the UCEGEO¹ deforestation dataset. In addition, members of the verification team met with the biologist who installs and monitors the camera traps for biodiversity assessment.

The following is a list of the main interviewees:

¹ Central Unit of GIS and Remote Sensing within the Climate Change Institute (ICM) in Acre, Brazil

Name*	Title
Brian McFarland	Director-Carbon Projects and Origination, Carbonfund.org – CarbonCo/Project Developer
James Eaton	Senior Manager-Forestry & Technical Services, TerraCarbon, LLC./Independent Consultant
Wanderley Cesario Rosa	Managing Director, Moura & Rosa /Landowner-Project Manager
Pedro Freitas	President, Freitas International Group, LLC. (Carbon Securities)/Project Facilitator
Andre Botelho	Project Biologist
Willian Flores	Professor, Remote Sensing Consultant to project
Kidney Da Cunha Aires	On-Site Project Manager
Rogério	On-Site Project Staff- manages project quarters in Kidney absence
Riba Mar	Local Resident/Informal Mayor
Manoel	Local Resident
Jose Maria Guita	Local Resident
Maria Delorge	Local Resident
Raimundo Guita	Local Resident

*Regarding members of the local communities, some interviewees did not give their names or only gave partial names. Due to the nature of their settlement, it was decided to simply ask for “names”, and then it was recorded. This was intended to not intimidate them and hope for a more complete answer.

The interviews confirmed with reasonable assurance that no community members will be negatively affected by the project and that most community members are participating in project activities and feel that they are a benefit.

2.4 Site Inspections

The verification site inspection followed our prepared Verification and Sampling Plan process and was conducted on 12-18 August 2015. The site visit aided the verification team to both

understand application of the methodology on-site and to identify possible sources of error to focus desktop verification efforts.

Ground inspection of the Project Area, leakage belt and adjacent ramal were conducted during the site visit in order to allow the Verification Team to confirm the implementation of project activities. To further confirm the reported areas of ex-post disturbance extensive review of remote sensing data was undertaken.

During the field review of the project, the following aspects of the project were considered:

1. Boundaries - reviewed boundaries using a Global Positioning System (GPS) and checked boundary signage
2. Stratification - checked vegetative cover classifications by taking waypoints and notes through direct observation with handheld GPS and maps.
3. Forest Protection - viewed areas of high likelihood of incursions
4. Reviewed and observed high risk areas and items:
 - Hot-spot areas of recent deforestation and degradation in project boundary, leakage area and carbon accounting area with confirmation of data collection methods in conformance with the stated Standard Operating Procedures (SOPs) for monitoring
 - This included assessments of:
 - Evidence of logging (degradation and deforestation)
 - Evidence of any Fire Hot Spots
 - Evidence of Land Clearing
 - Leakage
 - Considered leakage monitoring as described in the validated PD and Monitoring Report.
 - Review possibility of illegal expansion of other concessions
 - Visited communities along adjacent ramal to assess the potential for current and future impacts to the project area.
 - Implementation of monitoring
 - Reported elements of the Risk Assessment

During the site visit, verifiers travelled down Ramal 16 to the end to observe deforestation activities and inquire with individuals their familiarity with the project. Deforestation is extending rapidly within this portion of the leakage belt from the ramal due to government sponsored/sanctioned INCRA settlements. The presence of this INCRA settlement was confirmed by; Wanderley (landowner), an individual interviewed living there, and the geo-referenced ownership map of the project area. The verification team notes that here, the land-use decisions by agents are influenced by INCRA endorsement and not leakage in the conventional sense despite similar outcomes of agriculture and cattle ranch development.

Although the increased amounts of deforestation in the leakage belt as a result of the INCRA settlement are appropriately monitored following VM0007 monitoring methods, carbon stock losses due to this type of leakage (or any) are not applied to project accounting until it exceeds the baseline projected amount.

An interview with the individual living in the INCRA settlement along Ramal 16 noted that one of the greatest needs is improvements to the access road. Observations made during the previous 2nd verification site visit indicate that the road has improved and been lengthened substantially in the past year as seen at this 3rd verification site visit. Verifiers also observed on the third verification site visit that deforestation continues into the project area, albeit a minor amount as observed from the 2014 and older UCEGEO dataset.

Field observations sufficiently satisfied the professional discretion of the Verification Team that the findings in the monitoring report were accurate.

2.5 Resolution of Findings

During the verification process, there was a risk that potential errors, omissions, and misrepresentations would be found. The actions taken when errors, omissions, and misrepresentations were found included: notifying the client of the issue(s) identified, and expanding our review to the extent that satisfied the Lead Verifier's professional judgment.

The process of resolution of findings involved one formal round of assessment by the Verification Team. Findings were resolved during the verification by the Project Proponent implementing corrective actions such as amending the Monitoring Report and calculations, as well as and providing written responses. This resulted in project documentation that was in conformance with the requirements of the VCS Standard (v3.4) for GHG projects.

Findings were characterized in the following manner:

Non-Conformity Reports (NCRs) were issued as a response to material discrepancies in a part of the project and generally fell into one category:

- Non-conformity to a VCS guiding document listed in Section 2.1 above
- Consistency among project documentation or calculations was lacking
- Mathematical formulae were incorrect
- Additional information was required by the verification team in order to confirm reasonable assurance for compliance

Clarifications (CL) were issued when language within a project document needed extra clarification to avoid ambiguity.

Opportunities for Improvement (OFI) were issued to the project proponents when an opportunity for improvement was identified.

During the course of the verification, seven (7) essential findings were identified; a count by type is presented in the table below. Detailed summaries of each finding, including the issue raised, responses, and final conclusions, are provided in Appendix B. All NCRs/CLs were satisfactorily addressed.

2.5.1 Forward Action Requests

Two forward action requests were identified during the third monitoring period verification.

The first forward action request was raised at the second verification and again here at the third verification. One family (the Guita, represented by the son, Antonio Sales Nunes Cardeal) in the project area continues to not want to be involved in the project and remains opposed to it. Additionally though they are outside (but adjacent to) the project area, it was a concern that they may potentially continue to deforest in the project area. The project proponent indicated that between this verification and the next they are planning to coordinate with the Guita family to come to a reasonable resolution on the lands to be titled to them, which would resolve the potential for additional deforestation in the project area. This issue should be reviewed again in the next verification to confirm it was addressed and that the Guita family is not deforesting in the project area.

The second forward action request pertains to the observation of an INCRA sanctioned settlement in the leakage belt of the project during the third verification. The verification team notes that here, the land-use decisions by agents are influenced by INCRA endorsement and not leakage in the conventional sense despite similar outcomes of agriculture and cattle ranch development. The deforestation in the leakage belt as a result of the INCRA settlement is appropriately monitored following VM0007 monitoring methods. This issue should be reviewed again in the next verification to confirm that INCRA settlement has not encroached into the project area.

2.6 Eligibility for Validation Activities

Validation activities were not undertaken as part of the third monitoring period verification.

3 VALIDATION FINDINGS

3.1 Participation under Other GHG Programs

The PD entitled “*The Purus Project: A Tropical Forest Conservation Project in Acre, Brazil*” dated 28 December 2012 was previously validated by another Validation and Verification Body (VVB). The validation process is described in the Validation Report, available on the VCS website. The Project Proponent has attested that none of the project area has been or will be registered under another carbon trading scheme during the VCS project lifetime, other than CCBA.

3.2 Methodology Deviations

The following methodology deviations were applied to the project and assessed during the verification.

Methodology Deviation	Verification Findings
Trees in the Cecropia genus were not measured as part of the forest inventory. This	Verification team confirmed that Cecropia genus was conservatively omitted from

has been proposed as a deviation as it stands in conflict with the CP-AB requirement that "all the trees above some minimum DBH in the sample plots" be measured.	analysis and this is permitted per VCS Standard Section 3.5.1 which states that deviations are permitted where they relate to data and parameters available at validation, data and parameters monitored, or the monitoring plan. <i>Cecropia</i> sp. generally does not grow in a consistent tree form to allow conventional volume estimates using allometric methods. Most species, within the genus, contain hollow portions within the stems making volume measurement difficult. Further, there are relatively few <i>Cecropia</i> sp. across the project area. The omission of <i>Cecropia</i> is conservative and does not negatively impact the conservativeness of the quantification of GHG emission reductions or removals.
While sampling lying dead wood using the line intersect method: Two 92-meter transect lines were used rather than two 50-meter transect lines; The sampling lines did not bisect each sample plot, but rather ran from one plot center to the next; and The sampling lines were oriented to the north and east, and no randomization in the bearing of the first line was employed	Verification team confirmed that project proponents measured lying deadwood using two 92-meter transects and all dead wood greater than or equal to 10cm diameter was measured at the point of intersection. This measurement method differs from the requirements on module CP-D where Step 1 of Part 2: Lying Dead Wood states "Two 50-meter lines (164 ft) are established bisecting each sample plot and the diameters of the lying dead wood (≥ 10 cm diameter ≥ 3.9 inches+) intersecting the lines are measured. The first line is oriented along a random bearing, the second line is oriented perpendicular to the first." The PP established two 92-meter transect lines, greater in length, to capture a larger and more representative sample of lying dead wood. These sample lines were permitted not to intersect a given sample plot center, but instead run from one plot to another. This method still ensures a random, but systematic sample of lying dead wood along a transect. The Project Proponent followed the same minimum diameter rule as the requirement, where lying dead wood greater than or equal to 10cm which fell on the transect line was sampled. The first sample line was not at a randomized bearing but rather the two sample lines were oriented at the north and east. The

	verification team believes that consistent line bearings among sample lines is still in line with good forest sampling practice as no sampling bias is introduced. Field going personnel of varying forest measurement experience are better able to replicate sample line measurements which are consistent in bearing. Further, the bearing of sample lines follows the perpendicular rule stated in CP-D. These deviations from the criteria and procedures related to measurement are appropriate given the good forest measurement practices employed, consistency in sampling practices, and conservativeness in larger sample sizes of lying dead wood. Further, the deviations are permissible per VCS Standard Section 3.5.1 given that the issue is a monitoring/measurement deviation and its application does not negatively impact the conservativeness of the quantification of GHG emission reductions or removals.
For validation of the allometric equation, commercial heights were estimated from total height measured in the field by applying a factor of 62.9%. This commercial height to total height ratio is Amazon specific and was developed by Higuchi et al. 1998 (n = 315 trees).	This deviation is permissible as it does not negatively affect the conservativeness of quantification of tree volumes. The Higuchi et al. 1998 is an acceptable reference for commercial height to total higher ratio. The permissibility of this methodology deviation was evaluated at the previous initial validation and verification.
Rather than using a root to shoot ratio to estimate belowground biomass as per the CP-AB module, belowground biomass was estimated using an allometric equation developed by Cairns et al.	The verification team has agreed to allow this deviation as it has been demonstrated by project proponents that using the Cairns ² approach is a conservative allometric method to estimate belowground biomass. The Cairns et al. 1997 equation predicts root biomass density as a function of the aboveground biomass density and it was chosen to replace the root to shoot parameter R.

