

VALIDATION REPORT FOR THE PURUS PROJECT



Document Prepared By Zane Haxtema

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Prepared By	SCS Global Services (SCS)
Contact	2000 Powell Street, Suite 600, Emeryville, CA 94608, USA http://www.scsglobalservices.com Email: cpollet-young@scsglobalservices.com Telephone: +1 (510) 452-8000

Approved By	Christie Pollet-Young
Work Carried Out By	Lead auditor: Zane Haxtema Technical expert: Vanilda R. de Souza Technical expert: Francisca Guimarães Technical reviewer: Larry Wilson

Summary:
This report describes the validation audit of the Purus Project (“the project”), a Reduced Emissions from Deforestation and Degradation (REDD) project located in Acre, Brazil, that was conducted by SCS. The purpose of the validation audit was to assess the conformance of the project with the validation criteria. The validation audit was performed through a combination of document review, interviews with relevant personnel and on-site inspections. The project complies with all of the validation criteria, and the assessment team has no restrictions or uncertainties with respect to the compliance of the project with the validation criteria.

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1 INTRODUCTION

1.1 Objective

The purpose of the validation audit activity was to conduct an independent assessment of the Purus Project (“the project”) to determine whether the project complies with the validation criteria, as set out in the guidance documents listed in Section 1.2 of this report.

1.2 Scope and Criteria

In accordance with Section 4.3.4 of ISO 14064-3:2006, the scope was defined as follows:

- The project and its baseline scenarios;
- The physical infrastructure, activities, technologies and processes of the project;
- The GHG sources, sinks and/or reservoirs that are applicable to the project;
- The types of GHGs that are applicable to the project; and
- The project crediting period, as discussed in Section 3.1.4 of this report.

In accordance with Section 5.3.1 of the VCS Standard, the criteria for validation was the VCS Version 3, including the following documents:

- VCS Program Guide
- VCS Standard
- VCS AFOLU Requirements
- VCS AFOLU Non-Permanence Risk Tool

Unless otherwise indicated, the assessment was performed against the most recent version of the relevant VCS guidance document.

1.3 Level of assurance

In accordance with Section 5.3.1 of the VCS Standard, the level of assurance of this report is reasonable.

1.4 Summary Description of the Project

The following summary description of the project has been excerpted from Section 1.1 of the project description (PD):

“The Purus Project seeks to help protect and conserve tropical forest by providing payments for ecosystem services... Project activities intended to reduce deforestation are implemented in and around a privately-owned property in the State of Acre, Brazil and are funded by payments related to emission

reduction credits generated by the project... Activities implemented as part of the project to reduce deforestation include:

- Community outreach and education;
- Employ 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)."

2 VALIDATION PROCESS

2.1 Method and Criteria

The validation was performed through a combination of document review, interviews with relevant personnel and on-site inspections, as discussed in Sections 2.2 through 2.4 of this report. At all times, the project was assessed for conformance to the criteria described in Section 1.2 of this report. As discussed in Section 2.5, findings were issued to ensure that the project was in full conformance to all requirements.

2.2 Document Review

The PD and supporting documentation were carefully reviewed for conformance to the validation criteria.

Particular attention was focused on the PD, given its central role in the description of "the project and its context" (VCS Standard, Section 3.19.1). Through review of the PD, the audit team ensured that:

- The project design, as described in the PD, is in conformance with the VCS rules and the requirements of the methodology
- The PD satisfies all applicable documentation requirements of the VCS rules and the methodology

The final version of the PD reviewed is enclosed within the document entitled "Purus Project VCS PD 2012.12.28-2, Brian's Revisions.doc".

In addition to the PD, the following written documents (e.g., reports, memos, land deeds and titles) were reviewed to ensure conformance of the project to the VCS rules and the methodology:

Document (Date Created)	Date Reviewed

Document (Date Created)	Date Reviewed
"Tri-Party Agreement for Verified Emission Reduction Credits" (17 March 2011)	15 June 2012
"Declaração" (May 2011)	15 June 2012
Filled out Participatory Rural Appraisal forms	15 June 2012
"Financial Letter of Support for CarbonCo, LLC" (10 June 2012)	15 June 2012
"Memorial Descritivo do Seringal Porto Central" (2 June 2011)	29 June 2012
"Memorial Descritivo do Seringal Itatinga" (29 March 2007)	29 June 2012
"Global Forest Resources Assessment 2010, Brazil, Country Report" (July 2009)	Throughout audit
"Agreement" (30 June 2011)	13 September 2012
"CERTIDÃO" with respect to Seringal Porto Central (14 March 2012)	19 September 2012
"CERTIDÃO" with respect to Seringal Itatinga (14 March 2012)	19 September 2012
"Contrato de Compra e Venda" (6 July 2009)	20 September 2012
"Contrato Social" (27 February 2009)	3 October 2012
Documentation of transfer of Seringal Porto Central parcel from Normando Rodrigues Sales to Paulo Silvo Cesario Rosa (15 December 2006)	7 November 2012
Documentation of transfer of Seringal Porto Central parcel from Normando Rodrigues Sales to Felipe Moura Sales (15 December 2006)	7 November 2012
"Community Fuel Wood Collection at the Purus Project" (December 2012), six forms filled out	14 December 2012
"Addendum to Tri-Party Agreement" (11 December 2012)	14 December 2012
"REVISÃO DA DINÂMICA DO DESMATAMENTO NO ESTADO DO ACRE: ANÁLISE TEMPORAL DE 23 ANOS (PERÍODO DE 1988 A 2010)" (3 August 2010)	27 September 2012
"Forest biomass carbon inventory for the Purus REDD Project, Acre State, Brazil" (30 October 2012)	Throughout audit
"Estimating state-wide biomass carbon stocks for a REDD plan in Acre, Brazil" (2011)	Throughout audit

Document (Date Created)	Date Reviewed
"A global analysis of root distributions for terrestrial biomes" (1996)	Throughout audit
"Biomassa da parte aerea da vegetacao da floresta tropical umida de terra-firme da Amazonia Brasileira" (1998)	18 September 2012
"Root biomass allocation in the world's upland forests" (1997)	Throughout audit
"Estimating Biomass and Biomass Change of Tropical Forests: a Primer" (1997)	Throughout audit

Where multiple versions of an above document was provided to the audit team during the course of the audit, only the most recent version is described above.

2.3 Interviews

Interviews constituted an important component of the audit process. The following personnel associated with the project proponent and/or implementing partner were interviewed. The phrase "throughout audit" under "Date Interviewed" indicates that the individual in question was interviewed on multiple occasions throughout the audit process.

Individual	Affiliation and Role	Date Interviewed
Brian McFarland	Carbon Projects Manager, Carbonfund.org Foundation	Throughout audit
Pedro Freitas	Freitas International Group LLC	Throughout audit
Normando Rodrigues Sales	Moura e Rosa Empreendimentos Imobiliários LTDA	Throughout audit
Wanderley Cesário Rosa	Moura e Rosa Empreendimentos Imobiliários LTDA	Throughout audit

In addition, the following individuals who were not associated with the project proponent and/or implementing partner provided information regarding the project.

Individual	Affiliation and Role	Date Interviewed
James Eaton	Senior Manager, Forestry and Technical Services, TerraCarbon LLC	Throughout audit
Igor Agapejev de Andrade	Inventory Crew Supervisor, TECMAN	15 June 2012

Individual	Affiliation and Role	Date Interviewed
Willian Flores	Professor, Universidade Federal do Acre (UFAC)	18 June 2012 and 19 June 2012
Rebecca Dickson	TerraCarbon LLC	23 October 2012
Carolyn Ching	Senior Program Officer, Verified Carbon Standard Association	11 September 2012, 19 September 2012, 20 September 2012, and 13 December 2012
Sam Hoffer	Program Officer, Verified Carbon Standard Association	11 September 2012, 19 September 2012, 20 September 2012, and 13 December 2012

2.4 Site Inspections

The objectives of the on-site inspections performed were to:

- Ensure that the geographic area of the project, as reported in the PD and the accompanying KML file, is in conformance with Section 3.11.1 of the VCS Standard;
- Select samples of data from on-the-ground measurements for validation in order to meet a reasonable level of assurance and to meet the materiality requirements of the project, as required by Section 5.1.3 of the VCS Standard;
- Perform a risk-based review of the project area to ensure that the project is in conformance the eligibility requirements of the VCS rules and the applicability conditions of the methodology; and
- Perform a risk-based review of the project area to ensure that the project conforms to all other requirements of the VCS rules and the methodology.

In fulfilment of the above objectives, the audit team performed an on-site inspection of the project area on the dates 11 June 2012 to 19 June 2012. The main activities undertaken by the audit team were as follows:

- Interviewed representatives of the project proponents, as well as implementing partners (see Section 2.3 of this report), to gather information regarding the design of the project;

- Interviewed representatives of the project proponents, as well as implementing partners (see Section 2.3 of this report), for the purpose of seeking evidence of conformance with respect to the specific requirements of the methodology and the VCS rules;
- Interviewed 13 communities residing in the immediate vicinity of the project to confirm the claims of the project proponents with respect to the extent of community engagement, the conformance of the project to the applicability conditions of the various modules of the methodology, and the demonstration of additionality.
- Viewed representatives of the TerraCarbon and TECMA conducting re-measurements on two clusters of inventory plots. The representatives were asked to replicate the measurement protocol that was applied, for the purpose of providing the audit team with reasonable assurance that the measurements were collected to appropriate quality standards.

2.5 Resolution of Any Material Discrepancy

Any potential or actual material discrepancies identified during the assessment process were resolved through the issuance of findings. The types of findings issued by SCS were characterized as follows:

Non-Conformity Report (NCR): An NCR signified a material discrepancy with respect to a specific requirement. This type of finding could only be closed upon receipt by SCS of evidence indicating that the identified discrepancy had been corrected. Resolution of all open NCRs was a prerequisite for issuance of a validation statement.

New Information Request (NIR): An NIR signified a need for supplementary information in order to determine whether a material discrepancy existed with respect to a specific requirement. Receipt of an NIR did not necessarily indicate that the project was not in compliance with a specific requirement. However, resolution of all open NIRs was a prerequisite for issuance of a validation statement.

Opportunity for Improvement (OFI): An OFI indicated an area that should be monitored or ideally, improved upon. OFI's were considered to be an indication of something that could become a non-conformity if not given proper attention, and were sometimes issued in the case that a non-material discrepancy was identified. OFIs were considered to be closed upon issuance.

All findings issued by the audit team during the validation process have been closed. In accordance with Section 5.3.6 of the VCS Standard, all findings issued during the validation process, and the impetus for their closure, are described in Appendix A of this report.

3 VALIDATION FINDINGS

3.1 Project Design

3.1.1 *Project scope, type, technologies and measures implemented, and eligibility of the project*

The project exists under sectoral scope 14 (AFOLU). As described in Section 4.2 of the VCS AFOLU Requirements, the project falls under the category of Reduced Emissions from Deforestation and Degradation (REDD).

3.1.2 *Project proponent*

The project proponents are described in Section 1.3 of the PD. During the site visit, the audit team was provided with the “Tri-Party Agreement for Verified Emission Reduction Credits” (documented in Section 2.2 of this report) that set out a legal agreement between three entities: Carbonfund.org Foundation, Inc. (“Carbonfund”), Freitas International Group, LLC and Moura e Rosa Empreendimentos Imobiliários LTDA (“Moura & Rosa”). The audit team was later provided with an “Agreement”, documented in Section 2.2 of this report, that indicated that “Foundation [i.e., Carbonfund.org Foundation, Inc.] hereby contributes, assigns and transfers all of its rights, interests and obligations in and to the existing signed agreements for projects in Brazil, to CarbonCo [i.e., CarbonCo, LLC] and CarbonCo hereby accepts all rights, interests and obligations in such agreements”. The documents provided to the audit team adequately substantiated that the project proponents are the entities that, together, have “overall control and responsibility for the project”, as required by the VCS Program Definitions.

3.1.3 *Project start date*

As set out in Section 1.5 of the PD, the project start date is justified as the date on which the first document of agreement (the “Declaração”, as documented in Section 2.2 of this report) was signed with the individual communities. Six signed copies, all dated in May 2011, were presented to the audit team for review. Given that one of the primary objectives of the project is to effect change in the behavior of the communities that presently live near the project area, the audit team concludes that the signing of these initial documents can be reasonably concluded to have commenced the generation of GHG emission reductions or removals by the project, and therefore that the project meets the requirements for project start date set out in Section 3.8.1 of the VCS Standard.

3.1.4 *Project crediting period*

As described in Section 1.6 of the PD, the initial project crediting period is set at 30 years. This period is consistent with the requirements of Section 3.9.1 of the VCS Standard.

3.1.5 *Project scale and estimated GHG emission reductions or removals*

As stated in Section 1.7 of the PD, the project is considered a “project” according to the requirements of Section 3.10.1 of the VCS Standard. The project is estimated to result in GHG emission reductions and removals equivalent to 1,032,799 tCO₂e (calculated over the 10-year baseline period from 23 May 2011 to 22 May 2021). Of these emission reductions and removals, it is estimated that 134,120 tCO₂e will be deposited into the AFOLU pooled buffer account (hence the quantity of 898,679 tCO₂e that is reported in Section 1.7 of the PD).

3.1.6 *Project activities*

The project activities are described in Section 1.8 of the PD. In some cases, it was unclear during the audit team that the required frameworks were in place to effectively conduct all of the project activities described in the PD. For example, opportunities for improvement in the carrying out of the “Engage Local Communities” project activity were identified, and it was not clear during the site visit that there was a framework in place for carrying out the “Share a Portion of Profits from Sale of Carbon Credits” project activity. Nonetheless, it was clear that the project proponents were actively involved in carrying out some

of the project activities described in the PD. During the site visit, the audit team observed the following evidence of the above:

- On 19 June 2012, the audit team observed the trike, which is described in the PD, in a warehouse in Rio Branco. It has recently been shipped in and therefore had not been unpacked yet, but it was clearly new and of the same type of machine that is depicted in Figure 1.4 of the PD.
- Also on 19 June 2012, the audit team observed the courses described under the heading “Acquire Agricultural Extension Services”. The courses consisted of videotapes and accompanying booklets.

3.1.7 Project location

As described in Section 1.9 of the PD, the project is located in the state of Acre in Brazil. The project conforms to all VCS rules with respect to project location.

3.1.8 Project compliance with applicable laws, statutes and other regulatory frameworks

The attestation of the compliance of the project with applicable laws, statutes and other regulatory frameworks is set out in Section 1.11 of the PD. Implementation of the project activities, as described in Section 1.8 of the PD, will not require the violation of any applicable laws, statutes and other regulatory frameworks.

3.1.9 Ownership and other programs

3.1.9.1 Right of use

The project proponents have right of use over the project area. As explained during the site visit, the project area is a subset of the cumulative area of two parcels, “Seringal Porto Central” and “Seringal Itatinga”.

The Seringal Porto Central parcel was purchased by Normando Rodrigues Sales (managing director of Moura & Rosa) circa 1991. The purchase of the Seringal Porto Central parcel by Mr. Sales was substantiated by a “certidão” (see Section 2.2 of this report), provided by the project proponents, that was issued by the “extrajudicial branch” of the County of Sena Madureira, State of Acre, Republic of Brazil. Ownership of the Seringal Porto Central parcel was then transferred to Paulo Silva Cesário Rosa and Felipe Moura Sales on 15 December 2006, as attested by two documents certifying the ownership transfer (see Section 2.2 of this report). Ownership of the Seringal Porto Central parcel by Paulo Silva Cesário Rosa and Felipe Moura Sales is attested to in the “Memorial Descritivo” for the parcel (see Section 2.2 of this report). Paulo Silva Cesário Rosa and Felipe Moura Sales are the two owners of Moura & Rosa, as documented in the “contrato social” (see Section 2.2 of this report). Thus, the ownership of the Seringal Porto Central parcel by Paulo Silva Cesário Rosa and Felipe Moura Sales effectively constitutes ownership of the Seringal Porto Central by Moura & Rosa.

The Seringal Itatinga parcel was purchased by Moura & Rosa in 2009, as documented through the “Contrato de Compra e Venda” (see Section 2.2 of this report). Although the “Memorial Descritivo” for the Seringal Itatinga parcel (see Section 2.2 of this report) indicates that the parcel was owned by Rafaele

Farris at the time that the geo-reference was conducted, the Seringal Itatinga parcel was purchased by Moura & Rosa in 2009, as documented through the “Contrato de Compra e Venda” (see Section 2.2 of this report).

The “memorial descritivo” process provided information on the property boundaries of the Seringal Itatinga and Seringal Porto Central parcels that is of sufficient quality to justify the use of such information for purposes of delineating the project area. The audit team team confirmed that the number of hectares enclosed within the area described within the “memorial descritivo” for each parcel is equivalent to the number of hectares that can be calculated from the shapefiles that were the basis for the delineation of the project area.

As discussed during the site visit, Brazilian law allows for the claim of ownership by any individual who has been living on, and actively utilizing, a given area for at least 10 years. There are communities of individuals in residence within the Seringal Itatinga and Seringal Porto Central parcels, and some individuals have been resident there for multiple decades. Therefore, the project proponents do not have fee ownership of that area within the Seringal Itatinga and Seringal Porto Central parcels that has been occupied and in use by other individuals for at least 10 years. However, as the predominant settlement pattern in the region involves the clearing of land for dwellings and agricultural uses, and as the project area is specifically defined so as to exclude all areas that were deforested prior to the project start date (see Section 3.2.3 of this report), the project proponents do have fee ownership over the entire project area.

The above substantiates the right of use of the project proponents over the project area, as defined by Section 3.12.1(4) of the VCS Standard. SCS is not aware of any contractual arrangements divesting the right of use over the reductions or removals from the right of use over the land, excepting the contractual arrangements between the project proponents that are discussed in Section 1.12.1 of the PD.

3.1.9.2 Emissions trading programs and other binding limits

As the project has not reduced GHG emissions from activities that are included in an emissions trading program or any other mechanism that includes GHG allowance trading, this section is not applicable.

3.1.9.3 Participation under other GHG programs

As the project has not been registered under any other GHG program, this section is not applicable.

3.1.9.4 Other forms of environmental credit sought or received

As the project has not sought or received other forms of environmental credit, this section is not applicable.

3.1.9.5 Rejection by other GHG programs

As the project has not been rejected by any other GHG programs, this section is not applicable.

3.1.10 Additional information relevant to the project

3.1.10.1 Eligibility criteria for grouped projects

This section is not applicable, as the project is not a grouped project.

3.1.10.2 Leakage management for AFOLU projects

Although not all of the leakage management activities described in Section 1.13 were being implemented as of the site visit, all such activities are feasible. It is hoped that, with the implementation of these activities, leakage due to project activities is indeed reduced.

3.1.10.3 Commercially sensitive information

As no commercially sensitive information was excluded from the public project description, this section is not applicable.

3.1.10.4 Any further information

In accordance with Section 3.7.3 of the VCS AFOLU Requirements, the project's non-permanence risk report was assessed by the audit team. The non-permanence risk report upon which the risk analysis assessment was based is contained within the PD. The findings and conclusion regarding the non-permanence risk analysis undertaken for the project are summarized below for each risk category and factor.

For internal risks, the non-permanence risk report indicates a score of 8. The findings of the audit team regarding the risk scores applied for each factor are as follows.

Project Management		
Risk Factor	Validation Findings	Risk Rating
a)	It is not anticipated that any tree planting will take place within the project area, and therefore the factor is not applicable.	0
b)	Given the audit team's observations that in-migration has historically been a strong driver of deforestation around the project area, the audit team agrees with the conclusion stated in the risk report.	2
c)	The management team will be drawing on outside expertise for implementation of some project activities (for example, agriculture extension training courses). Therefore the audit team agrees with the conclusion stated in the risk report.	2
d)	Although the risk report states "There is a project manager living on the property and a project headquarters is being established on the property", the audit team learned during the site visit that the project manager then in place, Sebastião Marques da Silva, had indicated a desire to resign. It is not clear to the audit team that another project manager has been hired. Nonetheless, the management of Moura & Rosa, one of the project proponents, is based in Rio Branco, which is less than a full day's travel from the project area. Therefore, the audit team agrees that the risk factor	0

	assigned is appropriate.	
e)	One individual involved with the project, who is employed by one of the carbon project development partners (TerraCarbon LLC), holds significant experience in AFOLU project design and implementation, carbon accounting and reporting under the VCS Program, having lead at least one project from conception through to successful validation.	-2
f)	The audit team did not see any evidence of an adaptive management plan during the site visit, and therefore agrees with the conclusion stated in the risk report.	0
Total Project Management (PM) [as applicable, (a + b + c + d + e + f)] Total may be less than zero.		2

Financial Viability		
Risk Factor	Validation Findings	Risk Rating
a)	The audit team was provided with a spreadsheet that supported the assertion with respect to the period of time until breakeven. The assumptions within the spreadsheet were reviewed and found to be adequate.	1
b)		
c)		
d)		
e)	The audit team was provided with bank statements documenting the financial health of CarbonCo, LLC. In addition, the audit team was provided with a "Financial Letter of Support for CarbonCo, LLC" (see Section 2.2 of this report), issued by the Chief Financial Officer of that organization, attesting to the availability of funds as needed to cover the total cash out before the project reaches breakeven. This documentation is sufficient to serve as evidence of funding secured.	0
f)		
g)		
h)		
i)	The audit team was provided with a "Financial Letter of Support for CarbonCo, LLC" (see Section 2.2 of this report), issued by the Chief Financial Officer of that organization, attesting to the availability of callable financial resources as needed to cover the total cash out before the project reaches breakeven. This documentation is sufficient to serve as evidence of callable financial resources.	-2
Total Financial Viability (FV) [as applicable, ((a, b, c or d) + (e, f, g or h) + i)] Total may not be less than zero.		0

Opportunity Cost		
Risk Factor	Validation Findings	Risk Rating
a)	Although there exists a great disparity in income and lifestyle among the communities that exist near the project area (as documented within the PD and demonstrated to the audit team during the site visit), it is reasonable to	8
b)		
c)		

d)	categorize the baseline activities, overall, as “subsistence-driven”. The risk score claimed for the project is appropriately conservative, as at the time of this report, net positive community impacts have not been demonstrated for the project. It is hoped that net positive community impacts can be demonstrated during future verification audits.	
e)		
f)		
g)	As indicated within the risk report, none of the project proponents is a non-profit organization.	0
h)	The audit team was presented with a “Tri-Party Agreement” and “Addendum to Tri-Party Agreement” (see Section 2.2 of this report) that requires the protection of the credited carbon stocks over a period of 60 years. The Tri-Party Agreement does indicate that the agreement may be terminated by Carbonfund.org under various conditions. Therefore, it will be important that the continuing implementation status of the agreement is assessed during future verification audits. Nonetheless, the agreement is sufficient to support the risk score that has been claimed at this time.	-2
i)	The amended Tri-Party Agreement (mentioned immediately above) does not cover a period of at least 100 years, this risk score cannot be claimed.	0
Total Opportunity Cost (OC) [as applicable, (a, b, c, d, e or f) + (g or h)] Total may not be less than 0.		6

Project Longevity		
Risk Factor	Validation Findings	Risk Rating
a)	As discussed above, the project longevity of 60 years is covered by the amended Tri-Party Agreement, which requires the activities of “maintaining the Project's forest cover and mitigating deforestation”.	0
b)		
Total Project Longevity (PL) May not be less than zero		0

For external risks, the non-permanence risk report indicates a score of 0. The findings of the audit team regarding the risk scores applied for each factor are as follows.

Land Ownership and Resource Access/Impacts		
Risk Factor	Validation Findings	Risk Rating
a)	As discussed in Section 3.1.9.1 of this report, ownership and resource access/use rights are held by same entity.	0
b)		
c)	During the site visit, the audit team was made aware of no disputes over land tenure or ownership involving the project area. As the predominant settlement pattern in the region is to clear land for structures and agricultural uses, and as	0

	the project area, by definition, consists only of land that is forested and was forested for 10 years prior to the project start date, it appears highly unlikely that any individual could reside within, or lay claim to, any aspect of the project area.	
d)	As described above, the observations collected by the audit team do not indicate that disputes over land tenure or ownership exist within the project area.	0
e)	As the project is not a WRC project, this item is not applicable.	0
f)	As discussed previously, the project area is protected by legally binding commitment (the amended Tri-Party Agreement) to continue management practices that protect carbon stocks for a period of 60 years.	-2
g)	Not applicable.	0
Total Land Tenure (LT) [as applicable, ((a or b) + c + d + e+ f)]		0
Total may not be less than zero.		

Community Engagement		
Risk Factor	Validation Findings	Risk Rating
a)	As per the requirements of the methodology, the project area has been defined to include only the area that has been forested for the last 10 years. As the predominant settlement pattern in the region is to clear for forest to make room for home sites and agricultural enterprise, the project area has therefore been defined so as to exclude any households. As no households are living within the project area, this risk score is not applicable.	0
b)	As documented within the PD and demonstrated to the audit team during the site visit, over 20 percent of households living within 20 km of the project boundary outside the project area, and who are reliant on the project area, have been consulted through household surveys and participatory rural appraisals. During the site visit, the audit team was provided with filled-in household surveys and participatory rural appraisals as evidence of the consultation process. Therefore, the audit team agrees with the conclusion of the risk report.	0
c)	At the time of this report, net positive community impacts have not been demonstrated for the project. It is hoped that net positive community impacts can be demonstrated during future verification audits.	0
Total Community Engagement (CE) [where applicable, (a+b+c)]		0
Total may be less than zero.		

Political Risk		
Risk Factor	Validation Findings	Risk Rating
a)	As independently verified through a review of the Worldwide Governance	2

b)	Indicators website (http://info.worldbank.org/governance/wgi/index.asp) on 10 September 2012, the five most recent years of available data are 2006, 2007, 2008, 2009 and 2010. The audit team was able to replicate the analysis reported in the risk report, and therefore the audit team agrees with the conclusion of the risk report.	
c)		
d)		
e)		
f)	As independently verified through a review of the Governors' Climate and Forests Task Force website (http://www.gcftaskforce.org/), the jurisdiction in which the project is located (the Brazilian state of Acre) is participating in the Governors' Climate and Forests Task Force. Therefore, the audit team agrees with the conclusion of the risk report.	-2
Total Political (PC) [as applicable ((a, b, c, d or e) + f)] Total may not be less than zero.		0

For natural risks, the non-permanence risk report indicates a score of 2. The findings of the audit team regarding the risk scores applied for natural risk are as follows.

Natural Risk		
Risk Factor	Validation Findings	Risk Rating
F	The information and justification offered by the project proponents was sufficient to justify the risk rating assigned. During the site visit, the audit team observed that every morning the landscape was enveloped in fog and the ground covered with morning dew, even in the so-called "dry season". Therefore, the audit team agrees that, were fires to occur, it is unlikely that a large percentage of carbon stocks would be destroyed due to fire.	2
PD	On the basis of professional judgment, the audit team agrees with the information and justification provided by the project proponents, and thus with the risk rating arrived at. During the site visit, the audit team observed no evidence of large-scale die-off associated with any sort of pest and disease. The risk of a large percentage of carbon stocks being destroyed due to pest and disease is negligible.	0
W	During the site visit, the audit team observed no evidence of large-scale blowdown events, thus supporting the assertion of the project proponents that the periodicity of hurricane events is rare. The project area is located within a mild region, and as stated in the PD, episodic flooding events are a natural occurrence with the project area and therefore native species within the project area could be expected to adapt to such events.	0
G	No centers of geologic activity are known to be located near the project area. The audit team agrees that, due to the extremely flat terrain of the project area, landslides are unlikely to occur.	0
ON	The audit team has been unable to identify any other natural risks that may affect the project area.	0

Total Natural Risk (as applicable, F + PD + W + G + ON)	2
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In summary, the overall risk rating that was determined for the project, in accordance with the VCS Non-Permanence Risk Tool, was 10. The audit team has concluded that the above risk rating is in conformance with the VCS rules.

3.2 Application of Methodology

3.2.1 Title and Reference

The VCS approved methodology applied to the project (hereafter termed “the methodology”) is entitled the REDD Methodology Modules (methodology VM0007). The methodology can be found at <http://v-c-s.org/methodologies/VM0007>.

The name (as internally assigned by the methodology) and version of each methodology element used by the project are provided below.

Name	Version
REDD-MF	1.3
CP-AB	1.0
CP-D	1.0
BL-UP	3.1
LK-ASU	1.0
E-BB	1.0
M-MON	2.1
X-STR	1.0
X-UNC	1.0
T-ADD	3.0

The LK-ME module was not used by the project because it is not applicable to the project, as discussed in Section 3.2.6.3 of this report. The CP-W module was not used by the project because the wood products pool was excluded from the project boundary (please see Section 3.2.3 of this report for a discussion).

3.2.2 Applicability

The audit team's conclusions, and the justification for such conclusions, regarding the conformance of the project to the applicability conditions of REDD-MF are summarized below.

