

THE ENVIRA AMAZONIA PROJECT – A TROPICAL FOREST CONSERVATION PROJECT IN ACRE, BRAZIL



Document Prepared By: Environmental Services, Inc.

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Summary:

Environmental Services, Inc., (ESI) was contracted by CarbonCo, LLC, on 16 April 2014 to conduct the validation of *The Envira Amazonia Project: A Tropical Forest Conservation Project in Acre, Brazil*. The Envira Amazonia Project follows the framework of Reducing Emissions from Deforestation and Degradation (REDD) and is achieving Greenhouse Gas (GHG) emission reductions as well as tropical forest protection and conservation through payments for ecosystem services. This project is being developed in conjunction with the Climate, Community and Biodiversity Standard (CCBS). Proposed project activities involved engaging a large landowner willing to forego ranching for conversion of forest land, working with the local communities surrounding the project area, engaging Acre state officials working on reducing deforestation pressures on the regional/state level, and putting into operation the REDD project implementation plan with the help of local partners.

The validation process employed by ESI utilized an internal guiding framework and specifically incorporated VCS documents and ISO 14064-3 to develop and implement a Validation & Sampling Plan. The validation team assessed the Envira Amazonia Project's compliance under the Verified Carbon Standard (VCS) Version 3 (and all associated updates), the selected methodology, and the Project Description. The Envira Amazonia project was found to be appropriately eligible under Project Scope 14 for "Agriculture, Forestry, and other Land Use" (AFOLU), the project category "Reduction Emission from Deforestation and Degradation" (REDD), and activity type "Avoided Planned Deforestation" (APD).

The scope of the validation included the GHG project implementation status; physical infrastructure, activities, technologies as well as processes of the Envira Amazonia Project; GHG sources, sinks and/or reservoirs; types of GHG's; and time periods covered. The geographic validation scope was defined by the project boundaries, the carbon reservoir types, management activities, growth and yield models, the inventory program, and contract periods.

The validation criteria followed the guidance documents provided by VCS and included the following: VCS Standard (25 March 2015, v3.5), VCS Program Guide (08 October 2013, v3.5), Program Definitions (08 October 2013, v3.5), AFOLU Requirements (08 October 2013, v3.4), AFOLU Non-Permanence Risk Tool (4 October 2012, v3.2), and the VCS Methodology VM0007: "REDD Methodology Modules (REDD-MF)" v1.5 (09 March 2015) and its associated modules and tools.

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

ESI here confirms all validation activities including objectives, scope and criteria, level of assurance, monitoring and project documentation adhere to VCS Version 3 and all associated updates as documented in this report are complete. ESI concludes without any qualifications or limiting conditions that the Envira Amazonia Project Description dated 04 April 2015 (v1.2) meets the requirements of VCS Version 3 and all associated updates.

The GHG assertion provided by CarbonCo and validated by ESI will result in the expected GHG emissions reduction or removal of 20,170,532 tons CO₂e reductions over the initial 10 year reporting period (2013 - 2022). The project will contribute 23% (4,639,222 tons CO₂e) of the gross reductions to the buffer pool, and there will be a total expected emission reduction of 12,596,462 tons CO₂e after accounting for leakage (2,934,848 tons CO₂e).

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1 INTRODUCTION

1.1 Objective

CarbonCo, LLC (Project Proponent) commissioned Environmental Services, Inc. (ESI) (Validator) to conduct the validation of emissions reductions from planned deforestation for the *Envira Amazonia Project* registered under the Verified Carbon Standard (VCS). The project category is Reducing Emissions from Deforestation and Degradation (REDD), specifically “VM0007 REDD Methodology Modules”, and framework for activities related to Avoided Planned Deforestation (APD) within project scope 14: Agriculture, Forest and other Land Use (AFOLU) Requirements for the crediting period beginning on August 2, 2012 and ending on August 1, 2022. The validation objective of the *Envira Amazonia Project* included an assessment of compliance with the VCS Program Guide, VCS Standard, AFOLU Requirements, and the likelihood that implementation of the planned GHG project will result in the GHG emissions reductions/removal as stated by the Project proponent (ISO 14064-3:2006).

1.2 Scope and Criteria

The scope of a validation generally includes the GHG project and baseline scenarios; physical infrastructure, activities, technologies and processes of the GHG project; GHG sources, sinks and/or reservoirs; types of GHG's; and time periods covered. The geographic validation scope is defined by the project boundary, the carbon reservoir types, management activities, growth and yield models, inventory program, and contract periods. The scope of the *Envira Amazonia Project* was outlined by the Project Proponent within the Project Description and is re-defined as follows for the GHG emissions reduction/removals project:

Baseline Scenario	Planned deforestation - conversion to large-scale cattle ranches (forest clearing followed by the establishment of managed pasture) Agents of deforestation – the project proponent/landowner.
Activities/Technologies/Processes	Avoided planned deforestation – utilizing VM0007 v1.5
Sources/Sinks/Reservoirs	• Above ground live tree biomass • Below ground live tree biomass • Dead wood • Harvested wood products
GHG Type	CO ₂
Time Period	Start Date: 02 August 2012
Project Boundary	Project Area: 39,300.6 hectares Project Property: 200,000 hectares Privately-owned land in Acre, Brazil. Project seeks to conserve the entire property, but the Project activities will

	specifically focus on the subset Project Area of 39,300.6 hectares.
GHG credits expected to be eligible for issuance as VCU's for the initial 10 year baseline crediting period	12,596,462 tCO ₂ e

1.3 Level of Assurance

The level of assurance is used to determine the depth of detail that the validator places in the Validation and Sampling Plan to determine if there are any errors, omissions, or misrepresentations (ISO 14064-3:2006). For VCS validations, ESI will assess the project's description of general principles, eligibility, data sources, inventory plans, documentation, ex ante calculations, etc., for conformance with the VCS Program to meet *reasonable assurance*.

1.4 Summary Description of the Project

The *Envira Amazonia Project* was initiated by CarbonCo, LLC to protect and conserve tropical forest in the state of Acre, Brazil by providing payments for ecosystem services. This type of project is known as a Reducing Emissions from Deforestation and forest Degradation project (REDD project). This project is being developed and registered under the Verified Carbon Standard (VCS) and the Climate, Community and Biodiversity Standard (CCBS). Project development involved engaging a large landowner willing to forgo conversion of forest land to a ranching operation, working with the local communities surrounding the project area, engaging Acre state officials working on reducing deforestation pressures on the regional/state level, and putting into operation the REDD project implementation plan with the help of local partners.

The *Envira Amazonia Project* will generate GHG emission reductions by foregoing forest conversion to grassland in favor of conservation of the tropical forest (i.e., maintaining existing carbon stocks). The project will also mitigate deforestation pressures in the wider region using a combination of environmental programs and social programs intended to improve the livelihoods of community members living in the vicinity of the project area. Social projects and programs for the local communities will not only generate sustainable economic opportunities, but will also result in a reduction in deforestation in the region and the preservation of biodiversity.

The *Envira Amazonia Project* is located near Feijó in Acre, Brazil. The property where the project area is located covers an area of 200,000 hectares. Feijó, the closest town to the Envira Amazonia Project, is located between the towns of Sena Madureira and Cruzeiro do Sul along Highway BR-364. The recent paving of Highway BR-364, the main east-west highway in Acre, in 2011 has greatly increased market access in the region and increased property values as a cattle ranching along this road corridor has expanded. The project property is connected to BR-364 by a secondary road and is accessible by 4-wheeler paths found throughout the property.

2 VALIDATION PROCESS

2.1 Method and Criteria

A project specific Validation and Sampling Plan was developed to guide the validation auditing process to ensure efficiency and effectiveness. The purpose of the Validation and Sampling Plan is to present a risk assessment for determining the nature and extent of validation procedures necessary to ensure the risk of auditing error is reduced to a reasonable level.

According to the ISO14064-3, the validation criteria are the “policy, procedure or requirement used as a reference against which evidence is compared”. Therefore, validation of the selected methodology (VM0007, v1.5) and reported project results were measured for compliance against the following criteria:

- VCS Standard (v3.5, 25 March 2015)
- VCS Program Guide (v3.5, 08 October 2013)
- VCS Program Definitions (v3.5, 08 October 2013)
- VCS Agriculture, Forestry and Other Land Use (AFOLU) Requirements (v3.4, 08 October 2013)
- VCS AFOLU Non-Permanence Risk Tool (04 October 2012, v3.2)
- REDD+ Methodology Framework: REDD-MF (09 March 2015, v1.5)
- Carbon pool modules:
 - o CP-AB “VMD0001 Estimation of carbon stocks in the above- and belowground biomass in live tree and non-tree pools”, version 1.1
 - o CP-W “VMD0005 Estimation of carbon stocks in the long-term wood products pool”, version 1.1
 - o CP-D, “VMD0002 Estimation of carbon stocks in the dead-wood pool,” Version 1.0
- Baseline module:
 - o BL-PL “VMD0006 Estimation of baseline carbon stock changes and greenhouse gas emissions from planned deforestation”, version 1.2
- Leakage modules:
 - o LK-ASP “VMD0009 Estimation of emissions from activity shifting for avoided planned deforestation”, version 1.1
 - o LK-ME “VMD0011 Estimation of emissions from market-effects”. Mandatory where the process of deforestation involves timber harvesting for commercial markets, version 1.0
- Monitoring module:
 - o M-MON “VMD0015 Methods for monitoring of greenhouse gas emissions and removals”, version 2.1.
- Miscellaneous Modules:
 - o E-BB “VMD0013 Estimation of greenhouse gas emissions from biomass burning”, v1.0.
 - o X -STR “VMD0016 Methods for stratification of the project area”, version 1.0.
 - o X-UNC “VMD0017 Estimation of uncertainty for REDD project activities”, version 2.0.
- Tools:

- o T-SIG, CDM tool “Tool for testing significance of GHG emissions in A/R CDM project activities,” Version 1.0
- o T-ADD, “VT0001 Tool for the Demonstration and Assessment of Additionality in VCS Agriculture, Forestry and Other Land Use (AFOLU) Project Activities,” Version 3.0
- o T-BAR, “Tool for AFOLU non-permanence risk analysis and buffer determination,” Version 3.2

The validation process was derived from all items in the validation criteria stated above. Field sampling and techniques were based on the project parameters, scope, and best professional judgment of the validation team in order to meet a reasonable level of assurance. A risk-based approach was used for the field sampling effort to select key areas for review of carbon losses by direct measurement, observation, followed by ground assessment of leakage issues and review of project activities. The desktop validation component included a full review of all project documentation/calculations received from the Project Proponent, including the VCS Project Description Document.

2.2 Document Review

A detailed review of all project documentation was conducted to ensure consistency with, and identify any deviation from; VCS Program requirements, the methodological modules, and the Project Description (PD) document. The process of validation involved one (1) formal round of assessment by the validation team and resulted in a PD which was in conformance with VCS Rules. Desk review included an examination of the project details, data and parameters, and quantification of GHG emission reductions and removals. Documents reviewed included data used to set the baseline, carbon rights contracts, economic analysis, maps and aerial images, biomass and carbon calculation spread sheets. Modifications to the Validation and Sampling plan were made based upon the conditions observed in order to detect the processes with highest risk of material discrepancy.

2.3 Interviews

The objective of the interview process was to solicit important information from personnel related to the project and relevant to the validation process. Onsite interviews and informal discussions were conducted with project staff, members and leaders of the local communities, and Acre state government representatives. The interviews were performed by the validation team on-site (within the project area, in Rio Branco, and Feijó Brazil), and the following is a list of the main interviewees:

Name	Information Discussed
Duarte Jose do Couto Neto	This individual and his wife own the Envira Project land. He believes that the project will help to enrich the lives of the people that once worked the land for his family, when it was a rubber plantation. He believes there are no deterrents to the project. He stated that prior to the knowledge of these projects that the project area was scheduled to be harvested and would

	have been cleared.
Rege Ever C. Vasques	Lawyer for the project, and son of Duarte's old business partner. He does all of the paperwork for the project and clarified a number of the details related to original harvest planning that was performed. Particularly detailing their efforts in the application for the LAR.
Merla Albuquerque (Mayor of Feijo)	Mayor of Feijo. He discussed his relative familiarity with the project. Stated that the city's debt exceeds their income and would likely have no expansion in the foreseen future that could impact the project area. Additionally stated that a highway was just completed in the region, but it is approximately 12 kilometers from the project area.
Ayri Saraiva Rando	Cultural expert for the project. He interviewed and announced the project to the locals while living on the property for a month. He stated that the local inhabitants were largely in favor of the project and trust the landowner from many years of interactions. Additionally, he described a list of things that the project inhabitants would like from this project. Validators confirmed that the list coincided with project goals discussed in the PDD.
Professor Antonio Willian Flores	The professor served in helping to obtain the data for the project. Discussion also included his thoughts about baseline harvesting rate feasibility.
Valdmar Souza Azevedo Geneziou Delina Bezerra	Inventory crew for TECMAN, the forestry company that performed carbon inventory measurements for the project area. Validators confirmed hiring and safety practices. Additionally, the Validators confirmed inventorying procedures used in the field and related to dead wood collection.
Jose Aurimar Tavares Carneiro (aka "Mazinho")	Onsite project manager. He stated that he grew up near the area and has been involved historically in the area. He performed the GPS work for the delineation of the project boundary in 2003 for the CAR. He stated that the people within the project area are excited for the project.
David Shoch	TerraCarbon, consultants working with CarbonCo. in the development of the project. David discussed that his company trained the inventory firm TECMAN and described his role in both that and the development of the PDD.
Brian McFarland	Director for the company CarbonCo., the project developer. He discussed his part in the project and his role as a project developer.
Cerlando Dimas Souza, Raimundo Cunha Da Silva, Raimundo Estevaon Do Nascimento, Antonio Francisco Lopez Dasilva, Jose Ferreira Desousa, Ditimar Bispo Santos, Joao Nazario Rodriguez, Jornaldo Da Silva Pedrosa,	Stakeholders living within the project area, all interviewed individually. They confirmed that they were notified of the project by Ayri and Mazinho in most cases. With little exception, all had a positive view of the project and believed that it would benefit their community. The individuals largely stated their hopes for the proposed benefits of the project. Validators noted their expected benefits were largely in agreement with the plan outlined in the PDD. The individuals also spoke to their respective living conditions and the possibility of expansion. It was noted only by a couple that they would like to expand their cleared additional area for farming. Additionally, the individuals described their current relationship to the land and their future aspirations.

Jose Goncalves De Souza	This individual lives within the leakage area. He confirmed knowledge of the project and believed that its benefits would be helpful to both the individuals in the leakage area and the project area.
Luis Henrique Medeiros Borges	Wildlife biologist that was being considered for the project (a different biologist was selected in 2015). He noted that the area has not been monitored for verification, but described a number of the techniques used in monitoring the biological populations in the area, given that a large number of exotic flora and fauna exist in the area. Was planning on using techniques for surveying that are described in peer reviewed literature.

2.4 Site Inspections

The validation site inspection followed the prepared Validation and Sampling Plan process and was conducted on 10-20 December 2014. A ground inspection of the project area was conducted during the site visit and members of the validation team visited several targeted areas within and surrounding the project area. Communities were visited along the river and adjacent to the project area to gain a sense of the risks associated with the community benefits from the project.

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

General

- Project boundaries
- Pre-project conditions, as evidenced by condition of adjacent or nearby non-project areas, by evidence of site-preparation activities, and related
- Baseline scenario and supporting assumptions and evidence
- Eligibility criteria and supporting assumptions and evidence
- Current project conditions, including reported tree species, expected current density, reported growth characteristics (diameter, or similar), and reported biomass volume (above- and/or below-ground)
- An evaluation of project boundaries using GPS and project proponent's KML or GPX files provided.
- An assessment of the performance of the project activities and operations through visual inspection and through interviews with the project proponent's staff.
- Re-measurement of selected 5 forest inventory sampling plots, including 4 downed and dead wood transects (discussed below) which were part of the carbon stock inventory.
- ESI verified that operational, data collection procedures and monitoring methods were implemented in accordance with the SOP's as they are written.
- Assessment of the information flows for collection, collation and reporting of the baseline monitoring parameters.
- Confirmation that the quality control and quality assurance procedures are in place.

- An assessment of additionality in the project area through visual assessment and interviews with project proponents, community members and staff.
- Review of the Non Permanence Risk Report and all related elements, including interviews to confirm the evidence provided in the PRA.

Leakage

- Visit the leakage belt, specifically hot spot areas of recent deforestation and confirmation of data collection methods in conformance with the stated SOP's for leakage monitoring
- Review and observation of high risk areas for leakage
- Review of leakage area monitoring, selection of leakage areas, justification for areas selected (on site visit)
- Activities for minimizing deforestation- what is planned, what is in process, what is being implemented

Management/Community

- Meet and interview project management team
- Review dispute and resolution process reporting
- Review benefit mechanism and funds allocation system- interview those involved
- Governance structure review and interviews with officials involved
- Interviews with community members, representatives of local administrative municipality, and other stakeholders regarding knowledge of the project, expectations and concerns (see interview list from sampling plan)
- Review Public Meeting notes and summaries
- Community training activities and associated planned activities

During the field visit, re-measurement was performed on 5 forest inventory sampling plots. The clusters selected were: plots 108c, 106c, 106s, 401c, and 401w and include samples from two of the most carbon dense stratus. Sampling was designed to ensure a representative cross-section of the properties was assessed and that sampling took place in the areas of highest risk.

Cluster inventory plots were sampled in the field using the same inventory methods as submitted to the validator with the project materials. The intention was to have the field crews who conducted the inventories originally resample the clusters so the validation team could confirm Standard Operating Procedures (SOPs) were followed. The results of the cluster plot data collected by ESI were compared to the project proponent's reported carbon per hectare estimate. Reasonable assurance was determined from the examination of means for those plots re-measured.

2.5 Resolution of Findings

The process of validation involved one (1) formal round of evaluation by the validation team and resulted in a PD which is in conformance to VCS rules. Findings related to corrective action, clarification requests or other findings were resolved during communication between the validation team and the project proponent. More specifically, where noted by the validation team, project proponents implemented corrective actions by amending and providing written clarification responses. Types of findings were characterized in the following manner:

Non-Conformance Reports (NCRs) were issued as a response to material discrepancies in a part of the PD/calculations and generally fell into one of the following categories:

- Non-conformance to VCS guiding documents listed in Section 2.1
- Internal consistency among sections was lacking
- Mathematical formulae in sections were incorrect
- Additional information was required by the validation team in order to confirm reasonable assurance for compliance

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

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

During the course of the validation, 60 NCRs and CLs were identified. All NCRs/CLs were satisfactorily addressed. The NCRs/CLs provided necessary clarity to ensure the project was in compliance with the requirements of the VCS for GHG projects and the selected methodology. Detailed summaries of each finding, including the issue raised, responses and final conclusions are provided in Appendix B.

2.6 Forward Action Requests

No forward action requests were raised during the validation process.

3 VALIDATION FINDINGS

3.1 Project Details

The goal of the Envira Amazonia Project is to help protect and conserve tropical forest from deforestation by providing payments for ecosystem services. It is appropriately eligible under; Project Scope 14 for “Agriculture, Forestry, and other Land Use” (AFOLU), the project category “Reduction Emission from Deforestation and Degradation” (REDD) and activity type “Avoided Planned Deforestation” (APD). Payments associated with emissions removal/reduction credits are properly used for project activities intended to reduce deforestation in and around the project

area. The *Envira Amazonia Project* is developed and registered under the Verified Carbon Standard (VCS) and Climate, Community and Biodiversity Standard (CCBS).

Three project proponents are involved in the *Envira Amazonia Project* including CarbonCo, LLC (“CarbonCo”), Freitas International Group, LLC (“Carbon Securities”), and JR Agropecuária e Empreendimentos EIRELI. CarbonCo, the wholly-owned subsidiary of Carbonfund.org, is responsible for getting the project certified and for project finance. Carbon Securities acts as a liaison between CarbonCo and JR Agropecuária e Empreendimentos, acts as a translator, and assists with logistics for site visits. JR Agropecuária e Empreendimentos is an Acre, Brazil-based organization created by the landowner and is primarily responsible for day-to-day management of the Project. Based upon professional judgement, it is reasonable to assume that the project proponents are capable and collaborate effectively to conduct the project activities and oversee project activity implementation.

The *Envira Amazonia Project* commencement of the REDD project crediting period began on 02 August 2012 and will run through 01 August 2042. The project crediting period length is in compliance with VCS rules which specify temporal boundaries for REDD projects between 20 and 100 years. Project scale is appropriately selected as “Large Project” at estimated average annual emissions reductions of 1,259,646 tCO₂e per year (average), greater than the 300,000 tons of CO₂ per year which indicates a “Large Project” per VCS Standard Section 3.9.1. The project location of avoided deforestation is in Acre, Brazil and is appropriately forested at project start date and 10 years prior per VCS Rules. Conditions prior to project start date are well described in the PD including climate, vegetation, soils, rivers, local history, and local communities’ description.

The PD for the *Envira Amazonia Project* is appropriately accompanied by documentary evidence establishing rights of use per the VCS Standard Section 3.11.1 and VCS Program Definitions. The validation team confirmed that all project proponents have maintained compliance with relevant laws, statutes, and regulatory frameworks. The *Envira Amazonia Project* was confirmed to abide by Brazilian national laws including the Brazilian Constitution. Brazilian labour laws were also confirmed to have been appropriately met.

The certification of full rights document was provided by project proponents and correctly identifies Duarte Jose do Couto Neto and his company J.R. Agropecuaria e Empreendimentos LTDA as the owner of the property per VCS Standard Section 3.11.1. The property boundary has been properly georeferenced and provided to the validation team. The validation team confirmed that no other emissions trading programs, GHG programs, or environmental credits are applicable for the *Envira Amazonia Project* per VCS Standard Sections 3.11.3 - 3.11.9. Leakage management is appropriately handled in conformance with the VCS LK-MA, and LK-ASP modules to account for Activity Shifting, and Market Leakage that occur as a result of planned deforestation agents.

The validation team concludes that the description of the *Envira Amazonia Project* within Section 1 of the PD is accurate, complete and describes the true nature of the project.