² Cairns, M. A., S. Brown, E. H. Helmer, and G. A. Baumgardner. 1997. Root biomass allocation in the world's upland forests. *Oecologia* 111, 1-11.

	The Cairns et al. 1997 equation was confirmed by the validation team to be a widely referenced method during a related literature search. The project proponent (PP) demonstrated the conservativeness of the root to shoot parameter (R) substitution in a separate analysis where the default root to shoot ratios were compared to the Cairns root to shoot ratio. The Cairns et al. method employs an average root to shoot ratio of 0.2286 versus the value of 0.24 (Table 4.4 IPCC GL AFOLU Tropical Forest >125 t.ha-1). This alternative method for determining below ground biomass is acceptable as it is more conservative and accurate. Further, this method for determining below-ground biomass is a parameter available at validation and therefore a justifiable deviation.
The forest inventory has deviated from the criteria for selection (i.e., the equation is based on a datasets comprising at least 30 trees, with an r^2 that is ≥ 0.8) and validation of the allometric equation related to palm biomass, however the equation used is likely to result in a conservative estimate of palm biomass for the following reasons: Volume is calculated as the volume a parabaloid rather than the volume of a cylinder; Only stem biomass is estimated, thus conservatively excluding other aboveground biomass; and A conservative measure of basal diameter (i.e., dbh) was used.	The verification team has agreed to allow this deviation as it has been demonstrated by project proponents that using a paraboloid is a conservative alternative to applying a traditional allometric to represent palm trees. Further, this method for determining above-ground biomass is a parameter available at validation and therefore a justifiable deviation.
A calibration factor of 0.985 was applied to the Brown (1997) equation to ensure use of this equation results in conservative estimates of live aboveground biomass.	This deviation is permissible as it does not negatively affect the conservativeness of quantification of live aboveground biomass. The calibration factor applied to Brown 1997 is an acceptable approach. The permissibility of this methodology deviation was evaluated at the previous initial validation and verification.
In the with-project case, C(post) can	This methodology deviation is permissible as it

conservatively be assumed to be zero, not only for natural disturbance (CP,Dist,q,i , as stated in Section 5.2.3 of the M-MON module) but also for deforestation (CP,post,u,i). This deviation is conservative because subtracting zero from the baseline stocks, leads to the conclusion that $\Delta C_{pools,Def,u,i,t}$ is equal to $C(BSL,i)$, which leads to the maximum emission in the with-project case, which is conservative.	does not negatively affect the conservativeness of project emissions. Setting parameter Cpost to zero ensures that the most conservative estimate of emissions is achieved. This deviation was reviewed at the previous verification and found to be permissible.
AVFOR will be stratified using information and data derived from official (government) publications, peer-reviewed published sources, or other verifiable sources. Stratification is not limited to the delineation of different strata where contiguous areas of at least 100 ha differ in stocks by $\geq 20\%$.³	The verification team found that AVFOR was stratified by Amazon biomes, source: FAO publication Global Forest Resources Assessment 2010, Brazil Country Report. The requirement in LK-ASU states (Step 4, Definition of the Leakage Belt Boundary), "AVFOR shall be separated into different strata where contiguous areas of at least 100 ha differ in stocks by $\geq 20\%$." The project was stratified into contiguous natural forest biomes according to the FAO data that are larger than 100 ha and differ in in stocks by $\geq 20\%$, thus it meets the above quoted mandatory requirement. No divergences from the FAO document were identified during validation. Since the AVFOR parameter is directly related to the TOTFOR parameter which contains a permissible methodology deviation, the validation team agreed with the PP it be mentioned along with the TOTFOR as a methodology deviation. However, the verification team concludes that the actual measurement method for AVFOR does not constitute a methodology deviation because this measurement was performed correctly.

The verification process confirmed that the above methodology deviations are reasonable and in compliance with the VCS Standard, Section 3.5 and have been appropriately justified. The listed deviations represent a deviation from the criteria and procedures relating to monitoring and/or measurement of GHG emission reductions or removals set out in the selected methodologies.

³ *The Purus Project: A Tropical Forest Conservation Project in Acre, Brazil* – Project Description, v02, dated 28 December 2012.

Moreover, the deviations do not negatively impact the conservativeness of the quantification of GHG emissions reductions or removals (where degradation is deemed significant following the steps in T-SIG, it will be accounted for).

3.3 Project Description Deviations

A Project Description Deviation related to using temporary sample plots covering 1% of the potential degradation area (ADegW,i) was listed at this verification (see also Section 3.2 above). ESI confirms that the deviation from assessing the significance of degradation using temporary sample plots to the use of quantitative survey data and conservative assumptions is justified. This represents an acceptable approach for assessing if emissions due to degradation should be included in the quantification of net GHG emission reductions and if plot level monitoring of degradation is warranted.

The project remains in compliance with the VCS Standard, Section 3.6.1 where Project Description Deviations are permissible at verification as long as the deviation does not impact the applicability of the methodology, additionality or the appropriateness of the baseline scenario, and the project remains in compliance with the applied methodology.

The project remains in compliance with VM0007 V1.3 (where degradation is determined to be significant per the T-SIG tool, it will be accounted for) and the PD deviation is described and appropriately justified in Section 2.2.2 of the Monitoring Report.

CarbonCo's assessment of degradation ("2014_PurusDegradation 2015.10.09.xlsx") was thoroughly reviewed and found to contain the appropriate data and conservative calculations. Emissions due to degradation were justified as insignificant following the proper steps of the T-SIG tool and plot level monitoring of degradation is not warranted at this time. This item was assessed in full at this verification in addition to a full assessment at the previous verification and will be re-assessed at future verifications.

3.4 Grouped Project

Not applicable, as this is not a grouped project.

4 VERIFICATION FINDINGS

4.1 Project Implementation Status

The Project Activities and Monitoring Plan, as described in the validated PD, have been initiated. There are no remaining issues from the validation. At this third monitoring period verification, many activities are still being implemented, but the verification team observed considerable progress during the verification site visit activities.

The verification team requested to visit examples of all activities during the various site visit activities and subsequently confirmed the initial implementation of all items, as discussed in Section 2.1 of the Purus Project's third verification MR.

4.2 Accuracy of GHG Emission Reduction and Removal Calculations

ESI conducted an intensive review of all input data, parameters, formulas, calculations, conversions, statistics and resulting uncertainties and output data to ensure consistency with the VCS standard, the project PD and the methodologies. Further, ESI reproduced calculations for selected samples to ensure accuracy of the results. Conversion factors, formulas, and calculations were provided by the Project Proponent in spreadsheet format to ensure all formulas were accessible for review. The verification team recalculated subsets of the analysis to confirm correctness. The Project Proponent also provided a step-by-step overview of calculations to ensure ESI understood the approach and could confirm its consistency with the methodologies and PD.

An overview of the data and parameters monitored, along with verification team findings, are included in the table below:

Data Parameter	Verification Team Findings
$\Delta C_{P,Def,i,t}$	This data/parameter was appropriately chosen because it pertains to net carbon stock change as a result of deforestation in the project case in the project area in stratum i at time t . This value was found to be calculated accurately in a spreadsheet ("2014_PurusMonitoring 2015.10.09.xls") according to the correct formula for the monitoring period.
$\Delta C_{P,DefLB,i,t}$	This data/parameter was appropriately chosen because it pertains to net carbon stock change as a result of deforestation in the project case in the leakage belt in stratum i at time t . This value was found to be calculated accurately in a spreadsheet ("2014_PurusMonitoring 2015.10.09.xls") according to the correct formula for the monitoring period.
$\Delta C_{P,DistPA,i,t}$	This data/parameter was appropriately chosen because it pertains to net carbon stock change as a result of natural disturbance in the project case in the project area in stratum i at time t . The value applied was 0. This was appropriate as there were no areas of natural disturbance reported in by on-the ground forest monitors/local land managers and none was distinguished (from anthropogenic deforestation) with remote sensing analyses.
$A_{DefPA,u,i,t}$	This data/parameter was appropriately chosen because it pertains to the area of recorded deforestation in the project area stratum i converted to land use u at time t . This value was found to be calculated accurately from remote sensing/GIS data and was implemented appropriately in the monitoring spreadsheet ("2014_PurusMonitoring 2015.10.09.xls") according to the correct formula for the two year monitoring period.