Applicability Condition	Validation Findings
Land in the project area has qualified as forest at least 10 years before the project start date.	As discussed in Section 3.2.3 of this report, the project area includes only area that was forested from 1988 to 2010.
The project area can include forested wetlands (such as bottomland forests, floodplain forests, mangrove forests) as long as they do not grow on peat. Peat shall be defined as organic soils with at least 65% organic matter and a minimum thickness of 50 cm ³ . If the project area includes a forested wetlands growing on peat (e.g. peat swamp forests), this methodology is not applicable.	The PD attests that no organic soils exist in the project area. The audit team observed no evidence that organic soils exist in the project area, and the project area is not located within a region where organic soils would logically be expected to exist.
Project proponents must be able to show control over the project area and ownership of carbon rights for the project area at the time of verification.	Although this applicability condition is technically not applicable at validation, the project proponents were able to demonstrate control over the project area and ownership of carbon rights for the project area (see Section 3.1.9.1 of this report for more discussion).
Baseline deforestation and baseline forest degradation in the project area fall within one or more of the following categories: Unplanned deforestation (VCS category AUDD); Planned deforestation (VCS category APD); Degradation through extraction of wood for fuel (fuelwood and charcoal production) (VCS category AUDD).	As the agents of deforestation and degradation are not legally authorized to carry out the deforestation and degrading activities, the baseline deforestation and forest degradation falls within the category of unplanned deforestation. Through interviews with the project proponents and many of the families involved with these baseline activities, the audit team found that the assertion of the PD is correct.
Baselines shall be renewed every 10 years from the project start date	The PD states that the baseline will be renewed in May 2020, and the audit team has no reason to believe any differently.
All land areas registered under the CDM or under any other carbon trading scheme (both voluntary and compliance-orientated) must be transparently reported and excluded from the project area. The exclusion of land in the project area from any other carbon trading scheme shall be monitored over	To the knowledge of the audit team, the CDM does not credit REDD projects. The audit team does not know of any carbon trading schemes that such a project would likely have been registered under apart from the VCS Program.

Applicability Condition	Validation Findings
time and reported in the monitoring reports.	
If land is not being converted to an alternative use but will be allowed to naturally regrow (i.e. temporarily unstocked), this framework shall not be used.	The audit team observed forest regrowth taking place in an area that had been purchased by the project proponents several years ago, and it seems clear that forests will grow back naturally in the vicinity of the project area if given the chance. However, although the audit team did observe one instance in which it appeared that a cleared field had been abandoned to regrow naturally, it was evident during the site visit that such abandonment is rare, and that the overall trend over the past few decades has been for forest land to be permanently converted to other land uses.
Where post-deforestation land use constitutes reforestation this framework shall not be used.	The VCS Program Definitions defines "reforestation" as "The direct human-induced conversion of non-forested land to forested land through planting, seeding and/or the human-induced promotion of natural seed sources on land that was once forested but has been converted to non-forested land". The audit team observed no evidence that any such activity had been occurring prior to the project start date.
Leakage avoidance activities shall not include: Agricultural lands that are flooded to increase production (e.g. paddy rice); Intensifying livestock production through use of "feed-lots" and/or manure lagoons.	Neither of the activities mentioned by the condition are described within the PD as project activities, and the audit team observed no evidence during the site visit that such activities were planned to be implemented.
Baseline agents of deforestation shall: (i) clear the land for settlements, crop production (agriculturalist) or ranching, where such clearing for crop production or ranching does not amount to large scale industrial agriculture activities; (ii) have no documented and uncontested legal right to deforest the land for these purposes; and (iii) are either resident in the reference region or immigrants. Under any other condition this framework shall not be used.	Through community interviews, the audit team confirmed that baseline land clearing is primarily driven by communities that migrate into the area from outside (primarily by travel via boat up the Purus River), establish homesteads and clear land for agricultural purposes. The methodology does not define what is meant by "large scale industrial agriculture activities" but, although some individuals have cleared upwards of hundreds of hectares for ranching operations, it does not appear that such operations would be considered "large scale" within Brazil in general. Through interviews with local

Applicability Condition	Validation Findings
	communities observation of aerial photography of the area surrounding the project area and observations made during the site visit, it is clear to the audit team that baseline agents of deforestation clear the land for settlements, crop production or ranching. The lack of documented and uncontested legal right to deforest land by the baseline agents is discussed more fully in Sections 3.2.4 and 3.2.5 of this report.
It shall be demonstrated that post-deforestation land use shall not constitute reforestation.	The VCS Program Definitions defines “reforestation” as “The direct human-induced conversion of non-forested land to forested land through planting, seeding and/or the human-induced promotion of natural seed sources on land that was once forested but has been converted to non-forested land”. The audit team observed no evidence that any such activity had been occurring prior to the project start date.
Where, pre-project, unsustainable fuelwood collection is occurring within the project boundaries modules BL-DFW and LK-DFW shall be used to determine potential leakage.	The audit team was provided with the results of two different participatory rural appraisals in which the potential for fuelwood collection activities was assessed. In the first case, the communities were asked “do you participate in fuel wood collection?” Five of the 11 communities interviewed answered in the affirmative. A follow-up participatory rural appraisal was conducted with four out of these five communities to determine where fuelwood collection was occurring. Data sheets provided to the audit team indicate that most of the communities collect fuelwood from areas that have already been cleared (and thus, by definition, are excluded from the project area). These findings correspond to the observations made by the audit team during the site visit that many families in the area surrounding the project area now prefer to utilize a gas stove for cooking. Therefore, the information provided is sufficient to demonstrate that fuelwood collection did not generally occur within the project area prior to the project start date.

3.2.3 Project Boundary

The geographical boundaries of the project comply with the VCS rules and the VM0007 methodology. The project area is defined as the area of the Seringal Itatinga and Seringal Porto Central parcels (see Section 3.1.9.1 of this report for a discussion of the boundaries and area of these parcels) that has been forested since at least 1998. This was done with an annual remotely sensed dataset that is available from the Unidade Central de Geoprocessamento e Sensoriamento Remoto do Estado do Acre (UCEGEO), which shows cumulative deforestation for each year. The audit team was able to see the replication of the analysis that was done to delineate the project area.

As discussed in Section 3.1.9.1 of this report, a “memorial descritivo” process has been undertaken for each of the Seringal Itatinga and Seringal Porto Central parcels. This process has been determined by the audit team to be sufficient to document the accuracy of the vertices that comprise the ownership boundary. The audit team has confirmed that the area indicated within the “memorial descritivo” documentation corresponds to the area, as calculated within ArcGIS, from the shapefile containing the delineation of the Seringal Itatinga and Seringal Porto Central parcels.

As demonstrated to the audit team, the project area was defined as the subset of the total area within the property boundary shapefile (as described in the immediately preceding paragraph) that was clipped to the area was forested in 1988 and continued to be forested through 2010. Information on forest cover came from the data set that was used for the remote sensing analysis that is described in Section 3.2.6.1 of this report. The audit team was able to observe this analysis being replicated. The output from the analysis is the KML file for the project area, which was provided to the audit team as the file entitled “PurusPA2012.9.24.kmz”.

The temporal boundaries of the historical reference period, crediting period and date of baseline revision comply with REDD-MF (Section 5, Step 1(b)) and the VCS rules (in the case of the crediting period and date of baseline revision).

The findings of the audit team with respect to the GHG sources, sinks and reservoirs included in the project boundary are as follows.

Source		Gas	Included?	Validation Findings
Baseline	Biomass burning	CO ₂	No	According to Table 2 of REDD-MF, “carbon stock decreases due to burning are accounted as a carbon stock change”.
		CH ₄	No	Table 2 of REDD-MF allows emissions to be conservatively excluded in the baseline scenario.
		N ₂ O	No	Table 2 of REDD-MF allows emissions to be conservatively excluded in the baseline scenario.
	Fossil Fuel Combustion	CO ₂	No	Completely optional according to REDD-MF, Table 1.
		CH ₄	No	Excluded according to REDD-MF, Table 2..
		N ₂ O	No	Excluded according to REDD-MF, Table 2.
	Use of fertilizers	CO ₂	No	Excluded according to REDD-MF, Table 2.
		CH ₄	No	Excluded according to REDD-MF, Table 2.

Source		Gas	Included?	Validation Findings
		N ₂ O	No	Can be excluded from baseline accounting according to REDD-MF, Table 1.
Project	Biomass burning	CO ₂	No	According to Table 2 of REDD-MF, "carbon stock decreases due to burning are accounted as a carbon stock change".
		CH ₄	Yes	Table 2 of REDD-MF requires that emissions be included in the project case if fire occurs.
		N ₂ O	Yes	Table 2 of REDD-MF requires that emissions be included in the project case if fire occurs.
	Fossil Fuel Combustion	CO ₂	No	According to Table 2 of REDD-MF, emissions can be neglected if excluded from baseline.
		CH ₄	No	Excluded according to REDD-MF, Table 2.
		N ₂ O	No	Excluded according to REDD-MF, Table 2.
	Use of fertilizers	CO ₂	No	Excluded according to REDD-MF, Table 2.
		CH ₄	No	Excluded according to REDD-MF, Table 2.
		N ₂ O	No	Table 2 of REDD-MF indicates this source can be neglected "except in the situation where fertilizer use is enhanced as a leakage avoidance mechanism." While one objective of the project is to mitigate leakage through the introduction of improved agricultural practices, as described in Section 1.8 of the PD, fertilizer use is not a planned project activity.

The findings of the audit team with respect to the carbon pools included in the project boundary are as follows.

Source	Included?	Validation Findings
Aboveground	Yes	Aboveground tree biomass is required to be included by CP-AB. Aboveground non-tree biomass is only potentially required to be included when "stocks of non-tree aboveground biomass are greater in the baseline than in the project scenario", as set out in Section 1 of CP-AB. Given that the most likely land use in the baseline scenario is rangeland or cropland, it is the opinion of the audit team that carbon stocks of non-tree aboveground biomass are likely to be far greater in the project scenario, and therefore, the non-tree aboveground biomass pool may be conservatively excluded.

Source	Included?	Validation Findings
Belowground	Yes	An optional pool according to CP-AB.
Dead Wood	Yes	Table 1 of REDD-MF states that the pool is “mandatory if... greater in baseline (post-deforestation/degradation) than project scenario and significant; otherwise can be conservatively omitted.” The audit team agrees that the pool is likely to be greater in the project scenario than in the baseline scenario; however, the project proponent has determined to include the pool. This clearly permitted by REDD-MF
Harvested Wood Products	No	Table 1 of REDD-MF states that the pool is “mandatory where the process of deforestation involves timber harvesting for commercial markets”. Although timber is harvested for local use by the communities bordering the project area, the observations of the audit team support the assertion that such timber does not supply commercial markets.
Litter	No	Fully optional, according to Table 1 of REDD-MF.
Soil Organic Carbon	No	Fully optional, according to Table 1 of REDD-MF.

3.2.4 Baseline Scenario

The audit team agrees that the scenario described in Section 2.4.1 of the PD corresponds to the most likely baseline scenario in the absence of the project. The observations of the audit team while traveling up the Purus River from the BR-364 highway indicate that the river is a major conduit for transportation in the region. Review of notes from the participatory rural appraisals that were conducted indicate that it is common for individuals and families to travel up the river in search of available land. During the audit team’s travel to the project area up the Purus River, instances of conversion of land to agricultural uses along the river were commonly seen. These observations were later confirmed through observation of the project area through Google Earth, which reveals large areas of land that have been cleared along the banks of the river. Another access point for deforestation is the BR-364 highway, which has recently been paved. Small patches of deforestation are clearly evident, as seen through Google Earth, to the northeast of the project area in the vicinity of the BR-364 highway, and it is likely that the deforestation pressure adjacent to the BR-364 will intensify over time.

Therefore, the determination of the baseline scenario has been made in accordance with the VM0007 methodology.

3.2.5 *Additionality*

The findings of the demonstration of additionality through the use of the “VT0001 Tool for the Demonstration and Assessment of Additionality in VCS Agriculture, Forestry and Other Land Use (AFOLU) Project Activities” (“the VCS additionality tool”), for each step of the tool, are as follows.

For Sub-Step 1a, alternative land use scenarios to the proposed VCS AFOLU project activity have been listed in Section 2.4 of the PD. In accordance with the VCS additionality tool, all scenarios are credible. In addition, the minimum required scenarios are present in Section 2.4 of the PD.

For Sub-Step 1b, adequate evidence has been provided that all scenarios either comply with all mandatory applicable legislation and regulations or, in the absence of such compliance (as is the case with the scenario “Continuation of the Pre-Project Land Use with Unabated Threat of Illegal Deforestation”), that “applicable mandatory legal or regulatory requirements are systematically not enforced and that non-compliance with those requirements is widespread, i.e., prevalent on at least 30% of the area of the smallest administrative unit that encompasses the project area”. In this case, the smallest administrative unit that fully contains the project area is the state of Acre. For the scenario “Continuation of the Pre-Project Land Use with Unabated Threat of Illegal Deforestation”, conformance to the above requirement was demonstrated through a letter (an English translation of which is provided in the PD) containing the expert testimony of lawyer Dr. Florindo Poersch. The audit team was able to review said letter and confirm that the claims of Section 2.4.1 of the PD accurately reflect the statements therein. As president of the Ordem dos Advogados do Brasil no Acre (OAB-AC; roughly translated as the “Acre Lawyers Association”), Dr. Poersch can be considered qualified to provide such testimony. The audit team confirmed that Dr. Poersch was president of OAB-AC as of 25 October 2012.

For Step 2, the audit team agrees that the project activity is unlikely to produce any financial benefits other than VCS related income in the foreseeable future. The PD contains an adequate documentation of costs associated with the VCS AFOLU project.

For Step 4, the audit team agrees that the other major instances of implementation of activities similar to the project activity have occurred on land that is either owned or administered by the government, and that there is no other known instance in which the proposed project activity is currently underway on private land within the state of Acre without the benefit of carbon finance.

3.2.6 *Quantification of GHG Emission Reductions and Removals*

3.2.6.1 *Quantification of baseline emissions*

The remote sensing tasks required by the methodology were conducted by Dr. Willian Flores, who was available for discussions with the audit team (see Section 2.3 of this report). The audit team found Dr. Flores to be highly competent, and this competence was reflected in the caliber of the remote sensing output, as the audit team requested on many occasions that various remote sensing tasks be replicated, and in no instance was the replicated output any different from the original results.

All references to certain steps within this section are to the steps contained within Section 5 of BL-UP.

The reference region for projecting rate of deforestation (RRD) was appropriately delineated in accordance with the requirements of Step 1.1.1.1. The audit team was able to confirm that the RRD was

100% forested at the start of the historical reference period and that the area of the RRD conforms to the requirement of Equations 1 and 2 of BL-UP. In addition, the audit team was able to confirm, through review of Excel spreadsheets, ArcGIS output and conversation with project personnel, that the RRD conforms to each of the criteria (a)-(f) of Step 1.1.1.1. It should be noted that, with respect to criterion (c), project personnel are required to compare “Transportation networks and human infrastructure” that is expected to exist within the project term to that which existed historically in the RRD. This is a difficult task, as it is not known what infrastructure may be expected to exist within the “project term” (a term undefined within the VM0007 methodology). As the initial road density in the RRD was far higher than that in the project area, a 1-kilometer buffer was placed on all roads for the delineation of the final RRD, so that the roaded area was excluded. Although it is unclear whether this action conforms to the intent of BL-UP, the audit team agrees that it is a reasonable interpretation, given the unclear wording of BL-UP with respect to this matter.

The reference region for projecting location of deforestation (RRL) was appropriately delineated in accordance with the requirements of Step 1.1.1.2. Through replication of area calculations in ArcGIS, the audit team was able to confirm that the RRL complies with the forest/non-forest proportion requirements of BL-UP. The RRL is a rectangle, and therefore complies with the BL-UP requirements for boundary shape. The audit team also confirmed that the RRL is sufficiently similar in terms of proportion of forests suitable for conversion, as all forests in the RRL and project area are suitable for conversion. The RRL does include extractive reserves and state forests, which may fit the definition of “protected forest” as used within BL-UP. However, such areas are not completely protected from anthropogenic influence (they are “extractive use” reserves rather than “total preservation” reserves). Therefore, project personnel opted not to exclude them from the RRL. As BL-UP does not clearly define the term “protected forest”, the interpretation of BL-UP made by project personnel appears reasonable to the audit team.

For determining the baseline rate of deforestation, Dr. Flores used the annual dataset available from UCEGEO which was described previously. The dataset is based on Landsat data with a 30m x 30m resolution, therefore complying with Step 2.1.1. Because the dataset provides information on deforestation for each year from 1998 through 2010, the time period requirements of Step 2.1.1 are met. Mapping of historical deforestation was done by a government agency (UCEGEO) in accordance with established protocols (as documented in “REVISÃO DA DINÂMICA DO DESMATAMENTO NO ESTADO DO ACRE: ANÁLISE TEMPORAL DE 23 ANOS (PERÍODO DE 1988 A 2010)”, as discussed in Section 2.2 of this report), and therefore complies with the requirements of Steps 2.1.2 and 2.1.3. In accordance with Step 2.1.3, remote sensing products were not produced for a given year for scenes where cloud cover was above a threshold of 10%.

In accordance with Step 2.1.4, an accuracy assessment was carried out for with respect to the forest/non-forest map for 2010, using high-resolution imagery from Google Earth. The audit team confirmed that the imagery used for this assessment conforms to the resolution requirement of Step 2.1.1. In addition, through a risk-based sample of points used in the assessment, the audit team was able to confirm that the assessment was correctly carried out and that the classification accuracy as reported in Section 3.1.2.1 of the PD is correct.

Parameter $A_{BSL,RRD,unplanned,t}$ was quantified using Equation 3 of BL-UP. The audit team observed the quantification of this parameter being replicated. It was demonstrated that the linear, power and logarithmic regression methods produce results that are not significant, and therefore the mean area

deforested, hectares per year, across the historical reference period was used, in accordance with the methodology.

Parameter $A_{BSL,RRL,unplanned,t}$ was quantified using Equation 4 of BL-UP. The audit team confirmed that the calculation was appropriately carried out using the proportion of forest in the RRL in 2010.

As location analysis was conducted, the requirements of Step 3 were appropriately carried out. For determining the baseline location of deforestation, Dr. Flores used the DINAMICA EGO model. It was demonstrated that, in accordance with the methodology, DINAMICA EGO is 1) peer-reviewed; 2) transparent; 3) incorporates spatial datasets that have been documented to explain patterns of and are correlated with deforestation (both raster and vector); and 4) able to project location of future deforestation. The audit team reviewed the spatial input datasets and confirmed that they appropriately reflected conditions within the RRL. The audit team also confirmed that all of the factors required by Step 3.1.2 were included.

For Step 3.2, the audit team reviewed the process used to create the risk maps and observed that it was appropriately carried out. For Step 3.3, the audit team was able to see that the most accurate deforestation risk map was selected. The FOM calculation was carried out in ERDAS IMAGINE and Excel. The audit team was able to see the quantification of this value being replicated.

The guidance of Step 3.4.2 was carried out using DINAMICA-EGO. The audit team was able to review, in detail, the process used to determine the areas to be deforested for each year of the baseline period. The audit team was also able to observe the quantification of the total area deforested in each year and stratum ($A_{unplanned,i,t}$), from the output from DINAMICA-EGO, in ArcGIS.

Through a visual comparison of the stratification scheme employed, and the plot-level total live biomass for each inventory plot, the audit team confirmed that the stratification of the project area was carried out in accordance with X-STR (and, thus, Step 4.1).

For Step 4.2.1, the audit team confirmed that aboveground biomass, belowground biomass and biomass in dead wood was appropriately quantified in accordance with the CP-AB and CP-D modules, with the exception of the methodology deviations described in Section 3.2.7 of this report. As discussed in Section 2.4 of this report, the audit team observed representatives of TerraCarbon and TECMAN re-measuring above-ground carbon stocks on a sample of plots, and analysis was conducted to determine the extent of the differences between the original and re-measured datasets for those re-measured plots. The audit team observed the presence of sound quality control practices that minimized the likelihood of trees being missed or double-counted, and therefore the tree count matched up very well between the original dataset and the re-measured dataset. However, a substantive difference existed on the basis of carbon on one of the re-measured plots. It was determined that this difference was likely due to a difference in measurements on one extremely large tree with a prominent buttress at the base. Following a commonly accepted forest inventory convention, the inventory crews were instructed to determine diameter above the buttress, but it is likely that, on the tree in question, the diameter was visually estimated rather than measured, for reasonable safety reasons. When the plot was re-measured, the audit team witnessed a forest inventory feat for the history books, as representatives of TerraCarbon and TECMAN physically wrapped a diameter tape straight around the tree while dangling 15 feet in the air from some lianas. The resulting diameter measurement was undoubtedly much more accurate than the original measurement. When the validation measurements were compared with the original measurement, a large discrepancy in

carbon stocking was found that could only be reasonably attributed to a difference in how the large tree was measured.

While ideally a more accurate and replicable methodology for measuring large, buttressed trees would be developed, inventory crews cannot be expected to risk life and limb to perform measurements in the course of their work. Given the overall high quality of the inventory, and that the error that was detected was on the conservative side (i.e., carbon stocks were underestimated), it is the opinion of the audit team that the measurements that were taken are consistent with the requirements of the methodology and the VCS rules.

The quantification of aboveground and belowground biomass conforms materially to the requirements of CP-AB, with the exception of those deviations described in Section 3.2.7 of this report. Except as described in Section 3.2.7 of this report, the various allometric equations and default factors that have been utilized conform to the requirements of the CP-AB module. In all cases, the allometric equations and default factors that have been utilized are appropriate for use in the context of the project. In addition, the default factors that have been utilized, and the allometric equations that have been utilized, conform to the requirements of Section 3.1.5 and Section 3.1.4 of the VCS Standard, respectively. Through thorough review of the appropriate workbooks, the audit team was able to confirm that no material discrepancy exists in the quantification of aboveground and belowground biomass.

For measurement of standing dead wood and lying dead wood, the audit team confirmed that the measurement procedures undertaken were reasonable, replicable and in conformance to CP-D, with the exception of a deviation described in Section 3.2.7 of this report. The quantification procedures employed conform to the requirements of CP-D. As described within the document “Forest biomass carbon inventory for the Purus REDD Project, Acre State, Brazil” (see Section 2.3 of this report), the decay values utilized have been appropriately discounted, in accordance with the guidance of CP-D. Through thorough review of the appropriate workbooks, the audit team was able to confirm that no material discrepancy exists in the quantification of biomass in standing and lying dead wood.

Therefore, the forest carbon stocks in each pool included in the project boundary have been quantified in accordance with the CP-AB and CP-D modules, with the exception of the deviations described in Section 3.2.7 of this report.

For estimation of post-deforestation carbon stocks, the Option 1, as described in Step 4.2.2, was undertaken. The value for post-deforestation aboveground biomass is derived from the value provided for pasture in Table 3 of the report entitled “Estimating state-wide biomass carbon stocks for a REDD plan in Acre, Brazil” (see Section 2.3 of this report), as authored by Salimon et al. (2011). As this value is higher than the value for “agriculture”, it was considered most appropriate, in accordance with the guidance of Step 4.2.2. Although the value does not come from a local study within the project area, it does derive from a study that is specific to the state of Acre, and is therefore considered to be more appropriate than a default value sourced from IPCC. Belowground biomass is calculated from the value described above using a root-to-shoot ratio for “tropical grassland savannah”, as set out in Table 1 of the report entitled “A global analysis of root distributions for terrestrial biomes” (see Section 2.3 of this report), as authored by Jackson et al. (1996), which is a reasonable choice for a source of such a value. As both default factors originate from the peer-reviewed literature, they conform fully to the requirements of Section 3.1.5 of the VCS Standard.

Estimation of carbon stock change in the baseline scenario was conducted in accordance with Steps 4.2.3 and 4.3. The audit team was able to confirm correct quantification of the parameters Equations 16-24 of BL-UP through thorough review of the relevant workbook.

Therefore, the quantification of baseline emissions for the baseline period conforms to the guidance of BL-UP.

3.2.6.2 Quantification of project emissions

Ex ante estimation of project emissions was conducted in accordance with the requirements of the M-MON module, as described in Section 3.2 of the PD. The audit team's findings with respect to the values that were sourced for individual parameters are described below. Unless stated otherwise, it was found that the quantification of each parameter followed the requirements of the M-MON module.

Parameter	Audit Team Findings
$A_{DefPA,u,i,t}$	The parameter is calculated for each as the product of the area of forest at the beginning of year, the yearly percentage of deforestation in the baseline (1.57%/year) and 20% (assuming a "project effectiveness" of 80%). The approach taken is reasonable for ex ante estimation.
$\Delta C_{Pools,P,Def,u,i,t}$	This parameter is calculated as the average per-hectare carbon stocking in all pools, weighted by stratum. As the process of deforestation does not involve timber harvest for commercial markets (see Section 3.2.1 of this report), and as the M-MON module states that "It is conservative in the project case to assume no wood products are produced", it is acceptable not to account for carbon in the wood products pool in the quantification of this parameter. Furthermore, it has been assumed that long-term carbon stocks for post-deforestation land uses will have a value of zero. This is a deviation to the methodology that is described in Section 3.2.7 of this report.
$\Delta C_{P,Deg,i,t}$	All parameters related to degradation have been quantified as zero. The project proponents justified this on the basis that no selective logging will take place as a project activity and that incentives and regular patrols will reduce the amount of degradation taking place under the project scenario. The M-MON module states that "If the belief is that zero degradation will occur within the project boundaries then this parameter may be set to zero if clear infrastructure, hiring and policies are in place to prevent deforestation." The project proponents argued that such was the case.
$\Delta C_{P,DistPA,i,t}$	The audit team agrees with the argument set out in the PD that natural risks are low in the project area, and therefore it appears reasonable to source this parameter as zero for ex-ante estimation.
$GHG_{P-E,i,t}$	The audit team agrees with the arguments set out in the PD regarding the sourcing of this parameter as zero.

Parameter	Audit Team Findings
$\Delta C_{P,Enh,i,t}$	Monitoring of areas undergoing carbon stock enhancement has been conservatively excluded.

3.2.6.3 Quantification of leakage

In accordance with Section 3.6.4 of the VCS AFOLU Requirements, the quantity of market leakage caused by the project was assessed at validation. The information upon which the market leakage assessment was based is contained within PD.

The market leakage assessment findings and conclusion are as follows.

The methodology requires that market leakage, if applicable, be assessed using the LK-ME module. For those projects that seek to employ unplanned deforestation, Section 1 of the LK-ME module states that the module “is mandatory where the process of deforestation involves timber harvesting for commercial markets”, with a footnote clarifying that “Commercial markets here defined as sale of products to end users and public and private companies with sales conducted distant (>50km) from the project area”. During the site visit, the audit team found evidence that harvested timber is utilized for local use (e.g., for the construction of housing). However, in all of the community interviews conducted by the audit team, the audit team found no evidence that harvested timber is sold in commercial markets, as defined by the LK-ME module. This finding was further substantiated by the results of a participatory rural appraisal, conducted in 10-12 March 2012, that were reported in Climate, Community & Biodiversity Standards Project Design Documentation for the Purus Project. These results indicated that, of the 16 participants interviewed, none reported that they sell timber. Therefore, the audit team agrees that the LK-ME module is not applicable, and that market leakage therefore does not need to be accounted for under the methodology.

In summary, the total quantity of market leakage emissions is 0 tCO₂e over the project crediting period. The audit team has concluded that the reporting of market leakage emissions is in conformance with the VCS rules and the methodology.

For quantification of emissions due to activity shifting leakage, a leakage belt was delineated in accordance with Section 5, Step 1.1.3 of BL-UP. The audit team confirmed that the leakage belt conforms to the requirement of being 100% forested as of the project start date, and also that it conforms to the area requirement of Section 5, Step 1.1 of BL-UP. In addition, the audit team confirmed, through review of Excel spreadsheets, ArcGIS output and conversation with project personnel, that the leakage belt was delineated in accordance with criteria (a)-(g) of Section 5, Step 1.1.3 of BL-UP. The leakage belt is spatially biased in terms of distance of edge of belt from edge of project area. However, such bias can be justified by the predominance of river travel as a form of transportation in the region, and thus the ability of individuals to travel farther via river transport than via overland transport within a given period of time. All parts of the leakage belt are accessible and reachable by the baseline deforestation agents.

Ex ante estimation of emissions due to activity shifting leakage was conducted in accordance with the requirements of the LK-ASU module, as described in Section 3.3 of the PD.

For Step 1, the output of the modeling conducted in accordance with Parts 2 and 3 of Section 5 of BL-UP (see Section 3.2.6.1 of this report) was used to determine the baseline deforestation projected in the leakage belt.

For Step 2, the community surveys that were implemented met the requirements of the LK-ASU module. The project proponents chose to estimate the proportions of area deforested by immigrant and local deforestation agents using the proportion of respondents that belonged to the respective groups, which is a reasonable approach in the absence of further information or specific guidance from the LK-ASU module.