3.2 Application of Methodology

3.2.1 Title and Reference

The Envira Amazonia project was properly developed under the VCS REDD Methodology, entitled, “VM0007: REDD Methodology Modules (REDD-MF)” v1.5. The methodology applied, and associated tools were valid at the time of validation per VCS Rules. Modules and Tools applicable to the *Envira Amazonia Project* and properly invoked are listed below.

CP-AB “VMD0001 Estimation of carbon stocks in the above- and belowground biomass in live tree and non-tree pools”, version 1.1

CP-W “VMD0005 Estimation of carbon stocks in the long-term wood products pool”, version 1.1

CP-D, “VMD0002 Estimation of carbon stocks in the dead-wood pool,” Version 1.0

E-BB “VMD0013 Estimation of greenhouse gas emissions from biomass burning”, v1.0.

BL-PL “VMD0006 Estimation of baseline carbon stock changes and greenhouse gas emissions from planned deforestation”, version 1.2

LK-ASP “VMD0009 Estimation of emissions from activity shifting for avoided planned deforestation”, version 1.1

LK-ME “VMD0011 Estimation of emissions from market-effects”, version 1.0. Mandatory where the process of deforestation involves timber harvesting for commercial markets

M-MON “VMD0015 Methods for monitoring of greenhouse gas emissions and removals”, version 2.1.

X -STR “VMD0016 Methods for stratification of the project area”, version 1.0.

X-UNC “VMD0017 Estimation of uncertainty for REDD project activities”, version 2.0.

T-SIG, CDM tool “Tool for testing significance of GHG emissions in A/R CDM project activities,” Version 1.0

T-ADD, “VT0001 Tool for the Demonstration and Assessment of Additionality in VCS Agriculture, Forestry and Other Land Use (AFOLU) Project Activities,” Version 3.0

T-BAR, “Tool for AFOLU non-permanence risk analysis and buffer determination,” Version 3.2

3.2.2 Applicability

Compliance under the VM0007 modular applied methodology was evaluated for each applicability condition and the steps taken to assess are provided below.

Table. Applicability condition compliance

Applicability Conditions	Validation Team Findings/Compliance Evaluation
REDD-MF, REDD Methodology Framework Version 1.5	
Land in the project area has been qualified as forest at least 10 years before the project start date.	The project area was confirmed forest cover in the 10 years prior to project start date using a spatial dataset provided by project proponents to the Validation Team.
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.	Project proponents established using regional soil surveys that no organic or peatland type soils exist in the project area. Validation Team found that some areas in the project area may satisfy the definition of wetlands as defined by VCS Program Definitions v3.5. However, the soil organic carbon (SOC) pool was conservatively excluded and therefore the project is not subject to AFOLU WRC requirements.
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 validation.	Validation team concluded that project proponents adequately demonstrate control over the project area per VCS Standard Section 3.11.1. CarbonCo re-typed and translated the landownership documents known as the "certidao" into English. This translated certidao was provided to ESI (entitled "Envira Amazonia Project's Certidao Translated into English"). The certidao is essentially the final document that certifies the geo-referencement survey is complete, certified the property does not overlap any other properties, and that the property is owned by Duarte Jose do Couto Neto and his company J.R. Agropecuaria e Empreedimentos LTDA.
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).	Project proponents asserted that the Baseline deforestation in the project area falls within the planned deforestation category, as the agents of deforestation is the project proponent.
Baselines shall be renewed every 10 years from the project start date.	Validation Team confirms that project proponents will renew the baseline in year 2022.
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	The Validation Team confirmed that no other emissions trading programs, GHG programs, or environmental credits are applicable for the <i>Envira Amazonia</i> Project per VCS Standard Sections 3.11.3 - 3.11.9.

other carbon trading scheme shall be monitored over 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 Validation Team confirms the project proponent's assertion that forest clearing in the baseline is followed by ranching uses, thus preventing forest regrowth.
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.	The Validation Team confirms the project proponent's assertion that leakage avoidance activities do not include flooding agricultural land, creating feed-lots, or manure lagoons.
BL-PL, "VMD0006 Estimation of baseline carbon stock changes and greenhouse gas emissions from planned deforestation", version 1.2	
The module is applicable for estimating the baseline emissions on forest lands (usually privately or government owned) that are legally authorized and documented to be converted to non-forest land.	The validation team confirms the project proponent's assertion that baseline agents of deforestation have permission to clear up to 20% of the project property. Site visit interviews with local landowners and officials in the state of Acre further confirmed that the removal of native vegetation needs final approval of the Cadastro Ambiental Rural (CAR) by SISNAMA, or the Sistema Nacional do Meio Ambiente, as stated in the 2012 Brazilian Forest Code. In the State of Acre to convert forest to pasture for domestic sales of cattle, the CAR (formerly known as the Licenciamento Ambiental Rural or LAR) process just needs to be opened. The <i>Envira Amazonia Project's</i> planned deforestation is in compliance with all Brazilian forestry laws. Documentation outlining the initiation of the LAR process on 15 April 2011 was reviewed by validators for compliance with this requirement.
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.	Project proponents have asserted that fuelwood collection that does occur is sustainable. Evidence provided by project proponents indicates that average fuelwood collected is less than the annual growth in above-ground biomass (of 3.1 tonnes d.m. ha ⁻¹ yr ⁻¹ ; see Table 4.9 in IPCC 2006). The validation team confirmed this assertion is reasonable from site visit observations, interviews with relatively sparse population of community members (11 families), and from communication with local forester Igor Agapejev de Andrade.
M-MON, "VMD0015 Methods for monitoring of greenhouse gas emissions and removals," Version 2.1	

Emissions from logging may be omitted if it can be demonstrated the emissions are de minimis using T-SIG.	Since no commercial harvest occurs in the project case no logging emissions are emitted and this tool is not applicable.
If emissions from logging are not omitted as de minimis, logging may only take place within forest management areas that possess and maintain a Forest Stewardship Council (FSC) certificate for the years when the selective logging occurs.	Not applicable
Logging operations may only conduct selective logging that maintains a land cover that meets the definition of forest within the project boundary.	Not applicable
All trees cut for timber extraction during logging operations must have a DBH greater than 30 cm.	Not applicable
During logging operations, only the bole/log of the felled tree may be removed. The top/crown of the tree must remain within the forested area.	Not applicable
The logging practices cannot include the piling and/or burning of logging slash	Not applicable

The validation team found that the *Envira Amazonia Project* appropriately selected and applied tools and modules for the Avoided Deforestation VCS REDD Methodology. The eligible activity “Avoided Planned Deforestation and Degradation” (APD) was selected because forestland in the baseline is expected to be converted to non-forest with legal permission. Modules and tools were assessed individually for project compliance and all criteria evaluated systematically in a checklist format.

Table. Methodology module and tool appropriateness

Module/Tool	Validation Team Findings
BL-PL, “VMD0006 Estimation of baseline carbon stock changes and greenhouse gas emissions from planned deforestation”	Validation team concludes that this mandatory module is appropriate because it allows for estimates of carbon stock changes and GHG emissions for all projects in the planned deforestation category.
CP-AB, “VMD0001 Estimation of carbon stocks in the above- and belowground biomass in live tree and non-tree pools”	Validation team concludes that this mandatory module was appropriately selected because it estimates ex-ante and ex-post carbon stock change in above- and belowground tree and non-tree woody biomass for baseline and project cases.
CP-D, “VMD0002 Estimation of carbon	Validation team concludes that this module was appropriately selected because it estimates dead wood

stocks in the dead-wood pool”	carbon stocks in baseline and project cases. Since the carbon pool is greater in the baseline than the project scenario, this module is mandatory.
CP-W “VMD0005 Estimation of carbon stocks in the long-term wood products pool”	Validation team concludes that this module was appropriately selected because it estimates harvested wood carbon stocks in baseline and project cases. This module is mandatory.
E-BB, “VMD0013, Estimation of greenhouse gas emissions from biomass burning”	Validation team concludes that this module was appropriately selected because it estimates GHG emissions from biomass burning. For this project, CH ₄ and N ₂ O emissions are conservatively excluded in the baseline, but are included in the with-project case where fires occur.
LK-ASP “VMD0009 Estimation of emissions from activity shifting for avoided planned deforestation”	Validation team concludes that this mandatory module was appropriately selected for estimating emissions related to displacement of planned deforestation (or are legally authorized and documented to be converted to non-forest land).
LK-ME “VMD0011 Estimation of emissions from market-effects”	Validation team concludes that this mandatory module was appropriately selected for estimating emissions from market-effects as planned deforestation in the baseline scenario involves timber harvesting for commercial markets.
M-MON, “VMD0015 Methods for monitoring of greenhouse gas emissions and removals”	Validation team concludes that this mandatory module was appropriately selected because it provides methods for monitoring ex post emissions as a result of project implementation.
REDD-MF, “REDD Methodology Module: REDD Methodology Framework”	Validation team concludes that this mandatory module was appropriately selected because it provides the generic functionality of a modular REDD methodology.
T-ADD, “VT0001 Tool for the Demonstration and Assessment of Additionality in VCS Agriculture, Forestry and Other Land Use (AFOLU) Project Activities”	Validation team concludes that this mandatory tool was appropriately selected because it accounts for additionality in VCS AFOLU projects.
T-BAR, “Tool for AFOLU non-permanence risk analysis and buffer determination”	Validation team concludes that this mandatory tool was appropriately selected because it allows for a buffer withholding based on project overall risk classification.
T-SIG, CDM tool “Tool for testing significance of GHG emissions in A/R CDM project activities”	This tool is invoked from M-MON where emissions from selective logging are omitted if demonstrated as de minimis. Since no commercial harvest occurs in the baseline or project case no logging emissions are emitted and this tool is not applicable.
X –STR, “VMD0016 Methods for	Validation team concludes that this mandatory module was appropriately selected to improve accuracy and

stratification of the project area"	precision estimates of carbon stocks by stratifying the project area.
X-UNC, "VMD0017 Estimation of uncertainty for REDD project activities"	Validation team concludes that this mandatory module was appropriately selected to estimate uncertainty in the estimation of emissions for REDD project activities.

3.2.3 Project Boundary

The VCS Standard requires that projects describe the project boundary and identify and select appropriate carbon pools; i.e. sources, sinks, and reservoirs relevant to the baseline. Procedures to quantify emissions are included for each of these pools and sources by demonstrating significance in using the appropriate VCS modules and tools. The project addresses the establishment of spatial, temporal, and gaseous boundaries to meet VCS AFOLU Requirements for the REDD project category under the APD project scenario. The Validation Team found that mandatory and optional pools in this project are appropriate for planned conversion of forest.

The spatial boundaries for the *Envira Amazonia Project* were assessed for conformance to VCS rules and found to be sufficiently detailed, appropriate, and adequate as well as in compliance with the REDD-MF methodological module. Similarly, temporal boundaries were reviewed within the context of VCS rules and found to be detailed and correct.

Significant pools, sinks, and reservoirs accounted for are in compliance with AFOLU Requirements section 4.3 and are appropriately justified for the project. The following tables present a brief review of all considered carbon pools, and the validation assessment findings:

Source	Gas	Project Justification	Validation Findings
Biomass burning	CO ₂	CO ₂ is a major source that is already considered for carbon stock changes and is therefore not included. CH ₄ and N ₂ O emissions are conservatively excluded in the baseline, they are included in the with-project case where fires occur.	AFOLU Requirements section 4.3.3.2 allows for REDD project emissions due to burning of herbaceous vegetation and section 4.3.5 allows for distinguishing CH ₄ and N ₂ O emissions due to biomass burning. CO ₂ source is appropriately excluded because it has already been accounted for.
	CH ₄		
	N ₂ O		

Fossil Fuel Combustion	CO ₂	Emissions from fossil fuel combustion in the baseline and project case are minimal and therefore not included for all gases. As per methodology module E-FCC "Fossil fuel combustion in all situations is an optional emission source."	Validation team concludes that fossil fuel combustion is minimal in all scenarios as this is an AUDD project and per AFOLU Requirements section 4.3.3.3.
	CH ₄		
	N ₂ O		
Use of fertilizers	CO ₂	All gases are not included. No increase in fertilizer use is contemplated in the project case as part of leakage mitigation or any other activity	This is consistent with AFOLU Requirements section 4.3.3 where fertilizer use is not included as part of any anticipated project activities.
	CH ₄		
	N ₂ O		

Pool	Included	Project Justification	Validation Findings
Above-ground	Yes	Mandatory to include. Tree biomass only is included, which is the most significant pool. Non-tree woody biomass (e.g. shrubs) is less in the baseline (pasture and cropland) than the project case (forest) and is conservatively excluded.	Validation team concludes this is consistent with Table 2 of AFOLU Requirements section 4.3.1. This pool is appropriately required because of the likelihood of residual biomass cleared by agents of deforestation. The module CP-AB "VMD0001 Estimation of carbon stocks in the above- and belowground biomass in live tree and non-tree pools" was appropriately selected to account for above-ground biomass.
Below-ground	Yes	Included and treated together with above-ground biomass for completeness to include whole tree (above-ground and below-ground) biomass.	Validation team concludes this is consistent with Table 2 of AFOLU Requirements section 4.3.1. This pool is appropriately required when

			decay from below-ground biomass is considered. The module CP-AB “VMD0001 Estimation of carbon stocks in the above- and belowground biomass in live tree and non-tree pools” was appropriately selected to account for below-ground biomass.
Dead wood	Yes	This pool was included as it can represent a significant component of forest biomass.	Validation team concludes this is consistent with Table 2 of AFOLU Requirements section 4.3.1. This pool is appropriately required as project proponents have demonstrated that dead wood is collected by local communities per Applicability Conditions in Module BL-UP. The module CP-D “VMD0002 Estimation of carbon stocks in the dead-wood pool” was appropriately selected to account for dead wood.
Harvested Wood Products	Yes	Included as commercial harvesting for wood products takes place in the baseline as part of the forest conversion process.	Validation team agrees with project proponents that this pool is to be included because commercial harvesting will occur under the baseline scenarios per AFOLU Requirements Section 4.3.
Litter	No	Conservatively omitted, as allowed by methodology.	Validation team accepts that this pool is to be excluded per AFOLU Requirements Section 4.3.
Soil Organic Carbon	No	Conservatively omitted, as allowed by methodology.	Validation team agrees with project proponents that this pool is to be excluded per AFOLU Requirements Section 4.3.

3.2.4 Baseline Scenario

The procedures for determination of the baseline scenario in the *Envira Amazonia Project* were applied using the VCS T-ADD tool, “VT0001 Tool for the Demonstration and Assessment of Additionality in VCS Agriculture, Forestry and Other Land Use (AFOLU) Project Activities”. Project proponents properly selected applicable sub-steps 1a and 1b, “Identify credible alternative land use scenarios to the proposed VCS AFOLU project activity” and “Consistency of credible land use scenarios with enforced mandatory applicable laws and regulations”, respectively. Other sub-steps contained within the T-ADD tool deemed not applicable by project proponents and confirmed by the validation team. Project proponents correctly identified two alternative land use scenarios from the outcome of sub-step 1a:

1. Continuation of pre-project land use / Project activity on the land within the project boundary performed without being registered as a VCS AFOLU project.
2. Conversion to pasture.

The assumption by project proponents that forest conservation of the project area is unlikely is substantiated by formation of a business partnership to create a cattle ranch. Other planned deforestation pressures exist from other large landowners in the region who have already deforested large portions of their property for profitable cattle production.

Project proponents also correctly establish the outcome of sub-step 1b as the two land use scenarios are in compliance with applicable laws and regulatory requirements. The systematic noncompliance among private property laws in Acre state is represented above in sub-step 1a #1.

Overall, the procedures for identifying the baseline scenario have been correctly followed and the identified scenario is reasonable. The validation team concludes that procedures for determining the baseline are appropriate, adequate, and in compliance with VCS rules and AFOLU Requirements for REDD project activities applicable to this project.

3.2.5 Additionality

The procedures for determination of additionality in the *Envira Amazonia Project* were applied using the VCS T-ADD tool, “VT0001 Tool for the Demonstration and Assessment of Additionality in VCS Agriculture, Forestry and Other Land Use (AFOLU) Project Activities”. Project proponents performed Simple Cost and Common Practices analyses for demonstration of no financial benefit and credibility check, respectively. The validation team confirmed that no other revenues are produced for this VCS AFOLU project and therefore the simple cost analysis was appropriately selected. Due to the lack of financial benefits other than the VCS related income, project proponents correctly proceeded to perform a common practice analysis.

The common practice analysis indicated that social programs are largely unavailable to individuals in the project area and insufficient to prevent small scale farmers from deforestation. Project proponents provided additional detail to the validation team to demonstrate that there is currently a lack of programs similar to those offered by the project. The evidence provided by

project proponents and accurate application of the VCS T-ADD tool is deemed sufficient by the Validation Team for the project to be additional.

3.2.6 Quantification of GHG Emission Reductions and Removals

Procedures for quantifying the baseline emissions from planned deforestation were conducted in accordance with the BL-PL module. The validation team performed an intensive quantification review of all input data, parameters, formulas, calculations, conversions, statistics and resulting uncertainties and output data to ensure consistency with the VCS documentation, methodology modules, and the PD. Further, the validation team reproduced calculations for selected samples to ensure accuracy of the results. Conversion factors, formulas, and calculations were provided by project proponents in spreadsheet format to ensure all formulas were accessible for review. Members of the validation team recalculated subsets of the analysis to confirm correctness. Project proponents also provided a step-by-step overview of select calculations to ensure the validation team understood the approach and could confirm its consistency with the methodologies and PD. Where applicable, references for analysis methods or default values were checked against relevant scientific literature for best practice.

Inventory sampling

Sample design for the forest inventory was found to be in good forest measurement practice through data collection during the site visit and interviews with field-going personnel on-site. Further, the accuracy and conservativeness of the inventory approach is addressed through the overall validation review. Data collected by the Validation Team was in sufficient agreement with project inventory data to justify reasonable assurance. The validation team concludes that review of all inventory data, inventory sampling procedures, and analysis methods indicates that the sampling approach is reasonably conservative and acceptable.

Baseline emissions

The *Envira Amazonia Project* has appropriately included baseline emissions calculations in the PD per the VCS Standard Section 3.18.2. Data and parameters selected for spatial and temporal boundaries were found to be properly selected and calculated accurately from verifiable sources. The Validation Team checked all processes for estimation of the proxy area deforestation and confirmed the accuracy of remote sensing analysis. Individual calculations for project area stratification applied using module X-STR to improve carbon stock estimates was checked and confirmed accurate.

Some disagreement was discovered in the BL-PL module as to whether the deforestation in the proxy areas has to be within the allowable 20%. The requirement in Section 1.2 refers to proportion deforested and not actual deforestation, whereas Part 5 of proxy area applicability requirements simply states deforestation under the same criteria. Validators observed that proxy deforestation rate, though all above legal limit of 20% are common practice, average proxy deforestation proportions for the project are about 27% and evident that the threat of deforestation exists for the project area. The project proponent provided INCRA documentation that sufficiently demonstrated legal boundary delineation for the proxy areas. Considering other criteria are readily met and contradictory language in the methodology, this is permissible.

Project emissions

The *Envira Amazonia Project* has appropriately included project emissions calculations in the PD per the VCS Standard Section 3.18.2. The ex-ante project emissions were confirmed for adherence to module M-MON and checked as accurate. A conservative projection of project effectiveness was appropriately selected at 80%. Data and parameters for calculating ex-ante emissions under the project scenario and with project case were individually confirmed to be correct for project area and leakage belt boundaries.

Leakage

Leakage emissions from planned deforestation displacement were appropriately determined from the module LK-ASP. Parameters and values used to calculate the annual ex-ante GHG emissions in the leakage were individually checked for correctness and found to be accurate. The validation team found that the leakage factor used to estimate displacement from the project area to the leakage belt was reasonable.

Net GHG emissions reductions or removals

Overall net GHG emissions reductions or removals were carefully scrutinized for correctness according to module REDD-MF step 4. The estimate of GHG credits eligible for issuance as VCU's accounted for the proper parameters and resulted in a correct estimate of total emissions reductions.

Uncertainty

Uncertainty associated with the calculations of emissions was evaluated appropriately using the X-UNC module under VCS methodology VM0007 v1.5. Parameters factored into uncertainty calculations were assessed and the final buffer allocation was found to be correctly set at 23%. For example, the parameter for uncertainty in the baseline rate is set at zero because the long term average baseline rate of deforestation is utilized according to module BL-PL.

The project description contained sufficient information for the validation team to assess the accuracy of quantified GHG emission reductions and removals. Relevant assumptions made by project proponents are listed and include the appropriate references and sources. The Validation Team deemed data and parameters to be reasonable within the context of the project (see below). As part of the validation process, the Validation Team was able to successfully reproduce all GHG emission calculations and conclude that information supplied in the project description is sufficiently transparent.