$A_{DefLB,u,i,t}$	This data/parameter was appropriately chosen because it pertains to the area of recorded deforestation in the leakage belt stratum i converted to land use u at time t . This value was found to be calculated accurately from remote sensing/GIS data and was implemented appropriately in the monitoring spreadsheet ("2014_PurusMonitoring 2015.10.09.xls") according to the correct formula for the two year monitoring period.
$A_{DistPA,q,i,t}$	This data/parameter was appropriately chosen because it pertains to area impacted by natural disturbance in post-natural disturbance stratum q in stratum i , at time t . The value applied was 0. This was appropriate as there were no areas of natural disturbance reported by on-the ground forest monitors/local land managers and none was distinguished (from anthropogenic deforestation) with remote sensing analyses.
$C_{BSL,i}$	This data/parameter was appropriately chosen because it pertains to the carbon stock in all pools in the baseline case in stratum i . This value was calculated and assessed ex ante (at validation). The appropriate ex ante estimates were found to be implemented appropriately in the quantification of net GHG emission reductions.
$\Delta C_{pools,Def,u,i,t}$	This data/parameter was appropriately chosen because it pertains to the carbon stock in all pools in post-deforestation land use u in stratum i . This value was found to be calculated accurately by strata in a spreadsheet ("2014_PurusMonitoring 2015.10.09.xls") according to the correct formula for the two year monitoring period.
$A_{DegW,i,t}$	This data/parameter was appropriately chosen because it pertains to the area potentially impacted by degradation processes in stratum i . The value applied was 0. This was appropriate as CarbonCo's assessment of degradation ("2014_PurusDegradation 2015.10.09.xlsx") indicated that emissions due to degradation (for this monitoring period) are insignificant as per T-SIG.
$C_{DegW,i,t}$	This data/parameter was appropriately chosen because it pertains to the biomass carbon of trees cut and removed through degradation process from plots measured in stratum i at time t . The value applied was 0. This was appropriate as CarbonCo's assessment of degradation ("2014_PurusDegradation 2015.10.09.xlsx") indicated that emissions due to degradation (for this monitoring period) are insignificant as per T-SIG.
AP_i	This data/parameter was appropriately chosen because it pertains to the total area of degradation sample plots in stratum i . This parameter was not used during this monitoring period. This was appropriate as CarbonCo's assessment of degradation

	("2014_PurusDegradation 2015.10.09.xlsx") indicated that emissions due to degradation (for this monitoring period) are insignificant as per T-SIG and plot level monitoring of degradation is not warranted at this time.
$\Delta C_{P,DegW,i,t}$	This data/parameter was appropriately chosen because it pertains to the net carbon stock changes as a result of degradation in stratum i in the project area at time t . This parameter was not used during this monitoring period. This was appropriate as CarbonCo's assessment of degradation ("2014_PurusDegradation 2015.10.09.xlsx") indicated that emissions due to degradation (for this monitoring period) are insignificant as per T-SIG.
$PROP_{IMM}$	This data/parameter was appropriately chosen because it estimates proportion of baseline deforestation caused by immigrating population. This value was found to be obtained accurately from survey data and was implemented appropriately for the monitoring period.
$PROP_{RES}$	This data/parameter was appropriately chosen because it estimates the proportion of baseline deforestation caused by population that has been resident for ≥ 5 years. This value was found to be obtained accurately from survey data and was implemented appropriately for the monitoring period.
TOTFOR	This data/parameter was appropriately chosen because it gives the total available national forest area. This value was found to be obtained accurately from verifiable sources and implemented appropriately.
PROTFOR	This data/parameter was appropriately chosen because it gives the total area of fully protected forests nationally. The value applied was 0. This value was found to be obtained accurately from verifiable sources and implemented appropriately.
MANFOR	This data/parameter was appropriately chosen because it gives the total area of forests under active management nationally. The value applied was 0. This value was found to be obtained accurately from verifiable sources and implemented appropriately.
$ARRL_{forest,t}$	This data/parameter was appropriately chosen because it gives the remaining area of forest in RRL at time t . This value was found to be calculated accurately using the correct formula for the monitoring period.
$Aburn_{q,i,t}$	This data/parameter was appropriately chosen because it pertains to the area burnt in post-natural disturbance stratum q in stratum i ,

	at time t . It was conservatively assumed that the total area burnt during the deforestation process is equal to the area deforested, $A_{DefPA,u,i,t}$.
dbh	This data/parameter was appropriately chosen because it gives the tree diameter at breast height. DBH values were measured and assessed ex ante (at validation). The appropriate ex ante estimates were found to be implemented appropriately in the quantification of net GHG emission reductions.
dbasal	This data/parameter was appropriately chosen because it gives the basal diameter. Basal diameter values were measured and assessed ex ante (at validation). The appropriate ex ante estimates were found to be implemented appropriately in the quantification of net GHG emission reductions.
H	This data/parameter was appropriately chosen because it gives the height of a tree. Tree heights were measured and assessed ex ante (at validation). The appropriate ex ante estimates were found to be implemented appropriately in the quantification of net GHG emission reductions.
Dn	This data/parameter was appropriately chosen because it gives diameter of piece n of dead wood along a transect. Lying Dead Wood diameters were measured and assessed ex ante (at validation). The appropriate ex ante estimates were found to be implemented appropriately in the quantification of net GHG emission reductions.
N	This data/parameter was appropriately chosen because it gives the total number of wood pieces intersecting a transect. The numbers of Lying Dead Wood pieces were tallied and assessed ex ante (at validation). The appropriate ex ante estimates were found to be implemented appropriately in the quantification of net GHG emission reductions.
L	This data/parameter was appropriately chosen because it gives the length of a transect. Transects were installed, measured, and assessed ex ante (at validation). The appropriate ex ante estimates were found to be implemented appropriately in the quantification of net GHG emission reductions.
Cpost	This data/parameter was appropriately chosen because it pertains to the average carbon stocks remaining after deforestation. This value was found to be calculated accurately using the correct formula for the monitoring period.

$B_{i,t}$	This data/parameter was appropriately chosen because it pertains to the average aboveground biomass stock before burning stratum i , time t . This value was found to be calculated accurately using forest inventory data and implemented appropriately in the quantification of net GHG emission reductions.
$EBSL_{SS,i,pool\#}$	This data/parameter was appropriately chosen because it pertains to the carbon stock or GHG sources (e.g. trees, dead wood, soil organic carbon, emission from fertilizer addition, emission from biomass burning etc.) in the baseline case. This value was calculated and assessed ex ante (at validation). The appropriate ex ante estimates were found to be implemented appropriately in the quantification of net GHG emission reductions.
$UBSL_{SS,i,pool\#}$	This data/parameter was appropriately chosen because it pertains to the percentage uncertainty (expressed as 95% confidence interval as a percentage of the mean where appropriate) for carbon stocks and greenhouse gas sources in the baseline case (1,2...n represent different carbon pools and/or GHG sources). This value was found to be calculated accurately by strata in a spreadsheet ("2014_PurusMonitoring 2015.10.09.xls") according to the correct formulae for the two year monitoring period.

The verification team also reviewed data collection and storage procedures to ensure all opportunities for error in transposition of data between data were minimized.

Uncertainty was assessed as required. The verification team recalculated the statistics independently to confirm the accuracy of the reported precision and confirmed no confidence deduction was required.

Field data collection utilized appropriate principles of forestry data collection, including appropriate tools and methods. Collected data was handled appropriately, including a structured process for QA/QC. Analysis of collected data used appropriate formulas, conversions, and parameters, supported by scientific literature. Where ranges of parameters exist, or other types of formulaic uncertainty, appropriately conservative values were used in data analysis.

4.3 Quality of Evidence to Determine GHG Emission Reductions and Removals

During ESI's verification, the evidence provided by the Project Proponent was more than sufficient in both quantity and quality to support the determination of GHG emission removals reported by the project. Throughout the verification, the Project Proponent demonstrated a commitment toward conservativeness and took all measures appropriate to ensure the reliability of evidence provided.

The evidence provided to determine emission reductions reported in the monitoring report included values, notations, units and sources. This evidence has been cross checked with

supplied emission reduction calculation spreadsheets and a comprehensive GIS dataset. The procedure for data recording, transfer and final transposition was also verified and found to be in compliance with the monitoring plan outlined in the PD. The verification team was able to confirm through cross checks that adequate monitoring mechanisms are in place where the required parameters need to be monitored.

Interviews conducted (oral evidence) are outlined in Section 2.3 above, and the final documents received from the Project Proponent supporting the determination of GHG removals can be viewed in Appendix A.

4.4 Non-Permanence Risk Analysis

The AFOLU Non-Permanence Risk Tool (04 October 2012, v3.2) was used by the Project Proponent to assess overall project risk. The Verification Team reviewed the Non-Permanence Risk Report provided with the verification supporting documentation and confirmed that the Project adheres to the requirements set out in the VCS AFOLU Non-Permanence Risk Tool (04 October 2012, v3.2). Each risk factor was thoroughly assessed for conformance. Any identified NCR and/or CL findings related to the AFOLU Non-Permanence Risk Tool/Report are presented in Appendix B. The final score was calculated to be 11%. A brief review of each factor is found in the table below:

Factor	Rationale & Quality	Conclusion
Internal Risks		
Project Management	Ongoing enforcement is required to prevent encroachment by outside actors. The Purus Project employs forest patrols to prevent encroachment by outside actors into the project area = 2. Management team does not include individuals with significant experience in all skills necessary to successfully undertake all project activities = 2. Local management partners are based in Rio Branco less than a day's travel from the project activity. There is a project manager living on the property and a project headquarters is being established on the property. Site visit confirmed this situation. Issue is scored appropriately = 0. Project Proponents have developed other forest carbon projects and have been working in the forest carbon arena for over 5 years. Brian McFarland of CarbonCo has developed the "Tensas River National Wildlife Refuge Afforestation Project" under the VCS and the CCBS including managing the project design, implementation, and financing. The project proponents work alongside and have access to experts in carbon	A risk rating of 2 is appropriate given the rationale provided.