For Step 3a, the project proponents chose to estimate the carbon stock changes and greenhouse gas emissions in the leakage belt that are expected to occur due to the implementation of the REDD project activity and that would not occur in the baseline case by using a factor of 0.15. The LK-ASU module states that “If no leakage prevention activities are planned the factor shall be equal to 1. Where leakage prevention activities are implemented the factor shall be equal to the proportion of the baseline agents estimated to be given the opportunity to participate in leakage prevention activities. Leakage prevention activities must be planned to fully replace income, product generation and livelihood.” As leakage prevention activities are planned and communities in the project scenario will be permitted to retain control of lands that they have already converted to agriculture, the factor used appears to be reasonable, although the project proponents were unable to provide evidence of an analysis that specifically supported the factor that was used.

For Step 4, the audit team’s findings with respect to the values that were sourced for individual parameters are described below.

Parameter	Audit Team Findings
TOTFOR	The value for this parameter was sourced from the “Global Forest Resources Assessment 2010, Brazil, Country Report” (see Section 2.2 of this report). While the project proponents were unable to provide evidence that the value is “reduced to just the area of forest within 5km of a road or river that is suitable for conversion to agriculture or raising livestock”, as suggested by the methodology, the audit team’s understanding is that the term “should” as used by the methodology in this context implies a suggestion rather than a requirement. In addition, it is always conservative to have a larger value for TOTFOR.
PROTFOR	The value for this parameter has been set to zero, as allowed for by the methodology. It is always conservative to have a smaller value of PROTFOR.
MANFOR	The value for this parameter has been set to zero, as allowed for by the methodology. It is always conservative to have a smaller value of MANFOR.
LBFOR	The value for this parameter was sourced from the forested area of the leakage belt.
C _{OLB}	As described in the PD, the value for this parameter was sourced from the document entitled “Global Forest Resources Assessment 2010, Brazil, Country

Parameter	Audit Team Findings
	Report” (see Section 2.3 of this report), and is a reasonable estimate in the absence of firm guidance from the methodology.
C _{LB}	The value for this parameter was appropriately sourced from the weighted average carbon stock in the leakage belt, considering the area of all strata included within the leakage belt. It should be noted that, as documented within Section 3.1.4 of the PD, the leakage belt does contain 69 hectares that has been stratified as “FAP + FAB”, a stratum that does not appear within the project area. Therefore, as documented within Section 3.1.4.2 of the PD, rather than use data collected from the project inventory for this stratum, it has been determined to source values for aboveground biomass from Table 3 of the report “Estimating state-wide biomass carbon stocks for a REDD plan in Acre, Brazil” (see Section 2.3 of this report), which utilizes the same stratification scheme employed by the project. In addition, dead wood biomass for this stratum has been sourced from the measured dead wood within the “FAB+FAP” stratum, which was included in the project inventory. Given the negligible area of this stratum, the approach taken appears reasonable to the audit team. The audit team confirmed the correct calculation of the value for this parameter through a thorough review of the appropriate workbook.

3.2.6.4 Summary of GHG emission reductions or removals

The ex ante quantification of GHG emission reductions was conducted in accordance with the requirements of Equation 1 of REDD-MF. This information is presented in the two right-most columns of Table 3.32 of the PD (being separated into “Deductions for AFOLU pooled buffer account (tCO₂e)” and “GHG credits eligible for issuance as VCUs (tCO₂e)”). While it is the audit team’s impression that the sum of both said columns would produce the ex ante estimation of GHG emission reductions, it is also true that the VCS Program contains no formal definition of the term “GHG emission reductions or removals”. In any case, it is the opinion of the audit team that the information in Table 3.32 conforms to the requirement of Section 3.18.2(4) of the VCS Standard that PD contain a calculation of “net GHG emission reductions and removals”.

3.2.6.5 Uncertainties associated with the calculation of emissions

REDD-MF requires that X-UNC be used to quantify uncertainty. However, the deduction for uncertainty occurs ex post, in Section II, step 5(a) of REDD-MF and impacts the quantity of Verified Carbon Units to be issued, rather than the quantity of GHG emission reductions and removals to be reported. Therefore, quantification of uncertainty is considered outside the scope of the validation audit.

3.2.7 Methodology Deviations

Each deviation that has been proposed in the application of the methodology has been assessed against the requirements of Section 3.5.1 of the VCS Standard and found to conform to said requirements. All

deviations are with respect to the criteria and procedures for relating to monitoring and measurement of GHG emission reductions or removals set out in the methodology. The deviations are as follows:

- For ex ante and ex post quantification of post-deforestation carbon stocks in the project scenario, the project proponents have chosen to source carbon stock values as zero in all cases. This is consistent with the requirements of the Section 3.5.1 of the VCS Standard, as the deviation has been proposed regarding the criteria and procedures for relating to monitoring and measurement of GHG emission reductions or removals set out in the methodology. Furthermore, the deviation is conservative in all cases.
- The equation used for quantification of aboveground biomass in palm trees, as described in Equation 4.2 of the PD, does not conform to any of the criteria set out in pages 11-14 of CP-AB. The proposed deviation is considered appropriate by the audit team for the following reasons:
 - o The height measurement used is height to the top of the stem, and therefore the equation quantifies bole biomass only. Biomass in live branches is conservatively excluded by the quantification procedure employed.
 - o Given any degree of taper in the stem, diameter at breast height will be smaller than the basal diameter (the diameter at the base of the tree). Therefore, the use of diameter at breast height is likely to result in conservative estimation.
 - o The use of the paraboloid form is likely to conservatively estimate the volume of palm trees, as most palm trees have not tapered to a tip at the top of the stem.
 - o The audit team has been provided with reasonable assurance that no superior equation for quantification of palm biomass exists within the tropics.
- Trees of the *Cecropia* genus have been excluded from the baseline carbon stock estimates, and the monitoring plan states that they will not be included in future monitoring campaigns. The deviation is a deviation to the criteria and procedures for monitoring and measurement, and will not negatively impact the conservativeness of the quantification of GHG emission reductions or removals.
- The following nonconformities to the guidance in page 10 of CP-D have been proposed: 1) 92-meter transect lines were used rather than 50-meter transect lines; 2) The lines did not bisect each sample plot, but rather ran from one plot center to the next; and 3) The lines were oriented to the north and east, and no randomization in the bearing of the first line was employed. With respect to the first nonconformity, with all other variables held equal, an increase in transect line length will result in more accurate results. The second nonconformity is completely immaterial. With respect to the third nonconformity, the sampling scheme used for estimation of biomass in down wood is only design-unbiased in the case that all transects are randomized, and therefore the guidance provided by CP-D is appropriate. However, the audit team observed that the entire project area is very flat, and there were no obvious indicators of any trend in the direction of fall of dead trees. Under such circumstances, the audit team agrees that the approach taken is unlikely to lead to biases of any practical significance. The discrepancies described above constitute a deviation to the criteria and procedures for monitoring and measurement, and are considered

unlikely to negatively impact the conservativeness of the quantification of GHG emission reductions or removals.

- The equation validation guidance in pages 12-14 of CP-AB require that “height to a 10 cm diameter top or to the first branch” be acquired for a subset of trees. In contrast, total height was measured to the trees included in the equation validation dataset. A ratio of merchantable height to total height was sourced from the report “Biomassa da parte aerea da vegetacao da floresta tropical umida de terra-firme da Amazonia Brasileira”, authored by Higuchi et al. (1998; see Section 2.3 of this report). Although ideally the height measurement requirements of the CP-AB module would have been complied with at the time of measurement, a search for alternatives to conducting additional measurements seems reasonable, given the time and cost involved in accessing the project area. Ultimately the purpose of measuring to a 10 cm diameter top or to the first live branch, rather than measuring total height, is to ensure that the predictions of the biomass equation are compared with a conservative estimate of stem biomass. The use of the “commercial height to total height ratio” suggested by the client fulfills the same purpose. Although there is undoubtedly some loss of accuracy involved with the use of such a “proxy”, such a loss of accuracy is considered to be within acceptable limits, and it is unlikely that the conservativeness of the methodology will be affected (in the context of the above, an impact on conservativeness could result from an equation validation procedure whereby an equation that produces upwardly biased biomass estimates is mistakenly approved). On this basis, the methodology deviation was approved by the audit team.
- The Brown et al. (1997) equation, as sourced from the report “Estimating Biomass and Biomass Change of Tropical Forests: a Primer” (see Section 2.3 of this report), was not able to be validated through the “Limited Measurements” procedure described on page 13 of CP-AB, because over 75% of the measured trees had a “measured” biomass (as quantified using the procedure outlined in CP-AB) that was greater than the biomass predicted by the Brown et al. (1997) equation. Therefore, as described in Equation 4.1 of the PD, a “calibration factor” was applied which reduces all estimates of the Brown et al. (1997) equation such that, when so reduced, the Brown et al. (1997) equation is able to meet with the equation validation criteria of the “Limited Measurements” option of the CP-AB module. This deviation ensures that the predictions of the Brown et al. (1997) equation meet with the intent of CP-AB, and that the conservativeness of the quantification of GHG emission reductions or removals, relative to the guidance provided by CP-AB, is not impacted. On this basis, the methodology deviation was approved by the audit team.
- An equation sourced from the report “Root biomass allocation in the world's upland forests”, as authored by Cairns et al. (1997; see Section 2.3 of this report) was utilized to predict belowground biomass. This constitutes a deviation because the Cairns equation is not a simple root-to-shoot ratio, as required by Equation 5 of CP-AB, but rather a function of aboveground biomass. The Cairns et al. (1997) equation is a widely accepted equation for quantifying belowground biomass, and can be considered more accurate than a fixed root-to-shoot ratio, as it models a different rate of increase in belowground biomass for smaller trees than for larger trees. Furthermore, its use will not negatively impact the conservativeness of the quantification of GHG emission reductions or removals.

3.2.8 Monitoring Plan

3.2.8.1 Data and parameters available at validation

The data and parameters available at validation are all provided within Sections 3.1.4.3, 3.3, and 4.1 of the PD. The appropriate quantification of these data and parameters has been discussed previously in this report.

3.2.8.2 Data and parameters monitored

Section 4.2 contains an appropriate monitoring plan for the data and parameters monitored, which complies with the relevant guidance in the VM0007 methodology (specifically, Section 5, Step 3 of REDD-MF and M-MON) as well as the Sections 3.16.3-3.16.5 of the VCS Standard. In all cases, the monitoring procedures are consistent with the procedures for data and parameters available at validation (for example, deforestation will be monitored using the dataset from UCEGEO that was discussed in Section 3.2.6.1 of this report, and the forest carbon stock estimates will be updated using the same procedures that were assessed at validation). The monitoring plan has been thoroughly reviewed by the audit team for consistency with the validation criteria, and the audit team concludes that the monitoring plan conforms to said criteria. As commercial timber harvest is not a project activity, the audit team agrees that degradation due to selective logging of FSC certified forest management areas does not need to be monitored.

3.2.8.3 Applicability and eligibility of monitoring equipment and procedures

As discussed previously, deforestation will be monitored using a dataset from UCEGEO. The conformance of that dataset to the requirements of BL-UP (as discussed in Section 3.2.6.1 of this report) implies that it is automatically approved for use under M-MON for the duration of the baseline period. M-MON states that “in general, the same source of remotely sensed data and data analysis techniques must be used within the period for which the baseline is fixed” (Section 5, Step 1) and that “The same method must be used for the entire period for which the baseline is fixed.” (Section 5, Step 2).

As the equipment and procedures used to estimate the pre-deforestation carbon stocks, as discussed in Section 3.2.6.1 of this report, were fully adequate for the task, the equipment and procedures performed to undertake the “Updating Forest Carbon Stocks Estimates” should likewise be adequate so long as conformance with the procedures applied in the original inventory is maintained (as required by the monitoring plan).

The other monitoring procedures, for the duration of the baseline period, will involve surveys or review of published literature or official reports. The procedures set out in the monitoring plan, in combination with the guidance provided within M-MON and LK-ASU are sufficient for the intended purpose.

Therefore, the monitoring plan is in full conformance with the validation criteria.

3.3 Environmental Impact

So far as the audit team is aware, no environmental impact assessments have been conducted with respect to the project. The audit team agrees that the project is likely to have generally positive environmental impacts.

3.4 Comments by stakeholders

No stakeholder consultations held in respect of the project were within the scope of the validation audit described within this report.

4 VALIDATION CONCLUSION

The project conforms to the validation criteria for projects, as set out in the VCS Version 3 guidance documents referenced in Section 1.2 of this report. No qualifications or limitations exist with respect to the validation opinion reached by the audit team.

The project is likely to achieve the estimated GHG emission reductions and removals that are described in the PD.

APPENDIX A: LIST OF FINDINGS

NCR 2012.1 dated 05/30/2012

Standard Reference: VCS Standard V3.2, Sec. 3.19.1; VCS Project Description Template V3.0, Sec. 1.4

Document Reference: Purus Project VCS PD (Final Draft Version, 5-17-12).pdf, Sec. 1.4

Finding: The VCS Standard requires that "The project and its context shall be described in the project description using the VCS Project Description Template". The VCS Project Description Template requires that the PD contain "contact information and roles/responsibilities for any other entities involved in the development of the project." While EMBRAPA is identified as an entity involved in the development of the project, the PD does not contain contact information for EMBRAPA.

Client Response: The following information has been added to the PD.

"EMBRAPA

Dr. Judson Valentin

BR364 Km 14, PO Box 321, CEP 69.900-056 Rio Branco, Acre, Brasil

55-68-3212-3205"

Auditor Response: Subsequent to the issuance of this finding, SCS received guidance from Carolyn Ching of VCSA on 11 September 2012 indicating that the instructional text within the VCS Project Description Template is not intended to constitute auditable guidance. As contact information for other entities involved in the project is not required by any VCS rules, a non-conformity with respect to the VCS rules does not exist, and this finding can be considered withdrawn. Nonetheless, as indicated, contact information for EMBRAPA has been added to Section 1.4 of the PD.

Closing Remarks: The Client's response adequately addresses the finding.

NCR 2012.2 dated 05/30/2012

Standard Reference: VCS Standard V3.2, Sec. 3.19.1; VCS Project Description Template V3.0, Sec. 1.6

Document Reference: Purus Project VCS PD (Final Draft Version, 5-17-12).pdf, Sec. 1.6

Finding: The VCS Standard requires that "The project and its context shall be described in the project description using the VCS Project Description Template". The VCS Project Description Template requires that the PD "indicate the project crediting period, specifying the day, month and year for the start and end dates and the total number of years." While the PD contains the start date of the project crediting period

and the total number of years, the PD does not contain the end date of the project crediting period.

Client Response: The phrase "The initial project crediting period is set to end on May 22, 2041" has been added to Section 1.6 of the PD.

Auditor Response: Subsequent to the issuance of this finding, SCS received guidance from Carolyn Ching of VCSA on 11 September 2012 indicating that the instructional text within the VCS Project Description Template is not intended to constitute auditable guidance. Therefore, this finding should have been written against Section 3.19.2(1)(c) of the VCS Standard V3.2, which requires that "the project start date and project crediting period" be provided.

As indicated, the end date for the project crediting period has been added to the PD. Therefore, the non-conformity has been resolved.

Closing Remarks: The Client's response adequately addresses the finding.

NCR 2012.3 dated 05/30/2012

Standard Reference: VCS Standard V3.2, Sec. 3.19.1; VCS Project Description Template V3.0, Sec. 1.7

Document Reference: Purus Project VCS PD (Final Draft Version, 5-17-12).pdf, Sec. 1.7

Finding: The VCS Standard requires that "The project and its context shall be described in the project description using the VCS Project Description Template". The VCS Project Description Template requires that the PD indicate "the estimated annual GHG emission reductions or removals for the project crediting period." While the PD contains the estimated annual GHG emission reductions or removals for the first 10 years of the project, it does not contain the estimated annual GHG emission reductions or removals over the project crediting period.

Client Response: The VCS AFOLU Requirements document Version 3.2, Section 3.1.9, states "For all IFM, REDD, PRC and ACoGS project types, the project proponent shall, for the duration of the project, reassess the baseline every 10 years and have this validated at the same time as the subsequent verification. Baseline projections for deforestation and/or degradation, land conversion, forest management plans and peatland drainage beyond a 10-year period are not likely to be realistic because rates of change in land-use and/or land management practices are subject to many factors that are difficult to predict over the long term, hence the need for periodic reassessment of the baseline. The following shall apply with respect to the baseline reassessment:

- 1) The reassessment will capture changes in the drivers and/or behavior of agents that cause the change in land use and/or land management practices and changes in carbon stocks, all of which shall then be incorporated into revised estimates of the rates and patterns of land-use change and estimates of baseline emissions.
- 2) The latest approved version of the methodology or its replacement shall be applied at the time of baseline reassessment.

3) The project description shall be updated at the time of baseline reassessment following the requirements set out in the VCS Standard Section 3.9.5(2)(d).

4) Ex-ante baseline projections beyond a 10 year period are not required.”

As the above guidance states that “ex-ante baseline projections beyond a 10 year period are not required”, we have only estimated annual GHG emission reductions or removals for the first 10 years of the project. Carolyn Ching of the VCS in an email communication dated 5 September 2012 agrees with the above interpretation and states “that annual GHG emission reductions or removals beyond a 10 year period need not be estimated and subsequently documented”.

Auditor Response: Subsequent to the issuance of this finding, SCS received guidance from Carolyn Ching of VCSA on 11 September 2012 indicating that the instructional text within the VCS Project Description Template is not intended to constitute auditable guidance. As no additional VCS rule requires the reporting of estimated GHG emission reductions or removals beyond the first 10 years of the project, a non-conformity with respect to the VCS rules does not exist. Therefore, this finding has been withdrawn.

Closing Remarks: The Client’s response adequately addresses the finding.

NCR 2012.4 dated 05/30/2012

Standard Reference: VCS Standard V3.2, Sec. 3.19.1; VCS Project Description Template V3.0, Sec. 1.8

Document Reference: Purus Project VCS PD (Final Draft Version, 5-17-12).pdf, Sec. 1.8

Finding: The VCS Standard requires that “The project and its context shall be described in the project description using the VCS Project Description Template”. The VCS Project Description Template requires that the PD “Describe the project activity or activities (including the technologies or measures employed) and how it/they will achieve net GHG emission reductions or removals” and “Indicate the lifetime of the project activity(s)”. While the PD does describe the project activities, it does not describe how the following activities will achieve net GHG emission reductions or removals:

- Engage Local Communities
- Create Project Awareness
- Hire Project Managers and Project Staff
- Acquire Agricultural Extension Services
- Help Communities Obtain Land Rights / Delineate Family Areas

- Initiate Patrols/Monitors of Deforestation
- Plant Trees
- Share a Portion of Profits from Sale of Carbon Credits

In addition, the lifetime of the following activities is not indicated:

- Engage Local Communities
- Create Project Awareness
- Hire Project Managers and Project Staff
- Acquire Agricultural Extension Services
- Initiate Patrols/Monitors of Deforestation
- Plant Trees
- Share a Portion of Profits from Sale of Carbon Credits

Client Response: Please see Section 1.8 of the PD which has been revised and updated with descriptions of how project activities will achieve net GHG emission reduction and with the project lifetime for each of the project activities.

Auditor Response: Subsequent to the issuance of this finding, SCS received guidance from Carolyn Ching of VCSA on 11 September 2012 indicating that the instructional text within the VCS Project Description Template is not intended to constitute auditable guidance. As the requested information is not required by any VCS rules, a non-conformity with respect to the VCS rules does not exist, and this finding can be considered withdrawn. Nonetheless, as indicated, the requested information has been provided.

Closing Remarks: The Client's response adequately addresses the finding.

NCR 2012.5 dated 05/30/2012

Standard Reference: VCS Standard V3.2, Sec. 3.19.1; VCS Project Description Template V3.0, Sec. 1.10

Document Reference: Purus Project VCS PD (Final Draft Version, 5-17-12).pdf, Sec. 1.10

Finding: The VCS Standard requires that "The project and its context shall be described in the project description using the VCS Project Description Template". The VCS Project Description Template requires that the PD "Describe the conditions existing prior to project initiation and demonstrate that the project has not been implemented to generate GHG emissions for the purpose of their subsequent reduction,

removal or destruction." The PD does not contain a demonstration that the project has not been implemented to generate GHG emissions for the purpose of their subsequent reduction, removal or destruction.

Client Response: The following text was added to Section 1.8 of the PD. "Further, the project has not been implemented to generate GHG emissions for the purpose of their subsequent reduction, removal or destruction. This is substantiated in this section by documenting the commitment of the land owners to the conservation of the project area. Moura & Rosa was established specifically to promote the conservation of tropical rain forest, including the project area, and implement projects which result in the preservation of forest in Acre state."

Moura & Rosa's commitment to forest conservation stands in direct contrast to the idea that the Purus Project would be implemented for the later purpose of the removal/destruction of the forest (and carbon credits), as do all REDD projects.

Auditor Response: Subsequent to the issuance of this finding, SCS received guidance from Carolyn Ching of VCSA on 11 September 2012 indicating that the instructional text within the VCS Project Description Template is not intended to constitute auditable guidance. As the requested demonstration is not required by any VCS rules, a non-conformity with respect to the VCS rules does not exist, and this finding can be considered withdrawn. Nonetheless, as indicated, requested information has been added to Section 1.10 (not Section 1.8, as was indicated in the Client Response) of the PD.

Closing Remarks: The Client's response adequately addresses the finding.

NCR 2012.6 dated 05/30/2012

Standard Reference: VCS Standard V3.2, Sec. 3.19.1; VCS Project Description Template V3.0, Sec. 1.11

Document Reference: Purus Project VCS PD (Final Draft Version, 5-17-12).pdf, Sec. 1.11

Finding: The VCS Standard requires that "The project and its context shall be described in the project description using the VCS Project Description Template". The VCS Project Description Template requires that the PD "Identify and demonstrate compliance of the project with all and any relevant local, regional and national laws, statutes and regulatory frameworks." The PD states that "all Brazilian and US partners have followed labor laws, including minimum wage laws and the assurance that all employment taxes and insurance were paid." However, the PD does not identify and demonstrate compliance of the project with specific local, regional and national labor laws. In addition, the PD does not identify and demonstrate compliance of the project with specific regulations concerning taxation.

Client Response: The VCS PD has been updated with the identification of specific labor laws and taxation regulations, along with a demonstration that the project complies with such labor laws and

taxation regulations.

Auditor Response: Subsequent to the issuance of this finding, SCS received guidance from Carolyn Ching of VCSA on 11 September 2012 indicating that the instructional text within the VCS Project Description Template is not intended to constitute auditable guidance. Therefore, this finding should have been written against Section 3.19.2(1)(e) of the VCS Standard V3.2, which requires that "Identification and demonstration of compliance with relevant laws, statutes and other regulatory frameworks" be provided.

As indicated, the PD has been updated with additional information regarding labor and tax law. The PD now identifies relevant labor and tax laws, and also includes a section describing the mechanisms that have been put in place to ensure that all such laws are respected. Therefore, compliance with said laws has been demonstrated to the satisfaction of the audit team, and the non-conformity can be considered to be resolved.

Closing Remarks: The Client's response adequately addresses the finding.

NCR 2012.7 dated 05/30/2012

Standard Reference: VCS Standard V3.2, Sec. 3.19.1; VCS Project Description Template V3.0, Sec. 1.11; BL-UP V2.0, Sec. 2

Document Reference: Purus Project VCS PD (Final Draft Version, 5-17-12).pdf, Sec. 2.2

Finding: The VCS Standard requires that "The project and its context shall be described in the project description using the VCS Project Description Template". The VCS Project Description Template requires that the PD "Demonstrate and justify that the project activity(s) meet the applicability conditions of the methodology(s) applied to the project." The BL-UP module contains the following applicability condition: "Where, pre-project, unsustainable fuelwood collection is occurring within the project boundaries modules BL-DFW and LK-DFW shall be used to determine potential leakage." The PD states that "There is limited fuelwood collection from within the project area. This fuelwood collection is sustainable as the area remains as forest and the carbon stock does not systematically decrease overtime."

Section 2, footnote 3 of the BL-UP module states "Where fuelwood collection is claimed to be sustainable, the following criteria must in the absence of the project be met:

- a. The land area remains a forest; and
- b. Sustainable management practices are undertaken on these land areas to ensure, in particular, that the level of carbon stocks on these land areas does not systematically decrease over time (carbon stocks may temporarily decrease due to harvest); and
- c. Any national or regional forestry and nature conservation regulations are complied with."

The PD does not demonstrate and justify that criteria (b) and (c) are met.

Client Response: Table 2.2 in the PD has been revised to incorporate the following text.

“All fuelwood collection within the project boundaries is sustainable.

While there is limited fuelwood collection from within the project area, Igor Agapejev de Andrade, a local forester familiar with the property states “The community uses fuelwood originating from dead wood, usually in areas cleared for agriculture (roçados). Rarely are trees cut down for fuelwood” (pers comm).

While a formal management plan does not exist for forested areas in the project area, current and expected future harvest levels of fuelwood do not result in conversion of forest to a non-forest condition and can be characterized as sustainable in “that carbon stocks [are not expected to] systematically decrease over time on these lands.” This is supported by the analysis below.

Responses to the PRAs indicate that community members go up to an average of 450 m into the forest to collect wood. A spatial analysis using GIS suggests that the 100 community members in the project area (conservatively assuming that all engage in fuelwood collection, despite PRA responses) collect their fuelwood on 2622 ha of forested land. This has been calculated using a 450m buffer around each farm (i.e. cleared area) on the project property. Further as each rural resident in the municipality of Manoel Urbano uses on average 0.85 cubic meters of fuelwood per year and there are 100 residents of the project property, the total volume of fuel wood extracted per year is 85 cubic meters. The volume of wood, 85 cubic meters, was converted to biomass using the species level mean wood density for Amazonian forests of 0.62 g/cm³ resulting in 52.7 tons of fuelwood collected. As these 52.7 tons of biomass are collected over 2622 ha of land, this represents a harvest of 0.02 tonnes d.m. ha⁻¹ yr⁻¹. As the amount of fuelwood collected annually is far less than (only 0.65% of) expected annual growth in aboveground biomass in natural South American forests (>20 years old, 3.1 tonnes d.m. ha⁻¹ yr⁻¹), collection of fuelwood in the project area can be currently characterized as sustainable. Furthermore, even employing generous assumptions of population growth, fuelwood extraction would not be expected to approach unsustainable levels within the 10 year baseline period. Assuming even an extremely high 5% population growth rate, by 2022 there would be 163 people in the communities within the project property, extracting 0.033 tons of biomass per ha per year in the likely fuel collection area which is still far below the annual growth rate and thus not expected to result in sustained decreases in carbon stocks.

Further Mr. Agapejev de Andrade states "There are no national or regional forestry or nature conservation regulations in relation to fuel wood collection for domestic use."

A map of the buffer area used in the GIS analysis has been provided as part of this response.

Auditor Response: The information provided in the PD is not sufficient to allow the audit team to close this finding. Although the analysis presented in the PD reasonably demonstrates that the impact of pre-project fuelwood collection has been limited, the analysis does not demonstrate that sustainable management practices have been undertaken within the project area to ensure, in particular, that the level of carbon stocks within the project area does not systematically decrease over time. Although it may be that fuelwood collection has been sustainable (in terms of carbon stock balance over the project area) as a matter of accident, the usage of the phrase "to ensure" in the English language is in relation to a circumstance where action has been taken for the explicit purpose of effecting a specific outcome, rather than a circumstance where a specific outcome is reached through happenstance. During the site visit, the audit team was not made aware of any sustainable management practices that have been undertaken within the project area to ensure that the level of carbon stocks within the project area within the project area does not systematically decrease over time. Therefore, the finding must remain open.

Client Response 2: The results for the additional PRAs surrounding fuelwood collection and use indicate there is no fuelwood collection from the project area.

Basically, we implemented a detailed questionnaire of the individuals who responded yes to the question "Do you participate in fuelwood collection?" in the March 2012 PRAs. Of the five individuals, who responded yes to the question in the initial Participatory Rural Appraisal (PRA) conducted between March 10-12, 2012, four of the five were resurveyed on December 9. The one family not resurveyed has left and moved to Manoel Urbano and hence was unavailable for a response.

Interestingly, each of the four surveys conducted indicated that fuelwood was only collected in areas which have already been cleared rather than the surrounding forest (i.e. project area). Our initial confusion stemmed from the assumption that the answer yes to the question "Do you participate in fuelwood collection?" in the March 2012 survey indicated that fuelwood was collected from the forest (i.e. within the project boundaries). The assumption in the initial PRAs that fuelwood was collected from the forest was wrong.

The most recent PRAs confirm our new understanding of the issue and fully supports the statement cited in the PD (including in the original version) from Igor Agapejev de Andrade, a local forester familiar with the property whereby he states "The community uses fuelwood originating from dead wood, usually in areas cleared for agriculture (roçados). Rarely are trees cut down for fuelwood" (pers comm).