Data and Parameters available at validation:

Data Unit / Parameter	Validation Findings
$\Delta C_{BSL,PA,planned}$	This data/parameter was appropriately included because it pertains to net CO ₂ emissions in the baseline from planned deforestation in the project area. This value is relevant at the time of validation because it sets baseline carbon stock changes at the start of the

	baseline period.
CF	This data/parameter was appropriately included because it pertains to the carbon fraction of biomass. This default value was appropriately chosen per 2006 IPCC guidelines.
fj(X,Y)	This data/parameter was appropriately included because it pertains to the allometric equation for species j linking measured tree variable(s) to aboveground biomass of living trees. The Brown 1997 equation was properly chosen from the validated methodology for the calculation of baseline and project emissions.
Root Biomass Density	This data/parameter was appropriately included because it pertains to the allometric equation for predicting root biomass density as a function of aboveground biomass density. The choice of the Cairns et al. 1997 equation was considered adequate by the validation team as it is a widely referenced method and suitable for the calculation of baseline and project emissions.
LIF	This data/parameter was appropriately included because it pertains to the Logging infrastructure factor. Project proponents correctly used the default value from within module LK-ME.
BEF	This data/parameter was appropriately included because it pertains to the biomass expansion factor for conversion of merchantable volume to total aboveground tree biomass. The equation was actually computed as BEF instead of BCEF because strata are irrelevant for land cleared. Stratification of carbon pools is not required in the X-STR module (but rather recommended to improve accuracy), and in this case stratification would not improve accuracy. Validators confirm that clearing would not occur at a strata level, and agree that the assumption of no strata for this calculation is appropriate.
LDF	This data/parameter was appropriately included because it pertains to the logging damage factor. Project proponents correctly used the default value from within module LK-ME.
LFME	This data/parameter was appropriately included because it pertains to the leakage factor for market-effects calculations. PMLFT was considered equal to PMPi and a value of LFME = 0.4 was applied. Please see findings under parameters PMLFT and PMPi for greater detail.
SLFs	This data/parameter was appropriately included because it pertains to the fraction of wood products that will be emitted to the atmosphere within 5 years of timber harvest for sawn wood. Project

	proponents correctly used the default value from within module CP-W.
Ofts	This data/parameter was appropriately included because it pertains to the fraction of wood products that will be emitted to the atmosphere between 5 and 100 years of timber harvest for sawn wood. Project proponents correctly used the default value from within module CP-W.
WWs	This data/parameter was appropriately included because it pertains to the fraction immediately emitted through mill inefficiency for sawn wood. Project proponents correctly used the default value from within module CP-W.
VBSL,EX,i,t	This data/parameter was appropriately included because it pertains to the volume of timber projected to be extracted from within the project boundary during the baseline in stratum i at time t. These values were found to be correctly calculated using forest inventory data (VBSL) and AApIanned,i,t (ha).
Dmn	This data/parameter was appropriately included because it pertains to the mean wood density of commercially harvested species. Determination of Dmn used a combination of project specific data on commercial log volume and estimates of wood density as found in Chave et al. Use of Chave et al. 2006 falls under the appropriate sources of data to meet requirements.
PMLFT	This data/parameter was appropriately included because it pertains to the mean merchantable biomass as a proportion of total aboveground tree biomass for each forest type. The project assumes that "Mean merchantable biomass as a proportion of total aboveground tree biomass for each forest type" is generally equal to "Merchantable biomass as a proportion of total aboveground tree biomass for stratum i within the project boundaries." PMFLT and PMPi were demonstrated to be similar and the project referenced Feldpausch et al. 2006 to comparing merchantable biomass to AG biomass. Studies of commercial timber are limited in Acre state.

In summary, project proponents correctly calculated all GHG emissions reductions and removals for baseline emissions, project emissions, leakage and net GHG emission reductions and removals.

3.2.7 Methodology Deviations

Project proponents applied methodology deviations and were assessed by the validation team as follows:

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

	transect line was sampled. The first sample line was not at a randomized bearing but rather the two sample lines were oriented at the north and east. The validator believes that consistent line bearings among sample lines is still in line with good forest sampling practice as no sampling bias is introduced. Field going personnel of varying forest measurement experience are better able to replicate sample line measurements which are consistent in bearing. Further, the bearing of sample lines follows the perpendicular rule stated in CP-D. These deviations from the criteria and procedures related to measurement are appropriate given the good forest measurement practices employed, consistency in sampling practices, and conservativeness in larger sample sizes of lying dead wood. Further, the deviations are permissible per VCS Standard Section 3.5.1 given that the issue is a monitoring/measurement deviation and its application does not negatively impact the conservativeness of the quantification of GHG emission reductions or removals.
Instead of using a root to shoot ratio to estimate belowground biomass as per the CP-AB module, belowground biomass was estimated using an allometric equation developed by Cairns et al.	The Validation Team has agreed to allow this deviation as it has been demonstrated by project proponents that using the Cairns ¹ approach is a conservative allometric method to estimate belowground biomass. The Cairns et al. 1997 equation predicts root biomass density as a function of the aboveground biomass density and it was chosen to replace the root to shoot parameter R. The Cairns et al. 1997 equation was confirmed by the validation team to be a widely referenced method during a related literature search. The project proponent (PP) demonstrated the conservativeness of the root to shoot parameter (R) substitution in a separate analysis where the default root to shoot ratios were compared

¹ 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.

	to the Cairns root to shoot ratio. The Cairns et al. method employs an average root to shoot ratio of 0.2286 versus the value of 0.24 (Table 4.4 IPCC GL AFOLU Tropical Forest >125 t.ha⁻¹). This alternative method for determining below ground biomass is acceptable as it is more conservative and accurate. Further, this method for determining below-ground biomass is a parameter available at validation and therefore a justifiable deviation.
The forest inventory has deviated from the criteria for selection (i.e., the equation is based on a datasets comprising at least 30 trees, with an r^2 that is ≥ 0.8) and validation of the allometric equation related to palm biomass, however the equation used is likely to result in a conservative estimate of palm biomass for the following reasons: • Volume is calculated as the volume a paraboloid rather than the volume of a cylinder; • Only stem biomass is estimated, thus conservatively excluding other aboveground biomass; and • A conservative measure of basal diameter (i.e., dbh) was used.	The validation team has agreed to allow this deviation as it has been demonstrated by project proponents that using a paraboloid is a conservative alternative to applying a traditional allometric to represent palm trees. Further, this method for determining above-ground biomass is a parameter available at validation and therefore a justifiable deviation. Sample trees (i.e. datasets comprising at least 30 trees) for the rotten decay class was permitted to include samples taken from a neighbouring project, as many cores taken from the project area were damaged during transport to the lab for analysis. This deviation was deemed appropriate as the two sample sites were similar, having similar species composition, stand conditions, and wood densities for the two populations were very similar.
Dead wood collected for density determination was opportunistically sampled from within the project area. The forest inventory collected a total of 13,17,13 samples for the sound, intermediate, and rotten classes, respectively. While the minimum number of samples, twenty, as stated in the CP-D module of the methodology was not collected for each class, the sample was still sufficient for a robust estimate of the mean as indicated by the low coefficient of variations for each of the classes (i.e., less than 20% for each class).	The validation team initially found that the number of samples does not equal the minimum number of samples required for the determination of densities required by the methodology. This deviation was inserted by project proponents to address the monitoring/measurement of the dead wood densities. The project proponent has chosen to employ the method of project-specific determination of dead wood density rather than a source of data from the literature for parameter <i>DDWdc</i>. Communication with the project proponent confirmed the nature of the dead wood density

	“opportunistic samples”. The samples were not collected from forest inventory plot locations but rather throughout the project area and were representative of the relative species composition and abundance as observed in the project area. Through assurances from the project proponent, the scale and representation of the samples is the representative of the forest strata and species composition determined from the inventory. Samples were collected to the widest extent possible given the difficulty in identifying the species of lying dead wood. Further, the samples were collected independently of the forest inventory plots due to the inherent challenge of storage and transport to the laboratory for analysis. Additionally, the conservative nature of the results from the field samples was supported by a demonstration where the PP compared wood density values of the field samples and literature derived wood density values that illustrated the sampled values are conservatively lower. CP-D states that mean value and 90% confidence interval are to be computed for each density class and “If the 90% confidence interval is equal to or less than 10% of the mean, the mean density value is applied in project calculations.” The PP provided a demonstration that the mean dead wood density value can be applied at the 90% confidence interval and validators duplicated this analysis and achieved the same result. Despite the minimum number of samples, a meaningful statistical inference can still be made. At the 90% confidence interval, mean density values of 7%, 5%, and 8% were achieved for rotten, intermediate, and sound respectively. Furthermore, an examination of the coefficient of variations and other relevant statistics justify the homogeneity of the samples collected. Validation team concludes this deviation is acceptable per VCS Standard Section 3.5.1 as
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	it is a parameter available at validation and does not negatively impact the conservativeness of the quantification of GHG emission reductions or removals.
Parameter $U_{P,SS,i,pool\#}$ will be monitored at least once every 10 years, on re-measurement of forest carbon stocks. While module X-UNC requires that monitoring of this parameter occur every ≤ 5 years, this requirement is inconsistent with the VM0007 pools modules, which specify that stock estimates (from which uncertainty is calculated) are assumed valid for 10 years. Therefore, a deviation to module X-UNC is applied to permit parameter $U_{P,SS,i,pool\#}$ to be monitored every ≤ 10 years, putting it into alignment with modules CP-AB and CP-D.	Validation team confirmed that project proponents are correct in that no other module requires forest measurements to occur in intervals less than 10 years. Since this project also includes remote sensing and is clearly planning to update the baseline carbon stocks at 10 year intervals with inventory sample points, then this deviation is considered to be an acceptable approach by the validation team. The validation team cannot find any other instance where updates to the inventory plots are required in less than 10 year increments, thus there would be no new inventory plots to use for the update of the sampling error, as suggested by this monitoring frequency requirement. Validation team concludes this deviation is acceptable.
Instead of monitoring Cpost using modules CP-AB and CP-D as described in the MON modules, C(post) was assumed to be zero in the with-project case, for natural disturbance (CP,Dist,q,i), and for deforestation (CP,post,u,i).	The project proponent asserts that 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. The Validation Team believes this methodology deviation is permissible as it does not negatively affect the conservativeness of project emissions. Setting parameter Cpost to zero ensures that the most conservative estimate of emissions is achieved.

The validation process confirmed that the above methodology deviations are reasonable and in compliance with the VCS Standard, Section 3.5 and have been appropriately justified. The listed deviations represent a deviation from the criteria and procedures relating to monitoring and/or measurement of GHG emission reductions or removals set out in the selected methodologies. Moreover, the deviations do not negatively impact the conservativeness of the quantification of GHG emissions reductions or removals.

3.2.8 Monitoring Plan

Components of the monitoring plan were evaluated by the Validation Team for suitability and eligibility. Findings for individual data and parameters are presented:

Data and Parameters monitored:

Data Unit / Parameter	Validation Findings
$\Delta C_{P,Def,i,t}$	This data/parameter was appropriately included because it pertains to net carbon stock change as a result of deforestation in the project case in the project area in stratum i at time t . Project proponents have calculated net carbon stock change in the with-project case differently than the requirement because it is difficult to spatially define stratum being deforested ex-ante. Further, project proponents do not expect all the deforestation to occur in this scenario due to implementation of the project activities. As a result, project proponents calculated net carbon stock change in the with-project ex-ante case. The validation team accepts this approach as the estimate is ex-ante and does not affect the baseline or ex-post emission estimates. This parameter will be evaluated again at monitoring for compliance to the requirement.
$\Delta C_{P,DistPA,i,t}$	This data/parameter was appropriately included because it pertains to net carbon stock change as a result of natural disturbance in the project case in the project area in stratum i at time t . Ex ante $\Delta C_{P,DistPA,i,t} = 0$ (value applied was 0).
$A_{DefPA,u,i,t}$	This data/parameter was appropriately included because it pertains to the area of recorded deforestation in the project area stratum i converted to land use u at time t . This value was found to be not relevant at time of validation and will be monitored for each verification event.
$A_{DefLK,i,t}$	This data/parameter was appropriately included because it pertains to the total area of deforestation by the baseline agent of the planned deforestation in stratum i at time, t . This is a validation review and this value will be updated for each monitoring event.
$A_{DistPA,q,i,t}$	This data/parameter was appropriately included because it pertains to area impacted by natural disturbance in post-natural disturbance stratum q in stratum i , at time t . This value was found to be not relevant at time of validation and will be monitored for each verification event.
$C_{BSL,i}$	This data/parameter was appropriately included because it pertains to the carbon stock in all pools in the baseline case in stratum i and is estimated from the forest carbon inventory. This value was found to be calculated accurately according to project boundaries and appropriate pools.
$\Delta C_{pools,Def,u,i,t}$	This data/parameter was appropriately included because it pertains to the carbon stock in all pools in post-deforestation land

	use u in stratum i . This value was found to be calculated accurately by strata.
$A_{DegW,i,t}$	This data/parameter was appropriately included because it pertains to the area potentially impacted by degradation processes in stratum i . This area was properly determined from community survey results. This value was found to be not relevant at time of validation.
$C_{DegW,i,t}$	This data/parameter was appropriately included because it pertains to net carbon stock changes as a result of degradation in stratum i in the project area at time t . This value was found to be 0 as the PRA did not indicate degradation.
AP_i	This data/parameter was appropriately included because it pertains to the total area of degradation sample plots in stratum i . This value was found to be appropriately calculated as 3% of $A_{DegW,i,t}$ as a parameter for monitoring illegal degradation.
$\Delta C_{P,DegW,i,t}$	This data/parameter was appropriately included because it pertains to the net carbon stock changes as a result of degradation in stratum i in the project area at time t . This value was found to be Ex ante $\Delta C_{P,DegW,i,t} = 0$ (value applied was 0).
$Aburn,q,i,t$	This data/parameter was appropriately included because it estimates area burnt in post-natural disturbance stratum q in stratum i , at time t . This value was found to be not relevant at time of validation and will be monitored for each verification event.
dbh	This data/parameter was appropriately included because it gives the tree diameter at breast height. DBH values were measured and assessed ex ante (at validation). This value was found to be not relevant at time of validation.
dbasal	This data/parameter was appropriately included because it gives the basal diameter. Basal diameter values were measured and assessed ex ante (at validation). This value was found to be not relevant at time of validation.
H	This data/parameter was appropriately included because it gives the height of a tree. This value was found to be not relevant at time of validation.
Dn	This data/parameter was appropriately included because it gives diameter of piece n of dead wood along a transect. This value was found to be not relevant at time of validation.

N	This data/parameter was appropriately included because it gives the total number of wood pieces intersecting a transect. This value was found to be not relevant at time of validation.
L	This data/parameter was appropriately included because it gives the length of a transect. This value was found to be not relevant at time of validation.
$U_{P,SS,i,pool\#}$	This data/parameter was appropriately included because it calculates the percentage uncertainty (expressed as 95% confidence interval as a percentage of the mean where appropriate) for carbon stocks and greenhouse gas sources in the with-project case (1,2...n represent different carbon pools and/or GHG sources). This data/parameter represents a deviation noted in Section 3.2.7 of this report and will be reviewed at time of verification.
$EBSL\ SS,i, pool\#$	This data/parameter was appropriately included because it accounts for carbon stock or GHG sources (e.g. trees, dead wood, soil organic carbon, emission from fertilizer addition, emission from biomass burning etc.) in the baseline case.
$UBSL,SS,i,pool\#$	This data/parameter was appropriately included because it accounts for percentage uncertainty (expressed as 95% confidence interval as a percentage of the mean where appropriate) for carbon stocks and greenhouse gas sources in the baseline case (1,2...n represent different carbon pools and/or GHG sources).
$EBSL\ SS,i$	This data/parameter was appropriately included because it calculates the sum of combined carbon stocks and GHG sources in stratum i multiplied by the area of stratum i (A_i) in the baseline case.
$UBSL,SS,i$	This data/parameter was appropriately included because it determines the percentage uncertainty in the combined carbon stocks and greenhouse gas sources in stratum i in the baseline case.
Bi,t	This data/parameter was appropriately included because it calculates the average aboveground biomass stock before burning stratum i, time t. Emissions from biomass burning in project boundaries appropriately reference weighted average stocks.
AGB	This data/parameter was appropriately included because it calculates the aboveground biomass density.

Asp	This data/parameter was appropriately included because it determines the area of sample plots in ha.
Hsdw	This data/parameter was appropriately included because it determines the height of standing dead trees in m.
DDWdc	This data/parameter was appropriately included because it calculates the mean wood density of dead wood according to density class (dc) – sound (1), intermediate (2), and rotten (3); t d.m. m-3.
CP,Dist,q,i	This data/parameter was appropriately included because it determines carbon stock in all pools in post-natural disturbance q in baseline stratum i.
Ai	This data/parameter was appropriately included because it defines the total area of stratum i. This parameter changed as a result of adjustments made to the project area, leakage belt and RRD (outlined in section 3.2.6 above). Stratum areas were re-reviewed and found to be correct.
AAplanned,i,t	This data/parameter was appropriately included because it computes annual area of baseline planned deforestation for stratum i at time t. Project proponents requested a formal exemption from VCS for setting this parameter AAplanned,i,t (ha) to 8,000 per year instead of 200,000ha. Therefore requesting a cap on the annual area of deforestation in the baseline case. The larger calculated rate was due to the property size (and possible error in BL-PL equation), that gives an infeasible result (i.e. to deforest the entire project area in the baseline within 2 years). 8,000 ha/year was deemed by VCS to be more conservative. Project proponents further state that rate of deforestation in the baseline case as determined from the proxy areas is representative of the project area, and this component is assessed elsewhere in the validation. Additional information on VCS formal exemption approval can be found in a letter drafted by the Project Proponents; CarbonCo Letter for Envira Amazonia Project Exemption.pdf and associated emails in the validation archive. See also VCS final approval (CarbonCo Deforestation Rate Cap Exemption Request.pdf).
Aplanned,i	This data/parameter was appropriately included because it pertains to total area of planned deforestation over the baseline period for stratum i. The project property value of 200,000 hectares was correctly applied.

ALT,i	This data/parameter was appropriately included because it pertains to emissions from timber harvest in stratum i in the baseline case potentially displaced through implementation of carbon project. It correctly uses the value obtained from equation 4 in the LK-ME module, specifically parameter CBSL,XBFWC,i,t.
CXB,sawnwood	This data/parameter was appropriately included because it pertains to carbon emission due to displaces timber harvests in the baseline scenario in stratum in time t. It correctly uses the value obtained from the LK-ME module, specifically parameter VBSL,EX,i,t (m3) or volume of timber projected to be extracted from within the project boundary during the baseline in stratum i at time t; m3.
Pcomi	This data/parameter was appropriately included because it pertains to commercial volume as a percent of total aboveground volume in stratum i. This parameter was checked to be sure that commercial species likely to be harvested are reasonable and it correctly references average total biomass.
CWP100,i	This data/parameter was appropriately included because it pertains to carbon stocks entering the wood products pool at the time of deforestation that is expected to be emitted over 100-years from stratum i; t CO ₂ -e ha ⁻¹ . The value as confirmed to be correctly computed from Equation 6 within module CP-W.
CWP,i	This data/parameter was appropriately included because it pertains to carbon stocks entering wood products pool at time of deforestation from stratum i. The value as confirmed to be correctly computed from Equation 6 within module CP-W.
NewRi,t	This data/parameter was appropriately included because it pertains to new calculated forest clearance in stratum i at time t by the baseline agent of the planned deforestation where no leakage is occurring. The value as confirmed to be correctly computed from Equation 4 within module LK-ASP.
PMPi	This data/parameter was appropriately included because it pertains to merchantable biomass as a proportion of total aboveground tree biomass for stratum i within the project boundaries. Validation Team found the value to be correctly computed from merchantable and total aboveground biomass.

The *Envira Amazonia Project* was checked by the Validation Team for adherence to the M-MON module under VCS methodology VM0007 v1.5 and found to be in compliance. Project proponents have provided sufficient evidence that monitoring components including; deforestation, illegal

degradation, natural disturbance, and ex-post project emissions within project boundaries are established and procedures for monitoring efforts in place.

3.3 Non-Permanence Risk Analysis

The *Envira Amazonia Project* utilized a non-permanence risk analysis tool, “T-BAR”, to assess risk according to internal risk, external risk, natural risk, and mitigation measures for minimizing risk. At all levels, the validation team evaluated the rationale, appropriateness, and justifications of risk ratings chosen by project proponents. As this is a validation and not verification the risk analysis was assessed for appropriateness and to provide additional context for the validation review of the project. A buffer is only applied at verification when this risk analysis will be reassessed, the actual scores are not summarised here. Steps taken to assess risk rationale are presented for each risk factor:

Risk Factor	Validation Findings
<u>Internal Risk</u>	
Project management	Encroachment concerns are addressed through use of on-going forest patrols and the management team does not include individuals with skills necessary to undertake all project activities. Aside from the aforementioned increased risks, project proponents have substantial experience in the global forest carbon thus also lowering overall internal risk. Other project management components were confirmed to have been applied during the site visit.
Financial viability	Project proponents have provided the validation team appropriate documentation to prove project financial breakeven within 4 years. While sales of GHG credits are dependent on stability in the VER market, evidence of sufficient financial resources is demonstrated by a verified bank statement. Items presented to the Validation Team by project proponents give reasonable assurance that the risk rating for financial viability is appropriately set at 0.
Opportunity cost	NPV analysis was not required for <i>the Envira Amazonia Project</i> as baseline activities are subsistence-driven. As such, the risk rating from NPV was appropriately selected as high because the net community benefits have not been demonstrated yet.
Project longevity	Project proponents supplied legal contractual agreements (Tri-party) to address enforceability of carbon stock protection for the Acre State in Brazil. The agreement, as noted in the Addendum, ensures the project area will remain as forest for at least a 30 year period. Further, the Tri-party agreement severely limits management implementation that might interfere with project

	activities. The agreement was reviewed by the validation team and confirmed to allow for unobstructed project activities for a 30 year period.
<u>External Risk</u>	
Land tenure and resource access/impacts	The certification of full rights document was provided by the project proponents and it correctly identifies Duarte Jose do Couto Neto as the owner who is also a project proponent (JR Agropecuária e Empreendimentos LTDA). The property was properly geo-referenced and any boundary disputes have been resolved.
Community engagement	Site visit observations and discussions with community members indicated that the communities who live within the project area do not own the land they are living on. While this was not presented as a dispute, it is important to note the ownership pattern and any issues that may arise due to the granting of ownership as a consequence of the project. Validation Team confirmed that the local communities have been consulted and are involved in the project, thus a default risk value of zero is applicable
Political risk	Validation Team deemed the political risk was appropriately rated at zero for an average governance score, participation in the Governors' Climate and Forest Taskforce, and completion of at least one CDM Afforestation/Reforestation project.
<u>Natural Risk</u>	
Fire	The risk rating given for fire was justified by scientific research which suggested that most fires in the project region are anthropogenic and natural fire incidence is low. The validation team agrees with this assessment as being conservative given a higher fire return interval is used to generate the risk rating.
Pest and disease	Validation Team agrees that the forests of the project area have a high species diversity and therefore resistant to catastrophic disturbance caused by insect pests or forests diseases.
Extreme weather	Project proponents appropriately base this risk rating off of the likelihood of wind disturbance which could have an effect on carbon stocks.
Geologic risk	Local geology (i.e. volcanos, fault lines) are not active in the project area and the risk rating was appropriately given as zero.

In summary, project proponents have accounted for risk factors in a reasonable manner and have reached an overall risk rating that encompasses all risks of non-permanence. As required, risk will be reassessed and given risk scores at each verification period.

3.4 Environmental Impact

The environmental implications from the *Envira Amazonia Project* closely align with the REDD programme which seeks to achieve net environmental benefits by conserving forest and preventing degradation. A variety of ecosystem service benefits are bolstered by this effort and are outlined in detail in the Climate, Community, and Biodiversity Alliance (CCB) Standards which the *Envira Amazonia Project* has achieved validation for. ESI's assessment of the biodiversity aspects of CCB confirmed that the project will substantially improve the environmental status of the project area over the baseline scenario.