	accounting and reporting (i.e., TerraCarbon) who have significant experience in all aspects of AFOLU project design and implementation, carbon accounting and reporting under the VCS Program. TerraCarbon has successfully validated and verified numerous projects under the VCS, including validation and verification of the VCS ARR project "Reforestation Across the Lower Mississippi Valley" The explanation is acceptable given that verifiers have worked with several members of the management team and are familiar with their experience enough to agree with this mitigation credit = -2	
Financial Viability	The verifier has reviewed the support documentation provided by the Project Proponent. Confirmation of funds from the CFO, a bank statement of the company and a emission reduction purchase agreement between CarbonCo and a buyer, all provide evidence to provide reasonable assurance that the break-even point is less than 4 years = 0. Project has secured 100% of funding needed to cover the total cash out before the project reaches breakeven. Details are provided in a cash flow analysis which can be found in the project database = 0. The verifier has reviewed the support documentation provided by the PP. The letter from the CFO provides confirmation that the funds are non-restricted and that there is accessibility to funds. Based on that documentation, and the reviewed bank statement, the verifier has obtained reasonable assurance that the project has the ability to access funding as needed = -2.	A risk rating of 0 is appropriate given the rationale provided.
Opportunity Cost	As the majority of baseline activities over the length of the project crediting period are subsistence-driven and that the project proponent has selected the highest risk score, an NPV analysis is not required. This risk category will be revised downward, once net positive community impacts can be clearly demonstrated, such as through certification against the Climate, Community & Biodiversity Standards or results of a participatory assessment of the project activities on the local	A risk rating of 6 is appropriate given community benefits not demonstrated yet.

	communities which demonstrates net positive community benefits. Verifiers agree that the majority of the baseline activities are subsistence driven as evidenced by verifier's observations and discussions with community members in the project area. = 8. There is a legal contractual agreement to maintain the project area as forest for at least a 60 year period (i.e. greater than the length of the crediting period) from the project start date = -2.	
Project Longevity	There is a legal contractual agreement to maintain the project activities and maintain the project area as forest for at least a 60 year period from the project start date $(30-(60/2)) = 0$.	A risk rating of 0 is appropriate given the rationale provided.
Total Internal Risks		8
External Risks		
Land Tenure and Resource Access Impacts	The land tenure score was appropriately revised to a risk rating of 5 to account for the on-going dispute with the Guita family. The characteristics of the dispute are outlined sufficiently in the Risk Report. The proponent is implementing a mitigation credit for resolving the land tenure dispute. Per the VCS Risk tool requirement, "documented evidence is provided that projects have implemented activities to resolve the disputes," additional documentation was provided to substantiate dispute resolution activities performed by the project. Signed agreements were supplied which illustrate the agreement between three local families and the landowners for exclusive use of the land they reside on. This represents a documentary effort by the landowners and the project to resolve the land dispute with the Guita's. The verification team further recognizes the project has made efforts to resolve the land tenure dispute, as evidenced during interviews on-site with the project manager Kidney, representatives of the Guita family, and other project staff. There is a strong motivation by the project	A risk rating of 1 is appropriate given the rationale provided and mitigation deduction applied.

	proponents to resolve this conflict and granting title is the best resolution. The provided documents were translated to the best of the verifier's ability and reviewed. These provided reasonable assurance that Moura and Rosa have full ownership and right of use for the properties at the time of verification. Itatinga - Contrato de Compra e Venda do Seringal.pdf is a purchase and sales document that shows transfer of the Seringal Itantanga property to Moura & ROSA HOLDINGS LTD in 2009. M&R - Certid_o Itatinga - MemorialDescritivo - Manoel urbano - 13.03.12.pdf is a certification of rights to the property. It indicates the property was acquired by the previous landowners in February 2009. The rights were relinquished to Mora & Rosa in December 2009. M&R - Certid_oNegativaAç_es - Matricula-nº 1920 - PortoCentral - 14.03.12.pdf and M&R - Cetid_o Matricúla-nº1920-PortoCentral - 14.03.12.pdf indicate that Normando Sales Rodrigues has full ownership rights to the Seringal Porto Central Property. The certification documents are dated March 2012. = 0. It is understood that no communities live within the project area, rather they live within the boundaries of the land ownership, but they are excluded from project area. Thus, the land is owned by the project proponents. The project proponents have been adequately conducting activities to resolve the on-going dispute with the Guita family as noted above = -2. There is a legal contractual agreement to maintain the project area as forest for at least a 60 year period (i.e. greater than the length of the crediting period) from the project start date = -2.	
Community Engagement	Given that 100% of the local communities have been consulted and are involved in the project neither A nor B is applicable, and thus the default risk value of zero is applicable.	A risk rating of 0 is appropriate given the rationale provided.
Political Risk	Independent calculation of the governance score for Brazil is .057, which includes 2012 and is eligible for a score of 2. Acre, Brazil is	A risk rating of 0 is appropriate given the rating for

	participating in the Governors' Climate and Forest Taskforce. Further, Brazil has an established Designated National Authority under the CDM and has at least one registered CDM Afforestation/Reforestation project. "The jurisdiction in which the project is located is participating in the Governors' Climate and Forest Taskforce (GCF)." Independent web search reveals that the statement made by the Project Proponent is true = -2	governance and participation in beneficial projects.
Total External Risks		0
Natural Risks		
Fire, pests and disease, extreme weather, geologic risk,	Fire - justification for the 10-25 year return interval is sound. Given that the area of Acre has historically exhibited low fire incidence as described in (Aragao and Shimbukuro, 2010), a low amount of forest edge, and a fire suppression program in the region that inherently would inhibit the positive feedback loop associated with fire incidence, the verifier believes that the associated risk for fire is reasonable = 2. Pest and Disease - The forests of the project area have a high diversity of tree species, with over 150 tree species >10 cm dbh, and like other diverse tropical forests, are not known to be subject to catastrophic disturbance by insect pests or forest diseases. Forest pests and diseases as a source of risk are more relevant in temperate forests or plantations, with low species diversity and consequently susceptible to extensive damage due to pest and disease outbreaks, which tend to be concentrated on single host species. Further, there is no history of catastrophic forest disturbance due to forest pests or diseases in the region. Verifiers independently searched the internet for any relevant forest pest or disease issues and could not locate any information that	A risk rating of 2 is appropriate given the rationale provided for the greatest natural risk of fire.

	would lead verifiers to think that this item was scored incorrectly. Several references indicate that there are numerous endemic diseases and pests in the Amazon Forest, however none appear to be of epidemic proportions, nor is there much history of such occurrences. The diversity of the forested landscape appears to help to mitigate any widespread issues. Observations on the site visit and in flyovers in the region during previous travels have not ever revealed any widespread disease or pest outbreaks. Clearly climate change could play a greater role in this area in the future, however at this time, this element appears to be scored correctly = 0. Extreme Weather - While extreme weather events in the region include drought, flooding, and disturbance by wind, this analysis is limited to disturbance by wind as this is the only disturbance which has a direct effect on carbon stocks. As flooding within the project region is common, high water levels in the forest do not lead to a reduction in the forest carbon stocks. Drought does not have a direct effect on existing forest carbon stocks, but instead can increase the severity of forest fires and hence is covered above in the section on fire risk. In relation to disturbance by wind, the recurrence intervals for large blow down disturbances in the western Amazon have been estimated at 27,000 years. Verifiers independently searched the internet for any relevant weather related issues and could not locate any information that would lead verifiers to think that this item was scored incorrectly. Observations on the site visit and in flyovers in the region during previous travels have not ever revealed any widespread disease or pest outbreaks. Clearly climate change could play a greater role in this area in the future, however at this time; this element appears to be scored correctly = 0. Geologic Risk - Neither volcanoes nor active tectonic fault lines are present within the project area. Landslides are not likely to	
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	occur within the project area because the project area is relatively level (less than 5% slope) terrain. Verifiers agree with this evaluation. This item is scored appropriately = 0	
Total Natural Risks		2
Overall Risk Rating = 11		

5 VERIFICATION CONCLUSION

After review of all project information, procedures, calculations, supporting documentation and site visits, ESI confirms that the monitoring conducted by the Project Proponent, along with the supporting Monitoring Report, are accurate and consistent with all aforementioned VCS criteria, the validated PD, and the selected methodology (VM0007, v1.3). ESI confirms that the *2014 Purus Project Monitoring Report* (v01.0 dated 05 November 2015) has been implemented in accordance with the validated PD.

ESI confirms all verification activities, including objectives, scope and criteria, level of assurance, monitoring and project documentation adherence to VCS Version 3 (and all associated updates), as documented in this report are complete. ESI concludes without any qualifications or limiting conditions that *The Purus Project: A Tropical Forest Conservation Project in Acre, Brazil*, meets the requirements of VCS Version 3 and all associated updates for the third monitoring period.

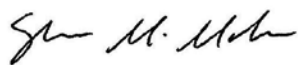
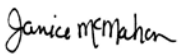
The GHG assertion provided by the Project Proponent and verified by ESI has resulted in the GHG emission reduction or removal of 60,387 tCO₂e equivalents by the project during the third monitoring/verification period (01 January 2014 – 31 December 2014). This value is net of the 11% (8,739 tCO₂e equivalents) buffer withholding based on the non-permanence risk assessment tool.