We therefore have revise the text in Table 2.2 to the following:

"No fuelwood collection occurs within the project boundaries as evidenced from participatory rural appraisals conducted March 10-12, 2012 and a follow-up PRA conducted December 9, 2012, which clarified fuelwood collection and use practices. Further, Igor Agapejev de Andrade a local forester familiar with the property states "The community uses fuelwood originating from dead wood, usually in areas cleared for agriculture (roçados). Rarely are trees cut down for fuelwood" (pers comm)."

Copies of the PRAs will be provided as part of this response and placed in the project database.

Auditor Response 2: In response to this finding, the audit team was provided with information substantiating the claim that fuelwood collection did not occur within the project area prior to the project start date. In accordance with BL-UP V3.1, which states "Where a project claims no fuelwood collection was occurring this shall be evidenced through a PRA process", a follow-up participatory rural appraisal was undertaken to clarify the source of fuelwood for four out of the five families that indicated that they collected fuelwood in the original participatory rural appraisal. The audit team was provided with the information collected during this process, which documents that most of the communities collect fuelwood from areas that have already been cleared (and thus, by definition, are excluded from the project area). These findings correspond to the observations made by the audit team during the site visit that many families in the area surrounding the project area now prefer to utilize a gas stove for cooking. Therefore, the information provided (and reported within the PD) is sufficient to demonstrate that fuelwood collection did not generally occur within the project area prior to the project start date, and the finding can be closed.

Closing Remarks: The Client's response adequately addresses the finding.

NCR 2012.8 dated 05/30/2012

Standard Reference: REDD-MF V1.1, Table 3

Document Reference: Purus Project VCS PD (Final Draft Version, 5-17-12).pdf, Sec. 2.3.1

Finding: The REDD-MF methodology framework states, with respect to emissions from fire, "it is conservative to exclude in the baseline but must be included in the project case if fire occurs." The PD states that CH₄ and N₂O emissions from fire are excluded, with the justification "Conservative to exclude in the baseline." While it is conservative to not account for such emissions in the baseline, and the methodology does permit projects to not account for such emissions in the baseline, the REDD-MF methodology framework requires that the emissions must be included in the project case if fire occurs.

Client Response: Table 2.4 of the PD has been revised to include both CH₄ and N₂O in the project boundary. Further the following text was added to the table to explain their inclusion. "While CH₄ and

N2O emissions are conservatively excluded in the baseline, they are included in the with project case where fires occurs."

Auditor Response: It is now clear that emissions from biomass burning are conservatively not accounted for in the baseline scenario but are included in the project boundary. Therefore, the non-conformity has been resolved.

Closing Remarks: The Client's response adequately addresses the finding.

NCR 2012.9 dated 05/30/2012

Standard Reference: REDD-MF V1.1, Sec. II, Step 2; T-ADD, Sec. 2.1.2

Document Reference: Purus Project VCS PD (Final Draft Version, 5-17-12).pdf, Sec. 2.4

Finding: The REDD-MF methodology framework requires that "Project participants shall use T-ADD to identify credible alternative land use scenarios and to evaluate both the alternatives and the proposed project scenarios and to demonstrate the additionality of the project scenario. The assessment and demonstration of additionality shall be presented in the VCS PD." Section 2.1.2 of T-ADD requires that "If an alternative does not comply with all mandatory applicable legislation and regulations then show that, based on an examination of current practice in the region in which the mandatory law or regulation applies, those applicable mandatory legal or regulatory requirements are systematically not enforced and that non-compliance with those requirements is widespread, i.e., prevalent on at least 30% of the area of the smallest administrative unit that encompasses the project area." As stated in the PD, the alternative entitled "Continuation of the Pre-Project Land Use with Unabated Threat of Illegal Deforestation" does not comply with all mandatory applicable legislation and regulations, and therefore the PD must contain a demonstration in accordance with the above. The PD does not contain such a demonstration.

Client Response: The following text has been added to Section 2.4.1 of the PD.

"Noncompliance with private properties laws is widespread and laws are systematically not enforced in Acre State. Numerous inquiries have been made to relevant state and local authorities to obtain data on levels of enforcement (or e.g., percentage of illegal land invasions resolved) of private property laws. To our knowledge no institutions currently track these cases in a systematic fashion. However, in general, in the Brazilian Amazon there is considerable uncertainty in property rights, owing to the lack of enforcement of laws to protect property rights. Hence, 100% of the areas of the municipality of Manoel Urbano and Sena Madureira (as well as the state of Acre) have insufficient levels of government enforcement of property rights sufficient to prevent or remove illegal land invasions and stop deforestation in accessible areas, as the legal institutions responsible for enforcement have uniform jurisdiction across the municipality and state of Acre. This is evidenced by historic illegal deforestation as documented in

Section 3.1. This is further supported by a letter from, the President of the Acre Lawyers Association, Dr. Florindo Poersch where he states:

In my professional opinion, illegal deforestation in the State of Acre, and particularly in the Municipalities of Manoel Urbano and Sena Madureira are rarely controlled and/or prevented by institutions of environmental control, due to lack of technical personnel and staff of the State Acre to perform this control.

Furthermore, the right to property in rural areas, in the case of invasion is difficult to apply in the State of Acre, due to lack of the judiciary's structure to escalate these demands quickly, and promptly remove invaders."

Auditor Response: As the smallest administrative unit that fully contains the project area is the state of Acre, the conformance of the alternative scenario "Continuation of the Pre-Project Land Use with Unabated Threat of Illegal Deforestation" with the criteria of Section 2.1.2 of T-ADD was demonstrated through a letter containing the expert testimony of Dr. Florindo Poersch. The audit team was able to review said letter and confirm that the claims of Section 2.4.1 of the PD accurately reflect the statements therein. As president of the Ordem dos Advogados do Brasil no Acre (OAB-AC; roughly translated as the "Acre Lawyers Association"), Dr. Poersch can be considered qualified to provide such testimony. The audit team confirmed that Dr. Poersch was president of OAB-AC as of 25 October 2012 through the following news story: <http://www.oabac.org.br/site/2012-06-30-15-00-53/noticias-nacionais/5036-presidente-da-oab-lan%C3%A7a-no-acre-a-caravana-das-prerrogativas>

On the above basis, the NCR can be closed.

Closing Remarks: The Client's response adequately addresses the finding.

NCR 2012.10 dated 05/30/2012

Standard Reference: REDD-MF V1.1, Sec. II, Step 2; T-ADD, Sec. 2.2.2

Document Reference: Purus Project VCS PD (Final Draft Version, 5-17-12).pdf, Sec. 2.5.1

Finding: The REDD-MF methodology framework requires that "Project participants shall use T-ADD to identify credible alternative land use scenarios and to evaluate both the alternatives and the proposed project scenarios and to demonstrate the additionality of the project scenario. The assessment and demonstration of additionality shall be presented in the VCS PD." Section 2.2.2 of T-ADD requires that the user "Document the costs associated with the VCS AFOLU project and demonstrate that the activity produces no financial benefits other than VCS related income." The PD does not contain documentation

of the costs associated with the VCS AFOLU project.

Client Response: The following text was added to Section 2.5.1 of the PD to document project costs. "Forest carbon projects, particularly REDD projects, involve substantial upfront costs ranging from \$325,000 to over \$650,000. This includes major items such as:

Feasibility Assessments: \$10,000 to \$25,000

Legal Fees and Translation Costs: \$20,000 to \$50,000

Site Visits and Project Design Documents Preparation: \$100,000 to \$250,000

Technical Work: \$150,000 to \$250,000

Validation Services: \$40,000 to \$80,000". Further detailed project financials are contained in the excel file "Complete Finances for Purus Project (4-24-12)" which was provided to the validator as part of the site visit."

Auditor Response: Although more precise information on the costs associated with the project would be provided in response to the requirement of Section 2.2.2 of T-ADD, it has been indicated to the audit team that the client would prefer not to reveal the exact costs associated with the project, for reasons of confidentiality. Given that simple cost analysis is being applied (and, therefore, that the exact costs associated with the project do not materially impact the outcome of the additionality analysis), it was determined by the audit team that the reporting of numerical ranges was sufficient to meet the requirement of T-ADD. Therefore, the non-conformity has been resolved.

Closing Remarks: The Client's response adequately addresses the finding.

NCR 2012.11 dated 05/30/2012

Standard Reference: REDD-MF V1.1, Sec. I

Document Reference: Purus Project VCS PD (Final Draft Version, 5-17-12).pdf

Finding: The REDD-MF methodology framework requires that "The justification of the choice of modules and why they are applicable to the proposed project activity shall be given in the VCS PD." The justification of the choice of modules and why they are applicable to the proposed project activity has not been given in the VCS PD.

Client Response: The following text was added to Section 2.1 of the PD. "Use of modules, REDD-MF, M-MON, T-ADD, T-BAR, X-UNC, and X-STR, is justified as these modules are always mandatory when using the VM0007 methodology. Further use of modules, BL-UP and LK-ASU, is mandatory in the case of projects focusing on unplanned deforestation. Use of the module T-SIG is justified as it determines whether GHG emissions by sources and/or decreases in carbon pools are insignificant. Finally, CP-AB is justified as it is mandatory in all cases and CP-D is justified as it is mandatory as the dead wood pool is greater in the baseline than project scenario. The above modules are applicable because they meet the

applicability conditions of the modules.”

Auditor Response: As the justification of the choice of modules and why they are applicable to the proposed project activity is now given in the VCS PD, the non-conformity has been resolved.

Closing Remarks: The Client's response adequately addresses the finding.

NCR 2012.12 dated 05/30/2012

Standard Reference: REDD-MF V1.1, Sec. II, Step 1a

Document Reference: NA

Finding: The REDD-MF methodology framework requires that the project proponent provide "Geographic coordinates of each polygon vertex along with the documentation of their accuracy". While the geographic coordinates of each polygon vertex have been provided, the documentation of their accuracy has not been provided.

Client Response: The issuance of the "Memorial Descritivo" for a property attests to the accurate geo-referencing of rural property boundaries. It issuance demonstrates that the project boundary (and therefore polygon vertex) is accurate and has been approved by all neighboring land owners, the federal government (i.e., INCRA), and the state government (i.e., ITERACRE). The property boundary as defined in the "Memorial Descritivo" is entered into

the official government National Rural Cadastre System (i.e., Sistema Nacional de Cadastro Rural – SNCR).

Auditor Response: Given the lack of specificity in the REDD-MF methodology framework regarding documentation of accuracy of the polygon vertices that must be provided, the flexibility exists for a variety of approaches to be utilized. As explained to the audit team during the site visit, the "Memorial Descritivo" process involves the expenditure of considerable effort to confirm the accuracy of the boundaries through a public process. Therefore, the audit team agrees that, given the lack of specificity regarding the format in which documentation of accuracy should be provided, the issuance of a the "Memorial Descritivo" for the two parcels (Seringal Porto Central and Seringal Itatinga) within which the project area lies is sufficient to fulfill the cited requirement.

Closing Remarks: The Client's response adequately addresses the finding.

NCR 2012.13 dated 05/30/2012

Standard Reference: REDD-MF V1.1, Sec. II, Step 1b

Document Reference: Purus Project VCS PD (Final Draft Version, 5-17-12).pdf, Sec. 3.1.1.2

Finding: The REDD-MF methodology framework requires that "For unplanned deforestation, the project baseline shall be revised every 10 years from the project start date" and that "The date of the next scheduled revision shall be specified in the VCS PD". While the date of the next scheduled baseline revision is specified in the VCS PD as 23 May 2020, this date is not 10 years from the project start date of 23 May 2011. Therefore, the stated date of baseline revision does not conform with the requirements of REDD-MF.

Client Response: The date of the baseline revision has been revised to state May 23, 2021 in Table 1.1, Table 2.1, and Table 3.1 of the PD.

Auditor Response: The date of baseline revision is now stated within the PD as May 23, 2021, which is 10 years from the project start date. Therefore, the non-conformity has been resolved.

Closing Remarks: The Client's response adequately addresses the finding.

NCR 2012.14 dated 05/30/2012

Standard Reference: VCS AFOLU Requirements V3.2, Sec. 3.7.3; VCS AFOLU Non-Permanence Risk Report Template

Document Reference: Purus Project VCS PD (Final Draft Version, 5-17-12).pdf, Sec. A1.1

Finding: The VCS AFOLU Requirements states that "Projects shall prepare a non-permanence risk report in accordance with VCS document AFOLU Non-Permanence Risk Tool at both validation and verification... The non-permanence risk report shall be prepared using the VCS Non-Permanence Risk Report Template". For the Internal Risk category, the VCS Non-Permanence Risk Report Template requires the user to "Document and substantiate the risk and/or mitigation for each risk factor applicable to the project."

For item e of the Project Management sub-category, a risk score of -2 can be applied if "Management team includes individuals with significant experience in AFOLU project design and implementation, carbon accounting and reporting (eg, individuals who have successfully managed projects through validation, verification and issuance of GHG credits) under the VCS Program or other approved GHG programs". The project claims a risk score of -2 for the item. However, the project proponents have not clearly documented and substantiated the claimed risk score within the non-permanence risk report.

Client Response: For item e of the Project Management sub-category, the text was revised to state: "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 CCBS including managing the project design, implementation, and financing. The project proponents work alongside and have access to experts in carbon 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."

TerraCarbon's experiences include the validation and verification of an AR project under the VCS which the validator is familiar with as he was part of the validation team.

Auditor Response: The term "approved GHG program" is defined by the VCS Program Definitions V3.2 as "A GHG program that has been approved by the VCS Board, through a gap analysis, as a VCS approved GHG program". The relevant VCS webpage (<http://v-c-s.org/how-it-works/linked-programs>), visited on 10 September 2012, indicated that the Climate, Community & Biodiversity Standards is not an approved GHG program. Therefore, the stated experience of CarbonCo with respect to the Climate, Community & Biodiversity Standards is not relevant for item e of the Project Management sub-category. While the stated experience of TerraCarbon under the VCS is relevant, the statement "TerraCarbon has successfully validated and verified numerous projects under the VCS" is not sufficiently detailed to constitute the documentation and substantiation that is required. Therefore, the non-conformity has not been resolved.

Closing Remarks: The Client's response adequately addresses the finding.

NCR 2012.15 dated 05/30/2012

Standard Reference: VCS AFOLU Requirements V3.2, Sec. 3.7.3; VCS AFOLU Non-Permanence Risk Report Template

Document Reference: Purus Project VCS PD (Final Draft Version, 5-17-12).pdf, Sec. A1.1

Finding: The VCS AFOLU Requirements states that "Projects shall prepare a non-permanence risk report in accordance with VCS document AFOLU Non-Permanence Risk Tool at both validation and verification... The non-permanence risk report shall be prepared using the VCS Non-Permanence Risk Report Template". For the Internal Risk category, the VCS Non-Permanence Risk Report Template requires the user to "Document and substantiate the risk and/or mitigation for each risk factor applicable to the project."

For item c of the Financial Viability sub-category, a risk score of 1 can be applied if "Project cash flow breakeven point between 4 and up to 7 years from the current risk assessment". The project claims a risk score of 1 for the item. However, the project proponents have not clearly documented and substantiated the claimed risk score within the non-permanence risk report.

For item h of the Financial Viability sub-category, a risk score of 0 can be applied if "Project has secured 80% or more of funding needed to cover the total cash out before the project reaches breakeven". The project claims a risk score of 0 for the item. However, the project proponents have not clearly documented and substantiated the claimed risk score within the non-permanence risk report.

For item i of the Financial Viability sub-category, a risk score of -2 can be applied if "Project has available as callable financial resources at least 50% of total cash out before project reaches breakeven". The project claims a risk score of -2 for the item. However, the project proponents have not clearly

documented and substantiated the claimed risk score within the non-permanence risk report.

Client Response: In an email on 23 October 2012, Zane Haxtema of SCS stated "I have reviewed the materials you provided and can confirm that the risk scores claimed for the financial viability category of the AFOLU Non-Permanence Risk Tool have been appropriately identified. As we discussed, this NCR will be closed."

Auditor Response: Subsequent to the issuance of this NCR, the audit team received guidance from VCSA indicating that the gray text within the VCS Non-Permanence Risk Report Template is not mandatory. Therefore, there is no VCS rule that requires documentation and substantiation of the claimed risk scores to be contained within the risk report. Furthermore, the audit team has received sufficient documentation of the financial resources of the project to substantiate the risk scores that are claimed for the Financial Viability sub-category.

Closing Remarks: The Client's response adequately addresses the finding.

NCR 2012.16 dated 05/30/2012

Standard Reference: VCS AFOLU Requirements V3.2, Sec. 3.7.3; VCS AFOLU Non-Permanence Risk Report Template

Document Reference: Purus Project VCS PD (Final Draft Version, 5-17-12).pdf, Sec. A1.1

Finding: The VCS AFOLU Requirements states that "Projects shall prepare a non-permanence risk report in accordance with VCS document AFOLU Non-Permanence Risk Tool at both validation and verification... The non-permanence risk report shall be prepared using the VCS Non-Permanence Risk Report Template". For the External Risks category, the VCS Non-Permanence Risk Report Template requires the user to "Document and substantiate the risk and/or mitigation for each risk factor applicable to the project."

For the Political Risk sub-category, the risk analysis claims that "The average governance score for 2006 through 2010 is 0.01, or between the governance score of -0.32 to less than 0.19. Details of the calculation are provided in the project archive." However, this does not constitute the clear documentation and substantiation that is required.

Client Response: Table A1. "Calculation of Brazil's average governance score" has been added to Section A1.2 of the PD to document and substantiate calculation of Brazil's governance score.

Auditor Response: As indicated, the table added to the PD contains documentation and substantiation of the selected risk score. As independently verified through a review of the Worldwide Governance Indicators website (<http://info.worldbank.org/governance/wgi/index.asp>) on 10 September 2012, the five most recent years of available data are 2006, 2007, 2008, 2009 and 2010. The audit team was able to replicate the analysis reported in the risk report, and therefore the audit team agrees with the conclusion of the risk report regarding the risk score. Therefore, the non-conformity has been resolved.

Closing Remarks: The Client's response adequately addresses the finding.

NCR 2012.17 dated 05/30/2012

Standard Reference: BL-UP V2.0, Step 3.3

Document Reference: Purus Project VCS PD (Final Draft Version, 5-17-12).pdf, Sec. 3.1.3.3

Finding: The BL-UP module requires that "The minimum threshold for the best fit as measured by the Figure of Merit (FOM) must be 40% for frontier configuration, 80% for mosaic configuration, and 60% for transition configuration. Where these minimum standards are not met the project shall be considered ineligible." The highest Figure of Merit value attained, as reported within the PD, is 9%. Therefore, the project cannot be considered eligible.

Client Response: The VMD0007 module, BL-UP, has been updated from v2.0 to v3.0. As this revision affects the FOM calculation, the FOM calculation and its surround text has been revised to come inline with the requirements set out in VMD0007, v3.0. Please see Section 3.1.3.3 to review these changes. In summary, the calculated FOM value of 0.177 is greater than the threshold value 0.026, and thus in conformance with the methodology. These calculations and supporting GIS files have been submitted along with this written response.

Further, the VMD0007 citation found in Section 2.1 and 2.2 of the PD has been revised from "Version 2.0" to "Version 3.0".

Auditor Response: As indicated within the Client Response section, the client directed on 18 September 2012 that the audit criteria should be adjusted such that the assessment is conducted against V3.0 of the BL-UP module. As the cited guidance does not exist within V3.0 of the BL-UP module, this finding is no longer relevant and can be withdrawn.

Closing Remarks: The Client's response adequately addresses the finding.

NCR 2012.18 dated 05/30/2012

Standard Reference: REDD-MF V1.1, Sec. II, Step 3

Document Reference: Purus Project VCS PD (Final Draft Version, 5-17-12).pdf, Sec. 4.3

Finding: The REDD-MF methodology framework requires that "Project proponents shall include a single monitoring plan in the VCS PD... The monitoring plan shall address the ... Revision of the baseline".

The monitoring plan does not fully address the task of revising the baseline. While the monitoring plan does address the task of updating carbon stock estimates, the task of baseline revision is wider in scope

than the task of updating carbon stock estimates.

Client Response: A Section on "Revision of the baseline" was added to Section 4.3 of the PD.

Auditor Response: For each of the tasks prescribed by the REDD-Methodology Framework, the Framework states "For each of these tasks, the monitoring plan shall include the following sections:

- a. Technical description of the monitoring task.
- b. Data to be collected. The list of data and parameters to be collected shall be given in VCS PD.
- c. Overview of data collection procedures.
- d. Quality control and quality assurance procedure.
- e. Data archiving.
- f. Organisation and responsibilities of the parties involved in all the above.

A description of the monitoring plan including the items "c" to "f" listed above shall be given in the VCS PD."

Therefore, the description under the header "Revision of the baseline" must contain the items required above. As such is not currently the case, this finding cannot be closed.

Client Response 2: This finding was responded to as part of the response to Finding 23.

Auditor Response 2: Section 4.3 of the PD has been modified to contain all of the information required by the methodology with respect to the "revision of the baseline" task. Therefore, the non-conformity has been resolved.

Closing Remarks: The Client's response adequately addresses the finding.

NCR 2012.19 dated 05/30/2012

Standard Reference: M-MON V2.0, Sec. 5.2.1; VCS Project Description Template V3.0, Sec. 2.6

Document Reference: Purus Project VCS PD (Final Draft Version, 5-17-12).pdf, Sec. 4.3

Finding: The M-MON module requires the following in the case that deforestation is observed in the project case:

"For each post-deforestation land use (u) estimate the long-term carbon stock. Carbon stocks in the selected pools (must be the same as those used in the baseline modules) must be measured and estimated using the methods given in modules CP-AB, CP-D, CP-L, CP-S."

The PD states that "Emissions ($\Delta CP_{Def,i,t}$ and $\Delta CP_{DistPA,i,t}$ for deforestation and natural disturbance,

respectively) are estimated by multiplying area of forest loss detected ($A_{DefPA,u,i,t}$ and $A_{DistPA,q,i,t}$, for deforestation and natural disturbance, respectively) by average forest carbon stock per unit area (conservatively assuming $\Delta C_{P,Dist,q,i,t}$ and $\Delta C_{pools,Def,u,i,t} = C_{BSL,i}$).

The assumption that $ChangeC(pools,Def,u,i,t)$ is equal to $C(BSL,i)$ requires the corresponding assumption that parameter $C(post,u,i)$ is equal to 0, in non-conformance to the requirements of the M-MON module.

Client Response: We have added the following deviation to Section 2.6 of the project document.

"In the with-project case, $C(post)$ can conservative be assumed to be zero, not only for natural disturbance ($C_{P,Dist,q,i}$, as stated in Section 5.2.3 of the M-MON module) but also for deforestation ($C_{P,post,u,i}$). 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."

Auditor Response: As indicated within the Client Response section, a deviation to the cited methodology requirement has been employed for the project and appropriately described in Section 2.6 of the PD. The deviation is proposed with respect to the criteria and procedures for monitoring, and therefore falls within the scope of allowable deviations as set out in Section 3.5.1 of the VCS Standard. The audit team agrees that it is conservative to assume that post-deforestation carbon stocks are zero in all cases in the project scenario, and therefore the proposed deviation is appropriate. Therefore, the nonconformity has been resolved.

Closing Remarks: The Client's response adequately addresses the finding.

NCR 2012.20 dated 05/30/2012

Standard Reference: M-MON V2.0, Sec. 5.2.3 and 5.2.5

Document Reference: Purus Project VCS PD (Final Draft Version, 5-17-12).pdf, Sec. 4.3

Finding: The M-MON modules indicates that "Emissions from any fires shall be calculated using E-BB and included calculated in 'Section 5.2.5

Monitoring project emissions'." However, the section "Monitoring Project Emissions" in the monitoring plan only addresses the quantification of emissions from fire related to deforestation, and does not address the quantification of emissions from fire related to natural disturbance.

Client Response: As "Emissions from any fires shall be calculated using E-BB and included calculated in [the]Section...Monitoring project emissions" as per VMD0015, the following sentence under "Monitoring Project Emissions" in Section 4.3 of the PD has been revised from:

"It will be conservatively assumed that the total area burnt is equal to the area deforested in each stratum, hence $A_{burn,i,t}$ equals $A_{DefPA,u,i,t}$."

to

"Non CO2 emissions from biomass burning in the project case include emissions from burning associated with deforestation and burning associated with natural disturbance, i.e. forest fire. It will be conservatively assumed that the total area burnt during the deforestation process is equal to the area deforested, $A_{DefPA,u,i,t}$. Thus, the area used when calculating E-BB is equal to $A_{burn,i,t}$ (area burnt) = $A_{burn,q,i,t}$ (area burnt in natural disturbance) + $A_{DefPA,u,i,t}$ (area burnt via deforestation in project ex post)."

Further, the term $A_{burn,q,i,t}$ have been added to Section 4.2.

Auditor Response: The section "Monitoring Project Emissions" now contains procedures for quantification of emissions from fire related to natural disturbance, and therefore the non-conformity has been resolved.

Closing Remarks: The Client's response adequately addresses the finding.

NCR 2012.21 dated 05/30/2012

Standard Reference: VCS Standard V3.2, Sec. 2.2.1

Document Reference: Annex 1. Purus REDD Project Forest Inventory.doc, Appendix A

Finding: The VCS Standard states that "The operating language of the VCS Program is English. The project description, validation report, monitoring report, verification report and all other project documentation (including all and any appendices) required under the VCS Program shall be in English." The "Standard Operating Procedures" document, included as Appendix A to Annex I of the VCS PD, is in Portuguese, rather than English, as required.

Client Response: During the validation site visit, the english version of the standard operating procedures were given to the validator, further they are available in the project archive.

Auditor Response: The statements made in the Client Response section are true, but are insufficient to resolve the non-conformity. However, an English version of the Standard Operating Procedures has also been added as Appendix B of the PD. Therefore, the non-conformity has been resolved.

Closing Remarks: The Client's response adequately addresses the finding.

NCR 2012.22 dated 05/30/2012

Standard Reference: CP-AB V1.0, Equation 5

Document Reference: Annex 1. Purus REDD Project Forest Inventory.doc, Sec. 6

Finding: Equation 5 of the CP-AB module mandates that carbon in the belowground pool be quantified

as a product of the carbon in the aboveground pool and a root to shoot ratio. The project does not employ the prescribed method, but rather uses the Cairns equations to quantify biomass in the belowground pool.

Client Response: The following text was added to Section 2.6 of the project document.

“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.”

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.

Auditor Response: As has been indicated, the use of the Cairns equations would constitute a deviation to the CP-AB module. The VCS Standard allows deviations "where they represent a deviation from the criteria and procedures relating to monitoring or measurement (but not quantification) of GHG emission reductions or removals set out in the methodology". As the use of the Cairns equations would represent a deviation from Equation 5 of the CP-AB module, it would represent a deviation from the criteria and procedures relating to quantification of GHG emission reductions or removals. Therefore, it does not fall within the scope of allowable deviations in accordance with the VCS Standard, and therefore the NCR must remain open.

Client Response 2: In an email to Brian McFarland and James Eaton on September 20, 2012 Zane Haxtema stated "...as an outcome of yesterday's call, your proposed deviation to Equation 5 of the CP-AB module is acceptable, and therefore NCR 2012.22 will be notated as "closed" the next time I am in position of the findings workbook. It will, of course, be necessary to identify the deviation in Section 2.6 of the PD."

Auditor Response 2: In discussions with VCSA during the week of 17 September 2012, Carolyn Ching clarified verbally that the criteria and procedures for sourcing the parameter $C(BB_{tree,sp,i})$ in Equation 5 of the CP-AB module can be consider criteria and procedures for measurement of GHG emission reductions and removals, and that therefore the proposed deviation does fall within the scope of allowable deviations as set out by the VCS Standard. The audit team has re-considered this finding accordingly.

The Cairns equation is a widely accepted equation for quantifying belowground biomass, and can be considered more accurate than a fixed ratio, as it models a different rate of increase in belowground biomass for smaller trees than for larger trees. Therefore, the audit team considers this equation to be acceptable for use by the project. The proposed deviation has been appropriately described within Section 2.6 of the PD. Therefore, the nonconformity has been resolved.

Closing Remarks: The Client's response adequately addresses the finding.

NCR 2012.23 dated 05/30/2012

Standard Reference: REDD-MF V1.1, Sec. II, Step 3

Document Reference: Purus Project VCS PD (Final Draft Version, 5-17-12).pdf; Annex 1. Purus REDD Project Forest Inventory.doc

Finding: The REDD-MF methodology framework states that "Project proponents shall include a single monitoring plan in the VCS PD... The monitoring plan shall address the following monitoring tasks, which should be standard headers in the Monitoring Plan: Revision of the baseline".

The REDD-MF methodology framework also states that "For each of these tasks, the monitoring plan shall include the following sections:

- a. Technical description of the monitoring task.
- b. Data to be collected. The list of data and parameters to be collected shall be given in VCS PD.
- c. Overview of data collection procedures.
- d. Quality control and quality assurance procedure.
- e. Data archiving.
- f. Organisation and responsibilities of the parties involved in all the above."