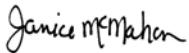
3.5 Comments by Stakeholders

As part of the Climate, Community, and Biodiversity objectives of the project, project proponents involved a variety of stakeholder groups in a series of meetings. The outcome of these meetings built a framework for project development and eventual implementation of the stated project goals. Project proponents have further indicated a commitment to continue communication with the project area community stakeholders to further the goals of the project. As described in section "2.3 Interviews" above the Validation Team held numerous interviews with a broad range of the stakeholders and confirmed the assertions made within the PD relating to stakeholders.

4 VALIDATION CONCLUSION

Environmental Services Inc. completed the validation assessment of "*The Envira Amazonia Project, A Tropical Forest Conservation Project in Acre, Brazil*". The validation team confirms that all activities adhere to the criteria established for this assessment and are documented and complete. ESI approved changes to the Project Description and concludes without any qualifications or limiting conditions that the *Envira Amazonia Project*, developed under VCS methodology VM0007 v1.5, meets the requirements of the: VCS Program Guide v3.5, VCS Standard v3.5, VCS Program Definitions v3.5, VCS AFLOU Requirements v3.4, and the VCS AFOLU Non-Permanence Risk Tool v3.2. The *Envira Amazonia Project*, as prepared by CarbonCo, LLC and validated by ESI will result in the expected GHG emissions reduction or removal of 20,170,532 tons CO₂e reductions over the initial 10 year reporting period (2013 - 2022). The project will contribute 23% (4,639,222 tons CO₂e) of the gross reductions to the buffer pool, and there will be a total expected emission reduction of 12,596,462 tons CO₂e after accounting for leakage (2,934,848 tons CO₂e).

5 SUBMITTAL INFORMATION

Report Submitted to:	Verified Carbon Standard Association 1730 Rhode Island Ave. NW, Suite 803, Washington, D.C. 20036 CarbonCo, LLC 3 Bethesda Metro Center, Suite 700 Bethesda, Maryland 20814
Report Submitted by:	Environmental Services, Inc. -Corporate Office 7220 Financial Way, Suite 100 Jacksonville, Florida 32257
ESI Lead Validator Name and Signature	 Guy Pinjuv Lead Validator
ESI Division Regional Technical Manager Name and Signature	 Janice McMahon Sr. Vice President/Technical Director Forestry, Carbon and GHG Services Division
Date:	06 April 2015

EJ/GP/rb/VO14034.00/VCS Validation Report-Final.doc

K pf: 04/06/15f

APPENDIX A – DOCUMENTS RECEIVED/REVIEWED

Documents received 10 October 2014

- Envira Amazonia Final Draft CCBS PDD, English (10-10-14).pdf

Documents received 14 October 2014

- Envira Amazonia Project Summary Document, Portuguese (10-14-14).pdf
- Envira Amazonia Project Summary Document, English (10-14-14).pdf

Documents received 15 October 2014

- Envira Amazonia Final Draft CCBS PDD, Portuguese (10-15-14).pdf

Documents received 28 October 2014

- Envira Amazonia VCS PD 2014.10.27.pdf
- Envira Amazonia 2014.10.24.xlsx

Documents received 07 November 2014

- 01 Project Document
 - o Envira Amazonia VCS PD 2014.10.27.pdf
 - o Envira Amazonia 2014.10.24.xlsx
 - o Envira Amazonia Final Draft CCBS PDD, English (10-10-14).pdf
 - o Envira Amazonia Final Draft CCBS PDD, Portuguese (10-15-14).pdf
- 02 Forest Inventory
 - o EnviraEqVal 2014.09.02.xlsx
 - o Envira Forest Inventory 2014 09 11 (Final).pdf
 - o Envira Forest Inventory 2014 09 11.doc
 - o EnviraCalc 2014.09.02.xls
- 03 Biodiversity Assessment
 - o Envira KBA Trigger Species.xlsx
 - o Acre's Vulnerable, Endangered and Critical Species.xlsx
 - o Envira Amazonia Key Biodiversity Area.pdf
- 04 Project Proponents Contracts
 - o Duarte Tri-Party Agreement Portuguese, Fully Signed and Certified.pdf
 - o Duarte Tri-Party Agreement English, Fully Signed and Certified.pdf
- 05 Community Agreements and Surveys
 - o Relatorio_1a_Visita_as_Familias_Projeto_Envira_Amazonia_05-07-14.pt.en.pdf
 - o 2014 Degradation Surveys at Envira Amazonia Project.xlsx
 - o Envira Amazonia BNS.xlsx
 - o Envira Amazonia Community Survey Results for PDD.xlsx
 - o Envira Amazonia Project's Community Atas.pdf
 - o Envira Amazonia Project's Individual Atas.pdf
 - o Relatorio_1a_Visita_as_Familias_Projeto_Envira_Amazonia_05-07-14.pdf
- 06 Title Documentation
 - o Mapa Seringal Duarte.pdf
 - o Envira Amazonia Project's Certidao.pdf
- 10 VCS CDM Documents
 - o VCS
 - VCS Standard, v3.4.pdf
 - AFOLU Non-Permanence Risk Tool, v3.2.pdf
 - VCS Standard, v3.3.pdf
 - o Methodology
 - VMD0017 X_UNC v2.0.pdf
 - T-SIG.pdf

- VM0007 REDD-MF Version 1.4.pdf
 - VMD0001 CP-AB Live biomass.pdf
 - VMD0002 CP-D Dead wood.pdf
 - VMD0005 CP-W, v1.1.pdf
 - VMD0006 BL-PL v1.2.pdf
 - VMD0009 LK-ASP, v1.1.pdf
 - VMD0011 LK-ME Leakage market effects.pdf
 - VMD0013 E-BB Biomass burning.pdf
 - VMD0015 M-MON, v2.1.pdf
 - VMD0016 X-STR Stratification.pdf
- 11 maps and gis
 - o Inventory
 - EnviralInventory_20140331_completed.shx
 - EnviralInventory_20140331_completed.dbf
 - EnviralInventory_20140331_completed.prj
 - EnviralInventory_20140331_completed.sbn
 - EnviralInventory_20140331_completed.sbx
 - EnviralInventory_20140331_completed.shp
 - EnviralInventory_20140331_completed.shp.xml
 - o Othergis
 - Proxyrate
 - ProxyAreas_2014.10.21.shx
 - Comparisons
 - o Vegetation_Proxies1.shp.xml
 - o Vegetation_Proxies1.shx
 - o Layers
 - SlopeClass.sbx
 - Ac_Soil.dbf
 - Ac_Soil.prj
 - Ac_Soil.sbn
 - Ac_Soil.sbx
 - Ac_Soil.shp
 - Ac_Soil.shp.xml
 - Ac_Soil.shx
 - AC_strm_utm_bin500m.tfw
 - AC_strm_utm_bin500m.tif
 - AC_strm_utm_bin500m.tif.aux.xml
 - AC_strm_utm_bin500m.tif.ovr
 - AC_strm_utm_bin500m.tif.vat.dbf
 - Ac_VegetationBroad.dbf
 - Ac_VegetationBroad.prj
 - Ac_VegetationBroad.sbn
 - Ac_VegetationBroad.sbx
 - Ac_VegetationBroad.shp
 - Ac_VegetationBroad.shp.xml
 - Ac_VegetationBroad.shx
 - SlopeClass.dbf
 - SlopeClass.prj
 - SlopeClass.sbn

- o Slope_PA2.shx
- o Slope_Proxies2.dbf
- o Slope_Proxies2.prj
- o Slope_Proxies2.sbn
- o Slope_Proxies2.sbx
- o Slope_Proxies2.shp
- o Slope_Proxies2.shp.xml
- o Slope_Proxies2.shx
- o Soil_PA.dbf
- o Soil_PA.prj
- o Soil_PA.sbn
- o Soil_PA.sbx
- o Soil_PA.shp
- o Soil_PA.shp.xml
- o Soil_PA.shx
- o Soil_Proxies2.dbf
- o Soil_Proxies2.prj
- o Soil_Proxies2.sbn
- o Soil_Proxies2.sbx
- o Soil_Proxies2.shp
- o Soil_Proxies2.shp.xml
- o Soil_Proxies2.shx
- o Vegetation_PA.dbf
- o Vegetation_PA.prj
- o Vegetation_PA.sbn
- o Vegetation_PA.sbx
- o Vegetation_PA.shp
- o Vegetation_PA.shp.xml
- o Vegetation_PA.shx
- o Vegetation_Proxies1.dbf
- o Vegetation_Proxies1.prj
- o Vegetation_Proxies1.sbn
- o Vegetation_Proxies1.sbx
- o Vegetation_Proxies1.shp
- ProxyAreas_2014.10.21.dbf
- ProxyAreas_2014.10.21.prj
- ProxyAreas_2014.10.21.sbn
- ProxyAreas_2014.10.21.sbx
- ProxyAreas_2014.10.21.shp
- ProxyAreas_2014.10.21.shp.xml
- 2013 Deforestation
 - Desmate_TC_1988_2013.shx
 - Desmate_TC_1988_2013.dbf
 - Desmate_TC_1988_2013.prj
 - Desmate_TC_1988_2013.sbn
 - Desmate_TC_1988_2013.sbx
 - Desmate_TC_1988_2013.shp
 - Desmate_TC_1988_2013.shp.xml
- Original Files
 - Rubens Vasques' Brazil Property
 - o SHP Pelicano.rar
 - bento's brazil property
 - o Fazenda Esperanca
 - placa 006.jpg
 - DSC02673.JPG

- Fazenda esperanca UTM.shp
 - Fazenda esperanca.kml
 - Fazenda esperanca.kmz
 - Fazenda esperanca.shp
 - Fazenda Sr.dbf
 - Duarte's Brazil Properties
 - o SERINGAL CECI EM LEVANTAMENTO.pdf
 - o PLANTA SERINGAL NAZARETH e PORTO ENVIRA.dwg
 - REDD Project Access Maps
 - o MAPA PROJETO RED.dwg
 - o mapa croqui de acesso.pdf
- o ProjectBoundaries
 - Seringal4_area.shx
 - EnviraPA_20140327.dbf
 - EnviraPA_20140327.kmz
 - EnviraPA_20140327.prj
 - EnviraPA_20140327.sbn
 - EnviraPA_20140327.sbx
 - EnviraPA_20140327.shp
 - EnviraPA_20140327.shp.xml
 - EnviraPA_20140327.shx
 - EnviraStrata_20140327.dbf
 - EnviraStrata_20140327.prj
 - EnviraStrata_20140327.sbn
 - EnviraStrata_20140327.sbx
 - EnviraStrata_20140327.shp
 - EnviraStrata_20140327.shp.xml
 - EnviraStrata_20140327.shx
 - Seringal4_area.dbf
 - Seringal4_area.kmz
 - Seringal4_area.prj
 - Seringal4_area.sbn
 - Seringal4_area.sbx
 - Seringal4_area.shp
 - Seringal4_area.shp.xml
- 12 Risk Assessment
 - o Pro Forma for Envira Amazonia Project (10-7-14).xls
 - o Cochrane and Laurance 2002 Fire as a large-scale edge effect in Amazon.pdf
 - o Cochrane et al. 1999 Positive Feedbacks in the Fire Dynamic of Tropical Forest.pdf
 - o Envira Amazonia VCS Non-Permanence Risk Report 2014.10.27.pdf
 - o Esp+ritoGÇÉSanto et al. 2010 Storm intensity and forest disturbances in the Amazon.pdf
- 13 Miscellaneous
 - o EnviraBoundaryComparison_2014.10.22.xlsx
 - o Env_ComVol_2014.10.21.xls
 - o Envira Sustainable Fuelwood Analysis 2014.10.21.xlsx
- 14 Summary Documents
 - o Envira Amazonia Project Summary Document, Portuguese (10-14-14).pdf
 - o Envira Amazonia Project Summary Document, English (10-14-14).pdf
- 15 VCS Gap Analysis and ESI Review
 - o Exhibit D - Milva Vasques and Bento Contract.pdf
 - o CarbonCo Envira Amazonia Project Pre-Validation Report.pdf
 - o Duarte Project VCS Gap Analysis, Final Version - Portuguese.pdf
 - o Duarte Project VCS Gap Analysis, Final Version.doc
 - o Duarte Project VCS Gap Analysis, Final Version.pdf

- o Exhibit A - Tri-Party Agreement English.pdf
- o Exhibit B - INCRA and CCIR Registration.PDF
- o Exhibit C -LAR Registration of Envira Amazonia Project.pdf

Documents received 01 December 2014

- CF's Employee Handbook (04-2010).pdf

Documents received 03 December 2014

- GIS Files 2014.12.03
 - o SimplifiedPA_20140327.shx
 - o Ac_River.dbf
 - o Ac_River.prj
 - o Ac_River.sbn
 - o Ac_River.sbx
 - o Ac_River.shp
 - o Ac_River.shp.xml
 - o Ac_River.shx
 - o Ac_Vegetation.dbf
 - o Ac_Vegetation.prj
 - o Ac_Vegetation.sbn
 - o Ac_Vegetation.sbx
 - o Ac_Vegetation.shp
 - o Ac_Vegetation.shp.xml
 - o Ac_Vegetation.shx
 - o SimplifiedPA_20140327.dbf
 - o SimplifiedPA_20140327.prj
 - o SimplifiedPA_20140327.sbn
 - o SimplifiedPA_20140327.sbx
 - o SimplifiedPA_20140327.shp
 - o SimplifiedPA_20140327.shp.xml

Documents received 26 February 2015

- Additional Support
 - o 2013 Accuracy Assessment
 - AccuracyAssessment2013_2014.06.31.docx
 - AApoints2013
 - AApoints2013_utm.shx
 - AApoints2013_final.kmz
 - AApoints2013_final.lyr
 - AApoints2013_utm.dbf
 - AApoints2013_utm.prj
 - AApoints2013_utm.sbn
 - AApoints2013_utm.sbx
 - AApoints2013_utm.shp
 - AApoints2013_utm.shp.xml
 - AApoints_2013_2014.06.30.xlsx
 - o GIS files
 - ProxyDeform_2014.10.21
 - ProxyDeform_2014.10.21.shx
 - ProxyDeform_2014.10.21.dbf
 - ProxyDeform_2014.10.21.prj
 - ProxyDeform_2014.10.21.sbn
 - ProxyDeform_2014.10.21.sbx
 - ProxyDeform_2014.10.21.shp

- ProxyDeform_2014.10.21.shp.xml
- Ac_Vegetation
 - Ac_Vegetation.shx
 - Ac_Vegetation.dbf
 - Ac_Vegetation.prj
 - Ac_Vegetation.sbn
 - Ac_Vegetation.sbx
 - Ac_Vegetation.shp
 - Ac_Vegetation.shp.xml
- Comparison Analysis
 - Vegetation_Proxies_2_18.shx
 - Slope_Proxies_2_18.dbf
 - Slope_Proxies_2_18.prj
 - Slope_Proxies_2_18.sbn
 - Slope_Proxies_2_18.sbx
 - Slope_Proxies_2_18.shp
 - Slope_Proxies_2_18.shp.xml
 - Slope_Proxies_2_18.shx
 - Soil_Proxies_2_18.dbf
 - Soil_Proxies_2_18.prj
 - Soil_Proxies_2_18.sbn
 - Soil_Proxies_2_18.sbx
 - Soil_Proxies_2_18.shp
 - Soil_Proxies_2_18.shp.xml
 - Soil_Proxies_2_18.shx
 - Vegetation_Proxies_2_18.dbf
 - Vegetation_Proxies_2_18.prj
 - Vegetation_Proxies_2_18.sbn
 - Vegetation_Proxies_2_18.sbx
 - Vegetation_Proxies_2_18.shp
 - Vegetation_Proxies_2_18.shp.xml
- Leakage
 - LeakageDeformMT_2014.10.07
 - o LeakageDeformMT_2014.10.07.shx
 - o LeakageDeformMT_2014.10.07.dbf
 - o LeakageDeformMT_2014.10.07.prj
 - o LeakageDeformMT_2014.10.07.sbn
 - o LeakageDeformMT_2014.10.07.sbx
 - o LeakageDeformMT_2014.10.07.shp
 - o LeakageDeformMT_2014.10.07.shp.xml
 - FazEsperanza_Clearing_2008
 - o FazEsperanza_Clearing_2008.shx
 - o FazEsperanza_Clearing_2008.dbf
 - o FazEsperanza_Clearing_2008.prj
 - o FazEsperanza_Clearing_2008.sbn
 - o FazEsperanza_Clearing_2008.sbx
 - o FazEsperanza_Clearing_2008.shp
 - o FazEsperanza_Clearing_2008.shp.xml
 - LeakageArea_2014.10.06
 - o LeakageArea_2014.10.06.shx
 - o LeakageArea_2014.10.06.dbf
 - o LeakageArea_2014.10.06.prj
 - o LeakageArea_2014.10.06.sbn
 - o LeakageArea_2014.10.06.sbx

- o LeakageArea_2014.10.06.shp
 - o LeakageArea_2014.10.06.shp.xml
- o Literature
 - Literature\ZEE Acre 2006.pdf
 - Baker TR et al Oecologia 2007.pdf
 - Chao KJ et al CJFR 2008.pdf
 - Higuchi et al 1998 - Biomassa da parte aerea.pdf
 - Winrock 2005 LULUCF Sourcebook.pdf
 - Winrock 2012 Terrestrial_Carbon_Field_SOP_Manual_2012_Version.pdf
- o Proxy Area INCRA doc
 - Fazenda Vitoria.pdf
 - Fazenda Antimari.pdf
 - Fazenda Batista.pdf
 - Fazenda Boa Ventura.pdf
 - Fazenda Che Kamba.pdf
 - Fazenda Corassal.pdf
 - Fazenda Eldorado.pdf
 - Fazenda Estela.pdf
 - Fazenda Fronteira.pdf
 - Fazenda Indaia.pdf
- o Bento's IBAMA Certificate.pdf
- o Broad Vegetation Classes.jpg
- o CC Vanguard Dec 2014 statement.pdf
- o CP-D Lying Dead changes 2014 02 19.docx
- o Dec 2014 CC Checking Statement.pdf
- o Envira Amazonia Project's Certidao (Translated into English).pdf
- o EnviraBoundaryComparison_2015.02.18.xlsx
- o Pro Forma for Envira Amazonia Project (1-30-15).xls
- Envira Amazonia 2015.02.26.xlsx
- Envira Amazonia VCS PD 2015.02.26.docx
- Envira Forest Inventory 2015.02.26.doc
- Envira Responses 2015.02.26.xlsx

Documents received 02 March 2015

- TC NonDiscr NonHarr Policy.docx
- 034_00-CCBA NCR Checklist Envira_round1.docx
- CARTILHA = ASS+ẽDIO MORAL E SEXUAL - TRABALHISTA - PRIMER = BULLYING AND SEXUAL - LABOR ..pdf
- CC Vanguard Dec 2014 statement.pdf
- Dec 2014 CC Checking Statement.pdf
- DOCUMENTO MAZINHO.pdf
- Envira Amazonia Project CCBS PDD, English (3-2-15).pdf
- Envira Amazonia Project CCBS PDD, Tracked Changes, English (3-2-15).pdf
- Pro Forma for Envira Amazonia Project (1-30-15).xls

Documents received 05 March 2015

- Envira Amazonia Project CCBS PDD, English (3-5-15).pdf
- 034_00-CCBA NCR Checklist Envira_rd2findings_20150303_draft.docx

Documents received 13 March 2015

- EnviraEqVal 2015.03.13.xlsx
- Additional Data
 - o Higuchi et al 1998 - Biomassa da parte aerea.pdf
 - o CarbonCo Deforestation Rate Cap Exemption Request.pdf
 - o commercialSpecies_EnviraAmazoniaProject.xlsx

- o Env_ComVol_2015.03.13.xls
- o Env_PMP_2015.03.13.xls
- o Feldpausch et al 2006 Biomass harvestable area and forest structure in southern Amazonia.pdf
- Envira Amazonia 2015.03.13.xlsx
- Envira Amazonia VCS PD 2015.03.13.docx
- Envira Forest Inventory 2015.03.13.doc
- Envira Responses 2015.03.13.xlsx
- EnviraCalc 2015.03.13.xls
- Additional support2
 - o Pro Forma for Envira Amazonia Project (1-30-15).xls
 - o 2013 Accuracy Assessment
 - AccuracyAssessment2013_2014.06.31.docx
 - AApoints2013
 - AApoints2013_utm.shx
 - AApoints2013_final.kmz
 - AApoints2013_final.lyr
 - AApoints2013_utm.dbf
 - AApoints2013_utm.prj
 - AApoints2013_utm.sbn
 - AApoints2013_utm.sbx
 - AApoints2013_utm.shp
 - AApoints2013_utm.shp.xml
 - AApoints_2013_2014.06.30.xlsx
 - o gis files
 - ProxyDeform_2014.10.21
 - ProxyDeform_2014.10.21.shx
 - ProxyDeform_2014.10.21.dbf
 - ProxyDeform_2014.10.21.prj
 - ProxyDeform_2014.10.21.sbn
 - ProxyDeform_2014.10.21.sbx
 - ProxyDeform_2014.10.21.shp
 - ProxyDeform_2014.10.21.shp.xml
 - Ac_Vegetation
 - Ac_Vegetation.shx
 - Ac_Vegetation.dbf
 - Ac_Vegetation.prj
 - Ac_Vegetation.sbn
 - Ac_Vegetation.sbx
 - Ac_Vegetation.shp
 - Ac_Vegetation.shp.xml
 - Comparison Analysis
 - Vegetation_Proxies_2_18.shx
 - Slope_Proxies_2_18.dbf
 - Slope_Proxies_2_18.prj
 - Slope_Proxies_2_18.sbn
 - Slope_Proxies_2_18.sbx
 - Slope_Proxies_2_18.shp
 - Slope_Proxies_2_18.shp.xml
 - Slope_Proxies_2_18.shx
 - Soil_Proxies_2_18.dbf
 - Soil_Proxies_2_18.prj
 - Soil_Proxies_2_18.sbn