Verified GHG emission reductions and removals in the above verification period (01 January 2014 – 31 December 2014):

Year	Baseline emissions or removals (tCO ₂ e)	Project emissions or removals (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Net GHG emission reductions or removals (tCO ₂ e)*
2014	158,897	79,452	10,319	60,387

*Net of buffer deduction

Submittal Information

Report Submitted to:	Verified Carbon Standard Association 1730 Rhode Island Ave. NW, Suite 803, Washington, D.C. 20036 CarbonCo, LLC 3 Bethesda Metro Center, Suite 700 Bethesda, Maryland 20814 USA 001-240-247-0630
Report Submitted by:	Environmental Services, Inc. - Corporate Office 7220 Financial Way, Suite 100 Jacksonville, Florida 32256
ESI Lead Verifier Name and Signature	 Shawn McMahon Lead Verifier
ESI Division Regional Technical Manager Name and Signature	 Janice McMahon Sr. Vice President/Technical Director Forestry, Carbon and GHG Services Division
Date:	11 November 2015

EJ/JPM/SMM/RB/VO13022.02VCS Verification Report_Final-20151111.doc

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APPENDIX A – DOCUMENTS RECEIVED/REVIEWED

Documents received 15 June 2015

- Purus Project Implementation Report, Final Draft Version (6-15-15).pdf
- 2014_PurusMonitoring 2015.06.15.pdf

Documents received 18 June 2015

- Purus Project Summary Document (Final Draft Version, English) 6-18-15.pdf

Documents received 23 June 2015

- 2014 purus monitoring
 - o Purus Project Summary Document (Final Draft Version, English) 6-18-15.pdf
 - o Supporting Information
 - Accuracy Assessment
 - Acre2014AA.kml
 - 2014AA_points.xlsx
 - AA_points_map.jpg
 - AA_points_utm19s.dbf
 - AA_points_utm19s.prj
 - AA_points_utm19s.sbn
 - AA_points_utm19s.sbx
 - AA_points_utm19s.shp
 - AA_points_utm19s.shp.xml
 - AA_points_utm19s.shx
 - AccuracyAssessment_draft2014.docx
 - o 2014_PurusMonitoring 2015.06.11.xls
 - o 2014_PurusMonitoring 2015.06.15.docx
 - o 2014_PurusMonitoring 2015.06.15.pdf
 - o Purus Project Implementation Report, Final Draft Version (6-15-15).pdf
- Forest Inventory
 - o Purus REDD project forest inventory 2012.10.30 clean.doc
 - o Purus Equation Validation 2012.10.30.xlsx
 - o Purus Forest Inventory data 2012.10.30.xls
- Gis
 - o Strata
 - PurusStrata.shp.xml
 - PurusStrata.shx
 - LBStrata3.dbf
 - LBStrata3.prj
 - LBStrata3.sbn
 - LBStrata3.sbx
 - LBStrata3.shp
 - LBStrata3.shp.xml
 - LBStrata3.shx
 - PurusStrata.dbf
 - PurusStrata.prj
 - PurusStrata.sbn
 - PurusStrata.sbx
 - PurusStrata.shp
 - o 2014 Monitoring
 - Deforestation2014_PurusRRL.shx
 - Desmate_TC_1988_2014
 - Desmate_TC_1988_2014.shx

- Desmate_TC_1988_2014.dbf
- Desmate_TC_1988_2014.prj
- Desmate_TC_1988_2014.sbn
- Desmate_TC_1988_2014.sbx
- Desmate_TC_1988_2014.shp
- Desmate_TC_1988_2014.shp.xml
- Deforestation1988_2014_PurusRRL.dbf
- Deforestation1988_2014_PurusRRL.prj
- Deforestation1988_2014_PurusRRL.sbn
- Deforestation1988_2014_PurusRRL.sbx
- Deforestation1988_2014_PurusRRL.shp
- Deforestation1988_2014_PurusRRL.shp.xml
- Deforestation1988_2014_PurusRRL.shx
- Deforestation2014_PurusLB_strata.dbf
- Deforestation2014_PurusLB_strata.prj
- Deforestation2014_PurusLB_strata.sbn
- Deforestation2014_PurusLB_strata.sbx
- Deforestation2014_PurusLB_strata.shp
- Deforestation2014_PurusLB_strata.shp.xml
- Deforestation2014_PurusLB_strata.shx
- Deforestation2014_PurusPA_strata.dbf
- Deforestation2014_PurusPA_strata.prj
- Deforestation2014_PurusPA_strata.sbn
- Deforestation2014_PurusPA_strata.sbx
- Deforestation2014_PurusPA_strata.shp
- Deforestation2014_PurusPA_strata.shp.xml
- Deforestation2014_PurusPA_strata.shx
- Deforestation2014_PurusRRL.dbf
- Deforestation2014_PurusRRL.prj
- Deforestation2014_PurusRRL.sbn
- Deforestation2014_PurusRRL.sbx
- Deforestation2014_PurusRRL.shp
- Deforestation2014_PurusRRL.shp.xml
- o Purus Geographical Boundaries
 - RRL_Boundary.shx
 - Purus_RRL.kmz
 - PurusLB2012.09.24.kmz
 - PurusLeakageBelt2012.09.19.dbf
 - PurusLeakageBelt2012.09.19.prj
 - PurusLeakageBelt2012.09.19.sbn
 - PurusLeakageBelt2012.09.19.sbx
 - PurusLeakageBelt2012.09.19.shp
 - PurusLeakageBelt2012.09.19.shp.xml
 - PurusLeakageBelt2012.09.19.shx
 - PurusPA2012.9.24.kmz
 - PurusProjectArea2012.09.19.dbf
 - PurusProjectArea2012.09.19.prj
 - PurusProjectArea2012.09.19.sbn
 - PurusProjectArea2012.09.19.sbx
 - PurusProjectArea2012.09.19.shp
 - PurusProjectArea2012.09.19.shp.xml
 - PurusProjectArea2012.09.19.shx
 - RRD_Boundary.dbf
 - RRD_Boundary.prj
 - RRD_Boundary.sbn

- RRD_Boundary.sbx
 - RRD_Boundary.shp
 - RRD_Boundary.shp.xml
 - RRD_Boundary.shx
 - RRL_Boundary.dbf
 - RRL_Boundary.prj
 - RRL_Boundary.sbn
 - RRL_Boundary.sbx
 - RRL_Boundary.shp
 - RRL_Boundary.shp.xml
- Miscellaneous
 - o UCEGEO Methodology 2011.DOC
 - o Arag+úo and Shimabukuro 2010.pdf
 - o Brown 1997 Estimating Biomass and Biomass Change of Tropical Forests FAO.pdf
 - o FAO 2010 FRA Brasil.pdf
 - o Lehmann et al., 2002, WCSS Bangkok, paper no.0449.pdf
 - o METODOLOGIA DESMATAMENTO DO ACRE 2011.doc
 - o Salimon et al 2011.pdf
 - o Swami et al., 2009, Springer.pdf
- Purus Project Validation Files
 - o Agricultural Surveys
 - Receipt for Purchase of Top 10 CPT Ag Courses.pdf
 - Ag Extension Raw Data.pdf
 - Agriculture Extension Aggregated Results.xlsx
 - Details on Agricultural Courses of Purus Project.docx
 - Details on Agricultural Courses of Purus Project.pdf
 - M&R - Cursos Oferecidos +ás Fam+;lias.docm
 - o Basic Necessity Surveys
 - March 2012
 - Purus Project BNS Raw Data.pdf
 - BNS Comparison of Inside vs Outside Project Communities.xlsx
 - BNS for Purus.xlsx
 - PRA and BNS English Template.docx
 - PRA and BNS Portuguese Template.doc
 - o Community Agreements
 - MOUs
 - Sebastiao Marques MOU.pdf
 - Adriano Moura da Silva MOU.pdf
 - Almira Nunes MOU.pdf
 - Antonio Marques MOU.pdf
 - Benedita Nunes MOU.pdf
 - Celina Pereira de Melo MOU.pdf
 - Francisco Marques MOU.pdf
 - Josefa Rodrigues MOU.pdf
 - M&R - Declaracao de Entendimento (English).docx
 - M&R - Declaracao de Entendimento.doc
 - Manoel Oliveira da Silva MOU.pdf
 - Declaration
 - MR - Declarao- Francisco Marques.pdf
 - M&R - Declara+º_o A Proj.Social.doc
 - MR - Declarao - Joao Rodrigues.pdf
 - MR - Declarao - Jose Marilson.pdf
 - MR - Declarao - Maria Geralda S.Pereira.pdf
 - MR - Declarao - Noa Claudio.pdf

- MR - Declarao - Raimundo Nonato.pdf
- Moura & Rosa Census
 - M&R - Moradores - Levantamento Social das Famílias.pdf
 - M&R - Entrevista Agnelo - Colocação Bica.pdf
 - M&R - Entrevista Antônio Marques - Colônia Nova Itatinga.pdf
 - M&R - Entrevista Benedito - Colocação Morada Nova (2).pdf
 - M&R - Entrevista Chico do Brabo - Colocação Samaíma Velha.pdf
 - M&R - Entrevista Francimar - Colônia Santana (Sede Porto Central).pdf
 - M&R - Entrevista João R Moura - Colônia Alegria (2).pdf
 - M&R - Entrevista José Mariano - Colônia Floresta.pdf
 - M&R - Entrevista José Marilson - Colônia Santa Clara.pdf
 - M&R - Entrevista Manoel Leite - Colônia Buenos Aires.pdf
 - M&R - Entrevista Manoel Nazareno - Colônia Pernanbuco.pdf
 - M&R - Entrevista Miguel - Colocação Nova Itatinga II.pdf
 - M&R - Entrevista Nônio Cláudio - Colônia Santa Rita.pdf
 - M&R - Entrevista Raimundo Carneiro - Colônia pdf
 - M&R - Entrevista Raimundo P Silva - Colônia Fátima Deus (2).pdf
 - M&R - Entrevista Raimundo Nonato-Hálio Oliveira - Colônia Vai Quem Quer.pdf
 - M&R - Entrevista Raimundo Silva Araújo - Colônia Samaíma Nova.pdf
- o Final VCS PD and CCBS PDD
 - VCS_CarbonCo_Purus_ValidationRepresentation_010213.pdf
 - CCB_CarbonCo_Purus_ValidationReport_011613.pdf
 - CCB_CarbonCo_Purus_ValidationRepresentation_011613.pdf
 - Final Purus Project CCBS PDD (English).pdf
 - Purus Project Final CCBS PDD (Portuguese).pdf
 - Purus Project Final VCS PD (English).pdf
 - Purus Project Final VCS PD (Portuguese).pdf
 - Purus Project Tables 2012.12.14.xls
 - VCS_CarbonCo_Purus_FinalValidationReport_122812.pdf
- o Laws
 - Procedimentos de Segurança em Campo (TECMAN).pdf
 - Employee Handbook 2010 April.pdf
 - M&R - Informativo Sobre Direitos Empregados.doc
- o Letters of Support
 - Termo de Cessão de Direito de Uso de Dados Geoespaciais.pdf
 - 20120223_Termo_Uso_BaseDados_UCEGEO - Anexo 1.pdf
 - Acre Lawyer on Deforestation.PDF
 - Financial Letter of Support from CFO.pdf
 - Letter of Support from Acir Israel Caccia.docx
 - M&R - Carta Município Manuel Urbano.pdf
 - M&R - Proj. Purus - Carta Corpo de Bombeiros.pdf
 - M&R - Proj. Purus - Carta SENAR.pdf
 - M&R - Proj. Purus - Inform Miguel-Socorro.pdf
 - M&R - Projeto Purus - Certidão Promotória Meio Ambiente.pdf
 - M&R - Projeto Purus - Prorrogação registro IMC.pdf
 - MR - Projeto Purus - Carta Governo do Acre.pdf
 - OAB AC translation.doc
 - President of OAB-AC.pdf
- o Participatory Rural Assessment
 - March 2013
 - Purus Project VCS Degradation Surveys.pdf
 - Purus Project 2013 Degradation Survey.xlsx
 - Purus Project Degradation Survey Template.docx