The monitoring plan within the PD states (page 81): "Where necessary... forest carbon stocks will be re-estimated using new field measurements. Five sample plots will be randomly located in areas within the Purus Project representative of the strata where deforestation was detected, and measured following standard operating procedures located in the appendix of the "Forest biomass carbon inventory for the Purus REDD Project, Acre State, Brazil," which is located in Annex 1.

The methodology requires that items c-f be described, for the task "Revision of the baseline", in a single monitoring plan that is included within the VCS PD. The referencing of an external document does not meet the requirement of the methodology.

Client Response: Standard operating procedures have been added to the PD as appendix 2.

The following text has been added to Section 4.3 of the PD to address c-f with respect to the "Revision of the baseline " task.

"Further, procedures for updating the forest carbon stocks and revising the baseline are also provided below."

"A separate section on quality assurance/quality control and data archiving procedures covers all

monitoring tasks.

Organizations responsible for monitoring are listed below in Table 4.6. These organizations are responsible for implementing all aspects of a particular monitoring task, as described in the monitoring sub-sections below.”

“Data collection procedures in regards to revision of the baseline will include participatory rural appraisals, interviews and collaboration with the Acre State government, UCEGEO, the GIS department within the Climate Change Institute, and municipal officials. In the case, where the Acre State government no longer produces the annual dataset on the extent and spatial location of all deforestation within the state, deforestation maps will be prepared by classifying remotely sensed imagery. Other datasets used to substantiate aspects of the baseline will be from official government sources, peer reviewed publications, or other reputable sources.”

In relations to quality control, we added the text:

“Personnel involved in the revising of the baseline will have detailed knowledge in regards to spatial modeling and land use change and deep familiarity with REDD methodologies. Remote sensing data used will include officially published dataset, or classified imagery, which meets accuracy assessment requirements as laid out in the methodology.”

A row on “Revision of the baseline” was also added to Table 4.6 which states the “ Type of Monitoring and Party Responsible for Monitoring”

Auditor Response: Although some additional information has been provided to clarify the procedures to be used to update the forest carbon inventory for the project, the following information gap remains.

Although the PD now states that "Biomass will be estimated applying the allometric equations of Brown 1997", no additional information is provided regarding the analytical procedures used to quantify carbon in the aboveground, belowground and standing dead wood carbon pools from inventory measurements. For the example, the following information is not specifically contained in the PD:

- The specific equation from Brown (1997) to be used to quantify aboveground biomass for trees other than palm and cecropia trees
- The procedure for quantifying aboveground biomass in palm trees

- The procedure for quantifying belowground biomass using the Cairns equations
- The procedure for quantifying biomass in dead wood

Although it is understood that this information is found within the "Forest biomass carbon inventory for the Purus REDD Project, Acre State, Brazil", as stated in the initial language of the finding, it is necessary for the information to be contained within the PD, rather than in a referenced external document.

Client Response 2: The following text was added to Section 4.3 of the PD. Further, the parameters listed in the below equations have been added to Section 4.2.

"For live trees, biomass is calculated as a function of diameter at breast height (DBH; in cm) using the predictive model developed by Brown for tropical moist forest stands. Results of this equation are conservatively adjusted downward using a calibration factor of 0.985. Application of the "moist" equation reflects the annual precipitation for the inventoried area, 2100mm.

$$\text{aboveground biomass (kg)} = ((42.69 - 12.8 * (\text{DBH}) + 1.242 * (\text{DBH})^2)) * 0.985$$

For palms, height and dbh (a conservative estimate of basal diameter) measurements are used to estimate the aboveground volume of a paraboloid and then mean (species level) Amazonian palm specific gravity of 0.31 g/cm³ estimated by Baker et al (2004) will be applied. The estimate of biomass for palms is therefore to be limited to the main trunk (bole) of the palm. Thus, for palms

$$\text{aboveground biomass (Mg)} = 0.5 * \pi * (\text{basal diameter (cm)} / 200)^2 * \text{height (m)} * 0.31$$

Root biomass density is estimated at the cluster sample level applying the equation developed by Cairns et al. , where

$$\text{Root Biomass Density (t/ha)} = \text{EXP} (-1.085 + 0.925 \text{ LN}(\text{aboveground biomass density}))$$

The volume of lying dead wood per unit area is estimated using the equation (Warren and Olsen) as modified by Van Wagner separately for each dead wood density class:

where:

VLDW Volume of lying dead wood per unit area; m³ ha⁻¹

D_n Diameter of piece n of dead wood along the transect; cm

N Total number of wood pieces intersecting the transect; dimensionless

L Length of the transect; m

Length of each transect was corrected for slope. The volumes per unit area of each dead wood density class are then multiplied by their respective densities to convert to a mass per unit area.

Biomass of standing dead wood is estimated using the allometric equation for live trees in the decomposition class 1. In decomposition class 2, the estimate of biomass was limited to the main trunk (bole) of the tree, in which case the biomass was calculated converting volume to biomass using dead wood density classes. Volume was estimated as the volume of a cone, as specified in the VM0007 module, "Estimation of carbon stocks in the dead wood pool".

Density of dead wood is determined through sampling and laboratory analysis. Discs are collected in the field and decomposition class and green volume determined as per standard protocols (see Appendix B for more details). The resulting dry weight is recorded and used to calculate dead wood density as oven-dry weight (g) / green volume (cm³) for each sample.

Dry mass is converted to carbon using the default carbon fraction of 0.47 t C/t d.m. (as recommended by IPCC Guidelines for National Greenhouse Gas Inventories)."

Auditor Response 2: Review of the monitoring plan within the updated PD indicates that sufficient information has been added to provide an adequate level of detail with respect to all of the topics identified within the text of the finding. Therefore, the non-conformity has been resolved.

Closing Remarks: The Client's response adequately addresses the finding.

NCR 2012.24 dated 05/30/2012

Standard Reference: REDD-MF V1.1, Sec. II, Step 3; M-MON V2.0, Sec. 5.1.2

Document Reference: Purus Project VCS PD (Final Draft Version, 5-17-12).pdf, Sec. 4.3

Finding: The REDD-MF methodology framework states that "Project proponents shall include a single monitoring plan in the VCS PD. For monitoring changes in forest cover and carbon stock changes, the monitoring plan shall use the methods given in M-MON. All relevant parameters from the modules are to be included in the monitoring plan." The M-MON module states that "For the calculation of each category of change: At the end of each monitoring period: Update the remaining area of forest in RRL (ARRL,forest,t)".

The monitoring plan in the VCS PD does not indicate how parameter A(RRL,forest,t) is to be updated at the end of each monitoring period.

Client Response: The following text was added to Section 4.3 of the PD. "The area of remaining forest in the RRL (ARRL,forest,t) is derived by subtracting by the nonforested area within the RRL, as found in the

forest benchmark map (updated at each monitoring event), from the total area of the RRL."

Further, the term $A(RRL, forest, t)$ was added both to Table 4.1 and to section 4.2 of the PD.

Auditor Response: The guidance added to the PD is sufficient to indicate how the remaining area of forest in the RRL is to be updated at each monitoring period. Therefore, the nonconformity has been resolved.

Closing Remarks: The Client's response adequately addresses the finding.

NCR 2012.25 dated 05/30/2012

Standard Reference: NA

Document Reference: Purus Project VCS PD (Final Draft Version, 5-17-12).pdf, Sec. 4.3

Finding: Page 77 of the monitoring plan in the VCS PD states "Emissions ($\Delta CP, Def, i, t$ and $\Delta CP, DistPA, i, t$ for deforestation and natural disturbance, respectively) are estimated by multiplying area of forest loss detected ($ADefPA, u, i, t$ and $ADistPA, q, i, t$, for deforestation and natural disturbance, respectively) by average forest carbon stock per unit area (conservatively assuming $\Delta CP, Dist, q, i, t$ and $\Delta C_{pools}, Def, u, i, t = CBSL, i$)." Page 81 states that "In the event that any deforestation is discovered in the project area, forest carbon stock estimates older than 10 years will be updated for any strata where deforestation is detected." As the first sentence quoted indicates that post-deforestation carbon stocks will be set equal to 0, while the second sentence quoted indicates that forest carbon stock estimates will be updated through new measurements in some post-deforestation strata, the two sentences are not consistent.

Client Response: The text stated on page 77 is correct and was not revised as part of the response to this finding. The text on page 81 was incorrect as this section of the PD was confusing two issues:

1) carbon stocks in strata deforested (including human induced and natural disturbance); and 2) reassessing forest carbon stocks, when needed.

It has been revised to the following text to only address issue 2 (as above) "Forest carbon stock estimates will be derived from field measurements less than or equal to 10 years old. Sample plots will be randomly located in areas within the Purus Project representative of the strata where deforestation was detected, and measured following standard operating procedures located in Appendix B. Biomass will be estimated applying the allometric equations of Brown 1997 and otherwise maintain consistency with analytical procedures applied in the original inventory ("Forest biomass carbon inventory for the Purus REDD Project, Acre State, Brazil," 2011)."

Auditor Response: The removal of the latter paragraph referenced within the finding is sufficient to

reconcile the inconsistency that had existed within the previous version of the PD. Therefore, the nonconformity has been resolved.

Closing Remarks: The Client's response adequately addresses the finding.

NCR 2012.26 dated 05/30/2012

Standard Reference: CP-AB V1.0, Sec. II; CP-D V1.0, Sec. II

Document Reference: Purus Project VCS PD (Final Draft Version, 5-17-12).pdf, Sec. 4.3

Finding: Both the CP-AB and CP-D modules state that carbon stock estimates "are valid in the baseline (i.e. treated as constant) for 10 years, after which they must be re-estimated from new field measurements (in both the project area and where applicable in the leakage belt)". The monitoring plan in the VCS PD indicates that "Forest carbon stock estimates used to calculate emissions from deforestation and natural disturbance will use estimates derived from field measurements less than or equal to 10 years old. In the event that any deforestation is discovered in the project area, forest carbon stock estimates older than 10 years will be updated for any strata where deforestation is detected." The CP-AB and CP-D modules require that carbon stocks be re-measured every 10 years in all cases, and not just the case where "deforestation and natural disturbance" has occurred.

Client Response: "Updating Forest Carbon Stocks Estimates" in Section 4.3 has been revised to state "Forest carbon stock estimates will be derived from field measurements less than or equal to 10 years old. Sample plots will be randomly located in areas within the Purus Project representative of the strata where deforestation was detected, and measured following standard operating procedures located in Appendix B. Biomass will be estimated applying the allometric equations of Brown 1997 and otherwise maintain consistency with analytical procedures applied in the original inventory ("Forest biomass carbon inventory for the Purus REDD Project, Acre State, Brazil," 2011)." to be in compliance with the methodology. Other text in the section has also been revised to be in compliance with the above statement, as found in the PD.

Auditor Response: While an effort has clearly been made to address the nonconformity, the language under the header "Updating Forest Carbon Stocks Estimates" within the monitoring plan is still not entirely clear. The statement "Sample plots will be randomly located in areas within the Purus Project representative of the strata where deforestation was detected" continues to imply that the inventory update procedure set out in Section II of the CP-AB module is only to be implemented where deforestation has occurred. Therefore the text continues to not be entirely consistent with the CP-AB module, and the finding must be left open at this time.

Client Response 2: The phrase "representative of the strata where deforestation was detected" has been removed as it continues to lead to confusion.

The sentence in Section 4.3 now reads "Sample plots will be randomly located in areas within the Purus

Project and measured following standard operating procedures located in Appendix B."

Auditor Response 2: The removal of the language mentioned in the Client Response section is sufficient to resolve the inconsistency with the requirements of the CP-AB module. Therefore, the non-conformity has been resolved.

Closing Remarks: The Client's response adequately addresses the finding.

NCR 2012.27 dated 05/30/2012

Standard Reference: REDD-MF V1.1, Sec. II, Step 3; M-MON V2.0, Sec. 5.2.3

Document Reference: Purus Project VCS PD (Final Draft Version, 5-17-12).pdf, Sec. 4.3

Finding: The REDD-MF methodology framework states that "Project proponents shall include a single monitoring plan in the VCS PD. For monitoring changes in forest cover and carbon stock changes, the monitoring plan shall use the methods given in M-MON." The M-MON module states that "For unplanned deforestation the sum of ADistPA,q,i,t shall be equal to the area of overlap between the delineated area of the disturbance and the summed area of unplanned deforestation in the project area (ABSL,PA,unplanned,t), summed to the year in which the disturbance occurred." The definition of A(DistPA,q,i,t) is not consistent with the definition of the parameter that is implied throughout the monitoring plan (e.g., on page 77, "...area of forest loss detected (ADefPA,u,i,t and ADistPA,q,i,t, for deforestation and natural disturbance, respectively)..."). Furthermore, the monitoring plan does not provide a procedure for how parameter A(DistPA,q,i,t) will be quantified at each monitoring event in accordance with the cited requirement of the M-MON module.

Client Response: The text in the "Monitoring Deforestation and Natural Disturbance" of Section 4.3 has been revised. Further the statement "Note that ADistPA,q,i,t,, is limited to the area where credits have been issued and is identified as the overlap between the delineated area of the disturbance and the summed area of unplanned deforestation in the project area to the year in which the disturbance occurred." had been added to Section 4.3.

The following procedures for how parameter A(DistPA,q,i,t) will be quantified have also been added to section 4.3. "Deforestation and natural disturbance will be distinguished using ancillary data which may include but is not limited to high resolution imagery, digital elevation models (to identify steep areas prone to landslides), information from local land managers, etc."

Auditor Response: The monitoring plan now refers to parameter A(DistPA,q,i,t) in a manner that is consistent with the definition of that parameter in the M-MON module. The additional guidance that has been provided with respect to monitoring the above parameter is flexible, yet--in concert with the requirements of the M-MON module--sufficient to ensure correct accounting for natural disturbances if

faithfully followed out.

Closing Remarks: The Client's response adequately addresses the finding.

NCR 2012.28 dated 05/30/2012

Standard Reference: M-MON V2.0, Sec. 5.2.2.1

Document Reference: Purus Project VCS PD (Final Draft Version, 5-17-12).pdf, Sec. 4.3

Finding: The M-MON module indicates that "If this assessment finds no potential pressure for [illegal degradation] activities then degradation ($\Delta CP, DegW, i, t$) can be assumed to be zero and no monitoring is needed". Otherwise, additional monitoring measures are needed. The monitoring plan states such additional monitoring measures will be employed "In the event that any potential of illegal logging occurring in the project area is detected from the surveys (i.e. $\geq 10\%$ of those interviewed/surveyed believe that degradation may be occurring within the project boundary)". The threshold of 10% that is selected in the monitoring plan is not consistent with the M-MON module, given that some potential for degradation would be detected even if only one participant indicated that degradation may be occurring within the project boundary.

Client Response: Close as per email from Zane Haxton on 5/31/12. "While further reviewing the M-MON module, I realized that NCR 2012.28 for the VCS audit was inappropriately issued. Please ignore this NCR, with my apologies. NCR 2012.28 will be notated as "closed" in the next iteration of the VCS findings workbook that is sent to you"

Auditor Response: This NCR should not have been issued, and was withdrawn following discovery of the following language on page 34 of the M-MON Module: "If $\geq 10\%$ of those interviewed/surveyed believe that degradation may be occurring within the project boundary then the limited on-the-ground degradation survey shall be triggered". The aspect of the monitoring plan in question is in conformance with the requirements of the M-MON module.

Closing Remarks: The Client's response adequately addresses the finding.

NCR 2012.29 dated 05/30/2012

Standard Reference: LK-ASU V1.0, Sec. IV

Document Reference: Purus Project VCS PD (Final Draft Version, 5-17-12).pdf, Sec. 4.3

Finding: Section IV of the LK-ASU module indicates that the following parameters "Must be monitored at least every 5 years or if verification occurs on a frequency of less than every 5 years examination must occur prior to any verification event". However, the monitoring plan does not contain procedures for monitoring them. The parameters are as follows:

- MANFOR
- PROTFOR
- TOTFOR

Client Response: The parameters used in the calculation of leakage outside the leakage belt including MANFOR, PROTFOR, and TOTFOR have been added to Table 4.5 and Section 4.2 of the PD. See also response to Finding Number: 2012.50.

Auditor Response: As indicated in the Client Response section, additional information has been added regarding the how the parameters in question are to be monitored. However, the only actual guidance provided for monitoring these parameters is in the "Source of Data" section in the parameter table in Section 4.2. For each parameter, this section states the following:

"Official data, peer reviewed publications, remotely sensed imagery (coarse scale imagery is appropriate) or cadastral maps and other verifiable sources"

The guidance provided is not sufficient to ensure the provision of high-quality information for these parameters. The REDD-MF methodology framework requires that the monitoring plan contain the following items with respect to the "Monitoring of leakage carbon stock changes and greenhouse gas emissions" task:

- c. Overview of data collection procedures.
- d. Quality control and quality assurance procedure.
- e. Data archiving.

This information has not been provided for the parameters in question. Therefore, the audit team is unable to close this finding at this time.

Client Response 2: The following text has been added to Section 4.3 of the PD to address c-e with respect to the "Monitoring of leakage carbon stock changes and greenhouse gas emissions" task.

"A separate section on quality assurance/quality control and data archiving procedures covers all monitoring tasks.

Organizations responsible for monitoring are listed below in Table 4.6. These organizations are responsible for implementing all aspects of a particular monitoring task, as described in the monitoring sub-sections below."

"The monitoring parameters MANFOR, PROTFOR, TOTFOR will be sourced from official data, peer reviewed publications or other verifiable sources, such as the Brazil Global Forest Resources

Assessment Report published by the FAO and these monitoring parameters will be updated on review of current literature at least every 5 years. Demonstration that managed and protected forests will be protected against deforestation will further be demonstrated, as stipulated in the LK-ASU module.”

FAO. 2009. Global Forest Resources Assessment 2010, Brazil Country Report. Forestry Department, Food and Agriculture Organization of the United Nations, Rome.

“Quality control procedures related to monitoring leakage include conducting a review of the current literature at least every 5 years to source information on the area of the monitoring parameters MANFOR, PROTFOR, and TOTFOR. Further, participatory rural appraisals used to assess the length of time people have been living in the project area and leakage belt will be implemented by personnel with experience conducting community surveys in rural Brazil.”

Auditor Response 2: As indicated in the Client Response section, Section 4.3 of the PD now contains adequate guidance for the monitoring of the leakage parameters in question. Therefore, the non-conformity has been resolved.

Closing Remarks: The Client's response adequately addresses the finding.

NCR 2012.30 dated 05/30/2012

Standard Reference: LK-ASU V1.0, Sec. IV

Document Reference: Purus Project VCS PD (Final Draft Version, 5-17-12).pdf, Sec. 4.3

Finding: It is required that parameters PROP(IMM) (defined as "Estimated proportion of baseline deforestation caused by immigrating population") and PROP(RES) (defined as "Estimated proportion of baseline deforestation caused by population that has been resident for ≥5 years") be monitored. The monitoring plan does indicate that surveys will be implemented "to determine what proportion of the agents of deforestation have been resident in and around the leakage belt and project area for ≥ 5 years (PROPRES) and the proportion of area deforested by population that has migrated into the area in the last 5 years (PROPIMM)", it is unclear how the results of the surveys are to be used in calculating the two proportions.

Client Response: The following text was added to Section 4.3 of the PD. "As it is extremely sensitive to ask explicit questions regarding responsibility for deforestation, "the proportion of area deforested by population that has migrated into the area in the last 5 years" is assumed to be equal to the percentage of recent immigrants among local population with potential access to the project area (i.e. without directly

asking if they are deforestation agents) . Similarly, the “proportion of baseline deforestation caused by population that has been resident for ≥5 years” is assumed to be equal to the percentage of the local population residing in the area longer than 5 years with potential access to the project area.”

Auditor Response: The approach set out in response to this finding is identical to the ex ante approach to be implemented in response to NCR 2012.43, and is therefore in accordance with the requirements of the LK-ASU module. Therefore, the nonconformity has been resolved.

Closing Remarks: The Client’s response adequately addresses the finding.

NCR 2012.31 dated 05/30/2012

Standard Reference: LK-ASU V1.0, Sec. IV

Document Reference: Purus Project VCS PD (Final Draft Version, 5-17-12).pdf, Sec. 4.3

Finding: Section IV of the LK-ASU module indicates that monitoring of leakage parameters, where applicable, "Must be monitored at least every 5 years or if verification occurs on a frequency of less than every 5 years examination must occur prior to any verification event". Table 4.6 of the monitoring plan indicates that monitoring of "Activity shifting immigrant leakage assessment" will occur at a frequency of "At least every 5 years". This statement is not consistent with the requirement of the LK-ASU module with respect to the possibility that verification may occur on a frequency of less than every 5 years.

Client Response: Table 4.5 and Table 4.6 in the PD have been revised to state that the monitoring of the leakage parameters will occur prior to each verification event and at least every 5 years.

Auditor Response: As indicated, the tables in question within the PD have been revised to appropriately reflect the requirements of the LK-ASU module. Therefore, the nonconformity has been resolved.

Closing Remarks: The Client’s response adequately addresses the finding.

NCR 2012.32 dated 06/29/2012

Standard Reference: VCS Program Definitions V3.2, definition of "project proponent"

Document Reference: Purus Project VCS PD (Final Draft Version, 5-17-12).pdf, Sec. 1.3; Tri-Party Agreement, provided for audit team review during the site visit

Finding: The VCS Program Definitions defines "project proponent" as follows: "The individual or organization that has overall control and responsibility for the project, or an individual or organization that together with others, each of which is also a project proponent, has overall control or responsibility for the project". The PD indicates that "The three main project proponents are CarbonCo, LLC ("CarbonCo"), Freitas International Group, LLC ("Carbon Securities"), and Moura & Rosa Investments, LTDA ("Moura & Rosa")." Upon review of the Tri-Party Agreement, the audit team found that the named entities are

Carbonfund.org Foundation, Inc., Freitas International Group, LLC and Moura e Rosa Empreendimentos Imobiliários LTDA. As the Tri-Party agreement establishes the framework whereby the three entities share overall control and responsibility for the project, the parties named in the Tri-Party agreement must be named as the project proponents, using the complete legal names of said parties as set out in the Tri-Party Agreement. This change must be made throughout the PD wherever the project proponents are named.

Client Response: Please see Section 9(j) entitled "Binding Agreement and Assignment" of the Tri-Party Agreement which states "This Agreement shall be binding on Parties and their respective successors and assigns. Neither Party shall transfer or assign its rights or obligations under this Agreement without previous written consent of the other Party, provided that no consent will be required for transfer or assignments by either Party to its legal successor, parent or subsidiary company."

CarbonCo is the wholly-owned subsidiary company of Carbonfund.org and thus, the Tri-Party Agreement allows for the transfer of the Purus Project from Carbonfund.org to CarbonCo.

Furthermore, the agreement entitled "2012-09-05 - CF-CC Project Transfer Agreement - Fully Executed" has been presented to SCS along with this finding which demonstrates the official, internal transfer of the Purus Project from Carbonfund.org to CarbonCo.

Auditor Response: The client provided an agreement dated 30 June 2011, Section 2.1 of which states that "Foundation hereby contributes, assigns and transfers all of its rights, interests and obligations in and to the existing signed agreements for projects in Brazil, to CarbonCo and CarbonCo hereby accepts all rights, interests and obligations in such agreements." The information provided in response to this finding is sufficient to substantiate the listing of CarbonCo, LLC ("CarbonCo") as a project proponent in place of Carbonfund.org Foundation, Inc ("Foundation").

However, no such information has been provided to substantiate the listing of Moura & Rosa Investments, LTDA in place of Moura e Rosa Empreendimentos Imobiliários LTDA, the entity named within the Tri-Party Agreement, and the PD continues to refer to Moura & Rosa Investments, LTDA as the project proponent. On this basis, the finding must remain open.

Client Response 2: "Moura & Rosa Investments, LTDA" has been changed to "Moura e Rosa Empreendimentos Imobiliários LTDA" in Section 1.1, Section 1.3 and Table 1.2 the PD to match the entity's official name in the Tri-Party Agreement.

Auditor Response 2: As the full legal name of Moura & Rosa (Moura e Rosa Empreendimentos Imobiliários LTDA) is now stated in Section 1.3 of the PD, the nonconformity has been resolved.

Closing Remarks: The Client's response adequately addresses the finding.

OFI 2012.33 dated 06/29/2012

Standard Reference: NA

Document Reference: Annex 1. Purus REDD Project Forest Inventory.doc, Sec. 7.4

Finding: Forest inventory measurements for quantification of baseline pre-deforestation carbon stocks the aboveground live biomass, belowground live biomass and standing dead carbon pools were conducted in such a manner as to make it impossible to match tree records between two inventories of the same plot. The lack of procedures for consistent ordering of measured trees increased the difficulty of quality control, as evidenced by the failure of the project proponent (as explained to the audit team by James Eaton on 15 June 2012) to determine the root causes of the discrepancies in biomass estimates that were found through application of the procedure documented in Section 7.4 of Annex 1.

Client Response: Thank you for your suggestion.

Auditor Response:

Closing Remarks: The Client's response adequately addresses the finding.

NIR 2012.34 dated 06/29/2012

Standard Reference: CP-AB V1.0, Sec. II, p 13

Document Reference: NA

Finding: Regarding validation of allometric equations used to predict biomass, the CP-AB module requires that "if validating forest type-specific equation, selection should be representative of the species composition in the project area, i.e. species representation in roughly in proportion to relative basal area". During the site visit, the audit team was not presented with evidence of conformance to the above language. Please provide evidence that the sample of trees selected for validation of the Brown (1997) equation is compliant with this requirement.

Client Response: The following text was added to Section 2.6 of the project document.

"We propose the following deviation: For validation of the allometric equation used to estimate biomass as a function of dbh, a ratio of stem biomass to total aboveground biomass of 0.656 was used (Higuchi et al 1998, n = 315 trees from Amazonas, Brazil). This ratio, developed from regional data and thus more specific to the project site, was used instead of the pantropical biomass expansion factors provided in the REDD Modules Methodology, VM0007."

Further, Section 7.3 of "Annex 1. Purus REDD Project Forest Inventory" was revised to demonstrate that

"species representation in roughly in proportion to relative basal area."

Auditor Response: Although the information provided in the Client Response to this finding is not relevant, evidence of conformance to the requirement cited in the finding was provided in Section 7.3 of the updated version of the document "Forest biomass carbon inventory for the Purus REDD Project, Acre State, Brazil". Among other information, this document states "Of trees > 60 cm dbh, 9 out of the top 10 species representing the highest relative basal areas are shared between the validation sample and the full inventory, and 13 out of the top 20 species are shared between the validation sample and the full inventory (Table 7.8)". The claims made above were checked through a review of project calculations. It is the opinion of the audit team that the information provided is sufficient to provide the audit team with reasonable assurance that the requirement in question has been met.

Closing Remarks: The Client's response adequately addresses the finding.

NCR 2012.35 dated 06/29/2012

Standard Reference: CP-AB V1.0, Sec. II, p 13

Document Reference: Annex 1. Purus REDD Project Forest Inventory.doc, Appendix A, Sec. 2.3

Finding: The CP-AB module requires that, for validation of allometric equations used to predict biomass, "height to a 10 cm diameter top or to the first branch" be measured on the trees selected for measurement. It is documented within Appendix A of Annex 1 that total height ("altura total") was measured instead, and James Eaton and Igor Agapejev de Andrade agreed on 15 June 2012 that total height was measured as part of the validation procedure. This is not in conformance with the requirements of the CP-AB module.

Client Response: The following text was added to Section 2.6 of the project document to address this finding.

"We propose the following deviation: For validation of the allometric equation, commercial height was 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. (n = 315 trees)."

Auditor Response: It is clear at this time that the height measurements taken in the field do not meet the requirements of the CP-AB module. Therefore, in response to this finding, guidance was requested from Carolyn Ching of VCSA in order to determine whether a deviation from the methodology is possible in this case. In response, Carolyn indicated via email on 5 September 2012 that "It is important to recognize that not all parameters identified in a methodology are directly monitored or measured directly from the field. Many methodologies identify at least some parameters that are "measured" through the use of a separate tool, sourced as defaults from national or IPCC data, determined from manufacturer's specifications, etc. Given this, methodology deviations may be applied to the criteria and procedures surrounding both

parameters available or monitored at validation (including default values and factors) and those monitored subsequent to validation."

Through the provided guidance and subsequent discussions, it is now clear that a deviation from the criteria and procedures for selection of allometric equations are possible in accordance with the requirements of Section 3.5.1 of the VCS Standard.

Although ideally the height measurement requirements of the CP-AB module would have been complied with at the time of measurement, a search for alternatives to conducting additional measurements seems reasonable, given the time and cost involved in accessing the project area.