- Soil_Proxies_2_18.sbx
- Soil_Proxies_2_18.shp
- Soil_Proxies_2_18.shp.xml
- Soil_Proxies_2_18.shx
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 - o LeakageDeformMT_2014.10.07.dbf
 - o LeakageDeformMT_2014.10.07.prj
 - o LeakageDeformMT_2014.10.07.sbn
 - o LeakageDeformMT_2014.10.07.sbx
 - o LeakageDeformMT_2014.10.07.shp
 - o LeakageDeformMT_2014.10.07.shp.xml
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 - o FazEsperanza_Clearing_2008.dbf
 - o FazEsperanza_Clearing_2008.prj
 - o FazEsperanza_Clearing_2008.sbn
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 - o LeakageArea_2014.10.06.prj
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 - Higuchi et al 1998 - Biomassa da parte aerea.pdf
 - Winrock 2005 LULUCF Sourcebook.pdf
 - Winrock 2012 Terrestrial_Carbon_Field_SOP_Manual_2012_Version.pdf
- o Proxy Area INCRA doc
 - Fazenda Vitoria.pdf
 - Fazenda Antimari.pdf
 - Fazenda Batista.pdf
 - Fazenda Boa Ventura.pdf
 - Fazenda Che Kamba.pdf
 - Fazenda Corassal.pdf
 - Fazenda Eldorado.pdf
 - Fazenda Estela.pdf
 - Fazenda Fronteira.pdf
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- o Dec 2014 CC Checking Statement.pdf
- o Envira Amazonia Project's Certidao (Translated into English).pdf
- o EnviraBoundaryComparison_2015.02.18.xlsx

Documents received 20 March 2015

- CC Vanguard Dec 2014 statement.pdf
- Dec 2014 CC Checking Statement.pdf
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Documents received 31 March 2015

- Envira Forest Inventory 2015.03.13 clean.doc
- Envira Amazonia VCS PD 2015.03.31.docx
- Envira Amazonia VCS PD 2015.03.31.pdf
- Envira Amazonia VCS Non-Permanence Risk Report 2015.03.31.pdf

Documents received 03 April 2015

- Envira Amazonia VCS PD 2015.04.03.docx
- Envira Amazonia VCS PD 2015.04.03.pdf
- Envira Amazonia VCS Non-Permanence Risk Report 2015.04.03.pdf

APPENDIX B – NCR/CL/OFI SUMMARY

Item Number	1
VCS Standard VCS Version 3 Requirements Document 08 October 2013, v3.4	3.5.1 Deviations from the applied methodology are permitted where they represent a deviation from the criteria and procedures relating to monitoring or measurement set out in the methodology (i.e., deviations are permitted where they relate to data and parameters available at validation, data and parameters monitored, or the monitoring plan). Methodology deviations shall not negatively impact the conservativeness of the quantification of GHG emission reductions or removals, except where they result in increased accuracy of such quantification. Deviations relating to any other part of the methodology shall not be permitted.
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Section 2.6
ESI Findings - Round 1 (21 January 2015)	There are several methodology deviations mentioned in Section 2.6. While many of them appear to only affect monitoring and measurement, there are some that appear to go beyond that scope - affecting inventory and baseline calculations. The root-shoot ratio required in CB-AB is not just a monitoring parameter, but it also affects baseline calculations. A request for further details on the appropriateness of the methodology deviation is made in module CP-AB. The forest inventory deviation would appear to also affect the baseline and is not strictly relegated to monitoring and measurement in the data and parameters table. The appropriateness of the methodology deviation is discussed in module CP-D. Deadwood collection did not meet the minimum requirements of the CP-D module, although it met the precision target. However, this does not appear to be an "either/or" requirement. Please provide the minimum required samples, or justification that samples from similar areas can be substituted in this analysis as discussed during the site visit. The deviations need to be separated by number, so that each item can be referenced and addressed individually.
Round 1 NCR/CL/OFI	1 NCR: Please address the finding, and please separately number each deviation in the PD (e.g., Deviation 1, Deviation 2, etc.) so that it is clear how many deviations exist, and each deviation can then be addressed individually and efficiently for tracking and reporting purposes. Please also see comment on deadwood sampling, and address as discussed.
Round 1 Response from Project Proponent (26 February 2015)	Deviations as found in Section 2.6 have been numbered. Please see the response to finding 30 in regards to the comment on deadwood sampling.

Final ESI Findings (31 March 2015)	Deviations in Section 2.6 have been numbered. Finding is addressed.
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Item Number	2
VCS Standard VCS Version 3 Requirements Document 08 October 2013, v3.4	3.7.1 The project start date is the date on which the project began generating GHG emission reductions or removals (see VCS document AFOLU Requirements for further specification for AFOLU projects). The rules and requirements on project start date, as well as validation and verification dates, are set out in the sections below. For projects registered under both the VCS Program and an approved GHG program, further specification with respect to the validation deadline is set out in Sections 3.11.8 and 3.11.9.
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Section 1.5 of PD; Duarte Tri-Party Agreement Portuguese, Fully Signed and Certified.pdf; Duarte Tri-Party Agreement English, Fully Signed and Certified.pdf
ESI Findings - Round 1 (21 January 2015)	The PD states that the "Project has a project start date of August 2, 2012. On this day the Tri-Party Agreement between the project proponents was signed and JR Agropecuária e Empreendimentos EIRELI agreed to pursue a forest conservation project rather than clear the land for lumber and establishment of a ranch." The validator reviewed the document "Duarte Tri-Party Agreement" in English and Portuguese. It appears the documents were drafted with the intent to sign on 02 August 2012, but there is no hand-printed date next to the signatures, and the notary date is 05 June or 05 August of 2013.
Round NCR/CL/OFI	1 CL: The start date does not appear to be supported by the provided Tri-Party Agreements. There are conflicting dates of signature. Please clarify.
Round 1 Response from Project Proponent (26 February 2015)	The Duarte Tri-Party Agreement was signed by all Parties on August 2, 2012. CarbonCo, in collaboration with TerraCarbon, undertook a rapid assessment and due diligence on the project. Upon completing the due diligence and believing the Envira Amazonia Project was viable, the Tri-Party Agreement was notarized on May 6, 2013 and then certified by the Clerk of the Circuit Court for Montgomery County on May, 10 2013 and was finally authenticated by the Consulate General of Brazil in Washington on June 17, 2013. It is important to note that project activities – particularly foregoing the conversion of the project's primary forests to a large-scale cattle ranch – commenced upon signing the Tri-Party Agreement on August 2, 2012.
Final ESI Findings (31 March 2015)	The Tri-party agreement was originally signed by all parties on August 2, 2012, and even though the actual agreement was not made legal until May 10, 2013 in the US and legal in Brazil until June 17, 2013. The date of August 2, 2012 was the day that forgoing conversion of the projects primary forest began. Under the AFOLU requirement 3.4, the start date can be indicated by activities, "Such activities may include preparing land for seeding, planting, changing agricultural or forestry practices, rewetting, restoring hydrological functions, or implementing management or protection plans". Finding is addressed.

Item Number	3
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VCS Standard VCS Version 3 Requirements Document 08 October 2013, v3.4	3) Project location for AFOLU projects shall be specified using geodetic polygons to delineate the geographic area of each AFOLU project activity and provided in a KML file.
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Section 1.9 of PD
ESI Findings - Round 1 (21 January 2015)	The project has been mapped with geodetic polygons. KMZ files of the project boundary have been provided. It is unclear if separate KMZ files have been provided showing the area of each AFOLU activity (strata, etc.).
Round 1 NCR/CL/OFI	CL: Please address the finding.
Round 1 Response from Project Proponent (26 February 2015)	No additional kmz files are warranted for this project as REDD is the only AFOLU project activity.
Final ESI Findings (31 March 2015)	The appropriate files have been previously provided. Finding is addressed.

Item Number	4
VCS Standard VCS Version 3 Requirements Document 08 October 2013, v3.4	3.11.1 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): 1) A right of use arising or granted under statute, regulation or decree by a competent authority. 2) A right of use arising under law. 3) A right of use arising by virtue of a statutory, property or contractual right in the plant, equipment or process that generates GHG emission reductions and/or removals (where such right includes the right of use of such reductions or removals and the project proponent has not been divested of such right of use). 4) A right of use arising by virtue of a statutory, property or contractual right in the land, vegetation or conservational or management process that generates GHG emission reductions and/or removals (where such right includes the right of use of such reductions or removals and the project proponent has not been divested of such right of use). 5) An enforceable and irrevocable agreement with the holder of the statutory, property or contractual right in the plant, equipment or process that generates GHG emission reductions and/or removals which vests the right of use in the project proponent. 6) An enforceable and irrevocable agreement with the holder of the statutory, property or contractual right in the land, vegetation or conservational or management process that generates GHG emission reductions or removals which vests the right of use in the project proponent. 7) A right of use arising from the implementation¹ or enforcement of laws, statutes or regulatory frameworks that require activities be undertaken or incentivize activities that generate GHG emission reductions or removals.
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	PD Section 1.12.1

ESI Findings - Round 1 (21 January 2015)	The Project claims their right of use under #4 of the Rule. Validator attempted to translate title documents with Google translate. Stopped translating after PDF Page 8.
Round NCR/CL/OFI 1	CL: If available, please provide translated title documents, else please explain in additional detail the right of use following #4.
Round 1 Response from Project Proponent (26 February 2015)	CarbonCo re-typed and translated the landownership documents known as the "certidao" into English. This translated certidao was provided to ESI and is located in the project database entitled "Envira Amazonia Project's Certidao (Translated into English)". The certidao is essentially the final document that certifies the geo-referencing survey is complete, certified the property does not overlap any other properties, and that the property is owned by Duarte Jose do Couto Neto and his company J.R. Agropecuaria e Empreendimentos LTDA.
Final ESI Findings (31 March 2015)	"Envira Amazonia Project's Certidao (Translated into English).pdf appears to demonstrate right of use to Duarte Jose do Couto Neto and his company J.R. Agropecuaria e Empreendimentos LTDA. arising by virtue of a statutory, property or contractual right in the land, vegetation or conservational or management process that generates GHG emission reductions and/or removals (where such right includes the right of use of such reductions or removals and the project proponent has not been divested of such right of use). The explicit right arises from the property ownership right, and legal authority to convert primary forest to pasture land once georeferencing is complete and the CAR is initiated. The provided certidao is the document that certifies the geo-referencing survey is complete for the CAR, certifies the property does not overlap any other properties, and is owned by Duarte Jose do Couto Neto and his company J.R. Agropecuaria e Empreendimentos LTDA. Finding is addressed.

Item Number	5
VCS AFOLU Requirements Version 3.4	3.4.2 The project proponent shall demonstrate control over the entire project area with documentary evidence establishing conclusively one or more rights of use accorded to the project proponent as set out in the VCS Standard, noting the following:
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	PD Section 1.12.1
ESI Findings - Round 1 (21 January 2015)	There is a legal contractual agreement to maintain the project area as forest for at least a 60 year period (i.e. greater than the length of the crediting period) from the project start date. There are a couple legal contracts available in the project files. The tri party agreement appears to be a legally binding contract within the United States and explicitly states as such. However, this term does not appear to be entirely spelled out in the Tri Party Agreement alone. Please provide an addendum to this agreement that clearly indicates a 60 year period or point to the language in the existing agreement that specifies this length.
Round NCR/CL/OFI 1	CL: Please provide an addendum to this agreement (as was done in the Russas and Valpariso projects) that spells out a 60 year period, or point to the language in the existing agreement that specifies this length.

Round 1 Response from Project Proponent (26 February 2015)	There is a contractual agreement to maintain the project area as forest for at least a 30 year period, as specified in the Tri-party agreement. This change has resulted in the updating of the risk score, and text as found throughout Appendix A.
Final ESI Findings (31 March 2015)	Text throughout Appendix A. now indicates that the contractual agreement to maintain the project area as forest for at least a 30 year period (no longer 60 as previously stated). Finding is addressed.

Item Number	6
Approved VCS Methodology VM0007 Version 1.4, 3 May 2013 REDD Methodology Modules REDD Methodology Framework (REDD-MF) Sectoral Scope 14	CP-AB "VMD0001 Estimation of carbon stocks in the above- and belowground biomass in live tree and non-tree pools"
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	PD section 2.1
ESI Findings - Round 1 (21 January 2015)	The module is used. Version 1.0 is noted for this module in the PD and the proper version should be 1.1. No noteworthy or significant changes occur between v1.0 and v1.1.
Round NCR/CL/OFI 1	CL: Please reference the appropriate up-to-date version of this module in the PD.
Round 1 Response from Project Proponent (26 February 2015)	The text of the PD has been updated to refer to version 1.1 of the CP-AB module.
Final ESI Findings (31 March 2015)	Text in section 2.1 of the PD That been updated to refer to version 1.1 of the CP-AB module. Finding is addressed.

Item Number	7
Approved VCS Methodology VM0007 Version 1.4, 3 May 2013 REDD Methodology Modules REDD Methodology Framework (REDD-MF) Sectoral Scope 14	CP-W "VMD0005 Estimation of carbon stocks in the long-term wood products pool"
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	PD Section 2.3.2
ESI Findings - Round 1 (21 January 2015)	Regarding Harvested Wood products, the PD States "Included as commercial harvesting for wood products takes place in the baseline as part of the forest conversion process." The PD references v1.0 of this module and v1.1 may be more appropriate.
Round NCR/CL/OFI 1	CL: Please justify use of v1.0 for CP-W module instead of more recent v1.1.

Round 1 Response from Project Proponent (26 February 2015)	As stated in Section 2.1 of the PD version 1.1 of the CP-W module was used during development of the project. For the sake of brevity, modules are referred to by their title or abbreviation (i.e., CP-W)) throughout the PD. Only in Section 2.1 are the full name of each module, including version number, listed.
Final ESI Findings (31 March 2015)	Section 2.1 of the PD states version 1.1 of the CP-W module was used during development of the project. Finding is addressed.

Item Number	8
Approved Methodology Version 1.4, 3 May 2013 REDD Methodology Modules REDD Methodology Framework (REDD-MF) Sectoral Scope 14	E-BB "VMD0013 Estimation of greenhouse gas emissions from biomass burning"
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	PD Section 2.1, 4.3
ESI Findings - Round 1 (21 January 2015)	Module not listed in PD Section 2.1 and per Table 1 of REDD-MF use of this module is required. Parameter EBiomassBurn,i,t is set to 0 for project emissions because it was deemed insignificant according to the T-Sig tool.
Round NCR/CL/OFI 1	CL: Please add E-BB module to Section 2.1 list of the PD.
Round 1 Response from Project Proponent (26 February 2015)	Section 2.1 of the PD has been revised to include the "E-BB module".
Final ESI Findings (31 March 2015)	Validators confirmed that Section 2.1 of the PD has been revised to include the "E-BB module". Finding is addressed.

Item Number	9
Approved Methodology Version 1.4, 3 May 2013 REDD Methodology Modules REDD Methodology Framework (REDD-MF) Sectoral Scope 14	To be eligible for VCS crediting, land defined as "forest" shall meet the VCS definition of forest and shall be under the control of the project proponent at the time of verification. The boundary of the REDD activity shall be clearly delineated and defined and include only land qualifying as "forest" for a minimum of 10 years prior to the project start date.
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	UCEGEO deforestation dataset, EnviraPA_20140327.shp

ESI Findings - Round 1 (21 January 2015)	Definition of forest is met and was confirmed during site visit. Ownership assessed in the Risk Tab. The boundary is clearly defined. 2.7 ha were discovered to be deforested within project area from the UCEGEO deforestation dataset, it appears they were not properly clipped out of the project area. Select by attribute was used "are within the source layer feature" to find these features (ex. FID 1064, 4646).
Round 1 NCR/CL/OFI	CL: Please address the findings and explain the slight discrepancy in nonforest within the project area. If warranted, please fix the project area boundary to be in compliance with this requirement and ensure only forest is accounted for in the project boundary 10 years prior to start date.
Round 1 Response from Project Proponent (26 February 2015)	The areas identified by the auditor were both deforested in 2013. As this is after the project start date they were not pulled out of the project area. This deforestation is in the with project case and hence will be treated as an emission during the first monitoring period. No changes to the project area were made.
Final ESI Findings (31 March 2015)	Validators confirm that these small areas were deforested after project start and therefore applicable to be included for project boundaries. No changes required. Finding is addressed.

Item Number	10
Approved VCS Methodology VM0007 Version 1.4, 3 May 2013 REDD Methodology Modules REDD Methodology Framework (REDD-MF) Sectoral Scope 14	Harvested wood products and dead-wood shall be included when they increase more or decrease less in the baseline than in the project scenario. In all other cases only aboveground biomass is mandatory. If a carbon pool is included in the baseline accounting, it shall also be included in project scenario and leakage accounting.
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	PD Section 2.3.2, Envira Amazonia 2014.10.24.xlsx
ESI Findings - Round 1 (21 January 2015)	The harvested wood products pool was Included as the PD states "commercial harvesting for wood products takes place in the baseline as part of the forest conversion process." The dead wood pool was included per the PD "as it can represent a significant component of forest biomass." Harvested wood products and dead-wood pools do not appear to have been included as part of leakage and project accounting as noted in the monitoring plan.
Round 1 NCR/CL/OFI	CL: Please include Harvested wood products and dead-wood in leakage accounting per this requirement in the monitoring plan.
Round 1 Response from Project Proponent (26 February 2015)	Harvested wood products and dead-wood have already been included in GHG accounting including leakage accounting. Harvested wood products and dead-wood are included in the project excel workbook (Envira Amazonia 2015.02.26.xlsx) in: baseline tab "3.1" in cells AR5 and AR6; With Project Tab "3.2" in cells D6-D15; and Leakage Tab "3.3" in cells P5-P14.
Final ESI Findings (31 March 2015)	Harvested wood products and dead-wood are indeed appropriately included for accounting purposes. Assessment of computation specifics are assessed elsewhere in the review. Finding is addressed.

Item Number	11
Approved VCS Methodology VM0007 Version 1.4, 3 May 2013 REDD Methodology Modules REDD Methodology Framework (REDD-MF) Sectoral Scope 14	• Revision of the baseline
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	PD section 4.3
ESI Findings - Round 1 (21 January 2015)	The technical description of the monitoring task for this heading does not contain sufficient detail.
Round 1 NCR/CL/OFI	CL: Please develop the technical description per this requirement more fully for "Revision of the baseline"
Round 1 Response from Project Proponent (26 February 2015)	The following text was added to Section 4.3 of the PD "As the entire project area will have been deforested during the initial baseline period, no new areas will be deforested post 2022 in the baseline. From 2023 onward, the baseline is therefore limited to delayed emissions in the dead wood, below ground biomass, and wood product pools resulting from deforestation in the initial baseline period. Should an analysis of proxy areas be warranted to estimate a rate of deforestation, the BL-PL module will be consulted."
Final ESI Findings (31 March 2015)	Technical description for revision of the baseline in section 4.3 of the PD contains sufficient detail. Finding is addressed.

Item Number	12
Approved VCS Methodology VM0007 Version 1.4, 3 May 2013 REDD Methodology Modules REDD Methodology Framework (REDD-MF) Sectoral Scope 14	• Revision of the baseline
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	PD section 4.3
ESI Findings - Round 1 (21 January 2015)	This heading does not contain data and parameters to be collected.
Round 1 NCR/CL/OFI	CL: Please add in data and parameters to be collected for this heading.
Round 1 Response from Project Proponent (26 February 2015)	A data and parameters table for Revising the Baseline has been added to Section 4.3 of the PD.
Final ESI Findings (31 March 2015)	Section 4.3 now contains Table 4.7 (Data and Parameters for Revising the Baseline). Finding is addressed.

Item Number	13
Approved VCS Methodology VM0007 Version 1.4, 3 May 2013 REDD Methodology Modules REDD Methodology Framework (REDD-MF) Sectoral Scope 14	• Monitoring of actual carbon stock changes and greenhouse gas emissions
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	PD section 4.3
ESI Findings - Round 1 (21 January 2015)	This heading does not contain data and parameters to be collected.
Round 1 NCR/CL/OFI	CL: Please add in data and parameters to be collected for this heading.
Round 1 Response from Project Proponent (26 February 2015)	A data and parameters table for monitoring of actual carbon stock changes and greenhouse gas emissions has been added to Section 4.3 of the PD.
Final ESI Findings (31 March 2015)	Section 4.3 now contains Table 4.6 (Data and Parameters for Monitoring Carbon Stocks Changes and GHG Emissions). Finding is addressed.

Item Number	14
VCS AFOLU Approved VCS Module VMD0001, Version 1.1 (10 October 2013), REDD Methodological Module: Estimation of carbon stocks in the above- and belowground biomass in live tree and non-tree pools (CP-AB), Sectoral Scope 14	Step 1: Determine the tree dimensions such as diameter (DBH, at typically 1.3 m [4.3 ft] aboveground level or above buttress where they exist, and total height H), of all the trees above some minimum DBH in the sample plots. The exact tree dimensions and minimum size tree to be measured in sample plots will be specified by the allometric equation selected in Step 2. Any minimum values employed in inventories are held constant for the duration of the project.
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	PD Appendix B2.0
ESI Findings - Round 1 (21 January 2015)	Diameter at breast height (1.3m) was measured for all trees on plot > 10 cm dbh. Diameter of trees with buttresses were measured directly above the point of termination of the buttress. In each plot, height to the base of the crown of the three tallest trees were measured with a clinometer. Where palms were encountered that meet the minimum dbh threshold, two measurements were taken: basal diameter and height to the top of the stem. Steps for measurement were correctly executed as observed by validators during the site visit. Site visit observations also highlighted some areas where clarity could be added to the inventory methodology to avoid confusion in the measurement of diameter on buttressed trees and forked trees.

Round 1 NCR/CL/OFI	1	CL: Please add further clarity to the inventory methodology on how to measure buttressed trees and forked trees with irregularities. i.e., during the site visit we discussed adding clarifying pictures to define what a buttress is (in the case that it is sweeping), and where to measure diameter on such a tree.
Round 1 Response from Project Proponent (26 February 2015)		The following text was revised in the SOPs as found in the Appendix B of the PD to clarify when a buttressed tree is present, and when Figure 2.2 of the SOP is relevant. "In cases where the base of the tree is enlarged and buttress roots are present to help stabilize the tree, and this enlargement extends above 1.3m, the diameter of these buttressed trees will be measured directly above the point of termination of the buttress (Figure 2.2). The termination of the buttress is most often characterized by the presence of an abrupt angle change along the bole of the tree due to the presence of the buttress roots. This abrupt angle change distinguishes buttressed roots from butt swell." For forked trees, please see response to Finding 18.
Final ESI Findings (31 March 2015)		Further clarity has been added to the inventory methodology on how to measure buttressed trees and forked trees with irregularities (as were encountered during the site visit). Finding is addressed.