- March 2012
 - Purus Project PRA Raw Data (March 2012).pdf
 - GPS INFO from surveys.doc
 - Participatory Rural Appraisal Results for Purus Project.xlsx
 - PRA and BNS English Template.docx
 - PRA and BNS Portuguese Template.doc
 - Project Meeting Notes
 - Unabridged Purus Project Meeting Notes.docx
 - Project Proponent Contracts
 - Tri-Party Agreement with Purus (Portuguese), Fully Signed.pdf
 - Addendum to Tri-Party Agreement (English), Fully Signed.pdf
 - FD and CF Bilateral Agreement, May 2010 - Fully-Signed.pdf
 - Freitas Name Change Certification.pdf
 - M&R - Adendo em Portugues - 24.12.2012.pdf
 - Tri-Party Agreement for Purus Project, Fully Signed.pdf
 - Rapid Biodiversity Assessment
 - RESPOSTAS DO QUESTIONÁRIO SOBRE A ÁREA DOS SERINGAIS PORTO CENTRAL E ITATINGA.pdf
 - Risk Assessment
 - Pro Forma for Purus Project (6-26-13).xls
 - Brazil Political Risk 2006-2010.xls
 - Cochrane and Laurance 2002 Fire as a large-scale edge effect in Amazon.pdf
 - Cochrane et al. 1999 Positive Feedbacks in the Fire Dynamic of Tropical Forest.pdf
 - Complete Finances for Purus Project (4-24-12).xls
 - Espírito Santo et al. 2010 Storm intensity and forest disturbances in the Amazon.pdf
 - Title Documentation
 - Relatório Técnico do Ser. Porto Central-sirgas.doc
 - A Itatinga - Contrato de Compra e Venda do Seringal.pdf
 - A Porto Central - Carta de Adjudicação - Sérgio Moura & Rosa.pdf
 - Memorial do Seringal Porto Central-Sirgas.doc
 - Memorial do Seringal Porto Central-Sirgas.pdf
 - Monografia dos Marcos do Seringal Porto Central-sirgas.doc
 - NRS - Escritura Doação Felipe.pdf
 - NRS - Escritura Doação Paulo Silva.pdf
 - Planilha Cálculo de área do Ser. Porto Central-Sirgas.doc
 - Planilha_de_dados_cartograficos.xls
- Risk Assessment
 - Updated Pro Forma for Purus Project Verification (6-19-15).xls
 - CC Vanguard March 2015 statement.pdf
 - Cochrane and Laurance 2002 Fire as a large-scale edge effect in Amazon.pdf
 - Cochrane et al. 1999 Positive Feedbacks in the Fire Dynamic of Tropical Forest.pdf
 - Espírito Santo et al. 2010 Storm intensity and forest disturbances in the Amazon.pdf
 - May 2015 CC Checking Statement.pdf
- VCS Documents
 - VCS
 - VCS Standard, v3.2_0.pdf
 - AFOLU Non-Permanence Risk Tool, v3.1.pdf
 - VCS AFOLU Requirements v3.2.pdf
 - Methodology
 - VT0001 VCS AFOLU Additionality Tool v3.0.pdf
 - CDM Tool for testing significance of GHG emissions.pdf
 - VM0007 REDD Methodology Modules, REDD-MF, v1.1.pdf
 - VMD0001 CP-AB Live biomass.pdf
 - VMD0002 CP-D Dead wood.pdf
 - VMD0007 BL-UP Unplanned baseline, v2.0.pdf

- VMD0010 LK-ASU Unplanned leakage.pdf
- VMD0015 M-MON Monitoring, v2.0.pdf
- VMD0016 X-STR Stratification.pdf
- VMD0017 X-UNC Uncertainty analysis.pdf

Documents received 09 July 2015

- Purus Project Summary Document (Final Draft, Portuguese) 7-9-15.pdf
- Purus Project Implementation Report, Final Draft Version (Portuguese, 7-9-15).pdf

Documents received 04 August 2015

- Packing List and Health and Safety for Brazilian Amazon Travel (Updated 8-4-15).doc
- Draft Copy of August 2015 Brazil Trip.docx

Documents received 13 August 2015

- Final Biodiversity Monitoring Report for Purus Project.pdf

Documents received 17 September 2015

- Purus Project Implementation Report, Tracked Changes Version (9-17-15).pdf
- 022_02 - CCBA NCR Round1_Purus_DRAFT_RS, Brian's Responses.docx
- Carbonfund.org 990 for 2014.pdf
- CF's Newsletter Announcement of Purus Project's Verification.pdf
- IISD Announcement of Purus Project's Public Comment Period.pdf

Documents received 18 September 2015

- Adriano Moura da Silva MOU.pdf
- Almira Nunes MOU.pdf
- Antonio Marques MOU.pdf
- Benedita Nunes MOU.pdf
- Carbonfund.org 990 for 2014.pdf
- Celina Pereira de Melo MOU.pdf
- CF's Newsletter Announcement of Purus Project's Verification.pdf
- Francisco Marques MOU.pdf
- IISD Announcement of Purus Project's Public Comment Period.pdf
- Josefa Rodrigues MOU.pdf
- Manoel Oliveira da Silva MOU.pdf
- Sebastiao Marques MOU.pdf

Documents received 12 October 2015

- Responses to Round 1 Findings
 - o additional support
 - GEO_PORTO_CENTRAL_NOVO.pdf
 - AA_2014 2015.10.02
 - Acre2014_AA_points_10_15.kml
 - 2014AA_points_10_15.xlsx
 - CarbonCoCarbonNeutralSignedVERPADecember 302012.pdf
 - CARTA - 01 - INGL+èS.pdf
 - CARTA - 01 - PORTUGUES.pdf
 - o 022_02_Purus_VCS_Rd1Findings_Responses 2015.10.09.xlsx
 - o 2014_PurusDegradation 2015.10.09.xlsx
 - o 2014_PurusMonitoring 2015.10.09.docx
 - o 2014_PurusMonitoring 2015.10.09.xls

Documents received 05 November 2015

- 2014_PurusMonitoring 2015 11 05 (tracked changes).docx

- 2014_PurusMonitoring 2015 11 05.docx
- 2014_PurusMonitoring 2015 11 05.pdf
- 2014_PurusRiskReport 2015 11 05.doc
- 2014_PurusRiskReport 2015 11 05.pdf
- Artenizio - Contrato Doa+^o+úo.pdf
- Benedito - Contrato Doa+^o+úo Porto Central.pdf
- Contrato Comodato - Benedito.pdf
- Jose Maria - Contrato Doa+^o+úo Porto Central 01.pdf
- Purus Project 2014 Implementation Report, Final Version (10-21-15).pdf
- Purus Project 2014 Implementation Report, Final Version (Portuguese, 10-21-15).pdf

Documents received 10 November 2015

- 2014_PurusRiskReport 2015 11 05.pdf
- 2014_PurusMonitoring 2015 11 05.pdf

APPENDIX B – NCRS/CL/OFIS

Item Number	1
Approved VCS Module VMD0010 Version 1.0 REDD Methodological Module: Estimation of emissions from activity shifting for avoided unplanned deforestation (LK-ASU) Sectoral Scope 14	b. Immigrant deforestation agents expected to encroach into the project area in future periods. This will be the main agent group in most cases of frontier deforestation. This group will also be present in some cases of mosaic deforestation. Influencing the land-use decisions of this deforestation agent groups will not be possible in most cases, particularly if the agents are coming from distant locations and are driven by economic reasons. Leakage prevention measures may not be sufficient to avoid some level of activity displacement from happening.
Evidence Used to Assess (Location in PD, MR or Supporting Documents)	Site Visit, PD
Validation or Verification or Both	Verification
ESI Findings - Round 1 (02 September 2015)	During the 3rd verification site visit, verifiers traveled down Ramal 16 to the end to observe deforestation activities and inquire with individuals their familiarity with the project. Deforestation is extending rapidly within this portion of the leakage belt from the ramal due to the government sponsored/sanctioned INCRA settlements as confirmed by Wanderley and an individual interviewed. Therefore, here the land-use decisions by agents are influenced by INCRA endorsement and not leakage in the conventional sense despite similar outcomes of agriculture and cattle ranch development. Explicit mention of the nature of this deforestation phenomenon is needed in project documentation for transparent reporting of an imminent threat to the goals of the project. Further, research indicates evidence should be available to project proponents which documents when each person was given/arrived on-site for their 50ha land allocation from INCRA, or at a minimum it appears INCRA maintains a map/layer showing planned expansion of settlements. This evidence should help identify whether clearing occurred during the monitoring period or in 2015, and will help plan to address future impacts to the project. An interview with an individual on a homestead along the ramal noted that one of the greatest needs is improvements to the road. Observations from the 2nd verification site visit indicate that the road has improved and been lengthened substantially in the past year. Verifiers also observed on the site visit that deforestation continues into the project area, albeit a small amount as seen from recent Landsat/UCEGEO datasets, which may or may not have occurred during the monitoring period. Note the increased amounts of deforestation in the leakage belt adjacent to ramals are currently monitored following VM0007 monitoring methods and stock losses due to leakage are not applied to project accounting until it exceeds the baseline amount.