Ultimately the purpose of measuring to a 10 cm diameter top or to the first live branch, rather than measuring total height, is to ensure that the predictions of the biomass equation are compared with a conservative estimate of stem biomass. The use of the "commercial height to total height ratio" suggested by the client fulfills the same purpose. Although there is undoubtedly some loss of accuracy involved with the use of such a "proxy", such a loss of accuracy is considered to be within acceptable limits, and it is unlikely that the conservativeness of the methodology will be affected (in the context of the above, an impact on conservativeness could result from an equation validation procedure whereby an equation that produces upwardly biased biomass estimates is mistakenly approved). Therefore, the methodology deviation is considered approved, and this finding can be closed.

However, please note that, given the above, the audit team will apply greater scrutiny to the procedure for validation of equations.

Closing Remarks: The Client's response adequately addresses the finding.

NCR 2012.36 dated 06/29/2012

Standard Reference: CP-AB V1.0, Sec. II, pp 12-14

Document Reference: Annex 1. Purus REDD Project Forest Inventory.doc, Sec. 6.0

Finding: The CP-AB module states that "It is necessary to validate the applicability of equations used" and provides two possible validation procedures that can be implemented. It was indicated to the audit team by James Eaton on 15 June 2012 that neither procedure was followed for the following equations:

- The Delaney et al. (2000) equation for prediction of aboveground biomass in trees of the Cecropiaceae genera, as described in Section 6.0 of Annex 1

- The equation used to predict aboveground biomass in palm trees, as described in Section 6.0 of Annex 1

Client Response: In an email to Brian McFarland and James Eaton on September 18, 2012 Zane Haxtema stated "It is now clear to the audit team that the proposed procedure for quantifying the aboveground biomass in palm trees on the project area is consistent with VCS rules, and that, to the extent that the procedure deviates from the requirements of the methodology, that such a deviation is

acceptable. The rationale for this is described in the Auditor Response for NIR 2012.37. Therefore, your team will no longer be required to respond to the aspect of NCR 2012.36 relating to the palm equation. However, your team will still be required to respond to the aspect of NCR 2012.36 relating to the equation for Cecropiaceae genera.”

To support this statement, we have added the following text to Section 2.6 of the PD.

“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.”

In relation to the Cecropia genera, the forest inventory will be updated to conservatively exclude Cecropia and thus the Delaney et al. (2000) equation will no longer be used. All text related to use of the Delaney et al. equation has been removed from the Purus REDD Project Forest Inventory report.

Auditor Response: During consultation with VCSA during the week of 17 September 2012, Carolyn Ching clarified that the criteria and procedures for selecting allometric equations to be used in the quantification of parameter C(AB_tree,sp,i) can be deviated from, in accordance with Section 3.5.1 of the VCS Standard, as they represent “a deviation from the criteria and procedures relating to... measurement... of GHG emission reductions or removals set out in the methodology”.

While many of the requirements of the pages 11-14 of the CP-AB module have been violated with respect to the selection of an allometric equation to quantify biomass in palm trees, the audit team agrees that the approach taken to quantify biomass in palm trees is likely to be conservative in all cases. Therefore, the proposed deviation, as discussed in Sec. 2.6 of the PD, is acceptable in the judgment of the audit team.

The exclusion of trees of the Cecropia genera from the forest inventory will be addressed in NCR 2012.62.

Closing Remarks: The Client's response adequately addresses the finding.

NIR 2012.37 dated 06/29/2012

Standard Reference: CP-AB V1.0, Sec. II, pp 11-12

Document Reference: Annex 1. Purus REDD Project Forest Inventory.doc, Sec. 6.0

Finding: The CP-AB module states that "Equations must have been derived using a wide range of measured variables (e.g. DBH, Height, etc.) based on datasets that comprise at least 30 trees. Equations must be based on statistically significant regressions and must have an r^2 that is ≥ 0.8 ." Please provide evidence that the allometric equation used for palm species, as described in Section 6.0 of Annex 1, conforms to the above requirement.

Client Response: [No response was provided to this finding.]

Auditor Response: It is clear at this time that the palm equation used does not meet the requirements of the CP-AB module. Therefore, in response to this finding, guidance was requested from Carolyn Ching of VCSA in order to determine whether a deviation from the methodology is possible in this case. In response, Carolyn indicated via email on 5 September 2012 that "It is important to recognize that not all parameters identified in a methodology are directly monitored or measured directly from the field. Many methodologies identify at least some parameters that are "measured" through the use of a separate tool, sourced as defaults from national or IPCC data, determined from manufacturer's specifications, etc. Given this, methodology deviations may be applied to the criteria and procedures surrounding both parameters available or monitored at validation (including default values and factors) and those monitored subsequent to validation."

Through the provided guidance and subsequent discussions, it is now clear that a deviation from the criteria and procedures for selection of allometric equations are possible in accordance with the requirements of Section 3.5.1 of the VCS Standard.

It is the opinion of the audit team that it is acceptable for the project to deviate from the guidance of the CP-AB module through the palm equation that was used. This equation is likely to result in conservative estimation of aboveground palm biomass for the following reasons:

- The height measurement used is height to the top of the stem, and therefore the equation quantifies bole biomass only. Biomass in live branches is conservatively excluded by the quantification procedure employed.
- Given any degree of taper in the stem, diameter at breast height will be smaller than the basal diameter (the diameter at the base of the tree). Therefore, the use of diameter at breast height is likely to result in conservative estimation.
- The use of the paraboloid form is likely to conservatively estimate the volume of palm trees, as most palm tree have not tapered to a tip at the top of the stem.

On the basis of the above, and given the assertion of the client that "no general allometric equations exist for palms in the tropics", it is the opinion of the audit team that the deviation outlined above meets the requirements of Section 3.5.1 of the VCS Standard, and this finding can be closed.

Closing Remarks: The Client's response adequately addresses the finding.

NIR 2012.38 dated 06/29/2012

Standard Reference: CP-AB V1.0, Sec. II, pp 11-12

Document Reference: Annex 1. Purus REDD Project Forest Inventory.doc, Sec. 6.0

Finding: The CP-AB module states that "Equations must have been derived using a wide range of measured variables (e.g. DBH, Height, etc.) based on datasets that comprise at least 30 trees." Please provide evidence that the Brown (1997) equation used for Cecropiaceae genera, as described in Section 6.0 of Annex 1, was based on a dataset that comprises at least 30 trees.

Client Response: The following text was added to Section 6.0 of the "Forest biomass carbon inventory for the Purus REDD Project, Acre State, Brazil".

The added text is "(n=170 trees, R-squared=0.84)"

The above information is stated in Section "3.2.1 BIOMASS REGRESSION EQUATIONS" of the publication "Brown, S., 1997. Estimating biomass and biomass change of tropical forests: A primer. FAO Forestry Paper: vii, 55 p."

Auditor Response: This finding contains mistaken information, as the Brown (1997) equation is used for estimating biomass of all trees other than palms and Cecropiaceae genera.

In response to this finding, the audit team was provided with the manuscript in which the Brown (1997) equation is reported, and the provided manuscript substantiates the attestation of the client regarding the equation. Therefore, it is clear that the requirements of the CP-AB module have been met in this regard, and the finding can be closed.

Closing Remarks: The Client's response adequately addresses the finding.

NCR 2012.39 dated 06/29/2012

Standard Reference: CP-D V1.0, p 10; VCS Project Description Template V3.0, Sec. 2.5

Document Reference: Annex 1. Purus REDD Project Forest Inventory.doc, Sec. 3.1.4

Finding: The CP-D module states that "Lying dead wood must be sampled using the line intersect method (Harmon and Sexton 1996). Two 50-meter lines are established bisecting each sample plot and the diameters of the lying dead wood (≥ 10 cm diameter) intersecting the lines are measured. The first line is oriented along a random bearing, the second line is oriented perpendicular to the first." As

documented within Annex 1 and/or explained to the audit team during on-site review on 13 June 2012, the sampling methodology employed by the project for sampling of dead wood exhibits the following nonconformities with respect to the above requirements:

- 92-meter transect lines were used rather than 50-meter transect lines
- The lines did not bisect each sample plot, but rather ran from one plot center to the next
- The lines were oriented to the north and east, and no randomization in the bearing of the first line was employed

While the above discrepancies are considered acceptable deviations in accordance with the Section 3.5 of the VCS Standard, they have not been reported in Section 2.6 of the PD, which states "No deviations to the methodology are applied."

Client Response: The text in Section 2.6 of the PD was revised to the following to address this finding: "The following deviations to the methodology are applied."

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."

Auditor Response: The text of Section 2.6 of the PD was modified to describe the methodology deviations regarding sampling of down wood that have been employed and approved by the audit team. Therefore, the non-conformity has been resolved.

Closing Remarks: The Client's response adequately addresses the finding.

NCR 2012.40 dated 06/29/2012

Standard Reference: CP-D V1.0, p 9

Document Reference: NA

Finding: Regarding the creation of project-specific wood density factors, the CP-D module requires the following: "For each density class, either:

- If the 90% confidence interval is equal to or less than 10% of the mean, the mean density value is applied in project calculations.

- If the 90% confidence interval is greater than 10% of the mean, the lower 90% confidence bound of the mean density estimate is applied in project calculations."

During the site visit, the audit team was not presented with evidence that the required analysis was conducted. Please provide evidence that the analysis was conducted.

Client Response: The text in Section 2.6 of the PD was revised to the following to address this finding: "The following deviations to the methodology are applied.

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."

Auditor Response: As described in the updated report "Forest biomass carbon inventory for the Purus REDD Project, Acre State, Brazil", the procedure for determining the wood density value for each decay class conforms to the requirements of the CP-D module, and therefore this finding may be closed.

Closing Remarks: The Client's response adequately addresses the finding.

NCR 2012.41 dated 06/29/2012

Standard Reference: BL-UP V2.0, Sec. II, Step 2.1.1

Document Reference: NA

Finding: The BL-UP module requires that the methodology user "collect high-resolution data from remote sensors (<5 x 5 m pixels) and/or from direct field observations for ground-truthing the medium resolution data collected in previous step." While remote sensing (as opposed to direct field observations) was used to ground-truth the medium-resolution data collected, during conversations on 18 June 2012, Professor Willian Flores indicated that 8 m resolution Formosat data was used where available, and 30 m resolution Landsat data was used where the Formosat data was not available. This is in nonconformance with the above requirement.

Client Response: The accuracy assessment had been redone to be in compliance with the methodology. The text in Section 3.1.2 related to the accuracy assesment has been revised to "An accuracy assessment of the 2010 forest/nonforest map was performed using Google Earth imagery. All images were high resolution (<5m) and collected in 2010 or 2011. A minimum of 50 ground truth points in each land cover class (Forest and Non-Forest) were collected in Google Earth. points were then compared to the forest/non-forest classification for 2010. The accuracy of the 2010 forest/non-forest map was 96.5%

and 92.9% for the forest and non-forest class , respectively. This meets the minimum map accuracy of 90% for each class as set forth in the methodology."

Documentation of calculations and supporting files have been submitted along with this written response.

Auditor Response: As indicated within the Client Response section, the accuracy assessment has been re-done using Google Earth imagery. However, further information will need to be provided to the audit team to ensure that the requirements of the BL-UP module have been met. Therefore, this finding will be closed and NIR 2012.63 will be opened.

Closing Remarks: The Client's response adequately addresses the finding.

NCR 2012.42 dated 06/29/2012

Standard Reference: BL-UP V2.0, Sec. II, Step 4.2.2

Document Reference: Purus Project VCS PD (Final Draft Version, 5-17-12).pdf, Sec. 3.1.4.3

Finding: The BL-UP module provides two options ("Option 1 - Simple approach" and "Option 2 - Historical area-weighted average") for estimation of post-deforestation carbon stocks in the baseline scenario. Conversations with James Eaton on June 19, 2012 revealed that neither option was employed to estimate post-deforestation carbon stocks in the baseline scenario.

Client Response: The following justification of C-post was added to Table 3.12: "Option 1, the simple approach, was used in the estimation of post-deforestation carbon stocks. The most likely post-deforestation land uses include pasture and cropland. Moist and wet tropical grasslands contain 16.1 tons d.m. per ha (from IPCC GL 2006, Table 6.4). Data presented in Salimon et al. for pasture in Acre state corroborate this value, whereby he lists the carbon stocks in pasture as 16.0 tons d.m. per ha. Annual croplands contain 5.0 tons d.m. per ha from (from IPCC GL 2006, TABLE 5.9). Pasture is the dominant and most likely land use in the region. Further, it has the highest long-term carbon stock of the above post-deforestation land uses. As such, the post deforestation carbon stock is calculated to be 27.75 t CO₂e ha⁻¹ (calculated as 16.1 tons d.m./ha * 0.47 * 44/12)."

Salimon et al. 2011. Estimating state-wide biomass carbon stocks for a REDD plan in Acre, Brazil. Forest Ecology and Management 262: 555-560.

Please see further revisions in the PD, including calculations using the above value as found in Table 3.14 for the project area and 3.15 for the leakage belt.

Further, all calculations relying on these values will be updated.

Auditor Response: In response to this finding, Option 1 was used to estimate post-deforestation carbon stocks. On this basis, the finding can be closed. Resolution of further questions and concerns regarding the conformance of the project to Section 4.2.2 of the BL-UP module can be tracked in NIRs 2012.56 and 2012.57.

Closing Remarks: The Client's response adequately addresses the finding.

NCR 2012.43 dated 06/29/2012

Standard Reference: LK-ASU V1.0, Sec. II, Step 2

Document Reference: Purus Project VCS PD (Final Draft Version, 5-17-12).pdf, Sec. 3.3

Finding: The BL-UP module requires that the methodology user do the following: "Using a participatory rural appraisal (PRA) approach, existing studies and other verifiable sources of information, determine the proportion of area deforested by the population that has been resident in and around the Leakage Belt and project area for ≥ 5 years (PROPRES) and the proportion of area deforested by population that has migrated into the area in the last 5 years (PROPIMM)." As documented in the PD and explained by James Eaton on 19 June 2012, a PRA was implemented to determine the proportion of the population within 2km of the boundaries of the leakage belt that have migrated into the area within the last five years. However, the proportion of area deforested by the population that has migrated into the area in the last five years was actually determined by application of professional judgment ("The proportion of the leakage belt deforested by the local versus immigrant agents is thought to be split evenly between these deforestation agents"), rather than through a PRA approach, existing studies and other verifiable sources of information. Therefore, the approach taken is not in conformance with the requirements of the BL-UP module.

Client Response: The text in Section 3.3 has been revised whereby the values of PROPRES and PROPIMM are now inline with the results of the PRA.

"In March 2012, 16 community surveys were carried out near the boundaries of the leakage belt and project area. While the total number of communities in the area is not known, it is thought the maximum number is approximately 45; hence about 30% of communities in the area were sampled. Results of the community surveys indicated that only 3 of the 16 families have migrated to the area within the last five years.

PROPRES = the proportion of area deforested by the population that has been resident in and around the leakage belt and project area for ≥ 5 years = 0.813; and

PROPIMM = the proportion of area deforested by population that has migrated into the area in the last 5 years = 0.188.

"

Further, all calculations relying on these values will be updated.

Auditor Response: The reference to the BL-UP module in this finding was a mistake, as the finding should have referenced the LK-ASU module.

As discussed in the Client Response, the parameters PROPRES and PROPIMM are now estimated through use of the results from the participatory rural appraisal approach. It is agreed that the actual amount of deforestation caused by participants in the participatory rural appraisal approach is a sensitive issue, and that the use of a proxy response variable (i.e., the proportion of participants that fall into the two categories) is sufficient to meet the requirements of the methodology. Therefore, the nonconformity has been resolved.

Closing Remarks: The Client's response adequately addresses the finding.

NCR 2012.44 dated 06/29/2012

Standard Reference: LK-ASU V1.0, Sec. II, Step 4

Document Reference: NA

Finding: The LK-ASP module requires that the methodology user "Define the total available national forest area (TOTFOR). This can be assessed with a coarse-scale imagery (e.g. using MODIS imagery or similar), or with official government statistics on forest area. The total national forest area should be reduced to just the area [sic] of forest with in 5km of a road or river that is suitable for conversion to agriculture or raising livestock." It was revealed during conversations with James Eaton on 19 June 2012 that the total national forest area was not reduced to just the area of forest within 5km of a road or river that is suitable for conversion to agriculture or raising livestock.

Client Response: We choose to use official government statistics on forest area to assess the area of TOTFOR. While is desirable to reduce the area of TOTFOR as much as possible to limit leakage outside the leakage belt, it is conservative to not limit TOTFOR to the area of forest within 5km of a road or river that is suitable for conversion to agriculture or raising livestock. Further it is not practical to limit areas provided in official government statistics as these statistics are not spatially explicit. This use of conservatism, results in estimates for TOTFOR and leakage outside the leakage belt (Δ CLK-ASU-OLB) as greater than if the area was limited to within 5km of a road and river as described above.

Auditor Response: This finding should not have been written, as it is now the understanding of the audit team that the term "should" refers to a polite suggestion rather than firm guidance. The audit team agrees with the attestation in the Client Response regarding the conservativeness of the approach suggested for use with the project, as that approach suggested in the Client Response results in a smaller value of PROPLB, a larger value of LKPROP and therefore a higher ex-ante estimate of leakage due to displacement of baseline deforestation actors to areas outside the leakage belt. It may for this reason that the term "should" was used, rather than the term "shall", within the LK-ASU module. In any case, the project is in conformance with the applicable requirements of the LK-ASU module, and this finding can be

closed.

Closing Remarks: The Client's response adequately addresses the finding.

NIR 2012.45 dated 06/29/2012

Standard Reference: LK-ASU V1.0, Sec. II, Step 4c

Document Reference: NA

Finding: The LK-ASP module requires that "At validation the source national datasets/maps shall be presented alongside the stratification of AVFOR and any divergence shall be explained". During the site visit, the audit team was not presented with the above information. Please provide the required information.

Client Response: Calculations and text surrounding the parameters COLB and PROPCS in Section 3.3 have been revised including all information present in Table 3.26. This update has enabled us to use one source "The FAO publication Global Forest Resources Assessment 2010, Brazil Country Report" for "information for the area of AVFOR, stratification of this area by forest types, and the stocks of aboveground biomass carbon present in each strata." This has resulted in no divergence between the national datasets cited for the area of AVFOR and the stratification of AVFOR

A copy of the "FAO. 2009. Global Forest Resources Assessment 2010, Brazil Country Report. Forestry Department, Food and Agriculture Organization of the United Nations, Rome." report has been provided to the validator in response to this finding.

The following deviation has been added to Section 2.6 of the PD. "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 $\geq 20\%$ "

Auditor Response: As indicated within the Client Response section, the carbon stock estimates are now sourced from the same publication that provides information on the available forest within Brazil, and therefore, there is no divergence between the source national datasets/maps and the stratification of AVFOR. Therefore, the information request has been satisfied.

Closing Remarks: The Client's response adequately addresses the finding.

NIR 2012.46 dated 06/29/2012

Standard Reference: NA

Document Reference: Purus Forest Inventory data 2012.03.06v.xls

Finding: The following records within the "Standing Dead - Data" worksheet do not contain complete information, and carbon stocks for these records are not calculated. The records are as follows:

- Plot 114S, tree 2; missing DBH and density class
- Plot 208L, tree 1; missing density class
- Plot 208L, tree 2; missing density class
- Plot 208L, tree 3; missing density class
- Plot 208O, tree 1; missing density class
- Plot 208O, tree 2; missing density class
- Plot 208O, tree 3; missing density class
- Plot 208O, tree 4; missing density class
- Plot 209O, tree 1; missing density class

Please provide information sufficient to allow the audit team to determine why information is missing and carbon stocks have not been calculated for the records in question.

Client Response: The field inventory crew failed to identify the density class for these 8 standing dead trees and as such these trees were excluded from biomass calculations (and effectively from the inventory). Each of these instances occurred in the initial stages of the inventory and upon discovery by the field crew leader this mistake was corrected to ensure that it did not occur repeatedly.

- Plot 208L, tree 1; missing density class
- Plot 208L, tree 2; missing density class
- Plot 208L, tree 3; missing density class
- Plot 208O, tree 1; missing density class
- Plot 208O, tree 2; missing density class
- Plot 208O, tree 3; missing density class
- Plot 208O, tree 4; missing density class
- Plot 209O, tree 1; missing density class

In relation to tree 2 in plot 114S, which is missing both DBH and density class data, it is unclear why this data is missing. It is thought that the data which is present for this tree was written in the wrong place and the data actually corresponds to the height information for one of the tallest trees in the plots. Regardless, no biomass for this tree was calculated; hence the tree was excluded from biomass calculations (and effectively from the inventory)

Auditor Response: The information provided in the Client Response section is sufficient to allow the audit team to close this finding. While the failure of the inventory crew to collect all of the required information with respect to the trees in question is unfortunate, it appears that the quality control processes of the inventory system were sufficient to detect the omissions and adjust the inventory procedures before such omissions became a systemic issue. Furthermore, the approach taken with respect to the biomass of the trees in question is unlikely to lead to non-conservative estimation of GHG emission reductions or removals.

Closing Remarks: The Client's response adequately addresses the finding.

NIR 2012.47 dated 06/29/2012

Standard Reference: BL-UP V2.0, Sec. II, Step 2.1.3; M-MON V2.0, Sec. 5.1.2

Document Reference: NA

Finding: With respect to remote sensing imagery used to monitor deforestation, the BL-UP module requires that "the cloud cover in the final images must be no more than 10% of any image. If there are clouds in either date in question in the area for which the rate is being calculated, then the rate should come from areas that were cloud free in both dates in question."

The M-MON module requires that "multi-date images must be used to reduce cloud cover to no more than 10% of any image. If the areas with 10% cloud cover in either date in question do not overlap exactly, then the rate should come from areas that were cloud free in both dates in question".

As documented in the PD and communicated to the audit team during the site visit, the baseline deforestation rate has been determined using data from the Central Unit of GIS and Remote Sensing (UCEGEO) within the Climate Change Institute (ICM) in Acre. During the site visit, the audit team was not provided with a demonstration that the above guidance has been, and will be, implemented by UCEGEO in the creation of the annual deforestation layer produced by that entity. Furthermore, Dr. Willian Flores indicated in follow-up communication, received via email, on 20 June 2012, that the maximum percentage of cloud cover allowed by UCEGEO in the creation of their dataset is 20%. Therefore, please provide the audit team with evidence indicating that the above guidance has been, and will be, implemented in the creation of the annual deforestation dataset.

Client Response: Willian Flores misspoke when he informed you in his June 20th email that the maximum percentage of cloud cover allowed by UCEGEO in the creation of their dataset is 20%. No images used in our analysis or contained in the Acre dataset have more than 10% cloud cover as documented in Section 3.1.1 of the UCEGEO report "REVISÃO DA DINÂMICA DO DESMATAMENTO NO ESTADO DO ACRE:

ANÁLISE TEMPORAL DE 23 ANOS (PERÍODO DE 1988 A 2010)"

Auditor Response: The UCEGEO report provided in response to this finding indicates the following: "Vale ressaltar que, a taxa de cobertura de nuvens das imagens foi inferior a 10%, contudo, houve cenas em determinados anos onde não foi possível classificar, principalmente por nebulosidade (Tabela 1)." Translated into English through Google Translate, the above text means: "It is noteworthy that the rate of cloud images were less than 10%, however, there were scenes in certain years where it was not possible to classify, mainly cloudy (Table 1)." Examination of the language in combination with Table 1 of the UCEGEO report indicates that remote sensing products were not produced for years in which cloud cover was excessive, but that in all other cases a 10% threshold was observed. As the audit team has been provided with evidence that the 10% threshold requirement of the methodology has been met, this finding can be closed.

Closing Remarks: The Client's response adequately addresses the finding.

NIR 2012.48 dated 06/29/2012

Standard Reference: LK-ASU V1.0, Sec. II, Step 4a

Document Reference: FRA 2010 – Country Report, Brazil

Finding: The LK-ASP module requires that "Protected forests should be defined as forests with active protection in place including forest guards and policies to evict squatters. The effectiveness of protection must be demonstrable for areas to be excluded from total available forest area". Please provide evidence that the National Forests, State Forests, and Biodiversity Conservation Areas, as defined in the "FRA 2010 – Country Report, Brazil", includes only those areas that meet the above criteria.

Client Response: It is unclear if the area of protected forest, including National Forests, State Forests, and Biodiversity Conservation Areas, meet the criteria "Protected forests should be defined as forests with active protection in place including forest guards and policies to evict squatters. The effectiveness of protection must be demonstrable for areas to be excluded from total available forest area". Hence, the area of protected forest will be revised to be zero. This is conservative and will result in greater leakage outside the leakage belt that would have occurred in PROTFOR had been included.

Further, all calculations relying on these values will be updated.

Auditor Response: The reference to the "LK-ASP" module in this finding is a typo, as the reference should have been to the LK-ASU module.

The LK-ASU module does not require the adjustment of parameter AVFOR to account for area of protected forests (parameter PROTFOR), but does require that, if the area of protected forests is to be subtracted, certain criteria regarding those protected forests must be met. The action suggest in the Client Response section will result in conservative ex ante estimation of leakage due to the proportion of the baseline deforestation actors who are displaced to areas outside the leakage belt, and is in

conformance with the requirements of the LK-ASU module. Therefore, this finding can be closed.

Closing Remarks: The Client's response adequately addresses the finding.

NIR 2012.49 dated 06/29/2012

Standard Reference: LK-ASU V1.0, Sec. II, Step 4a

Document Reference: FRA 2010 – Country Report, Brazil

Finding: The LK-ASP module requires that "Active management should be defined as under a specific ownership which has management plans and actively defends lands against invasion by squatters. The effectiveness of active management for preventing deforestation must be demonstrable for areas to be excluded from total available forest area". Please provide evidence that the plantation forests and community managed forests, as defined in the "FRA 2010 – Country Report, Brazil", includes only those areas that meet the above criteria.

Client Response: It is unclear if the area of managed forest, including plantation forests and community managed forests, meet the criteria "Active management should be defined as under a specific ownership which has management plans and

actively defends lands against invasion by squatters. The effectiveness of active management for preventing deforestation must be demonstrable for areas to be excluded from total available forest area". Hence, the area of managed forest will be revised to be zero. This is conservative and will result in greater leakage outside the leakage belt that would have occurred in MANFOR had been included.

Further, all calculations relying on these values will be updated.

Auditor Response: As with NIR 2012.48, the reference to the "LK-ASP" module in this finding is a typo, as the reference should have been to the LK-ASU module.

As with NIR 2012.48, the LK-ASU module does not require the adjustment of parameter AVFOR to account for area of managed forests (parameter MANFOR), but does require that, if the area of managed forests is to be subtracted, certain criteria regarding those managed forests must be met. The action suggest in the Client Response section will result in conservative ex ante estimation of leakage due to the proportion of the baseline deforestation actors who are displaced to areas outside the leakage belt, and is in conformance with the requirements of the LK-ASU module. Therefore, this finding can be closed.

Closing Remarks: The Client's response adequately addresses the finding.

NCR 2012.50 dated 06/29/2012

Standard Reference: LK-ASU V1.0, Sec. III

Document Reference: Purus Project VCS PD (Final Draft Version, 5-17-12).pdf, Sec. 4.3

Finding: Section III of the LK-ASU module indicates the following for parameter C(LB): "As forests in the leakage belt are deforested, the area weighted average must be recalculated at each monitoring period." In addition, the LK-ASU module indicates the following for parameter C(OLB): "The available national forest area and MANFOR and PROTFOR will change over time. The area weighted average must be recalculated at least every 5 years."

Although the LK-ASU module indicates that parameters C(LB) and C(OLB) must be monitored, the monitoring plan in the PD does not contain procedures for monitoring the parameters.

Client Response: In the LK-ASU module, both C(LB) and C(OLB) are listed under the section "III. DATA AND PARAMETERS NOT MONITORED", hence they are not included as parameters in the monitoring section. The parameters used in the calculation of leakage outside the leakage belt including MANFOR, PROTFOR, and TOTFOR have been added to Table 4.5 and Section 4.2 of the PD.

Auditor Response: It is true that the parameters in question are listed under the heading "DATA AND PARAMETERS NOT MONITORED (DEFAULT OR MEASURED ONE TIME)". The placement of these parameters is not consistent with the text within "any comment" section of the parameters, and such a discrepancy appears to signify a deficiency in the module. As the module is not consistent with respect to whether or not the parameters need to be measured, the approach taken for the project cannot be unequivocally stated to be in nonconformance with the requirement of the methodology, and therefore this finding can be closed.

Closing Remarks: The Client's response adequately addresses the finding.

NIR 2012.51 dated 06/29/2012

Standard Reference: VCS AFOLU Non-Permanence Risk Tool V3.1, Sec. 2.2.3 and 2.3.2

Document Reference: Purus Project VCS PD (Final Draft Version, 5-17-12).pdf, Sec. A1.1 and A1.2

Finding: In assessing the risk rating for the Opportunity Cost sub-category, a risk score of 0 has been applied by the project proponents, with the justification that item (d) applies. The description for item (d) is as follows: "NPV from the most profitable alternative land use activity is expected to be between 20% more than and up to 20% less than from project activities; or where baseline activities are subsistence-driven, net positive community impacts are demonstrated".