Item Number	15
VCS AFOLU Approved VCS Module VMD0001,Version 1.1 (10 October 2013), REDD Methodological Module: Estimation of carbon stocks in the above- and belowground biomass in live tree and non-tree pools (CP-AB), Sectoral Scope 14	Step 2: Select or develop an appropriate and validated allometric equation for forest type/group of species j (e.g. tropical humid forest or tropical dry forest) or for each species or family j (group of species) found in the inventory (hereafter referred to as species group). Any equation selected may only be used if applicability has been demonstrated and validated per guidance in the parameters section below.
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Envira Forest Inventory 2014 09 11.doc
ESI Findings - Round 1 (21 January 2015)	The Inventory Reports notes a 'quasi-validation" was performed of the allometric equations. Brown, S. 1997, moist area equation was used for all species with the exception of palms. Palms were calculated based on the volume of a paraboloid as described in the methodology deviation section. Please see the parameters section below for additional related review. Additional evidence is needed to justify the conservativeness of using a paraboloid to estimate palm biomass. Further, the text seems to suggest this is the case "excluding other aboveground biomass; and..."
Round 1 NCR/CL/OFI	1 CL: Please elaborate on why estimating palm biomass using a paraboloid is conservative.

Round 1 Response from Project Proponent (26 February 2015)	As stated in Section 2.6: "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 of a paraboloid rather than the volume of a cylinder;" Note that the volume of a cylinder is 1/2 the volume of a paraboloid. Further, the text in Section 2.6 of the PD was revised to read: "Only stem biomass is estimated, thus conservatively excluding other aboveground biomass including palm fronds."
Final ESI Findings (31 March 2015)	Estimating palm biomass using a paraboloid appears to be conservative for the following reasons: 1) Volume is calculated as the volume of a paraboloid rather than the volume of a cylinder. The volume of a cylinder is 1/2 the volume of a paraboloid. 2) Only stem biomass is estimated, thus conservatively excluding other aboveground biomass including palm fronds. Finding is addressed.

Item Number	16
VCS AFOLU Approved VCS Module VMD0001, Version 1.1 (10 October 2013), REDD Methodological Module: Estimation of carbon stocks in the above- and belowground biomass in live tree and non-tree pools (CP-AB), Sectoral Scope 14	Step 1: Calculate the belowground tree biomass carbon stock for each plot by multiplying the root to shoot ratio by the AGB calculated in Part 1
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	PD Section 2.6, EnviraCalc 2014.09.02.xls
ESI Findings - Round 1 (21 January 2015)	The project proponent used the Cairns et al, 1997 equation in place of the root to shoot method. This methodology deviation for the root to shoot parameter needs a more detailed demonstration of appropriateness and conservativeness to be justified as a methodology deviation. Cairns substitution here effects baseline quantification. The Cairns equation was correctly applied at t/ha cluster level.
Round 1 NCR/CL/OFI	CL: Please elaborate on the appropriateness and conservativeness of this methodology deviation per the finding, noting these details in Section 2.6 of the PD.
Round 1 Response from Project Proponent (26 February 2015)	The following text was added to Section 2.6 of the PD "Cairns et al. is appropriate for determining belowground biomass as this equation is published in a peer-reviewed scientific journal. In fact, guidance for new methodologies as found in VCS AFOLU Requirements version 3.4 specifically mentions the Cairns et al. equations in reference to established procedures for quantifying belowground biomass, thus indicating the appropriateness of this source."

Final ESI Findings (31 March 2015)	The Cairns et al. equation is from the following peer reviewed source, (Cairns, M. A., S. Brown, E. H. Helmer, and G. A. Baumgardner. 1997. Root biomass allocation in the world's upland forests. <i>Oecologia</i> 111, 1-11.). This equation is referenced in guidance for new AFOLU methodologies version 3.4, thus indicating the appropriateness of this source. Finding is addressed.
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Item Number	17
VCS AFOLU Approved VCS Module VMD0001, Version 1.1 (10 October 2013), REDD Methodological Module: Estimation of carbon stocks in the above- and belowground biomass in live tree and non-tree pools (CP-AB), Sectoral Scope 14	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 . The source of equation(s) shall be chosen with priority from higher to lower preference, as available, as follows:
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	EnviraEqVal 2014.09.02.xlsx, Envira Forest Inventory 2014 09 11.doc
ESI Findings - Round 1 (21 January 2015)	Based on equation validation supplied evidence, Brown's allometric equation may not be applied conservatively (i.e. predicted should be less than observed) as seen on the graph of observed vs. predicted live AG biomass estimates. Validators achieve a R^2 fit of .759 which does not meet this requirement.
Round NCR/CL/OFI 1	NCR: Please further justify use of the Brown's equation, explaining how it is able to meet all components of this requirement. Please also correct the incorrect numerical references to Brown's equation at the beginning of Section 6.0 in the Inventory report.
Round 1 Response from Project Proponent (26 February 2015)	There seems to be some confusion as to what the methodology requires. There are two checks on the allometric equations. 1) It meets the requirements of the methodology (i.e. as detailed in the "source of data" for the parameter $f(X,Y)$ the allometric equation is appropriate for the forest type and location, the equation is based on at least 30 trees and the R-squared ≥ 0.8). 2) The equations is valid and applicable (as detailed in the "Any comment" for the parameter $f(X,Y)$). 1) The Brown equation meets the first requirement as noted in the inventory report it is based on $n=170$ trees with an R-squared=0.84. The R-squared value 0.759, as noted by the auditor, is of no relevance to whether the equation meets requirements of the methodology (check 1) or during the equation validation (check 2). 2) The second requirement is discussed in response to Finding 19. Detail has been added to the Brown reference to list its equation number (Equation 3.2.3), but the original numerical reference appears to be correct.

Final ESI Findings (31 March 2015)	Validators original concern was that the Brown equation was selected appropriately and whether the intent of the methodology was being followed for parameter $f(X,Y)$. Validators agree with the project proponent that Brown was preferentially selected but also suitable as a validated equation. There was also a misinterpretation of overlapping methodology requirements. Finding is addressed.
Item Number	18
VCS AFOLU Approved VCS Module VMD0001, Version 1.1 (10 October 2013), REDD Methodological Module: Estimation of carbon stocks in the above- and belowground biomass in live tree and non-tree pools (CP-AB), Sectoral Scope 14	· Measure DBH, and height to a 10 cm diameter top or to the first branch.
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	EnviraEqVal 2014.09.02.xlsx, Envira Forest Inventory 2014 09 11.doc
ESI Findings - Round 1 (21 January 2015)	This was performed for the trees used to validate the Brown equation. During the site visit, validators noted that several trees with swell extending beyond dbh did not fall under the conventionally written inventory SOPs. There was some discussion and the PP indicated they would reach out to Sandra Brown (of the Brown equation).
Round NCR/CL/OFI 1	CL: Please provide evidence of the appropriate approach as suggested by Sandra Brown for the measurement of dbh of unusual stem forms.
Round 1 Response from Project Proponent (26 February 2015)	A new figure has been added to the standard operating figures to better explain sampling trees with split boles. The text "Figure 2.1b. Point of measurement on trunk with previous fork or split bole." was added alongside 2 pictures. This is in agreement with the following sources which have been produced by Sandra Brown's group at Winrock and provided in response to this finding: Page 21 of Winrock 2005 LULUCF Sourcebook. Cited as Timothy Pearson, Sarah Walker and Sandra Brown. 2005. Sourcebook for Land Use, Land Use Change, and Forestry Projects. World Bank BioCarbon Fund Page 26 of Winrock 2012 Terrestrial Carbon Field SOP Manual. Cited as Walker, SM, TRH Pearson, FM Casarim, N Harris, S Petrova, A Grais, E Swails, M Netzer, KM Goslee and S Brown. 2012. Standard Operating Procedures for Terrestrial Carbon Measurement: Version 2012. Winrock International.
Final ESI Findings (31 March 2015)	Evidence for the appropriate approach as suggested by Sandra Brown for the measurement of dbh of unusual stem forms has been provided and is sufficient to explain DBH measurement of unusual stem forms. Finding is addressed.

Item Number	19
VCS AFOLU Approved VCS Module VMD0001, Version 1.1 (10 October 2013), REDD Methodological Module: Estimation of carbon stocks in the above- and belowground biomass in live tree and non-tree pools (CP-AB), Sectoral Scope 14	· 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. or
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	EnviraEqVal 2014.09.02.xlsx, Envira Forest Inventory 2014 09 11.doc
ESI Findings - Round 1 (21 January 2015)	A plot of the predicted versus observed values was included as Figure 7.1 in the Inventory Report. There was no plot of the predicted values versus DBH. An examination of the residuals showed that 57% of the predicted values are higher than the values of Brown and less than 75% to be in compliance with the methodology. However, Figure 7.1 was plotted incorrectly.
Round 1 NCR/CL/OFI	1 NCR: Please fix Figure 7.1 and plot correctly to illustrate predicted above observed.
Round 1 Response from Project Proponent (26 February 2015)	Figure 7.1 of the inventory report has been corrected to illustrate predicted versus observed.
Final ESI Findings (31 March 2015)	Figure 7.1 of the inventory report (Envira Forest Inventory 2015.03.13.doc) still shows predicted biomass is greater than observed (for most of the data points), which would indicate a model that is not conservative. Upon further examination validators find that predicted values are still <75% as compared to measured and in compliance of this requirement and it is acceptable. Finding is addressed.

Item Number	20
Approved VCS Module VMD0005, Version 1.1 (20 November 2012), REDD Methodological Module: Estimation of carbon stocks in the long-term wood products pool (CP-W), Sectoral Scope 14	This module is applicable to all cases where wood is harvested for conversion to wood products for <i>commercial markets</i> , for all forest types and age classes.
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	PD Section 2.3.2, and section 4.3

ESI Findings - Round 1 (21 January 2015)	PD states in Table 2.5 "commercial harvesting for wood products takes place in the baseline as part of the forest conversion process." Harvested wood products are included as commercial harvesting does take place in the baseline as part of the forest conversion process according to Table 2.5 and use of module CP-W. However, at the beginning of Section 4.3 Monitoring Plan, it is stated "Further as no commercial harvest of timber (including FSC selective logging) occurs in the baseline or with project case, the degradation due to harvest of timber will not be monitored, thus parameter $\Delta CP, SelLog, i, t$ is set to 0."
Round 1 NCR/CL/OFI	CL: please adjust quoted text so they are consistent and do not to mislead the reader.
Round 1 Response from Project Proponent (26 February 2015)	The statement at the beginning of Section 4.3 has been revised to read: "Further as no commercial harvest of timber (including FSC selective logging) occurs in the with project case, the degradation due to harvest of timber will not be monitored, thus parameter $\Delta CP, SelLog, i, t$ is set to 0."
Final ESI Findings (31 March 2015)	Statement in section 4.3 has been revised to only apply to the with project case and has avoided previous confusion. Finding is addressed.

Item Number	21
Approved VCS Module VMD0005, Version 1.1 (20 November 2012), REDD Methodological Module: Estimation of carbon stocks in the long-term wood products pool (CP-W), Sectoral Scope 14	Step 1: Calculate the biomass carbon of the commercial volume extracted prior to or in the process of deforestation using <u>equation 4 on page 7</u>
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Envira Amazonia 2014.10.24.xlsx
ESI Findings - Round 1 (21 January 2015)	This equation was applied correctly with the exception that CXB, I is to be computed on an individual stratum level and then summed in the next equation. Further, 12 m ³ /ha was mentioned as commercially extractable by the landowner.
Round 1 NCR/CL/OFI	NCR: Please follow equation 4 and compute parameter CXB, I on an individual stratum basis. Please also substantiate the value of extractable volume.
Round 1 Response from Project Proponent (26 February 2015)	CXB was not calculated on the strata level as the land is not being cleared at the strata level and hence strata are irrelevant for this analysis. Further, stratification of carbon pools is suggested to improve accuracy but not required as discussed in the X-STR module. The volume of extractable timber is 21.1 m³ (converted from a CXB value of 36.4 t CO₂/ha, which is in line with what would be expected (12 to >25m³/ha) from clearing a large rural property similar to the Envira property in Acre (personnel comment made by Igor Agapejev de Andrade, a local forester familiar with the property).

Final ESI Findings (31 March 2015)	Stratification of carbon pools is not required in the X-STR module (but rather recommended to improve accuracy), and in this case stratification would not improve accuracy. Validators also agree that clearing would not occur at a strata level, and agree that the assumption of no strata for this calculation is appropriate. Finding is addressed.
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Item Number	22
Approved VCS Module VMD0005, Version 1.1 (20 November 2012), REDD Methodological Module: Estimation of carbon stocks in the long-term wood products pool (CP-W), Sectoral Scope 14	Step 2: Identify the wood product class(es) (ty; defined here as sawnwood, wood-based panels, other industrial roundwood, paper and paper board, and other) that are the anticipated end use of the extracted carbon calculated in Step 1.
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	PD Section 3.1.4.2, Envira Amazonia 2014.10.24.xlsx
ESI Findings - Round 1 (21 January 2015)	Only sawnwood was noted as being extracted for commercial markets. It seems plausible that other product classes may be anticipated end use in the region. During the site visit, the landowner noted only 8 commercial species are eligible for market, all other species left in the forest.
Round NCR/CL/OFI 1	NCR: Please address the findings and justify the selection of a single wood product class as it relates to these 8 commercial species are eligible for market use.
Round 1 Response from Project Proponent (26 February 2015)	Igor Agapejev de Andrade, a local forester familiar with the property states "The trees harvested would have been made into sawnwood as is typical for the tropical hardwood species in Acre State (Igor Agapejev de Andrade, pers comm.)". This statement has been added to Section 3.1.4.2 of the PD. Igor Agapejev de Andrade classified the potential commercial species in the excel workbook "commercialSpecies_EnviraAmazoniaProject" which has been provided in response to this finding. Forty six tree species considered "Hardwood - High value" and "Hardwood - Normal" were included in the CP-W analysis as commercial species as these are what would likely be harvested for the Envira Property. It is unrealistic to "limit" harvesting on a clearcut to 8 species.
Final ESI Findings (31 March 2015)	Forty six tree species considered "Hardwood - High value" and "Hardwood - Normal" were included in the CP-W analysis as commercial species as these are what would likely be harvested for the Envira Property. Trees harvested would have been made into sawnwood as is typical for the tropical hardwood species in Acre State. An official email from a local forester (Igor Agapejev de Andrade) has also been provided as support for these classifications of species. (see Igor Commercial Species letter from Forester.pdf)

Item Number	23
Approved VCS Module VMD0005, Version 1.1 (20 November 2012), REDD Methodological Module: Estimation of carbon stocks in the long-term wood products pool (CP-W), Sectoral Scope 14	Equations must have been derived using a wide range of measured variables (commercial wood volume per unit area and total aboveground biomass per unit area) 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 .
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	PD Section 4.1
ESI Findings - Round 1 (21 January 2015)	The source of this parameter is Higuchi et al. 1998 where it is noted country and ecoregion specific. This source of data is acceptable but the reference is needed for confirmation that all requirements for this parameter are met.
Round 1 NCR/CL/OFI	CL: Please provide noted reference for this parameter.
Round 1 Response from Project Proponent (26 February 2015)	Higuchi et al. 1998 has been provided in response to this finding.
Final ESI Findings (31 March 2015)	A copy of Higuchi et al. 1998 has been provided to the validation team and appears that all requirements for this parameter are met (i.e. derived using a wide range of measured variables (commercial wood volume per unit area and total aboveground biomass per unit area) based on datasets that comprise at least 30 trees (in this case its 130). Equations are based on statistically significant regressions and have an r^2 that is ≥ 0.8). Finding is addressed.

Item Number	24
Approved VCS Module VMD0005, Version 1.1 (20 November 2012), REDD Methodological Module: Estimation of carbon stocks in the long-term wood products pool (CP-W), Sectoral Scope 14	(a) National species-specific or group of species-specific (e.g. from National GHG inventory); (b) Species-specific or group of species-specific from neighbouring countries with similar conditions. Sometimes (b) may be preferable to (a); (c) Global species-specific or group of species-specific (e.g. IPCC 2006 INV GLs AFOLU Chapter 4 Tables 4.13 and 4.14).
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Env_ComVol_ 2014.10.21.xls, PD Table 3.31 and Section 4.1
ESI Findings - Round 1 (21 January 2015)	This parameter (Dj) is missing from the PD and instead the PP has used Dmn to compute VBSL in "Env_ComVol_ 2014.10.21.xls." as part of Equation 4. Mean wood density of commercially harvested species was used in place of basic wood density. CP-W module for equation 4 does not directly specify the Dj parameter for use but it is

		mentioned as applicable in the parameter table in Section 5.1. Validators believe the intent of the module refers to Dj and should be used.
		Wood densities of commercial trees were selected from Chave et al 2006 and weighted according to log volumes. Validators are unable to locate the source of log volume computations.
Round 1 NCR/CL/OFI	1	NCR: Please add this parameter into computations for Equation 4, sourcing data in order of preference and following all requirements. Please provide transparent computations of the results and add the parameter table to the PD.
Round 1 Response from Project Proponent (26 February 2015)		No density parameter was used in in Equation 4. Further, Dj is used for option 1 of the CP-W module, we used option 2.
Final ESI Findings (31 March 2015)	(31)	The statement by the PP is correct and this parameter is not applicable. Finding is addressed.

Item Number	25
Approved VCS Module VMD0005, Version 1.1 (20 November 2012), REDD Methodological Module: Estimation of carbon stocks in the long-term wood products pool (CP-W), Sectoral Scope 14	(a) Direct forest inventory of the project area, distinguishing commercially viable stocks on the basis of species and tree size, referencing local expert knowledge or a participatory rural assessment (PRA) of harvest practices and markets; (b) Forest inventory from a proxy area in the same region, representing the same forest type and age class, distinguishing commercially viable stocks on the basis of species and tree size, referencing local expert knowledge of harvest practices and markets National and forest type-specific or eco-region-specific (e.g. from National GHG inventory).
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Env_ComVol_2014.10.21.xls
ESI Findings - Round 1 (21 January 2015)	Source of data was (a) below using direct inventory data. This parameter was included in the PD and calculation method is noted "Calculated as 88.4/313.93. 1) 88.4 tons d.m./ha, total aboveground biomass for commercial species (trees>50cm), forest inventory. 2) 313.96 tons d.m./ha, average total aboveground biomass, forest inventory." Validators are unable to trace the data used to determine mean total aboveground biomass for commercial species (88.4). Pcomi parameter table reports 313.93 at beginning of "Calculation method"
Round 1 NCR/CL/OFI	1 CL: Please present transparent computations for "Live aboveground biomass in commercial species (t d.m./ha)" within the Env_ComVol_2014.10.21.xls worksheet. Please also direct validators to locate the source of data for "313.96 tons d.m./ha, average total aboveground biomass".
Round 1 Response from Project Proponent (26 February 2015)	Pcom has been recalculated in response to this finding. The update is warranted due new information on which species are commercial and likely to be harvested in the baseline and an incorrect reference to average total biomass rather than average total aboveground biomass. These changes necessitated updating the baseline and net GHG calculations which have been tracked in the PD.

Final ESI Findings (31 March 2015)	New values for Pcom have been provided "1) commercial portion of a tree (.656) x 49.1 tons d.m./ha, total aboveground biomass for commercial species, forest inventory 2) 246.5 tons d.m./ha, average total aboveground biomass, forest inventory". As a result, many other values within wood products pool have been revised and deltaCBSL has been appropriately updated. Changes to the effected parameters and wood products pool calculations as well as the baseline from the calc worksheet were correctly implemented in the PD. Finding is addressed.
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Item Number	26
Approved VCS Module VMD0002,Version 1.0 (3 December 2010), REDD Methodological Module: Estimation of carbon stocks in the dead wood pool (CP-D), Sectoral Scope 14	Step 1.1: Standing dead trees shall be measured using the same criteria (e.g. minimum DBH) used for measuring live trees. Stumps must be inventoried as if they are very short standing dead trees.
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Envira Forest Inventory 2014 09 11.doc
ESI Findings - Round 1 (21 January 2015)	Standing dead trees were measured under same criteria as live trees as confirmed during the site visit. However it is unclear whether stumps were measured in compliance with this requirement.
Round 1 NCR/CL/OFI	CL: Please state whether stumps were measured in compliance with this requirement during the inventory effort.
Round 1 Response from Project Proponent (26 February 2015)	The following text was added to the Standard Operating Procedures as found in the forest inventory report to address this finding: "(or total height if the crown is gone) Note that all standing deadwood with a diameter > 10 cm is to be measure regardless of height, ensuring that stumps less than 1.3 m tall are measured as very short standing dead trees."
Final ESI Findings (31 March 2015)	The quoted statement from the PP was confirmed to have been included in the inventory report and is sufficient to address this requirement. Finding is addressed.

Item Number	27
Approved VCS Module VMD0002,Version 1.0 (3 December 2010), REDD Methodological Module: Estimation of carbon stocks in the dead wood pool (CP-D), Sectoral Scope 14	Step 1: Lying dead wood must be sampled using the line intersect method (Harmon and Sexton 1996)1. Two 50-meter lines (164 ft) are established bisecting each sample plot and the diameters of the lying dead wood (≥ 10 cm diameter ≥ 3.9 inches+) intersecting the lines are measured. The first line is oriented along a random bearing, the second line is oriented perpendicular to the first.
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Envira Forest Inventory 2014 09 11.doc

ESI Findings - Round 1 (21 January 2015)	The project proponent measured lying deadwood using two 92 meter transects and this is noted as a methodology deviation, all deadwood ≥ 10 cm diameter was measured at the point of intersection. The proponent has included methodology deviations in the PD to describe deviations from the methodology. The deviations are sufficient, given that the issue is a monitoring/measurement deviation. However, it is not immediately clear how direction was chosen for transects.
Round 1 NCR/CL/OFI	CL: Please indicate how transect directions were determined during the field inventory.
Round 1 Response from Project Proponent (26 February 2015)	The following text was added to the SOP appendix in the forest inventory report. "The two directions sampled should be to the north and east. Only when a project boundary is encountered should the south or west line be sampled. The two directions sampled should form a right angle if possible, to ensure lying dead wood is not oversampled in the case of wind throw in a dominant direction. "
Final ESI Findings (31 March 2015)	Additional transect directions added to the inventory report are sufficient to address this requirement. Finding is addressed.