Round 1 NCR/CL/OFI	CL: Please include explicit mention of the INCRA sanctioned deforestation occurring in the leakage belt and this imminent threat to the project area in project documentation. Please research if the government provides INCRA maps/layers of planned expansion. Please identify any mitigation strategies the project might administer for ramal/INCRA-induced deforestation in the leakage belt and project area. Please identify location of changes to project documentation in response to this finding. If assumptions made by verifiers in the finding are incorrect, please clarify, providing supporting evidence as needed.
Round 1 Response from Project Proponent (09 October 2015)	INCRA maps are not publically available before the plan for an INCRA settlement is finalized because the process involves private negotiations between INCRA and the landowner. After creation of an INCRA settlement, the maps are available. This INCRA settlement has been established along the Ramal and within the Purus Project's leakage belt. The INCRA settlement does not overlap with the Project Area. The following text has been added to section 2.1 of the monitoring report: "To mitigate deforestation from the leakage belt encroaching into the project area, Moura & Rosa will implement several activities. First, Moura & Rosa will continue to monitor deforestation throughout the project area and the leakage belt via trike and plane. Second, Moura & Rosa will use a motorcycle to periodically visit the end of the Ramal to ensure there is no encroachment into the Project Area. These visits will be used to help inform the communities along the Ramal about the Purus Project, community benefits (i.e., free doctor visits and access to the health clinic), and about the importance of not deforesting the project area. Third, Moura & Rosa may build a small headquarters, if necessary, with a project sign to establish a permanent presence on that side of the Purus Project. In 2016, Moura & Rosa plan to install a gate at the end of the Ramal that is adjacent to the project area with a sign for the Purus Project." Further, CarbonCo has added a georeferenced map of the Purus Project's Porto Central parcel to the project database which demonstrates the INCRA settlement "Liberdade" does not overlap the Purus Project.

Final ESI Findings (05 November 2015)	Verifiers examined the additional text added to the MR for mitigation of deforestation in the leakage belt. The monitoring methods outlined are sufficient to bolster the presence of the project in the area and increase awareness. The results of the monitoring efforts for this specific case of deforestation will be assessed at the next verification event. Review of the geo-referenced map "GEO_PORTO_CENTRAL_NOVO.pdf" of the project area revealed that the INCRA settlement is close to the ramal verifiers traveled down. This map does not give boundaries of the "Liberdade" INCRA settlement but does show it is directly adjacent to the project area (but not within) and within the leakage belt. This highlights the importance of stating in the MR the INCRA settlement location within the leakage belt and close proximity to the project area. As noted in the Round 1 finding, the MR now includes explicit mention of the nature of this deforestation phenomenon (INCRA sanctioned deforestation is occurring in the LB). The MR Section 4.3 states, "Much of the deforestation in the leakage belt is attributable to a recent INCRA settlement. This INCRA settlement is located partially within the leakage belt and abuts the project area's north northwest boundary. This INCRA settlement is likely to represent a large percentage of the project's leakage emissions for the foreseeable future." This is sufficient. The item is addressed.
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Item Number	2
Approved VCS Module VMD0015,Version 2.1 (20 November 2012), REDD Methodological Module: Methods for monitoring of greenhouse gas emissions and removals (M-MON), Sectoral Scope 14	For the project area, the net greenhouse gas emissions resulting from degradation is equal to the sum of stock changes due to degradation through extraction of trees for illegal timber or fuelwood and charcoal, and extraction of trees for selective logging from forest management areas possessing a FSC certificate (Calculated using <u>Equation 7 on page 11</u>)
Evidence Used to Assess (Location in PD, MR or Supporting Documents	MR Section 4.2
Validation or Verification or Both	Verification
ESI Findings - Round 1 (02 September 2015)	At the previous verification, Equation 7 was not utilized and a de-minimis analysis was provided to allow $\Delta CP, Deg, i, t$ to be set equal to 0 for the illegal wood extraction component. Since monitoring requires a PRA every $\leq$ two years, the current verification can have the 2013 degradation PRA applied to it. However, this discussion is lacking in the current MR and the de minimis analysis is needed. Note that degradation will also be checked as part of the site visit in August 2015
Round 1 NCR/CL/OFI	CL: Please include a discussion of the results of the applicable degradation PRA and provide the de minimis analysis which asserts setting $\Delta CP, Deg, i, t$ to 0.

Round 1 Response from Project Proponent (09 October 2015)	Section 4.2 of the monitoring report was updated with the following text to address this finding. "Degradation surveys were conducted by CarbonCo and Carbon Securities, with assistance from Moura & Rosa, on April 6 and 7, 2013. Fifty percent of the survey respondents (i.e., 5 out of 10) indicated they collect charcoal or timber from forested areas. Using conservative assumptions and further survey information on the amount of charcoal/timber collected, emissions from degradation were estimated. Degradation emission estimates were very small due to the low population pressures and insignificant amounts of charcoal and timber collected . Using the T-SIG tool, degradation emissions (432 t CO₂) are determined to be de minimis because they are less than five percent of the total GHG benefits generated during the same monitoring period (60,387 t CO₂), and thus are not accounted in net GHG benefit calculations. The net carbon stock change as a result of degradation in the project area ($\Delta CP_{Deg,i,t}$) is therefore equal to zero for the monitoring period, 2014." Further the excel file "2014_PurusDegradation 2015.10.09" has been added to the project archive to document the de minimis analysis.
Final ESI Findings (05 November 2015)	The results of the degradation PRA have been appropriately included in the MR as requested. The de minimis analysis provided is sufficient to demonstrate degradation is indeed de minimis as noted in the last verification. The item is addressed.

Item Number	3
Approved VCS Module VMD0015,Version 2.1 (20 November 2012), REDD Methodological Module: Methods for monitoring of greenhouse gas emissions and removals (M-MON), Sectoral Scope 14	c. Classification accuracy assessment: Accuracy assessment technique used; coordinates and description of the ground-truth data collected for classification accuracy assessment; and final classification accuracy assessment.
Evidence Used to Assess (Location in PD, MR or Supporting Documents	MR, Section 3.3 and 5, Acre2014AA.kml, 2014AA_points.xlsx
Validation or Verification or Both	Verification

ESI Findings - Round 1 (02 September 2015)	An accuracy assessment was included in section 5 of the MR which describes the comparison between the landcover classification and ground reference points. This section adequately describes the accuracy assessment performed for the monitoring period. Spatial dispersion of accuracy assessment ground reference is reasonable. However, in review of reference points in Google Earth, verifiers note that points f22, f21, nf119, nf120, f120, nf118, f119 and many others fall within July 2013 dated Digital Globe imagery and outside of the monitoring period. Image acquisition dates used for the ground reference points are not specified but the accuracy assessment supplement document states, "All verification samples gathered from high-resolution imagery were from within 12 months of the classification date." Since classification was performed by UCEGEO, it is unclear when this dataset became available for use by the PP. There is no requirement here for timeliness of ground reference data acquisition, but best practice would suggest as close as possible to classification date. The ground reference points were independently evaluated using newest available imagery in Google Earth and verifiers agree with landcover type calls. Points outside the boundary were appropriately omitted. The accuracy assessment document illustrates an error matrix with 235 points for forest/non-forest classes. However, following Congalton, the error matrix has classified data on the y axis and reference data (imagery or ground truth) on the x axis. Again, there is no specific requirement here for format of the error matrix but best practice would suggest following Congalton for the layout of the error matrix. Computations for producer's and user's accuracy were thus flopped where producer's accuracy is total correctly classed samples divided by total samples in the reference (ground truth or imagery) and user's accuracy is total correctly classed samples divided by total samples in the classified data. Overall accuracy was computed correctly.
Round 1 NCR/CL/OFI	CL: Please use a closer time period classification date for generation of accuracy assessment ground reference points. Please fix the error matrix format as noted in the finding and for producers and user's accuracy in the error matrix.
Round 1 Response from Project Proponent (09 October 2015)	Points from July and August of 2013 have been replaced with new points. All ground truthing point are from within 2014. A new kml file of these points has been included in the project database. An updated spreadsheet, "2014AA_points_10_15", correcting the axis of the error matrix has been included in the project database and the monitoring report updated.
Final ESI Findings (05 November 2015)	The new accuracy assessment was reviewed and ground reference points are now appropriately taken from year 2014. The error matrix in Section 5 of the MR was also correctly and appropriately updated. The item is addressed.