In assessing the risk rating for the Community Engagement sub-category, a mitigation risk score of -5 has been applied by the project proponents, with the justification that item (c) applies. The description for item (c) is as follows: "The project generates net positive impacts on the social and economic well-being of the local communities who derive livelihoods from the project area".

The risk assessment claims that "The project generates net positive economic and social benefits.

Economic opportunities include revenue sharing and increased access to markets. The project also implements social programs to better the lives of those living in nearby communities including building of a school and staffing of a health clinic. Further, the project is to be certified against the Climate, Community, and Biodiversity Standard." However, the net positive community impacts to be generated by the project have yet to be unambiguously demonstrated to the audit team. In addition, the project has not yet been validated against the Climate, Community & Biodiversity Standards. Please provide evidence that the project has been validated against the Climate, Community & Biodiversity Standards.

Client Response: The VCS Community Engagement mitigation subcategory (c) has been revised to reflect that a score of zero.

Auditor Response: A mitigation risk score of -5 is no longer claimed in assessing the risk rating for the Community Engagement sub-category. In addition, all justification for the net positive impacts generated by the project has been removed from the Community Engagement sub-category. However, a risk score of 0 is still applied for the Opportunity Cost sub-category, with the justification that item (d) applies. In order for item (d) to apply, the net positive impacts generated by the project must be justified. As indicated within the finding, the net positive community impacts to be generated by the project have yet to be unambiguously demonstrated to the audit team. Therefore, additional justification must be provided before the audit team can gain reasonable assurance that the project will generate net positive community impacts, and the finding must remain open.

Client Response 2: The risk score for the Opportunity Cost has been revised to be 8 in conjunction with application of sub-category (a), where baseline activities are subsistence-driven and net positive community impacts are not demonstrated.

The follow text has been added to the PD: "As the majority of baseline activities over the length of the project crediting period are subsistence-driven, 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 communities which demonstrates net positive community benefits."

Auditor Response 2: The need for new information has been resolved. The risk score claimed for the project is appropriately conservative, as at the time of this report, net positive community impacts have not been demonstrated for the project. It is hoped that net positive community impacts can be demonstrated during future verification audits.

Closing Remarks: The Client's response adequately addresses the finding.

NCR 2012.52 dated 06/29/2012

Standard Reference: VCS AFOLU Non-Permanence Risk Tool V3.1, Sec. 2.3.2

Document Reference: Purus Project VCS PD (Final Draft Version, 5-17-12).pdf, Sec. A1.2

Finding: The risk assessment claims that, for the Community Engagement sub-category, neither items (a) or (b) apply, as "All households living on the Moura & Rosa property directly adjacent to the project area have been consulted". However, the audit team has determined that no households living within and adjacent to the project area have been consulted in accordance with Section 2.3.2(2) of the VCS AFOLU Non-Permanence Risk Tool, which states "Households can be determined as consulted and involved in participatory planning where there have been direct meetings and planning with associations or community groups that are legally recognized to represent the households". During on-site interviews with the communities during the period 13-15 June 2012, the audit team could find no evidence that direct meetings and planning with associations or community groups that are legally recognized to represent the households, were implemented.

Client Response: Close as per email from Zane Haxton on 7/18/12. "I am writing to inform you that NCR 2012.52, issued on June 29 with respect to the VCS audit of the Purus Project, has been withdrawn. There is no need to provide a response to this NCR. I will notate the next iteration of the findings workbook that is sent to you with an indication that the NCR has been closed.

"

Auditor Response: The issuance of this finding was based on an incorrect interpretation of the VCS AFOLU Non-Permanence Risk Tool. This finding would not have been issued had the Tool been correctly interpreted. Therefore, as indicated via email to the client on 18 July 2012, this finding has been withdrawn.

Closing Remarks: The Client's response adequately addresses the finding.

NCR 2012.53 dated 06/29/2012

Standard Reference: VCS AFOLU Non-Permanence Risk Tool V3.1, Sec. 2.3.2

Document Reference: Purus Project VCS PD (Final Draft Version, 5-17-12).pdf, Sec. A1.1

Finding: The risk assessment claims that a Project Longevity score of 0 may be applied on the basis that "There is a legal contractual agreement to maintain the project area as forest for a 110 year period from the project start date". However, examination of the Tri-Party Agreement (the legal contractual agreement referred to in this case) revealed that the Tri-Party Agreement is legally binding for only 35 years. While the agreement contains a framework for up to two renewal periods of 40 years each (for a total possible period of 110 years), renewal after 35 years is on a voluntary basis. Therefore, the Tri-Party agreement does not constitute "a legally binding agreement that covers at least a 100 year period from the project start date", which is required to automatically receive a score of 0 for Project Longevity. Therefore, the score for Project Longevity must be re-evaluated.

Client Response: The project longevity score has been revised to 15, as there is a legal contractual

agreement to maintain the project activities and maintain the project area as forest for a 30 year period from the project start date. The project longevity score is calculated as $(30/2) = 15$. The total risk score and calculation of the risk buffer has also been revised as part of this revision.

Further, the mitigation factor (h, i) for the opportunity cost analysis has been revised as there is only a legal contractual agreement to maintain the project area as forest for a 30 year period rather than at least 100 years as previously stated.

Auditor Response: This finding contains a typo, and should indicate that the Tri-Party Agreement is legally binding for 30 years, instead of 35 years as stated. As indicated, the project longevity score has been correctly calculated to reflect the 30-year legal commitment. Therefore, the non-conformity has been resolved.

Closing Remarks: The Client's response adequately addresses the finding.

NIR 2012.54 dated 06/29/2012

Standard Reference: NA

Document Reference: Purus Project VCS PD (Final Draft Version, 5-17-12).pdf, Sec. 1.9; Memorial Descritivo do Seringal Itatinga.doc; Memorial do Seringal Porto Central-Sirgas.doc

Finding: The PD states that the Seringal Porto Central and Seringal Itatinga properties total 36,334 ha. However, the "Memorial Descritivo" documentation for the two properties, as provided by Moura & Rosa, indicates that the Seringal Porto Central parcel totals 18,144.5402 ha, while the Seringal Itatinga parcel totals 17,654.1165 ha. The summed area of the two parcels appears to be 35,798.6567 ha. Please explain the discrepancy between the total area of the Seringal Porto Central and Seringal Itatinga parcels as claimed in the PD and as independently calculated from the "Memorial Descritivo" documentation.

Client Response: The "Memorial Descritivo" is the officially approved documentation for demonstrating property boundaries, their accuracy, and their total area in Brazil. The property boundaries used in the preparation of the PD were incorrect as they did not use the final approved boundary, due to a miscommunication.

The area of the two parcels will be revised to 35,797 ha (see text in Section 1.9) in line with GIS file which supports the "Memorial Descritivo". Further, as this change alters the project area all references, calculations, and tables in the PD will be revised to incorporate this revision. The project area was revised downward to 34,702 ha (see text in Section 3.1.1.1).

Calculations and supporting GIS files have been submitted along with this written response, including files

in the folders: "Revised Project Boundaries", "PurusPropertyBoundary", and "Baseline Deforestation".

Auditor Response: The shapefiles provided in response to the finding support the assertions made in the Client Response section. The revised shapefile "PurusPropertyBoundary" shows an area of 17,652.512344 ha for the Seringal Itatinga parcel and 18,144.540243 ha for the Seringal Porto Central parcel. The area value for the Seringal Itatinga parcel is not identical to that stated within the "Memorial Descritivo"; however, the discrepancy (of approximately 2 ha) can reasonably be determined to be de minimis. The revised shapefile "PurusProjectArea2012.09.19" shows an area of 16,966.759597 ha for the Seringal Itatinga parcel and 17,735.632889 ha for the Seringal Porto Central parcel; the combined area of these parcels is 34,702.39 ha. Examination by the audit team indicated that the revised project boundary shapefile appropriately excludes nonforested area, as was verified with the original project boundary shapefile during the site visit. Therefore, the observed discrepancy has been resolved.

Closing Remarks: The Client's response adequately addresses the finding.

OFI 2012.55 dated 06/29/2012

Standard Reference: NA

Document Reference: NA

Finding: From careful assessment of the inventoried carbon stocks on plots 211C and 215C, the audit team estimated that the Purus Project forest carbon inventory underestimated the true carbon stocking by 22.4%. From careful review of plot cards, it was determined that a substantial difference in diameter measurements on several large trees constituted a likely root cause of the discrepancy. During on-site review of inventory methods, the audit team observed that large trees, while relatively rare in the project area, are present. These trees often have large buttress root systems that make measurement of diameter above the buttress difficult. While accurate measurement of diameter on such trees is admittedly quite difficult, it is also important for accurate accounting of carbon stock. The audit team observed that the inventory protocol employed lacked explicit, replicable procedures for measuring diameter on live, buttressed trees.

In the context of the methodology applied, the observed quantification errors will most likely result in conservative crediting of the project, and therefore the errors do not result in a non-conformance with the methodology or the VCS rules. However, the observed errors are indicative of a deficiency in the quality system with respect to the collection of forest carbon data. Such a deficiency may result in a non-conformance during a future reporting period.

Client Response: Thank you for your suggestion.

Auditor Response:

Closing Remarks: The Client's response adequately addresses the finding.

NIR 2012.56 dated 09/13/2012

Standard Reference: BL-UP V2.0, Sec. 4.2.2

Document Reference: Purus Project VCS PD 2012 09 06.doc, Sec. 3.1.4.3

Finding: As reported in the PD, "Option 1", as defined by the BL-UP module, is used to estimate post-deforestation carbon stocks. Option 1 requires the following:

"A list of likely post-deforestation land uses shall be established taking into account land uses on areas deforested in the reference region during the historical reference period. The land uses with the highest long-term carbon stocks are conservatively considered representative of future post-deforestation land use classes. A carbon stock is calculated from the highest carbon stock land-use class and used as a proxy for all post-deforestation carbon stocks in that land use during the project term. Note that in cyclical post-deforestation land-use systems the time-weighted average of stocks in a cycle shall be used."

Therefore, please provide evidence of the following:

- The establishment of a list of likely post-deforestation land uses, taking into account land uses on areas deforested in the reference region during the historical reference period
- The procedure used to select the land use with the highest long-term carbon stocks

The provided reference to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 4, Table 5.9 is not sufficient to demonstrate conformance to the requirements of the BL-UP module, as Table 5.9 provides "Default biomass carbon stocks present on land converted to cropland in the year following conversion". It is anticipated that long-term average carbon stocks for some land uses may be substantially different from the carbon stocks in the year following conversion.

Client Response: The justification for Cpost in Table 3.12 has been replaced with the following text.

"Option 1, the simple approach, was used in the estimation of post-deforestation carbon stocks.

A land use classification produced by the State of Acre indicated that forest in Acre State are converted into three non-forest classes including agriculture, pasture, and urban lands. As the deforestation in the project area is occurring in rural areas, the post-deforestation land uses do not include urban lands, but are limited to pasture and cropland.

After a thorough review of literature, the best source of information on biomass stocks was a local study by Salimon et al. entitled "Estimating state-wide biomass carbon stocks for a REDD plan in Acre, Brazil". This peer reviewed study lists biomass values from both pasture and cropland and was in part supported by the Acre Environment Office and Fundação de Tecnologia do Estado do Acre; two organizations which

are helping to develop the Acre state baseline. Salimon et al. lists the aboveground biomass stocks for both pasture and cropland. These values were converted to the total aboveground and belowground biomass stock using root to shoot ratios developed by Jackson et al. and using a carbon fraction of 0.47, as per the VM007 module. The resulting estimate for post-deforestation carbon stocks are 12.8 and 6.0 t C/ha for both pasture and cropland, respectively.

As pasture has the highest carbon stock of the post-deforestation land uses, the value of 12.8 t C/ha has been used as the post deforestation carbon stock. While we recognize the vast majority of this stock is herbaceous and not included with the Purus project boundaries, this value represents a conservative estimate of the post-deforestation carbon stock."

An excel file and land use map has been submitted as part of the response to this finding. Further, a excel table has also been submitted listing the literature review of carbon stocks in the post-deforestation land uses.

Auditor Response: This finding can be closed when the procedure for quantification of aboveground and belowground biomass is transparently documented, including the use of the "root to shoot ratios developed by Jackson et al".

Client Response 2: Zane Haxtema from SCS wrote in an email dated 7 November 2012, "As the procedure for quantification of aboveground and belowground biomass is now transparently documented, this finding can be closed.

Auditor Response 2: The audit team was able to review the workbook entitled "Finding 56 Biomass C Stock Table.xlsx", which transparently documented the procedure used to estimate post-deforestation carbon stocks in accordance with Option 1 of the BL-UP module. Therefore, the non-conformity was resolved.

Closing Remarks: The Client's response adequately addresses the finding.

NCR 2012.57 dated 09/13/2012

Standard Reference: BL-UP V2.0, Sec. 4.2.2

Document Reference: Purus Project VCS PD 2012 09 06.doc, Sec. 3.1.4.3

Finding: The BL-UP module contains the following guidance regarding the estimation of post-deforestation carbon stocks:

"Post-deforestation carbon stocks of the selected land-use classes shall be obtained from local studies

and, where examples of mature vegetation for a particular land-use do not exist in the reference area then data shall be obtained from credible and representative literature sources (e.g. IPCC GL 2006 or other credible literature sources). The local study areas shall include sites that represent the conditions and the land management practices identified as the most likely post-deforestation baseline conditions. Local data shall be based on a sampling scheme that produces conservative estimates of the carbon stocks. Where stocks accumulate through time, the mature stock shall be used and where stocks are in a cycle such as in shifting cultivation, the time-weighted average of C stocks in a cycle shall be used in option 1 and 2."

The above guidance only permits the use of "credible and representative literature sources" (e.g., the IPCC GL 2006) where "local studies" do not exist that meet the requirements of the methodology. It appears that the Salimon et al. (2011) study referenced by the PD may constitute a local study that meets the requirements of the PD. Please provide one of the following:

- Evidence that the Salimon et al. (2011) study does not meet the above requirements of the BL-UP module, and that no other local study exists that meets said requirements
- Evidence that the Salimon et al. (2011) study, or another local study, has been used to estimate post-deforestation carbon stocks

Client Response: We have revised Table 3.12 to use Salimon et al. (2011) as indicated in the response to Finding 56.

Auditor Response: As indicated within the Client Response, the values from the Salimon study are now used in preference to the values from the IPCC, in conformance with the requirements of the BL-UP module. Therefore, the nonconformity has been resolved.

Closing Remarks: The Client's response adequately addresses the finding.

NCR 2012.58 dated 09/13/2012

Standard Reference: CP-AB V1.0, Sec. II, p 13; VCS Standard V3.2, Sec. 3.5.1

Document Reference: Purus REDD project forest inventory 2012.09.06.doc, Sec. 7.3; Purus Project VCS PD 2012 09 06.doc, Sec. 2.6; Purus Equation Validation 2012.08.28.xlsx

Finding: The CP-AB module requires that, when performing validation of allometric equations through the "Limited Measurements" option, that the user implement the following step:

"Apply a biomass expansion factor [BEF] to estimate total aboveground biomass from stem biomass. For broadleaf tropical trees this factor shall be:

- o 1.38 for trees 20-40cm
- o 1.33 for trees 40-80cm

o 1.25 for trees $\geq 80\text{cm}^4$

Plot all the estimated biomass of all the measured trees along with the curve of biomass against diameter as predicted by the allometric equation. If the estimated biomass of the measured trees are distributed both above and below the curve (as predicted by the allometric equation) the equation may be used. The equation may also be used if the measured individuals have a biomass consistently higher than predicted by the equation. If plotting the biomass of the measured trees indicates a systematic bias to overestimation of biomass (>75% of the trees above the predicted curve) then destructive sampling must be undertaken, or another equation selected."

As stated within Section 2.6 of the PD and Section 7.3 of the document "Forest biomass carbon inventory for the Purus REDD Project, Acre State, Brazil", the following methodology deviation has been suggested:

"For validation of the allometric equation used to estimate biomass as a function of dbh, a ratio of stem biomass to total aboveground biomass of 0.656 was used (Higuchi et al, n = 315 trees from Amazonas, Brazil). This ratio, developed from regional data and thus more specific to the project site, was used instead of the pantropical biomass expansion factors provided in the REDD Modules Methodology, VM0007"

The VCS Standard states the following with respect to methodology deviations:

"Deviations from the methodology applied to the project are permitted where they represent a deviation from the criteria and procedures relating to monitoring or measurement (but not quantification) of GHG emission reductions or removals set out in the methodology. Deviations relating to any other part of the methodology shall not be permitted. Methodology deviations shall not negatively impact the conservativeness of the quantification of GHG emissions reductions or removals."

When expressed in the same terms as the BEF values set out in the methodology, the BEF value suggested for use by the project is (1/0.656), or approximately 1.52. As determined through analysis of the client-supplied workbook, when this BEF value is used, only approximately 59% of trees in the validation dataset have a biomass value as predicted by the allometric equation used that is greater than the biomass value as quantified through validation exercise.

However, as determined through analysis of the client-supplied workbook, when the BEF values set out in the methodology are used in place of the BEF value suggested for use by the project, approximately 77% of trees in the validation dataset have a biomass value as predicted by the allometric equation used that is greater than the biomass value as quantified through validation exercise. In this case, the allometric equation suggested for use by the project cannot be demonstrated to be valid through the "Limited Measurements" option, as described above.

Within the context of the above requirements of the CP-AB module, a deviation that allows the validation of an allometric equation that results in overestimation of the biomass of individual trees is likely to negatively impact the conservativeness of the quantification of GHG emissions reductions or removals. While the BEF value suggested for the project may be more accurate than the values required by the methodology, it is a higher value and therefore not as conservative.

As the deviation discussed above would negatively impact the conservativeness of the quantification of GHG emissions reductions or removals, it cannot be allowed by the audit team. Furthermore, the Brown (1997) equation has not been demonstrated to have been validated in accordance with the requirements of the CP-AB module.

Client Response: The proposed deviation cited in the finding has been removed from Section 2.6 of the PD, and the validation of the Brown equation has been redone using the BEF values noted in the methodology.

The phrase "Results of this equation were then conservatively adjusted downward using a calibration factor of 0.985." was added to Section 6.0 of the "Forest biomass carbon inventory for the Purus REDD Project, Acre State, Brazil". Further, the Brown et al equation was adjusted by adding in a calibration factor of 0.85. The revised Brown equation listed in the forest inventory report equals

"aboveground biomass (kg) = $((42.69 - 12.8 * (DBH) + 1.242 * (DBH)^2)) * 0.985$ "

All calculations depending on live aboveground biomass stocks have also been updated as part of this response. An excel file has been provided to the validator as part of this response to this finding which demonstrates that the adjusted Brown equation meets the requirements of the methodology.

The following deviation has been added to Section 2.6 of the PD: "A calibration factor of 0.985 was applied to the Brown (1997) equation to ensure use of this equation results in conservative estimate of live aboveground biomass."

Auditor Response: As noted in the Client Response, the project development team addressed the non-conformity documented in this NCR through the use of an adjustment factor (0.985) which reduces all estimates of the Brown equation such that, when so reduced, the Brown equation is able to meet with the equation validation criteria of the "Limited Measurements" option of the CP-AB module. This methodology deviation is consistent with the intent of the CP-AB module and complies with Section 3.5.1 of the VCS Standard. Therefore, the non-conformity has been resolved.

Closing Remarks: The Client's response adequately addresses the finding.

NIR 2012.59 dated 09/13/2012

Standard Reference: CP-AB V1.0, Sec. II, p 13; VCS Standard V3.2, Sec. 1; ISO 14064-2:2006, Sec. 5.7

Document Reference: Purus REDD project forest inventory 2012.09.06.doc, Sec. 7.3

Finding: The CP-AB module requires that, when performing validation of allometric equations through the "Limited Measurements" option, that the user implement the following step:

"Calculate stem volume from measurements and multiplying by species-specific density to gain biomass of bole."

Although the methodology does not prescribe a specific method to be used to calculate stem volume, it is a requirement of ISO 14064-2:2006, which is a required document for the VCS Program, that "When highly uncertain data and information are relied upon, the project proponent shall select assumptions and values that ensure that the quantification does not lead to over-estimation of GHG emissions reductions or removal enhancements."

Therefore, please provide source material (such as a reference to a published paper, textbook or trade journal) indicating that the equation used to calculate stem volume is derived from a reputable source. If such cannot be provided, please provide evidence that the equation used is conservative and unlikely to lead to over-estimation of GHG emission reductions or removals.

Client Response: The following citation was added to the "Purus REDD project forest inventory" and provided as part of the response to this finding.

Thaines, F., E. Muñoz Braz, P. Pova de Mattos, A.A. Ribeiro Thaines. 2010. Equações para estimativa de volume de madeira para a região da bacia do Rio Ituxi, Lábrea, AM (Equations for estimating timber volume in the region of the River Basin of Ituxi, Lábrea, Amazon, Brazil). Pesquisa Florestal Brasileira, Volume 30; Issue 64.

Auditor Response: The audit team reviewed the publication and found that it is specific to the Amazon region, as the research was conducted in the nearby state of Amazonas. The equation used to calculate cubic-foot volume in the allometric equation validation procedure was found to match equation 7 from the publication, which is suggested by the authors "for studies of biomass and carbon stock". Therefore, the information request has been satisfied.

Closing Remarks: The Client's response adequately addresses the finding.

NIR 2012.60 dated 09/20/2012

Standard Reference: VCS Standard V3.2, Sec. 3.12.1

Document Reference: Memorial do Seringal Porto Central-Sirgas.doc; M&R - Cetidão Matricúla-nº1920-PortoCentral - 14.03.12.pdf

Finding: The VCS Standard requires that "The project description shall be accompanied by documentary evidence establishing conclusively one or more of the following rights of use (see VCS document

Program Definitions for definition of right of use) accorded to the project proponent(s)..."

The PD states that the project proponents hold right of use over the project area. However, the documents provided thus far have not been sufficient to conclusively demonstrate such right of use for the Seringal Porto Central parcel.

The "Memorial Descritivo" for the above parcel, dated 2 June 2011, indicates that the total area of the parcel was 18,144.5402 hectares and that the owners were Paulo Silva Cesário Rosa and Felipe Moura Sales. A "certidão", dated 14 March 2012 and issued by the District of Sena Madureira, State of Acre, for the above parcel, indicates that the purchase of the parcel by Normando Rodrigues Sales was recorded on 8 June 2000 as AV-5-1920. The area that is stated at the time of recordation is 17,200.0000 hectares.

Please provide explanation and documentary evidence, as necessary, to explain the following:

- The discrepancy between 17,200.0000 hectares, as stated on the "certidão", and 18,144.5402 hectares, as stated on the "Memorial Descritivo"
- The discrepancy in ownership between Normando Rodrigues Sales (the apparent purchaser of the above parcel) and Silva Cesário Rosa and Felipe Moura Sales (the individuals listed on the "Memorial Descritivo"); please provide any documentation necessary to substantiate claims as to the transfer of ownership between the above individuals.
- The ownership of the above parcel by Moura e Rosa Empreendimentos Imobiliários LTDA, given that no documentation has previously been provided to substantiate the active partnership of Silva Cesário Rosa and Felipe Moura Sales in Moura e Rosa Empreendimentos Imobiliários LTDA

Client Response: For VCS Finding 2012.60:

The total area of Seringal Porto Central is 18,144.5402 hectares. The original "certidão" for Seringal Porto Central, which stated an area of 17,200 hectares, was issued prior to the geo-referencing of the parcel. After the geo-reference was completed, the area of the Seringal Porto Central was officially established at 18,144.5402 hectares, as described in the Memorial Descritivo do Seringal Porto Central-Sirgas.

Moura e Rosa Empreendimentos Imobiliários LTDA ("Moura & Rosa") was created by Normando Rodrigues Sales and Wanderley Cesário Rosa to ensure the continuity of ongoing projects and investments targeting the preservation of the Purus Project area. Normando and Wanderley are the Managing Directors of Moura & Rosa and the owners of Moura & Rosa are their sons Paulo Silva Cesário Rosa and Felipe Moura Sales. The document entitled, "M&R - Contrato Social- Moura & Rosa," was signed in February 2009 by Paulo Silva Cesário Rosa and Felipe Moura Sales to establish Moura e Rosa Empreendimentos Imobiliários LTDA ("Moura & Rosa"). The opening clause starting from "resolvem, de comum acordo..." Translates as "decide, by common agreement and in the best shape of law, constitute a company limited business under the following clauses and conditions. First Clause: From Corporate Name - The company carries the denomination's social Moura e Rosa Empreendimentos Imobiliários LTDA, headquartered at Av. Ceará nO364, Sala 01 – Bairro Cadeia Velha – Rio Branco – AC, CEP:

69910-000.”

Auditor Response: While sufficient information has been provided to address a number of the information requests of this finding, the following information request remains unsatisfied:

Please explain the discrepancy in ownership between Normando Rodrigues Sales (the apparent purchaser of the above parcel) and Silva Cesário Rosa and Felipe Moura Sales (the individuals listed on the “Memorial Descritivo”); please provide any documentation necessary to substantiate claims as to the transfer of ownership between the above individuals.

Therefore, the finding remains open.

Client Response 2: Two supporting documents have been provided as part of the response to this finding including:

- NRS - Escritura Doação Felipe, and
- NRS - Escritura Doação Paulo Silva.

The documents “NRS - Escritura Doação Felipe” and “NRS - Escritura Doação Paulo Silva” demonstrate the transfer of the Porto Central property from Normando Rodrigues Sales to Felipe Moura and Sales Paulo Silva Cesário Rosa, respectively.

In an email from Zane Haxtema dated 7 November 2012, “The documentation provided is sufficient to confirm the transfer of the Seringal Porto Central property from Normando to Paulo and Felipe, and therefore the NIR can be closed.”

Auditor Response 2: The documents referred to in the Client Response 2 section were provided to the audit team, and were sufficient to substantiate the transfer of the Seringal Porto Central property from Normando Rodrigues Sales to Silva Cesário Rosa and Felipe Moura Sales. Therefore, the information request has been resolved.

Closing Remarks: The Client’s response adequately addresses the finding.

NIR 2012.61 dated 10/05/2012

Standard Reference: BL-UP V3.0, Equation 15

Document Reference: Purus Project VCS PD 2012.09.28.doc, Sec. 3.1.3.3

Finding: The BL-UP module requires that Equation 15 be used to calculate the Figure of Merit. The audit

team previously reviewed the calculation of the Figure of Merit, including the values that were sourced from the spatial analysis, and verified the correctness of the value of 0.09 as claimed within the prior version of the PD. However, within the updated version of the PD, the stated value has changed, as have all sourced values. It is not clear to the audit team why this value should have changed. Therefore, please provide information to justify the change in calculation of the Figure of Merit value, including all supplementary datasets as necessary.

Client Response: In an email on 23 October 2012, Zane Haxtema of SCS stated "Becky was very helpful in leading me through the analysis that was done for the purpose of calculating the Figure of Merit. Therefore, this NIR will be closed."

Auditor Response: Subsequent to the issuance of this finding, Rebecca Dickson of TerraCarbon reviewed the revised quantification of the Figure of Merit statistic with the audit team during a Skype exchange on 23 October 2012. It is now clear to the audit team that the Figure of Merit statistic has been calculated in accordance with the requirements of the BL-UP module. Therefore, the information request has been resolved.

Closing Remarks: The Client's response adequately addresses the finding.

NCR 2012.62 dated 10/05/2012

Standard Reference: CP-AB V1.0, page 2; VCS Standard V3.2, Sec. 3.5.1

Document Reference: Purus Project VCS PD 2012.09.28.doc

Finding: In response to NCR 2012.36, the following has been stated:

"In relation to the Cecropia genera, the forest inventory will be updated to conservatively exclude Cecropia and thus the Delaney et al. (2000) equation will no longer be used. All text related to use of the Delaney et al. equation has been removed from the Purus REDD Project Forest Inventory report."

The CP-AB module requires the user to "Determine the tree dimensions... of all the trees above some minimum DBH in the sample plots." While trees of the Cecropia genera have been measured in the forest inventory, the exclusion of these trees is inconsistent with the requirement of the CP-AB module.

The proposed deviation is a deviation to the criteria and procedures for monitoring and measurement and is unlikely to have a non-conservative impact on the claimed GHG emission reductions and removals, so long as it is maintained for the duration of the project crediting period. However, the proposed deviation is not documented in Section 2.6 of the PD. In addition, the monitoring plan does not clarify that trees of the Cecropia genera are to be excluded from future inventories. Unless the monitoring plan is amended to exclude trees of the Cecropia genera from future inventories, the possibility exists for a nonconservative impact on the claimed GHG emission reductions and removals.

Client Response: The following deviation has added to Section 2.6 of the PD.

"Trees in the Cecropia genus will not be measured as part of the forest inventory. This 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."

The statement "Trees in the Cecropia genus will not be measured as part of the forest inventory." has been added to Section B2.3 of the PD. "Further, trees in the Cecropia genus were not measured and are conservatively excluded from the forest inventory." was also added to Section 3.1.2 of the "Forest biomass carbon inventory for the Purus REDD Project, Acre State, Brazil."