Item Number	28
Approved VCS Module VMD0002, Version 1.0 (3 December 2010), REDD Methodological Module: Estimation of carbon stocks in the dead wood pool (CP-D), Sectoral Scope 14	Step 2: The dead wood is assigned to one of the three density states (sound, intermediate and rotten) using the 'machete test', as recommended by IPCC Good Practice Guidance for LULUCF (2003), Section 4.3.3.5.3. Dead wood density class (dc) is assessed at the point of intersection with the sample line, as per measured parameters section below.
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Envira Forest Inventory 2014 09 11.doc
ESI Findings - Round 1 (21 January 2015)	The 'machete test' was used for the assessment of the density class of the lying deadwood. During the site visit validators noted during a transect the presence of blown down trees where distinguishing live and dead lying wood was difficult.
Round 1 NCR/CL/OFI	CL: Please indicate how live and dead wood were distinguished during the field inventory in a case of blown down trees, and add additional clarification in the inventory methodology.
Round 1 Response from Project Proponent (26 February 2015)	While newly dead trees are difficult to identify, in most cases it is evident when trees are alive or dead. Only in rare cases is there confusing over whether a tree is alive or dead. The following text was added to the SOP appendix in the forest inventory report. "When it is difficult to identify whether a tree is alive or dead, make a small scratch on a branch to see if the cambium layer, directly below the bark, is green. Alternatively, a small cut on the trunk should be made, where branches cannot be reached, to check for a green cambium layer or presence of sap."
Final ESI Findings (31 March 2015)	The additional detail for alive and dead tree detection is sufficient to address this requirement. Finding is addressed.

Item Number	29
Approved VCS Module VMD0002, Version 1.0 (3 December 2010), REDD Methodological Module: Estimation of carbon stocks in the dead wood pool (CP-D), Sectoral Scope 14	Step 3: The volume of lying dead wood per unit area is estimated using the equation (Warren and Olsen 1964) ² as modified by Van Wagner (1968) ³ separately for each density state. <u>The equation (7) is provided on page 6.</u>
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	EnviraEqVal 2014.09.02.xlsx
ESI Findings - Round 1 (21 January 2015)	Equation 7, 8 and 9 were not followed per the module as lying deadwood stocks are summed according to plot instead of a unit area basis. In other words, volume and biomass are computed at the plot level and then extrapolating to the strata level. This is logical given the poor guidance by the module where a parameter is apparently missing and uncertainty is computed at the plot level. However, the project has not followed quantification methods per CP-D properly.
Round 1 NCR/CL/OFI	CL: Please justify calculating the volume of lying dead wood according to plot and stratum instead of per unit area in density class dc.
Round 1 Response from Project Proponent (26 February 2015)	In order to calculate uncertainty, stocks of biomass for each forest component need to be calculated at the plot level. For this reason, the volume of each piece of woody debris has been multiplied by the wood density values for the corresponding decay class. The resulting biomass values have then been summed at the plot level to give an estimate of lying dead wood. It is not feasible to calculate uncertainty for lying dead wood, when summing volumes by decay class at the strata level and then multiplying by wood density, as this only gives one estimates of biomass at the strata level. Equation 7 and 8 as written in the CP-D module are incorrect as they are either missing a parameter to scale strata stocks by the number of sampling plots; or are missing subscript such that both equation 7 and 8 calculate volume and then biomass of dead wood for each plot within a stratum rather than at only the stratum level. We propose calculating volume and biomass for each plot as this is needed to run the uncertainty calculations in the X-UNC module. A further equation is however needed between the current equation 8 and 9, to average the plot level data thus providing an estimate of the mean for each strata. This proposed change to the CP-D module has been provided as an attachment to this response. This MS-Word document is titled "CP-D Lying Dead changes 2014.02.19"

Final ESI Findings (31 March 2015)	Validators agree with this proposed approach as plot level is the method for computing uncertainty of other pools including AB and WP. Other revisions to work up plot level averages are appropriate. The validation team has reviewed the document outlining proposed changes to the CP-D module as supplied by the project proponent. While the methodology specifies that lying deadwood volume be calculated on a per unit area basis, calculating volume and biomass at the plot and then extrapolating to the strata level. This is logical given the poor guidance by the module where a parameter is apparently missing. Therefore the validation team deems this approach reasonable and accepts this response. Finding is addressed.
Item Number	30
Approved VCS Module VMD0002, Version 1.0 (3 December 2010), REDD Methodological Module: Estimation of carbon stocks in the dead wood pool (CP-D), Sectoral Scope 14	Project-specific determination of density is most likely necessary, requiring collection of representative samples (in terms of scale and representation of forest strata/species composition similar to the inventory), from a minimum of 20-30 trees from each density class. Density classes need not be determined for specific species or species groups.
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	EnviraEqVal 2014.09.02.xlsx, Envira Forest Inventory 2014 09 11.doc
ESI Findings - Round 1 (21 January 2015)	Section 2.6 of PD states "Dead wood collected for density determination was opportunistically sampled from within the project area. The forest inventory collected a total of 39, 42, 10 samples for the sound, intermediate, and rotten classes, respectively. While the minimum number of samples, twenty, as stated in the CP-D module of the methodology was not collected for each class, the sample was still sufficient to meet the precision target for each of the classes (i.e., +/- 10% of the mean with 90% confidence) and results were similar to other dead wood density estimates produced in the same forest types in Acre." During the site visit, validators interviewed field inventory staff and found that the minimum number of samples were collected, but did not make it to the lab so they could be analysed in one piece (samples from the rotten class fell apart during shipping). Please provide data from the project or alternatively use data from a similar project area to get the minimum number of 20-30 samples/ class and re-calculate dead wood densities. Please provide data, recalculation, and justification for the data used.
Round NCR/CL/OFI	1 NCR: Please provide data from the project or alternatively use data from a similar project area to get the minimum required number of 20-30 samples/ class and re-calculate dead wood densities. Please provide data, recalculation, and justification for the data used.

Round 1 Response from Project Proponent (26 February 2015)	The value for the rotten wood density class is 0.131 g/cm³. This value represents the lower 90% confidence bound of the mean density estimate, as the 90% confidence interval is greater than 10% of the mean. This estimate is based on the original 10 rotten samples collected at the Envira Project area and an additional 27 rotten samples from similar forest type in the nearby Purus Project. The following footnote was also added to deviation 5 in the PD on dead wood density. "Note that 27 of the 37 rotten samples were sourced outside the project area as those sourced from within the project area did not return to the lab intact." The following proposed addition to Section 2.6 of the PD was deleted. "Further, use of the rotten value (0.148 g/cm³) is conservative when compared to applicable peer reviewed publications relevant to the area, including a value of 0.37 g/cm³ for the rotten class as found in Baker et. al." Data to derive this variable can be found in EnviraCalc 2015.03.13
Final ESI Findings (31 March 2015)	A value of 0.131 g/cm³ for the rotten wood density class is listed in section 4.2 of the PD, and agrees with EnviraCalc 2015.03.13. The value for the rotten class based on the lower 90% confidence bound of the mean density estimate, and the other two classes were based on the mean. The rotten class is appropriately based on the lower 90% confidence bound of the mean density estimate, as the 90% confidence interval is greater than 10% of the mean per section III of the CP-D Module. See language from section III: 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. Finding is addressed.

Item Number	31
VCS MODULE VMD0006 REDD METHODOLOGICAL MODULE: ESTIMATION OF BASELINE CARBON STOCK CHANGES AND GREENHOUSE GAS EMISSIONS FROM PLANNED DEFORESTATION AND PLANNED DEGRADATION (BL-PL) Version 1.2 3 May 2013 Sectoral Scope 14	o Where a specific baseline agent has been identified: Either a valid and verifiable land use management plan for deforesting the project area, or a documented history (for example government data or maps) of similar planned deforestation activities by the baseline agent of planned deforestation within the five years previous to without-project deforestation.
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	PD Section 3.1.1.4, Exhibit D - Milva Vasques and Bento Contract.pdf

ESI Findings - Round 1 (21 January 2015)	Planned deforestation activities have been performed by one of the partners in the company JR Agropecuaria e Empreendimentos LTDA where a cattle ranch was established 2008/2009. The PD states "Exhibit C, in the project archive, documents an agreement where Bento hired Ruben's company, Milva Vasques ME, to log and clear part of Fazenda Esperanca, Bento's property, in the State of Mato Grosso, Brazil to establish a cattle ranch, in 2008/2009. This clearing is further substantiated using 2012 PRODES data in Figure 3.3." This statement refers to the wrong agreement as Exhibit C in the project archive is the LAR registration and should refer to "Exhibit D - Milva Vasques and Bento Contract.pdf." Exhibit D shows a logging agreement but it is not clear whether this agreement complies with the 20% forest clearing allotment permitted by law. Common practice in the region (i.e. proxy areas) appear to follow the 80% reserve agreement for Legal Amazon as noted during the site visit, and during CCB interviews with similar cattle ranchers in the region (see site visit notes for full description).
Round NCR/CL/OFI	1 CL: Please correct the reference to Exhibit C and also explain whether the noted agreement complies with the 20% forest clearing allotment permitted by law.
Round 1 Response from Project Proponent (26 February 2015)	The PD has been revised to state: "Exhibit D, in the project archive, documents an agreement where Bento hired Ruben's company, Milva Vasques ME, to log and clear part of Fazenda Esperanca, Bento's property, in the State of Mato Grosso, Brazil to establish a cattle ranch, in 2008/2009." Exhibit D complies with the 20% forest clearing allotment as demonstrated by the fact the contract has registered by the government and taxes have been paid. As demonstration, the Federal Brazilian Institute of Environment and Renewable Natural Resources (IBAMA) website (see here: http://www.ibama.gov.br/sicafixt/sistema.php) was checked to see if there were any pending fines, fees or cases opened up against the landowner Bento (i.e., such as illegal deforestation) using Bento's CPF number (equivalent to Social Security Number in the US). The certificate from IBAMA's website was provided to ESI in response to this finding and is entitled "Bento's IBAMA Certificate".
Final ESI Findings (31 March 2015)	The PD has been revised to state Exhibit D in section 3.1. Further, evidence provided (Bento's IBAMA Certificate.pdf) sufficiently demonstrates that exhibit D complies with the 20% forest clearing allotment as federal registration has been completed and all taxes are paid. See translated text from the document below. BRAZILIAN INSTITUTE OF THE ENVIRONMENT AND RENEWABLE NATURAL RESOURCES - IBAMA, CERTIFICATE OF NEGATIVE DEBT Certificate Number: 4991753 Issued: 02/20/2015 Valid until : 03/22/2015 INTERESTED : BENEDICT FERRAZ PACHECO ADDRESS: AVE THEODOMIRO RODRIGUES DE SOUZA - BRIDGES AND LACERDA CENTER - MT ZIP code : 78250000 CNPJ / CPF: 116016639-00. Finding is addressed.

Item Number	32
VCS MODULE VMD0006 REDD METHODOLOGICAL MODULE: ESTIMATION OF BASELINE CARBON STOCK CHANGES AND GREENHOUSE GAS EMISSIONS FROM PLANNED DEFORESTATION AND PLANNED DEGRADATION (BL-PL) Version 1.2 3 May 2013 Sectoral Scope 14	2. The post-deforestation land use shall be the same in the proxy areas as expected in the project area under business as usual
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	PD Section 3.1.2
ESI Findings - Round 1 (21 January 2015)	PD states "The post-deforestation land use is ranching/pasture, the same as the baseline scenario, confirmed via inspection of satellite imagery." Unclear as to how satellite imagery was used to confirm post deforestation land use.
Round 1 NCR/CL/OFI	CL: Please clarify how satellite imagery was inspected for the post-deforestation land use in all the proxy areas.
Round 1 Response from Project Proponent (26 February 2015)	The following text was added as a footnote to Section 3.1.2 of the PD. "The boundaries of proxy areas overlaid high resolution aerial photos which depicted features typical of large scale ranches in Acre State, including many cattle trails and ponds."
Final ESI Findings (31 March 2015)	As the methodology does not specify a method to confirm proxy post-deforestation land use this addition to the PD is sufficient. Ranching/pasture is readily detectable from coarser resolution too. Finding is addressed.

Item Number	33
VCS MODULE VMD0006 REDD METHODOLOGICAL MODULE: ESTIMATION OF BASELINE CARBON STOCK CHANGES AND GREENHOUSE GAS EMISSIONS FROM PLANNED DEFORESTATION AND PLANNED DEGRADATION (BL-PL) Version 1.2 3 May 2013	5. Agents of deforestation in proxy areas must have deforested their land under the same criteria that the project lands must follow (legally permissible and suitable for conversion—see section 1.1 above).

Sectoral Scope 14	
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	PD Section 3.1.2
ESI Findings - Round 1 (21 January 2015)	PD states "Deforestation is inferred to be legally permitted as the property is fully georeferenced and registered with INCRA and the CAR and under the oversight of the state of Acre." However, in the Additionality section (2.5.2) of the PD, it is noted that deforestation of the proxy lands exceeds the legal reserve requirement, "Evidence suggests that landowners with market access (i.e., access to major roads) have deforested at least 20% of their properties, see Figure 2.2."
Round 1 NCR/CL/OFI	1 NCR: Please provide a quantitative measurement of deforestation in proxy areas and explain whether it is exceeding that which is legally permitted for the project.
Round 1 Response from Project Proponent (26 February 2015)	See the response to finding 34 for details on the quantitative measurement of deforestation in the proxy areas. The methodology is contradictory as to whether the deforestation in the proxy areas has to be within the allowable 20% given that the text in 1.2 states: "The proportion of the total parcel area planned to be deforested cannot exceed the legal mandate unless common practice in a proxy area shows that the mandates are not enforced." directly disagrees with the cited text in 1.3 (i.e., the text noting "legally permissible"). We are unable to assess the proxy areas via the IBAMA website, as was done with Bento, because we do not have the CPF numbers (equivalent to Social Security numbers) for the landowners of the proxy areas. We are therefore left with checking that the properties are in full compliance with the requirements of the state of Acre in that they are georeferenced and registered with INCRA and the CAR. We checked each proxy area on the INCRA website (see here: http://certificaweb.incra.gov.br/consulta/) using the proxy areas' process numbers. None of the proxy areas have any special conditions (e.g., investigations by IBAMA, pending fines, etc.) and all but one of the proxy areas has the full INCRA certification which demonstrates the proxy areas are in full compliance. These INCRA certificates were provided to ESI in response to this finding.
Final ESI Findings (31 March 2015)	Validators agree there is some disagreement in the methodology for legally permissible or common practice (but illegal) deforestation in proxy areas. However, the requirement in 1.2 refers to proportion deforested and not actual deforestation, whereas this requirement simply states deforestation under the same criteria. Validators observe that proxy deforestation rate, though all above legal limit of 20% are common practice, average proxy deforestation proportions are about 27% and evident that the threat of deforestation exists for the project area. Provided INCRA documentation is sufficient to demonstrate legal boundary delineation for the proxy areas. Considering other criteria are readily met, and contradictory language in the methodology, this is permissible. Finding is addressed.

Item Number	34
VCS MODULE VMD0006 REDD METHODOLOGICAL MODULE: ESTIMATION OF BASELINE CARBON STOCK CHANGES AND GREENHOUSE GAS EMISSIONS FROM PLANNED DEFORESTATION AND PLANNED DEGRADATION (BL-PL) Version 1.2 3 May 2013 Sectoral Scope 14	6. Deforestation in the proxy area shall have occurred within the 10 years prior to the baseline period.
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	PD Section 3.1.2
ESI Findings - Round 1 (21 January 2015)	PD states "It has deforestation which has occurred within 10 years prior to the baseline period."
Round 1 NCR/CL/OFI	1 CL: If available, please provide evidence to illustrate deforestation has occurred in the proxy areas within 10 years prior to the baseline period.
Round 1 Response from Project Proponent (26 February 2015)	The areas deforested in the proxy areas between 2002 and 2011 as found on the "3.1" tab of the project excel workbook, were calculated by clipping the Acre deforestation data layer with the proxy area layer and then limiting the data set to areas cleared between 2002 and 2011. The following shapefiles were mentioned in response to this finding: 1) Desmate_TC_1988_2013.shp - as present in the project archive 2) ProxyAreas_2014.10.21.shp - as present in the project archive 3) ProxyDefor_2014.10.21.shp - provided in response to this finding
Final ESI Findings (31 March 2015)	Deforestation has occurred in all proxy areas in the period 2002-2011 and areas are correctly computed. Files provided correlate correctly to Table 3.3 of the PD. Finding is addressed.

Item Number	35
VCS MODULE VMD0006 REDD METHODOLOGICAL MODULE: ESTIMATION OF BASELINE CARBON STOCK CHANGES AND GREENHOUSE GAS EMISSIONS FROM PLANNED DEFORESTATION AND PLANNED DEGRADATION (BL-PL) Version 1.2 3 May 2013 Sectoral Scope 14	· The forest types surrounding the proxy area or in the proxy area prior to deforestation shall be in the same proportion as in the project area ($\pm 20\%$).
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	PD Table 3.1, EnviraBoundaryComparison_2014.10.22.xlsx, Vegetation_Proxies1.shp
ESI Findings - Round 1 (21 January 2015)	Table 3.1 illustrates vegetation percentage according to open forest, dense forest and other. The "other" forest type is noted as open forest which has been converted to pasture. Strata level forest type data is available but was not used. Considering strictly the open and dense "forest types", only proxy area 160 compares within 20% to the project area. Further, additional polygons (11 areas perhaps total instead of 10) have been included in Vegetation_Proxies1.shp (38,745ha) which exceeds the area of the proxy areas shapefile (33,893ha). Proxy areas summed from Vegetation_Proxies1.shp do not match areas summed (cells D7 to M7) from "EnviraBoundaryComparison_2014.10.22.xlsx." Proxy areas "ProxyAreas_2014.10.21.shp" contain a different spatial projection (SAD_1969_UTM_Zone_18S) than other project boundaries (EnviraPA_20140327.shp = South_America_Lambert_Conformal_Conic) resulting in different areal calculations.
Round NCR/CL/OFI	1 NCR: a. Please justify the use of simplified forest types instead of Acre state available strata level forest type. b) Please meet this condition where the forest types in or surrounding the proxy areas are within 20% of the project area. c) Please bring into agreement all noted shapefile areal issues concerning ProxyAreas_2014.10.21.shp and Vegetation_Proxies1.shp. d) Please explain the differing spatial projection of ProxyAreas_2014.10.21.shp.

Round 1 Response from Project Proponent (26 February 2015)	a) The use of a more generalized forest class for reference region and proxy comparisons was intended by the methodology but is not reflected in text as found within the BL-PL module. Rather the text is found as a foot note on forest classes in the BL-UP module which states "Defined as the broad classes that are observable in remote sensing imagery from differences in spectral characteristics that can be confirmed on the ground." Regardless, broad generalized classes are appropriate as the finer distinctions between forest strata (e.g., the prevalence of bamboo and palm) are not important when assessing whether or not to clear a particular area for pasture. The main importance aspect is whether pasture, the baseline land use, could be established in the forest type. b) While the base vegetation file distinguishes forest types, there is also an "Áreas Antropizadas" which reflects settled areas and is reflected in our "other class". This other class reflects the fact the part of the proxy areas have been cleared and are no longer forest. Prior to deforestation these lands were predominantly open forest as dense forest is not common in the state (see map provided on "Broad Vegetation Classes") , including in areas surrounding the proxy sites. Hence, the vegetation in the proxies areas are within 20% of the project area yet this cannot be quantified absolutely given the fact the proxy areas have already been cleared of trees which is represented in the other classes. c) The comparison analysis for vegetation, soil, and slopes have been redone and provided in the excel file "EnviraBoundaryComparison_2015.02.18" in response to this finding. All areas were calculated in the projection SAD_1969_UTM_Zone_18S (as set for the data frame). These GIS files have been included in the project data base in the folder "comparison analysis" in response to this finding. The "extra" proxy sites (i.e., 139 and 202) have been removed (as these did not meet the requirements of the methodology) from all shapefiles mentioned below. The slight discrepancy in the area of the slope file (33,882 ha compared to the total of all the proxy areas, 33,893 ha) is due to the conversion of a raster to a vector file. Regardless, slight differences in areas between the files are not important as percentages are being compared. d) The spatial projections were left the same as those in the original source file. The original projections include: ProxyAreas_2014.10.21.shp Projection: SAD_1969_UTM_Zone_18S Slope_Proxies2.shp Projection: WGS84_Zone19S Soil_Proxies2.shp Projection: Lambert Conformal Conic Vegetation_Proxies1.shp Projection: Lambert Conformal Conic
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Final ESI Findings (31 March 2015)	a) Validators agree with the PP that the intent of correlating forest types is suitability for deforestation conversion to pasture and more exacting vegetation classes do not refine the query any better. b) Elevation, slope and soil criteria of the proxy areas are within 20% of the project area to meet this requirement. Vegetation subdivided into open, dense and other types does not meet this requirement. c) Revised areal computations and commented spatial projections are correct and sufficient.
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Item Number	36
VCS MODULE VMD0006 REDD METHODOLOGICAL MODULE: ESTIMATION OF BASELINE CARBON STOCK CHANGES AND GREENHOUSE GAS EMISSIONS FROM PLANNED DEFORESTATION AND PLANNED DEGRADATION (BL-PL) Version 1.2 3 May 2013 Sectoral Scope 14	· Soil types that are suitable for the land-use practice used by the agent of deforestation in the project area must be present in the proxy area in the same proportion as the project area ($\pm 20\%$). The ratio of slope classes "gentle" (slope $< 15\%$) to "steep" (slope $\geq 15\%$) in the proxy areas shall be ($\pm 20\%$) the same of the ratio in the project area.
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	PD Table 3.1, EnviraBoundaryComparison_2014.10.22.xlsx, Slope_Proxies2.shp
ESI Findings - Round 1 (21 January 2015)	Similar to the forest types condition above, ProxyAreas_2014.10.21.shp differs in size from Slope_Proxies2.shp and Soil_Proxies2.shp. Furthermore, areas in ArcMap differ from those used in computations for Table 3.1.
Round NCR/CL/OFI 1	CL: Please explain why the shapefiles mentioned in the finding differ as well as the noted areal discrepancies. If warranted, please revise areal computations for consistency across spatial files.
Round 1 Response from Project Proponent (26 February 2015)	See part c and d of the response to finding 35.
Final ESI Findings (31 March 2015)	Revised areal computations and commented spatial projections are correct and sufficient. Finding is addressed.