Item Number	4
Approved VCS Module VMD0015, Version 2.1 (20 November 2012), REDD Methodological Module: Methods for monitoring of greenhouse gas emissions and removals (M-MON), Sectoral Scope 14	Area of recorded deforestation in the leakage belt in stratum I converted to land use u at time t (ADefLB,i,u,t)
Evidence Used to Assess (Location in PD, MR or Supporting Documents)	MR Section 3.2
Validation or Verification or Both	Verification
ESI Findings - Round 1 (02 September 2015)	During the site visit and as part of the desktop review, verifiers reviewed the UCEGEO dataset used to derive the estimates of deforestation in the PA and LB. The UCEGEO dataset sufficiently captured deforestation which occurred during the monitoring period in these boundaries. This parameter was computed correctly but it also contains the wrong date (year) within the parameter table.
Round 1 NCR/CL/OFI	CL: Please fix the date within the parameter table as stated in the finding.
Round 1 Response from Project Proponent (09 October 2015)	The date for the parameter ADefLB,u,i,t has been updated to "2014" in the monitoring report.
Final ESI Findings (05 November 2015)	The date was appropriately fixed in the parameter table. The item is addressed

Item Number	5
VCS AFOLU Non-Permanence Risk Tool, Version 3.2 04 Oct 2012	Project has secured 80% or more of funding needed to cover the total cash out before the project reaches breakeven
Evidence Used to Assess (Location in PD, MR or Supporting Documents)	MR, Appendix A. VCS NON-PERMANENCE RISK REPORT
Validation or Verification or Both	Verification

ESI Findings - Round 1 (02 September 2015)	Project has secured 100% of funding needed to cover the total cash out before the project reaches breakeven. Risk report states "Details are provided in a cash flow analysis which can be found in the project database." As per the Risk Tool "The cash flow breakeven point is the year in which the cumulative cash flow is positive (ie, cash flow in exceeds cash flow out) and stays positive." "Cash flow in may include commercial revenue streams associated with the project, secured revenue and conservatively projected revenues from the sale of GHG credits, other funding sources such as donor funds, upfront investments, or carbon prepayments, equity or loans." To ensure the project has remained positive, sale agreements or similar will need to be provided. In reviewing the pro-forma (both Carbon Co's and Mora & Rosa) none appear to address the legal expenses associated with ownership and title transfer.
Round 1 NCR/CL/OFI	CL: To support that the project remains positive (maintaining breakeven as of 2012) please provide forward sale agreement/purchase agreements through 2014. NCR: Please revise the pro-forma to include the periodic legal costs associated with title and ownership transfer. It would also be appropriate for similar future legal cost estimates in the pro forma worksheet. This can be based on the assumptions for procedures for title transfer and the costs incurred for the title transfers currently in process.
Round 1 Response from Project Proponent (09 October 2015)	CarbonCo has provided a forward sales agreement (i.e., VERPA) to ESI that was signed in December 2012 and that included purchase commitments from 203 to 2015. CarbonCo and Moura & Rosa purposely did not include legal costs in the Pro Forma. This is because CarbonCo's parent company, Carbonfund.org, receives pro bono legal assistance. In addition, Moura & Rosa receives pro bono legal assistance from Wanderley Rosa, who is both a founder and director of Moura & Rosa as well as a practicing attorney. Furthermore, Wanderley's son Leonardo is an attorney and provides pro bono legal advice to the Purus Project.
Final ESI Findings (05 November 2015)	Verifiers reviewed the cash checking account and investment account information for CarbonCo again using the VERPA agreement supplied. The evidence supplied notes amounts that are sufficient to cover the 80% funding procurement requirement. The item is addressed.

Item Number	6
VCS AFOLU Non-Permanence Risk Tool, Version 3.2 04 Oct 2012	There exist disputes over access/use rights (or overlapping rights)
Evidence Used to Assess (Location in PD, MR or Supporting Documents)	MR, Appendix A. VCS NON-PERMANENCE RISK REPORT
Validation or Verification or Both	Verification

ESI Findings - Round 1 (02 September 2015)	Site visit observations and discussions with community members were similar to the last verification for this criteria. The communities who live within the project area (in some cases clearing project forested hectares) do not own the land they are living on. The individuals living on the property (interviewed during the site visit) all knew they were not the owners and that their deforestation activities were not necessarily welcome. There was a strong desire by inhabitants within the project boundary to secure rightful ownership. During the site visit one family in particular (Guita) stated they do not plan to change their activities and the extent of their right to ownership was somewhat in question. Many other Guita family members similarly were not sure how much land they planned to claim and there seemed to be some conflict regarding this issue. Further explanation is needed in project documentation for how the project is addressing as this would appear to qualify as disputes over access/use rights. Risk Factor a) in the Risk Assessment states, "Community members that have been living on land adjacent to the project area and who made the land productive (e.g., by growing crops or raising animals) for ten years, have the right to be titled. To resolve ongoing disputes over land, Moura & Rosa will voluntarily recognize whatever area is currently deforested and under productive use by each family living on the Seringal Porto Central and Seringal Itatinga parcels. However these land tenure "disputes" concern deforested areas, rather than the forest Project Area of the Purus Project." During the site visit, verifiers noted a disconnect between individuals who recognized they can have up to 100ha of deforested land, and statements by the project proponents which are clear in only allowing 100ha of land which had been productive for 10 years prior. These areas, deforested after project start, and previously forest within the project area, actually represent a dispute as the landowners have legal ownership but homesteaders claim rights to the land resource (AFOLU Risk Tool Section 2.3.1., 9)). Currently, project proponents have not characterized any land tenure disputes. Related to above, there was uncertainty observed among community members as to whether individuals or families "under one roof" are entitled to eventual ownership of 100ha.
Round 1 NCR/CL/OFI	NCR: Please address the finding as this conflicts with the Guita and other community members appear to qualify as disputes over access/use rights. Please justify the lack of characterizing the existing land and resource tenure issues as disputes. Since it appears to be a growing issue, please describe in project documentation how the project is handling land tenure disputes, specifically the desire of individuals to retain ownership of land deforested after the project start and within the project area, particularly greater than the allotted 100 ha. If warranted, please adjust the risk score for this requirement (5). CL: Please clarify the definition of community member entitlement to 100ha. Is this by individual or households "under one roof" or will the government and Mora & Rosa permit families like the Guitas to have 100 ha for each son? If this item has been requested or has been responded to elsewhere in Round 1, the response can reference it.

Round 1 Response from Project Proponent (09 October 2015)	In response to this finding the risk score of Land Tenure and Resource Access/Impacts has been updated. The project claims a 5 due to a small dispute over access/use rights. The project further claims a -4 mitigation credit because: f) There is a legal contractual agreement to maintain the project area as forest for at least a 60 year period (i.e. greater than the length of the crediting period) from the project start date. g) The project proponents have been implementing activities to resolve the ongoing access/use right disputes. Therefore the net increase in external risk is 1 resulting in a 1% increase in the risk buffer. The monitoring report and project calculations have been updated in response to this finding. The law states 100 hectares per family and this is what Moura & Rosa will offer each family at the Purus Project.
Final ESI Findings (05 November 2015)	The land tenure score was appropriately revised to a risk rating of 5 to account for the on-going dispute with the Guita family. Also noted is that this land tenure dispute is on-going from the last verification. The characteristics of the dispute are outlined sufficiently in the Risk Report. The proponent is now implementing a mitigation credit for resolving the land tenure dispute. Per the VCS Risk tool requirement, "documented evidence is provided that projects have implemented activities to resolve the disputes," additional documentation was provided to substantiate dispute resolution activities performed by the project. Signed agreements were supplied which illustrate the agreement between three local families and the landowners for exclusive use of the land they reside on. This represents a documentary effort by the landowners and the project to resolve the land dispute with the Guita's. The verification team further recognizes the project has made efforts to resolve the land tenure dispute, as evidenced during interviews on-site with the project manager Kidney, representatives of the Guita family, and other project staff. There is a strong motivation by the project proponents to resolve this conflict and granting title is the best resolution. It is clear to verifiers after conversations with the project proponents that family entitlement amounts to 100ha per the law. This dispute will be reviewed again at the next verification to monitor resolution activities and progress. The item is addressed.

Item Number	7
VCS AFOLU Non-Permanence Risk Tool, Version 3.2 04 Oct 2012	Less than 50 percent of households living within the project area who are reliant on the project area, have been consulted
Evidence Used to Assess (Location in PD, MR or Supporting	MR, Appendix A. VCS NON-PERMANENCE RISK REPORT

Documents	
Validation or Verification or Both	Verification
ESI Findings - Round 1 (02 September 2015)	The Risk Report states, "All households living on the Moura & Rosa property directly adjacent to the project area have been consulted. MOUs with each family living within the project property have been signed and are located in the project archive." Verifiers reviewed the MOUs submitted for this verification and it does not appear that all households living directly adjacent to the project area as well as within the "project property" have been consulted (only 7 MOUs were provided to the verifier and considerably more households are present on the project area). This observation stems from households viewed from the river vantage point during the site visit, and quantity of interviews performed by verifiers. Members from the Guita family are notably absent from the MOUs. Additionally, during the site visit the verifiers noted during an interview with a community member that he speculated signatures had been forged on MOUs. Use of the term "project property" from the quoted text above is unclear in this context. Those interviewed during the site visit returned mixed results regarding consultation. Roughly 90% of our sample had indeed been contacted about the project, an improvement over the previous verification.
Round 1 NCR/CL/OFI	NCR: Please provide the rest of the MOUs for other households which required consultation by the project. Otherwise, please revise the wording as noted in the finding to reflect the quantity of actual MOUs signed. CL: Please speak to the concern of the community member that signatures had potentially been forged on the MOUs. NCR: Please also define the term "project property" in the context of the risk factor in response to this finding.
Round 1 Response from Project Proponent (09 October 2015)	CarbonCo resubmitted all the MOUs and Declarations that were signed between the Project Proponents and the local communities. Not every community member signed off on the MOUs or Declarations and nor does every community want to join the Purus Project, but every community member has been consulted about the Project. The Project Proponents have visited all the communities, especially to complete the various community surveys (i.e., Basic Necessity Survey and Participatory Rural Assessments). In addition, Ayri Rando was hired by CarbonCo as an independent community specialist and Mr. Rando visited as many community members as possible to further explain the Project. Regarding the forgery claim, this is a false rumor spread by the Guitas. The MOUs were all signed by the named person and the MOUs have witness signatures, including Professor Willian Flores who acted as a witness during the collection of baseline data.

Final ESI Findings (05 November 2015)	MOUs were provided in response to this finding and reviewed. Verifiers confirmed that participation in the project is voluntary during the site visit. Given that 100% of the local communities have been consulted and are involved in the project neither A nor B is applicable, and thus the default risk value of zero is applicable. Project property refers to the project area as forest areas at the project start date. The item has been addressed.
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