Auditor Response: The revised PD now appropriately lists the exclusion of trees in the Cecropia genus as a deviation to the methodology in Section 2.6. In addition, the future exclusion of trees from the Cecropia genus is appropriately clarified within the revised monitoring plan. Therefore, the non-conformity has been resolved.

Closing Remarks: The Client's response adequately addresses the finding.

NIR 2012.63 dated 10/05/2012

Standard Reference: BL-UP V3.0, Sec. 5, Step 2.1.1

Document Reference: Purus_AccuracyAssessment 2012.09.19.docx

Finding: The BL-UP module requires that the methodology user "collect high-resolution data from remote sensors (<5 x 5 m pixels) and/or from direct field observations for ground-truthing the medium resolution data collected in previous step." In response to NCR 2012.41, the accuracy assessment has been re-done using Google Earth imagery. However, it is not clear that the Google Earth imagery that was used conforms to the requirement of the BL-UP module. In addition, it is not clear that the revised accuracy assessment has been appropriately implemented, as the revised accuracy assessment was not previously reviewed by the audit team. Therefore, it will be necessary for the audit team to receive a demonstration that the revised accuracy assessment was conducted in accordance with the requirements of the BL-UP module.

Client Response: Basically, the only analytical procedure is comparing the actual forest/nonforest classes to the mapped forest/nonforest classes. That is 55 of 57 points were correctly classified as forest. This yields a 96.5% accuracy which was calculated by dividing 55 by 57 and then multiplying by 100 to convert to percentage. Similarly, 53 of 57 points were correctly classified as non-forest. This yields a 92.9% accuracy which was calculated by dividing 53 by 57 and then multiplying by 100 to convert to percentage.

Forest point incorrectly classified as non-forest include: Forest 21, Forest 58 (edge)

Non-forest point incorrectly classified as forest include: Non-forest 36, Non-forest 37, Non-forest 53 (edge), Non-forest 58

As not all ground truthing points were originally provided to the validator, the excel file "Purus_accuracy" and kml file "Points_add" were sent to Zane via email on 10/26/2012.

Auditor Response: During a Skype exchange on 15 October 2012, James Eaton of TerraCarbon demonstrated the revised procedure for the accuracy assessment using data from Google Earth, and provided evidence that the revised accuracy assessment was conducted in accordance with the requirements of the BL-UP module. Therefore, the information request has been resolved.

Closing Remarks: The Client's response adequately addresses the finding.

NCR 2012.64 dated 10/05/2012

Standard Reference: BL-UP V3.0, Sec. 5, Step 4.2.1

Document Reference: Purus Project VCS PD 2012.09.28.doc, Tables 3.9, 3.10 and 3.11

Finding: The referenced tables in the PD indicate that parameters C(BB_tree,i), C(SOC,i) and C(DW,i) are sourced from the "forest inventory report". However, the BL-UP module requires that "It is conservatively assumed that parameters CBB_tree,i CSOC,i and CDW,i are equal to zero (i.e. that no emissions take place from these pools in the baseline)." Therefore, the setting of the above parameters to a nonzero value as sourced from the forest inventory report is not consistent with the requirements of the BL-UP module.

Client Response: The statement was mistakenly included in version 3.0 of the BL-UP module and has been removed from the current version the BL-UP module, 3.1. This PD has been updated to be inline with the most current versions of the BL-UP module (version 3.1) and VM0007 methodology (version 1.3).

Auditor Response: Subsequent to the issuance of this finding, a new version (V3.1) of the BL-UP module was released, effective immediately. The requirement cited within this finding is not contained

within the new version. Therefore, the finding is no longer relevant and can be closed.

Closing Remarks: The Client's response adequately addresses the finding.

NIR 2012.65 dated 10/09/2012

Standard Reference: VCS Program Definitions V3.4, definition of "model"; VCS Standard V3.3, Sec. 3.1.4 and 4.1.6(2)-(6)

Document Reference: NA

Finding: Sec. 3.1.4 of the VCS Standard requires that "Where projects apply methodologies that permit the project proponent its own choice of model (see VCS document Program Definitions for definition of model), such model shall meet with the requirements set out in Section 4.1.6(2)-(6) and it shall be demonstrated at validation that the model is appropriate to the project circumstances (ie, use of the model will lead to an appropriate quantification of GHG emission reductions or removals)." As set out in the VCS Program Definitions, "model" is defined as "A formula or set of formulae that uses parameters and input values to establish the value of one or more output variables". The allometric equations used to predict the aboveground and belowground biomass of trees within the project area fall under the above definition.

Sec. 4.1.6(2)-(6) states:

"Where methodologies mandate the use of specific models to simulate processes that generate GHG emissions (ie, the project proponent is not permitted to use other models), the following applies, given the note below:

- 2) Model parameters shall be determined based upon studies by appropriately qualified experts that identify the parameters as important drivers of the model output variable(s).
- 3) Models shall have been appropriately reviewed and tested (eg, ground-truthed using empirical data or results compared against results of similar models) by a recognized, competent organization, or an appropriate peer review group.
- 4) All plausible sources of model uncertainty, such as structural uncertainty or parameter uncertainty, shall be assessed using recognized statistical approaches such as those described in 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 1, Chapter 3.
- 5) Models shall have comprehensive and appropriate requirements for estimating uncertainty in keeping with IPCC or other appropriate guidance, and the model shall be calibrated by parameters such as geographic location and local climate data.
- 6) Models shall apply conservative factors to discount for model uncertainty (in accordance with the requirements set out in Section 4.1.4), and shall use conservative assumptions and parameters that are likely to underestimate, rather than overestimate, the GHG emission reductions or removals.

Note – The criteria set out in (2)-(6) above are targeted at more complex models. For simple models,

certain of these criteria may not be appropriate, or necessary to the integrity of the methodology. Such criteria may be disregarded, though the onus is upon the methodology developer to demonstrate that they are not appropriate or necessary."

Please provide evidence that the allometric equations used to predict aboveground and belowground biomass for trees within the project area comply with the criteria set out above, or if such criteria may be disregarded, demonstrate that they are not appropriate or necessary.

Client Response: Accounting of uncertainty currently follows all methodology requirements. Further details on the spatial model and allometric equation, demonstrating the appropriateness of their application in the context of VCS 4.1.6, are provided below.

The model employed for projecting the location of deforestation, Idrisi's Land Change Modeler (LCM) using the multi-layer perceptron algorithm (MLP) meets the requirements of section 4.1.6(2)-(6) of the VCS standard as required by section 3.1.4 of the VCS standard as elaborated below:

4.1.6.2 Model parameters tested for inclusion into the model were based upon feedback from local experts on regional drivers of land cover change, as well as from regional and global studies that identify important driver variables. LCM was developed using case studies in South America, and multiple cases have demonstrated the host of important variable to consider for inclusion. Further these variables are tested against actual change (ground truthed) within the modeling process through a separation of modeling calibration and confirmation intervals which serves to identify the variables with the most predictive capacity. Each model run is separately evaluated for performance so that the important driving factors as measured by final predictive capacity, are incorporated in the final model.

4.1.6.3 The model has been reviewed and tested both in peer review and by competent organizations. In a comparative study of the predictive accuracy of land-use and land-cover change models, Eastman et al (2005) evaluated multiple methods applied to the generation of transition potentials including the Weights of Evidence, empirical probabilities, logistic regression, and the Multi-Layer Perceptron neural network. The main conclusion of that work is that the Multi-Layer Perceptron (MLP) has better overall predictive accuracy compared to other approaches. This was also confirmed in a study by Kim (2010) where MLP had the highest predictive accuracy compared to logistic regression and empirical frequency based models.

4.1.6.4-6 Model uncertainty is incorporated through the modeling process. Through the evaluation of multiple model runs for predictive accuracy using the Figure of Merit (FOM) measure, the best possible model is chosen. The Figure of Merit not only ensures that the most accurate model is chosen, it also sets the minimum acceptable accuracy of the model. By meeting this threshold, the question of uncertainty is addressed (VCS methodologies address uncertainty either by quantifying and discounting it, or by setting minimum thresholds for allowable, and un-discounted, uncertainty). In a similar fashion to setting the minimum accuracy for classification procedure, and then accepting the classification output when it meets this threshold, if the FOM threshold is met no further uncertainty deductions are required.

-Eastman J R, Van Fossen M E, and Solorzano L A 2005 Transition potential modeling for land

cover change. In Maguire D J, Batty, and Goodchild M F (eds), GIS, Spatial Analysis and

Modeling. Redlands CA, ESRI Press: 357–86.

-Kim, O S. 2010. An Assessment of Deforestation Models for Reducing Emissions from Deforestation and Forest Degradation (REDD). Transactions in GIS. 14(5): 631-654.

The Brown 1997 allometric equation used to estimate aboveground biomass as a function of DBH was produced from a peer-reviewed and published research effort involving a global dataset of destructively-sampled tropical trees. The application of the equation to the project was validated in accordance with methodology VM0007 module CP-AB, ensuring that it does not produce non-conservative results in the project context. Beyond this equation validation, methodology VM0007 (module X-UNC) requires no further assessment (or discounting) of uncertainty from regression error. Similarly the Cairns et al. 1997 used to estimate root biomass was produced from a peer-reviewed and published research effort involving a global dataset. In an email from Carolyn Ching, VCS, from Nov 26 2012, “ For the allometric equation, I don’t think it is necessary that the project proponent analyze the statistical uncertainty of the equation. Rather, it is important that the project proponent demonstrate that this equation were derived in a manner consistent with these requirements.”

-Brown, S., 1997. Estimating biomass and biomass change of tropical forests: A primer. FAO Forestry Paper: vii, 55 p.

-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.

Auditor Response: The information provided in the Client Response section for the Land Change Modeler (LCM) is sufficient to demonstrate conformance to Section 4.1.6(2)-(6) of the VCS Standard.

With respect to the Brown et al. (1997) equation, sufficient information was provided to satisfy criteria (2), (4), (5) and (6) of the VCS Standard V3.3, Section 4.1.6. However, it was not immediately clear that the Brown et al. (1997) equation complied with criterion (3) as it was not obvious to the audit team that the model was “appropriately reviewed and tested... by a recognized, competent organization, or an appropriate peer review group”.

With respect to the Cairns et al. (1997) equation, sufficient information has been provided to satisfy criteria (2), (4), (5) and (6) of the VCS Standard V3.3, Section 4.1.6. However, it was obvious that the equation was reviewed in accordance with criterion (3), it was not obvious to the audit team that the equation was tested by a recognized, competent organization, or an appropriate peer review group, as required by the VCS Standard.

In addition, no information was provided regarding the conformance of the equation for estimation of aboveground biomass in palm trees, as set out in Equation 4.2 in the PD, to Section 4.1.6(2)-(6) of the

VCS Standard.

In response to the audit team's concerns, a conversation was held with VCSA on 13 December to clarify the issues. During that phone call it was clarified that the palm equation can be considered a "simple" equation with respect to Section 4.1.6(2)-(6), because it is based on a well-established geometric function that is likely to be conservative in all cases (see NIR 2012.37).

As a follow-up to that phone call, Carolyn Ching of VCSA provided the following written guidance with respect to the conformance of the equations sourced from the Brown et al. (1997) and Cairns et al. (1997) manuscripts, in an email dated 19 December 2012:

"Paragraph 3 [of Section 4.1.6 of the VCS Standard] states that models shall be appropriately reviewed and tested by a recognized competent organization or an appropriate peer review group. The Cairns et al 1997 equation was published in Oecologia following the scientific peer review process and as such meets the requirement as being appropriately reviewed and tested by an appropriate peer review group. The Brown 1997 publication reviewed and tested the results of their models and was published by FAO, the equation conforms to the requirement that the model should be reviewed and tested by a recognized competent organization."

Therefore, sufficient information has been provided to justify the conformance of all models used to Section 4.1.6(2)-(6) of the VCS Standard, and this finding can be closed.

Closing Remarks: The Client's response adequately addresses the finding.

NIR 2012.66 dated 10/09/2012

Standard Reference: VCS Standard V3.3, Sec. 3.1.5 and 4.1.7(1)

Document Reference: NA

Finding: Sec. 3.1.5 of the VCS Standard requires that "Where projects apply methodologies that permit the project proponent its own choice of third party default factor or standard to ascertain GHG emission data and any supporting data for establishing baseline scenarios and demonstrating additionality, such default factor or standard shall meet with the requirements set out in Section 4.1.7(1)."

Sec. 4.1.7(1) states:

"Where methodologies use default factors and standards to ascertain GHG emission data and any supporting data for establishing baseline scenarios and demonstrating additionality, the following applies:

1) Where the methodology uses third party default factors and/or standards, such default factors and standards shall meet with the requirements for data set out in Section 4.5.6, *mutatis mutandis*."

Sec. 4.5.6 states:

"Appropriate data sources for developing performance methods include economic and engineering

analyses and models, peer-reviewed scientific literature, case studies, empirical data, and common practice data. The data and dataset derived from such data sources shall meet the requirements below. The CDM Guidelines for quality assurance and quality control of data used in the establishment of standardized baselines also provides useful related guidance.

- 1) Data collected directly from primary sources shall comply with relevant and appropriate standards, where available, for data collection and analysis, and be audited at an appropriate frequency by an appropriately qualified, independent organization.
- 2) Data collected from secondary sources shall be available from a recognized, credible source and must be reviewed for publication by an appropriately qualified, independent organization or appropriate peer review group, or be published by a government agency.
- 3) Data shall be from a time period that accurately reflects available technologies and/or current practice, and trends, within the sector. Selection of the appropriate temporal range shall be determined based on the guidance provided in the GHG Protocol for Project Accounting, Chapter 7 (WRI-WBCSD).
- 4) Where sampling is applied in data collection, the requirements set out in Section 4.1.4 shall be adhered to. The methodology developer shall demonstrate that sampling results provide an unbiased and reliable estimate of the true mean value (ie, the sampling does not systematically underestimate or overestimate the true mean value).
- 5) Data shall be publicly available or made publicly available. Proprietary data (eg, data pertaining to individual facilities) may be aggregated, and therefore not made publicly available, where there are demonstrable confidentiality considerations. However, sufficient data shall be publicly available to provide transparency and credibility to the dataset.
- 6) All data shall be made available, under appropriate confidentiality agreements as necessary, to the VCSA and each of the validation/verification bodies assessing the proposed performance benchmark methodology, to allow them to reproduce the determination of the performance benchmark. Data shall be presented in a manner that enables them to independently assess the presented data.
- 7) Data shall be appropriate to the methodology's geographic scope and the project activities applicable under it.
- 8) All reasonable efforts shall be undertaken to collect sufficient data and the use of expert judgment as a substitute for data shall only be permitted where it can be demonstrated that there is a paucity of data. Expert judgment may be applied in interpreting data. Where expert judgment is used, good practice methods for eliciting expert judgment shall be used (eg, IPCC 2006 Guidelines for National GHG Inventories).
- 9) Where data must be maintained in a central repository on an on-going basis (eg, in a database that holds sector data for use by project proponents in establishing specific performance benchmarks for their projects), there shall be clear and robust custody arrangements for the data and defined roles and responsibilities with respect to the central repository."

The methodology allows project proponents to make a choice of third party default factor with respect to the estimation of post-deforestation carbon stocks in module BL-UP. For the third party default factors

that are chosen, please provide evidence of conformance to the above requirements.

Client Response: Referenced default parameters, including post-deforestation carbon stock values, wood densities, palm specific gravity, and the carbon fraction of biomass, are sourced from publically available, peer-reviewed, and published scientific journals. “Peer-reviewed scientific literature” and “empirical data” are specifically noted as appropriate data sources in VCS 4.5.6 (referenced in 4.1.7). Following methodological guidance in choice of data, in all cases, the most recent and site-specific values available were chosen to employ in project accounting. Beyond this, it is impractical to access raw source data from these studies, or directly assess their measurement/analysis procedures, and it is assumed that the scientific peer review process is robust.

Post-deforestation carbon stock estimates are sourced from Salimon et al. 2011 and Jackson et al.1996. Biomass values for the baseline land uses of pasture and cropland are from Salimon et al. Default belowground biomass was determined using root to shoot ratios for tropical grasslands and crops as developed by Jackson et al.

-Salimon et al. 2011. Estimating state-wide biomass carbon stocks for a REDD plan in Acre, Brazil. *Forest Ecology and Management* 262: 555-560.

-Jackson, R.B., Canadell, J., Ehleringer, J.R., Mooney, H.A., Sala, O.E. & Schulze, E.D. 1996. A global analysis of root distributions for terrestrial biomes. *Oecologia* 108: 389-411.).

Wood densities for use in validation of the allometric equation are sourced from Chave et al. 2006.

-J. Chave, H. Muller-Landau, T. Baker, T. Easdale, H. ter Steege, CO Webb. 2006. Regional and phylogenetic variation of wood density across 2,456 neotropical tree species. *Ecological Applications* 16, 2356-2367.

Mean Amazonian palm specific gravity used in estimating palm biomass is sourced from Baker et al. 2004.

-Baker TR., Phillips OL., Malhi Y., Almeida S., Arroyo L., Di Fiore A., Killeen TJ., Laurance SG., Laurance, WF., Lewis SL., Lloyd J., Monteagudo A., Neill DA., Patiño S., Pitman NC., Silva JN., Vásquez Martínez R. 2004. Variation in wood density determines spatial patterns in Amazonian forest biomass. *Global Change Biology* 10:545-562.

Carbon fraction of dry matter is sourced from IPCC 2006GL, as specifically permitted by methodology VM0007 module CP-AB "Values from the literature (e.g. IPCC 2006 INV GLs AFOLU Chapter 4 Table 4.3) shall be used if available, otherwise default value of 0.47 t C t-1 d.m. can be used"

For all of the above default values, judged to be appropriate in the context of the project, methodology VM0007 (module X-UNC) requires no assessment or discounting of uncertainty.

Auditor Response: All default factors listed in the Client Response section have been sourced from secondary sources (i.e., none have been sourced directly from data collected by the project proponent). Therefore, criteria (1) and (4) do not apply. The evidence provided in the Client Response section for each default factor is sufficient to demonstrate the conformance of each default factor to criterion (2). All default factors are appropriate for the time period in question (i.e., the baseline period from 2011 to 2020) and the project's geographic scope and the , and thus comply with criteria (3) and (7). All default factors are derived from actual data (as opposed to expert judgment), and all default factors are publically available and appropriately archived as part of peer-reviewed or IPCC publications, and thus comply with criteria (5), (6), (8) and (9).

Therefore, sufficient evidence has been provided to justify the closure of this finding.

Closing Remarks: The Client's response adequately addresses the finding.

NCR 2012.67 dated 10/09/2012

Standard Reference: VCS Standard V3.3, Sec. 3.18.1; Project Description Template, V3.1

Document Reference: Purus Project VCS PD 2012.09.28.doc

Finding: The VCS Standard requires that "The project and its context shall be described in the project description using the VCS Project Description Template (or approved GHG program project description template where the project is requesting registration under an approved GHG program)". A new version of the Project Description Template (V3.1) was released on 4 October 2012 and is effective immediately. Therefore, use of the out-of-date template constitutes a non-conformity with respect to the VCS rules.

Client Response: The PD has been updated to conform with the Project Description Template (V3.1) released on 4 October 2012.

Auditor Response: Subsequent to the issuance of this finding, VCSA instituted a six-month grace period for use of the updated Project Description Template, and therefore the continued use Version 3.0 does not, at the time of writing of this response (3 December 2012), constitute a non-conformity with respect to the VCS rules. Nonetheless, the audit team has able to confirm that the updated template has been adopted.

Closing Remarks: The Client's response adequately addresses the finding.

NCR 2012.68 dated 12/19/2012

Standard Reference: VCS Standard V3.3, Sec. 3.18.2(4)

Document Reference: Purus Project VCS PD 2012.12.14.doc, Sec. 3.1.4.5

Finding: The VCS Standard requires that the PD contain "A calculation of baseline emissions, project emissions, leakage emissions (if applicable) and net GHG emission reductions and removals."

The PD states that "As GHG emissions in the baseline are conservatively assumed to be zero, the net CO₂ emissions in the baseline is equal to the sum of the baseline carbon stock change in all pools ($\Delta\text{C}_{\text{BSL,unplanned}} = \Delta\text{C}_{\text{TOT}}$). $\Delta\text{C}_{\text{BSL,PA,unplanned}} = 1,709,253 \text{ } 2,348,408 \text{ t CO}_2\text{e}$ "

The value stated above is not consistent with the value stated in Table 3.14 of the PD. The inconsistency could be confusing to future readers.

Client Response: [The client responded by providing an updated version of the PD, entitled "Purus Project VCS PD 2012.12.19.doc", wherein the identified nonconformity was reconciled.]

Auditor Response: The revised PD now indicates that " $\Delta\text{C}_{\text{BSL,PA,unplanned}} = 1,709,253 \text{ t CO}_2\text{e}$ ", which is consistent with Table 3.14 of the PD. Therefore, the identified discrepancy has been resolved.

Closing Remarks: The Client's response adequately addresses the finding.

NCR 2012.69 dated 12/19/2012

Standard Reference: VCS Standard V3.3, Sec. 3.18.2(4)

Document Reference: Purus Project VCS PD 2012.12.14.doc, Table 3.32

Finding: The VCS Standard requires that the PD contain "A calculation of baseline emissions, project emissions, leakage emissions (if applicable) and net GHG emission reductions and removals."

Table 3.32 of the PD contains a calculation of the net GHG emission reductions and removals for the years 2012-2020. However, the calculation is missing for the year 2011.

Client Response: [The client responded by providing an updated version of the PD, entitled "Purus Project VCS PD 2012.12.19.doc", wherein the identified nonconformity was reconciled.]

Auditor Response: Table 3.32 now includes a calculation of the net GHG emission reductions and

removals for the years 2011. Therefore, the identified nonconformity has been resolved.

Closing Remarks: The Client's response adequately addresses the finding.

NCR 2012.70 dated 12/19/2012

Standard Reference: VCS Standard V3.3, Sec. 3.18.2(3); M-MON V2.1, Equation 5

Document Reference: Purus Project VCS PD 2012.12.14.doc, Tables 3.9a and 3.9b; PurusProject Tables 2012.12.14.xls

Finding: The VCS Standard requires that the PD contains "A description of all data and parameters, available at validation, used for measuring, monitoring and calculating GHG emissions and net GHG emission reductions or removals..."

The values provided for parameter C(BSL,i) in Tables 3.9a and 3.9b of the PD are not consistent with the values reported in the "3.1 BL-UP Carbon Stocks" worksheet in the "PurusProject Tables 2012.12.14.xls" workbook. Because parameter C(BSL,i) may be used for ex post quantification of project emissions, it is important that this parameter be correctly reported within the PD.

Client Response: [The client responded by providing an updated version of the PD, entitled "Purus Project VCS PD 2012.12.19.doc", wherein the identified nonconformity was reconciled.]

Auditor Response: Tables 3.9a and 3.9b now contain values for parameter C(BSL,i) that are consistent with those that are reported in the "3.1 BL-UP Carbon Stocks" worksheet in the "PurusProject Tables 2012.12.14.xls" workbook. Therefore, the identified nonconformity has been resolved.

Closing Remarks: The Client's response adequately addresses the finding.

NCR 2012.71 dated 12/19/2012

Standard Reference: VCS Standard V3.3, Sec. 3.18.2(3)

Document Reference: Purus Project VCS PD 2012.12.14.doc, page 81; PurusProject Tables 2012.12.14.xls

Finding: The VCS Standard requires that the PD contains "A description of all data and parameters, available at validation, used for measuring, monitoring and calculating GHG emissions and net GHG emission reductions or removals..."

The value provided for parameter C(OLB) in the parameter table on page 81 is not consistent with the value reported in the "Section 3.3" worksheet of the "PurusProject Tables 2012.12.14.xls" workbook. Such inconsistency may cause confusion to future readers of the PD.

Client Response: [The client responded by providing an updated version of the PD, entitled "Purus Project VCS PD 2012.12.19.doc", wherein the identified nonconformity was reconciled.]

Auditor Response: The value provided for parameter C(OLB) is now consistent with that which is reported in the "Section 3.3" worksheet of the "PurusProject Tables 2012.12.14.xls" workbook. Therefore, the identified nonconformity has been resolved.

Closing Remarks: The Client's response adequately addresses the finding.

OFI 2012.72 dated 12/19/2012

Standard Reference: VCS Standard V3.3, Sec. 5.3.1(4)

Document Reference: Purus Project VCS PD 2012.12.14.doc, Equation 4.3; Purus Forest Inventory data 2012.10.30v.xls

Finding: The project has opted to use an equation from Cairns et al. (1997) to quantify biomass in the belowground biomass pool. The equation is set out in Equation 4.3 of the PD as:

Root Biomass Density (t/ha) = EXP (-1.085 + 0.925 LN(aboveground biomass density))

The equation is implemented within the "Purus Forest Inventory data 2012.10.30v.xls" workbook as:

Root Biomass Density (t/ha) = EXP (-1.085 + 0.926 LN(aboveground biomass density))

However, neither of these equations is strictly consistent with the equation as set out in Table 3 of the Cairns et al. (1997) report. That equation is:

Root Biomass Density (t/ha) = EXP (-1.085 + 0.9256 LN(aboveground biomass density))

The audit team has found that the differences between the three equations set out above lead to quantitatively immaterial differences in belowground biomass, and therefore such difference have no potential to exceed the materiality threshold as set out in the VCS Standard. However, an opportunity exists for the project to better conform to the requirements of the VCS rules by consistently adhering to the correct equation.

Client Response:

Auditor Response:

Closing Remarks: The Client's response adequately addresses the finding.

NCR 2012.73 dated 12/26/2012

Standard Reference: AFOLU Requirements V3.3, Sec. 3.7.3; VCS Program Update Catalog

Document Reference: Purus Project VCS PD 2012.12.19.doc, Appendix A

Finding: The VCS AFOLU Requirements states that "Projects shall prepare a non-permanence risk report in accordance with VCS document AFOLU Non-Permanence Risk Tool at both validation and verification." The Non-Permanence Risk Report Template V3.1 was released on 4 October 2012 and is effective immediately, as is indicated in the VCS Program Update Catalog (http://v-c-s.org/sites/v-c-s.org/files/VCS%20Program%20Update%20Catalogue%2C%2017%20DEC%202012_0.pdf). Although the client's risk report is a component of the PD, rather than a stand-alone document, it is clear from comparison of the risk report with updated Non-Permanence Risk Report Template that the updated Non-Permanence Risk Report Template has not been used as the basis for the risk report.

Client Response: The VCS AFOLU Non-Permanence Risk Report has been updated to the latest V3.1 template.

Auditor Response: As indicated, the risk report is now consistent with the updated template. Therefore, the identified discrepancy has been resolved.

Closing Remarks: The Client's response adequately addresses the finding.

NCR 2012.74 dated 12/26/2012

Standard Reference: VCS Standard V3.3, Sec. 3.18.1

Document Reference: Purus Project VCS PD 2012.12.19.doc

Finding: The VCS Standard requires that "The project and its context shall be described in the project description using the VCS Project Description Template". The VCS Project Description Template requires that a table of contents be included at the beginning of the document. While a table of contents has been included at the beginning of the PD, that table does not provide the correct page numbers in all instances (e.g., the table indicates that the Non-Permanence Risk Report begins on page 90, whereas it actually begins on page 109).

Client Response: The table of contents has been updated with the correct page numbers.

Auditor Response: The table of contents within the PD continues to not reflect the correct page numbers. For example, the table of contents indicates that the non-permanent risk report begins on page 107, whereas it actually begins on page 106. Therefore, the nonconformity has not been resolved.

Client Response 2: Page numbers now fixed.

Auditor Response 2: As the table of contents now reflects the page numbers within the report, the nonconformity has been resolved.

Closing Remarks: The Client's response adequately addresses the finding.

NCR 2012.75 dated 12/28/2012

Standard Reference: VCS AFOLU Non-Permanence Risk Tool V3.2, Sec. 2.3.1

Document Reference: Purus Project VCS PD 2012.12.28.doc, Appendix A1.2

Finding: The VCS AFOLU Requirements states that "Projects shall prepare a non-permanence risk report in accordance with VCS document AFOLU Non-Permanence Risk Tool at both validation and verification."

Under the table "Land Tenure and Resource Access/Impacts", the risk score claimed for item (e) is not consistent with the risk score that is allowed by the AFOLU Non-Permanence Risk Tool. The risk score claimed for this item is -2, whereas the AFOLU Non-Permanence Risk Tool only allows a risk score of 5 (or 0 if the item is not applicable).

Client Response: The VCS AFOLU Non-Permanence Risk Report has been updated.

Auditor Response: The risk report now indicates that item (e) is not applicable, and that a score of 0 should therefore be assigned. As item (e) is only relevant to Wetland Rewetting and Conservation projects, the audit team agrees with this assessment. Therefore, the nonconformity has been resolved.

Closing Remarks: The Client's response adequately addresses the finding.