Item Number	37
VCS MODULE VMD0006 REDD METHODOLOGICAL MODULE: ESTIMATION OF BASELINE CARBON STOCK CHANGES AND GREENHOUSE GAS EMISSIONS FROM PLANNED DEFORESTATION AND PLANNED DEGRADATION (BL-PL) Version 1.2 3 May 2013 Sectoral Scope 14	Examination of proxy areas may be through original data collection (field measurements and/or remote sensing analysis) or where appropriate use of directly applicable existing data generated from credible sources.
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	PD Section 3.1.2, Envira Amazonia 2014.10.24.xlsx
ESI Findings - Round 1 (21 January 2015)	Proxy areas were provided as a shapefile and seen in Figure 3.4 of the PD. Validators could not locate the source of data for the proxy areas per this requirement from remote sensing, field measurements, or from a credible source.
Round 1 NCR/CL/OFI	CL: Please address the findings and explain the source of data for proxy areas.
Round 1 Response from Project Proponent (26 February 2015)	The proxy areas were part of a data package, which included CAD files, provided by one of the project proponents. The original source for this file was INCRA which maintains a cadaster of all large parcels georeferenced and registered with the state.
Final ESI Findings (31 March 2015)	The source of data is credible and likely unsourcable elsewhere, further the data is being used appropriately in order to meet all steps of this requirement.

Item Number	38
VCS MODULE VMD0006 REDD METHODOLOGICAL MODULE: ESTIMATION OF BASELINE CARBON STOCK CHANGES AND GREENHOUSE GAS EMISSIONS FROM PLANNED DEFORESTATION AND PLANNED DEGRADATION (BL-PL) Version 1.2 3 May 2013 Sectoral Scope 14	The annual deforestation is calculated with <u>Equation 2 on page 8</u>

Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Envira Amazonia 2014.10.24.xlsx
ESI Findings - Round 1 (21 January 2015)	The computations for $D_{planned,i,t}$ were performed correctly. However, validators computed different values for deforestation in the proxy areas than was reported in 3.1 tab of "Envira Amazonia 2014.10.24.xlsx." This could be due to a proxy area shapefile used for the analysis which differs from the file submitted to validators. Validators also note a methodology deviation in calculating the value of $(AA_{planned,i,t})$. Approval of this deviation is pending guidance from VCS.
Round 1 NCR/CL/OFI	CL: Please provide the intermediate analysis file(s) used to determine deforestation since 2002 in the proxy areas. Please also explain how this analysis was performed. Finding Pending VCS: The methodology deviation for $(AA_{planned,i,t})$ is also pending guidance from VCS
Round 1 Response from Project Proponent (26 February 2015)	Please see the response to Finding 34 which explains the analysis and documents the intermediate file.
Final ESI Findings (31 March 2015)	The finding referred in the PP response sufficiently addresses this request. Validators achieved the same result and proxy area deforestation values are correct. Validators confirm the statement of VCS that this issue not be resolved as a methodology deviation. Project proponents requested a formal exemption from VCS for setting the parameter $AA_{planned,i,t}$ (ha) to 8,000 per year instead of 200,000ha. In other words, a cap on the annual area of deforestation in the baseline case. The larger amount is the property size but is infeasible to deforest at this rate where the project is completely deforested in the baseline within 2 years. 8,000 acres was the lowest, and hence more conservative than other yearly amounts feasible to be deforested. Project proponents further state that rate of deforestation in the baseline case as determined from the proxy areas is representative of the project area, and this component is assessed elsewhere in the validation. Additional information on VCS formal exemption approval can be found in a letter drafted by the Project Proponents; CarbonCo Letter for Envira Amazonia Project Exemption.pdf and associated emails in the validation archive. See also VCS final approval (CarbonCo Deforestation Rate Cap Exemption Request.pdf)

Item Number	39
VCS MODULE VMD0006 REDD METHODOLOGICAL MODULE: ESTIMATION OF BASELINE CARBON STOCK CHANGES AND GREENHOUSE GAS EMISSIONS FROM PLANNED DEFORESTATION AND	GPS coordinates and/or Remote Sensing data and/or legal parcel records

PLANNED DEGRADATION (BL-PL) Version 1.2 3 May 2013 Sectoral Scope 14	
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	PD Section 3.1.3, Seringal4_area.shp
ESI Findings - Round 1 (21 January 2015)	A value of 200,000 was used here which is the property where the project area is located. A shapefile was provided in order to confirm area. This represents the area available for planned deforestation. However, in Table 3.5 AA,planned, I, t is set to a maximum of 8,000 ha per this comment "The calculated annual area of planned deforestation, found in Table 3.4, was conservatively adjusted downward (see Table 3.5) due to the impracticality of clearing such a large amount of land at one location in one year. Discussions with Milva Vasquez M.E., a logging company owned by one of the investors in JR Agropecuária e Empreendimentos EIRELI, revealed it was possible to clear up to 8,000-10,000 hectares in any given year. The baseline areas cleared have therefore been adjusted downward, imposing a maximum annual area deforested of 8,000 ha. Note that the calculated baseline applying the methodology yields over 30,000 ha per year." The setting of AA,planned, I, t to 8,000 ha represents a methodology deviation and must be documented appropriately. Validators discussed the deforestation amount per year during the site visit where a value of up to 12,000ha in another region was mentioned.
Round 1 NCR/CL/OFI	1 CL: Please describe the adjustment to AA,planned, i, t as a methodology deviation. Please provide additional justification for the conservativeness of setting deforestation to 8,000ha per year. Please also provide written evidence to support using a value of 8,000ha per year as noted by the logging company. Note resolution of this finding is also pending a discussion with validators.
Round 1 Response from Project Proponent (26 February 2015)	VCS has issued an exemption allowing the project to use a conservative and more accurate estimate of the amount of deforestation in the baseline case. They further requested that this issue not be handled as a deviation.
Final ESI Findings (31 March 2015)	Validators confirm the statement of VCS that this issue not be resolved as a methodology deviation. Project proponents requested a formal exemption from VCS for setting the parameter AAplanned,i,t (ha) to 8,000 per year instead of 200,000ha. In other words, a cap on the annual area of deforestation in the baseline case. The larger amount is the property size but is infeasible to deforest at this rate where the project is completely deforested in the baseline within 2 years. 8,000 acres was the lowest, and hence more conservative than other yearly amounts feasible to be deforested. Project proponents further state that rate of deforestation in the baseline case as determined from the proxy areas is representative of the project area, and this component is assessed elsewhere in the validation. Additional information on VCS formal exemption approval can be found in a letter drafted by the Project Proponents; CarbonCo Letter for Envira Amazonia Project Exemption.pdf and associated emails in the validation archive. See also VCS final approval (CarbonCo Deforestation Rate Cap Exemption Request.pdf). Finding is addressed.

Item Number	40
Approved VCS Module VMD0009, Version 1.1 (20 November 2012), REDD Methodological Module: Estimation of emissions from activity shifting for avoided planned deforestation (LK-ASP), Sectoral Scope 14	Two options exist for estimating the baseline rate of forest clearance by the deforestation agent. <u>Only if a historic trend analysis (Option 1.1) is not feasible shall Option 1.2 be used:</u>
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	PD Section 3.3
ESI Findings - Round 1 (21 January 2015)	Option 1.2 was chosen and it is unclear whether this choice is justified given the historic trend requirement.
Round 1 NCR/CL/OFI	CL: Please justify and provide evidence per this requirement for the choice of Option 1.2.
Round 1 Response from Project Proponent (26 February 2015)	The following footnote was added to Section 3.3 of the PD. "The regression equation for Option 1.1 had a very low r2 value and therefore Option 1.1 could not be used." The regression equation figure was added to the project excel workbook "Envira Amazonia 2015.02.26" on tab "3.3".
Final ESI Findings (31 March 2015)	This explanation of poor agreement between year and area deforested by the baseline agent is sufficient. PP used 5 years of data, though more data points may force a better regression as up to 10 years is also permissible. Finding is addressed.

Item Number	41
Approved VCS Module VMD0009, Version 1.1 (20 November 2012), REDD Methodological Module: Estimation of emissions from activity shifting for avoided planned deforestation (LK-ASP), Sectoral Scope 14	Survey the deforestation agent and, if available, examine official records ¹ to determine the total area deforested by the deforestation agent each year over the previous five years within the country.
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	PD Section 3.3, Envira Amazonia 2014.10.24.xlsx
ESI Findings - Round 1 (21 January 2015)	The PD states "Leakage areas include 11 properties in Brazil owned or managed by the project proponents in Acre and Mato Grosso State." The validation calcs worksheet in tab 3.3 notes "Only land cleared by landowner during 5 years prior to the project start date is at Fazenda Esperanca in 2008/2009" for parameter HistHai,ag.
Round 1 NCR/CL/OFI	CL: Please establish whether official records were used to determine the total area deforested by the deforestation agent each year over the previous five years within the country. If available, please provide the official records used to determine the area deforested dating back five years.

Round 1 Response from Project Proponent (26 February 2015)	The deforestation agents were surveyed as no official records were available. The following text was added to Section 3.3 of the PD, "As no official records were available, the deforestation agents were surveyed to determine the area cleared by the baseline agent in the five years prior to project implementation."
Final ESI Findings (31 March 2015)	Lack of official records is acceptable as it is not always feasible to obtain them. Option 1.2 is appropriate in this situation as many more data points will be need to increase the likelihood of achieving an acceptable regression. Finding is addressed.

Item Number	42
Approved VCS Module VMD0009,Version 1.1 (20 November 2012), REDD Methodological Module: Estimation of emissions from activity shifting for avoided planned deforestation (LK-ASP), Sectoral Scope 14	Analysis of Remote Sensing data and/or legal records and/or survey information for lands owned or controlled or previously owned or controlled by the baseline agent of deforestation
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	PD Section 3.3, Envira Amazonia 2014.10.24.xlsx
ESI Findings - Round 1 (21 January 2015)	A value of 115.9ha is applied for this parameter and the PD notes "Only land cleared owned/managed by landowners and cleared during 5 years prior to the project start date is at Fazenda Esperanca in 2008/2009." Validators could not trace where this value was obtained from in the PD or calc worksheet. The parameter is correct as applied to Equation 3.
Round NCR/CL/OFI 1	CL: Please provide evidence as to the origin of the value for this parameter and state whether it complies with the "source of data" requirements.
Round 1 Response from Project Proponent (26 February 2015)	The deforestation agents were surveyed to determine the location and amount of deforestation on their properties. Exhibit D is the official documentation of the deforestation at Fazenda Esperanca. The exact value was derived using PRODES data, see the shapefiles "LeakageDeforMT_2014.10.07" and "FazEsperanza_Clearing_2008" provided in response to this finding. This parameter complies with the "source of data" requirements as it is derived from survey information and analysis of remote sensing data.
Final ESI Findings (31 March 2015)	Shapefiles provided as evidence to support compliance with this requirement were reviewed and deforestation noted is correct. This parameter does not factor into leakage for project accounting because NewRi,t is still less than AdefLK. Finding is addressed.

Item Number	43
Approved VCS Module VMD0009, Version 1.1 (20 November 2012), REDD Methodological Module: Estimation of emissions from activity shifting for avoided planned deforestation (LK-ASP), Sectoral Scope 14	Analysis of Remote Sensing data and/or legal records and/or survey information for lands owned or controlled or previously owned or controlled by the baseline agent of deforestation,
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	PD Section 4.2
ESI Findings - Round 1 (21 January 2015)	This value is appropriately set to 0 ex-ante and is monitored. There is an accidental comma placed under the name Data Unit / Parameter: in Section 4.2 of the PD.
Round 1 NCR/CL/OFI	CL: Please fix the noted typographical mistake.
Round 1 Response from Project Proponent (26 February 2015)	The extra comma in the "value applied cell" of parameter "ADegW,i,t" has been deleted.
Final ESI Findings (31 March 2015)	The extra comma in the "value applied cell" of parameter "ADegW,i,t" has been deleted in Section 4.2 of the PD. Finding is addressed.

Item Number	44
VCS Approved VCS Module VMD0011 Version 1.0 REDD Methodological Module: Estimation of Emissions from Market Effects (LK-ME) Sectoral Scope 14	The amount of leakage is determined by where harvesting would likely be displaced to. If in the forests to which displacement would occur a lower proportion of forest biomass in commercial species is in merchantable material than in project area, then in order to extract a given volume higher emissions should be expected as more trees will need to be cut to supply the same volume. In contrast if a higher proportion of the total biomass of commercial species is merchantable in the displacement forest than in the project forests, then a smaller area would have to be harvested and lower emissions would result. Each project thus shall calculate within each stratum the proportion of total biomass in commercial species that is merchantable (PMPi). This shall then be compared to mean proportion of total biomass that is merchantable for each forest type (PMLFT). Merchantable biomass is defined as: Total gross biomass (including bark) of a tree 40 cm DBH or larger from a 30 cm stump to a minimum 10 cm top of the central stem.
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	PD Section 3.3

ESI Findings - Round 1 (21 January 2015)	The project assumes that "Mean merchantable biomass as a proportion of total aboveground tree biomass for each forest type" is generally equal to "Merchantable biomass as a proportion of total aboveground tree biomass for stratum i within the project boundaries." This may be a reasonable assumption but the requirement states that within stratum biomass proportions are needed to compare to forest type total biomass, in other words a quantitative comparison between PMPi and PMLFT. The cited literature is needed as well. Each project thus shall calculate within each stratum the proportion of total biomass in commercial species that is merchantable (PMPi). This shall then be compared to mean proportion of total biomass that is merchantable for each forest type (PMLFT)
Round 1 NCR/CL/OFI	CL: Please address the findings and calculate the comparison between PMPi and PMLFT per the requirement. Please also provide the cited literature comparing merchantable biomass to AG biomass.
Round 1 Response from Project Proponent (26 February 2015)	Stratification of carbon pools is suggested to improve accuracy but not required as discussed in the X-STR module. Higuchi et al. 1998 has been provided in response to this finding. PMPi has been calculated similar to Pcom in response to this finding. In order to be comparable to the cited literature, the calculation of PMP was limited to all trees ≥ 45 cm. PMPi was calculated using the live aboveground biomass in commercial species (t d.m./ha) is found in cell N32 of the "commercial biomass" tab within the Env_PMP_2015.03.13.xls worksheet. This value was converted to the commercial portion of the stand by multiplying by 0.656. Average total aboveground biomass references cell G38 of the "parameters" tab within the project workbook, "Envira Amazonia 2015.03.13.xls". This value 424.85 t CO₂/ha equates to 246.5 t d.m./ha, which is the denominator in the PMPi calculation. PMPi was calculated to be 11.9%. While this value was calculated referencing the methodology, the actual value is slightly less as only trees >60 cm are actually harvested for many commercial species. Commercial forestry research is limited in Acre State. As such, PMLft is derived from a study in the southern Amazon. Feldpausch et al. (2006) found that " Commercial timber (≥ 45 cm DBH) represented an average of 8–12% of the total biomass (≥ 10 cm DBH)." A leakage market fraction of 0.4 is therefore warranted given the similarity between PMLft (8%-12%) and PMPi (11.9% +/- 15%) and that PMPi is actually somewhat lower due to few trees in the 45-60 cm size range being harvested than in Feldpausch et al. study. The "Env_PMP_ 2015.03.13.xls" workbook and Feldpausch et al. (2006) has been provided in the project database in response to this finding.

Final ESI Findings (31 March 2015)	The demonstration provided shows a comparison of PMPi and PMLFT as required. Further, literature (Feldpausch et al. (2006)) comparing merchantable biomass to AG biomass has also been provided. An immaterial discrepancy was noted in the calculation of PMPi, a (0.6%) difference, because of a "single tree" summing error in Env_PMP_2015.03.13.xls worksheet. Validators feel that this is both a immaterial as it will have less than a 5% effect on the baseline and total carbon stocks. An OFI can be issued to correct this error in the event that recalculation of the baseline is warranted for another reason. Finding is addressed.
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Item Number	45
VCS Approved VCS Module VMD0011 Version 1.0 REDD Methodological Module: Estimation of Emissions from Market Effects (LK-ME) Sectoral Scope 14	Data / parameter: PMLFT Data unit: % Used in equations: Description: Mean merchantable biomass as a proportion of total aboveground tree biomass for each forest type Source of data: The source of data shall be chosen with priority from higher to lower preference as follows: 1. Peer-reviewed published sources (including carbon/biomass maps or growing stock volume2 maps with a scale of at least 1km) 2. Official Government data and statistics 3. Original field measurements The forest types considered shall be only those relevant for the specific market effects leakage; i.e. only forest types with active timber production. An appropriate source of data will be Government records on annual allowable cuts for the areas of commercial forests. Where volumes are used the source of data wood density is required to convert to merchantable biomass. The source of data on wood densities shall be chosen with priority from higher to lower preference as follows: 1. Knowledge on commercial species and thus an appropriately weighted wood density derived from the density of these species 2. A region-specific mean wood density as given e.g. in Brown 19973 Measurement procedures (if any): Any comment:
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	PD Section 3.3, Envira Amazonia 2014.10.24_ESI_check.xlsx
ESI Findings - Round 1 (21 January 2015)	Please see finding related to this parameter above where comparison to PMPi was requested. This parameter was not included in Section 4.1 of the PD.
Round 1 NCR/CL/OFI	CL: Please include this required validation parameter in Section 4.1 of the PD. Note this parameter will be evaluated again for compliance to all requirements upon submission of round 1 responses.
Round 1 Response from Project Proponent (26 February 2015)	The parameter PMLFT has been added to Section 4.1. Please see the response to finding 44.
Final ESI Findings (31 March 2015)	The parameter PMLFT has been added to Section 4.1. Finding is addressed.

Item Number	46
VCS Approved VCS Module VMD0011 Version 1.0 REDD Methodological Module: Estimation of Emissions from Market Effects (LK-ME) Sectoral Scope 14	Data / parameter: VBSL,EX,i,t Data unit: m3 Used in equations: 4 Description: Volume of timber projected to be extracted from within the project boundary during the baseline in stratum i at time t Source of data: The source of data shall be chosen with priority from higher to lower preference as follows: 1. Timber harvest records and/or 2. Estimates derived from field measurements and/or 3. Assessments with aerial photography or satellite imagery. Measurement procedures (if any): Any comment: Note that this volume does not include logging slash left onsite (tracked as part of the dead wood pool). Data compilers should also make sure that extracted volumes reported are gross volumes removed (i.e. reported volume does not already discount for estimated wood waste, as is often the practice in harvest records)
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	
ESI Findings - Round 1 (21 January 2015)	This parameter was computed correctly but as a validation parameter was incorrectly placed in parameters monitored section of the PD.
Round 1 NCR/CL/OFI	CL: Please move this parameter to the appropriate section of the PD.
Round 1 Response from Project Proponent (26 February 2015)	This parameter has been moved to Section 4.1 of the PD.
Final ESI Findings (31 March 2015)	This parameter has been moved to Section 4.1 of the PD. Finding is addressed.

Item Number	47
VCS Approved VCS Module VMD0011 Version 1.0 REDD Methodological Module: Estimation of Emissions from Market Effects (LK-ME) Sectoral Scope 14	Data / parameter: PMPI Data unit: % Used in equations: Description: Merchantable biomass as a proportion of total aboveground tree biomass for stratum i within the project boundaries Source of data: Within each stratum divide the summed merchantable biomass (defined as "Total gross biomass (including bark) of a tree 30 cm DBH or larger from a 30 cm stump to a minimum 10 cm top DOB of the central stem") by the summed total aboveground tree biomass Merchantable biomass is equal to merchantable volume multiplied by wood density (Dmn) Measurement procedures (if any): Monitoring frequency: 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 QA/QC procedures: Any comment: Ex-ante a time zero measurement shall be made of this factor

Evidence Used to Assess (Location in PD/MR or Supporting Documents)	PD Section 3.3, Envira Amazonia 2014.10.24_ESI_check.xlsx
ESI Findings - Round 1 (21 January 2015)	Please see finding related to this parameter above where comparison to PMIFT was requested. This required parameter was omitted from the PD.
Round 1 NCR/CL/OFI	CL: Please include this required validation parameter in Section 4.2 of the PD. Note this parameter will be evaluated again for compliance to all requirements upon submission of round 1 responses.
Round 1 Response from Project Proponent (26 February 2015)	A parameter table has been added to Section 4.2 for the parameter PMPi.
Final ESI Findings (31 March 2015)	The parameter PMPi has been added to Section 4.1. Further, the parameter has been evaluated again for compliance to all requirements. Finding is addressed.

Item Number	48
Approved VCS Module VMD0015, Version 2.1 (20 November 2012), REDD Methodological Module: Methods for monitoring of greenhouse gas emissions and removals (M-MON), Sectoral Scope 14	For each post-deforestation land use (u) estimate the long-term carbon stock (Represented by Equation 6 on Page 9)
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	PD Section 3.2, Envira Amazonia 2014.10.24.xlsx
ESI Findings - Round 1 (21 January 2015)	The carbon stock in all pools in post-deforestation land use (CP,post,u,l) has been set to 0 in the ex-ante with-project instead of following equation 6. Additional detail is needed to explain whether this is conservative and warranted.
Round 1 NCR/CL/OFI	CL: Please justify setting CP,post,u,l to 0
Round 1 Response from Project Proponent (26 February 2015)	The following text has been added to Section 2.6 of the PD as a deviation: "Rather than monitoring Cpost using modules CP-AB and CP-D as described in the MON modules, C(post) can conservatively be assumed to be zero in the with project case, not only for natural disturbance (CP,Dist,q,i , as stated in Section 5.2.3 of the M-MON module) but also for deforestation (CP,post,u,i). This deviation is conservative because subtracting zero from the baseline stocks, leads to the conclusion that $\Delta C_{pools,Def,u,i,t}$ is equal to $C(BSL,i)$, which leads to the maximum emission in the with project case, which is conservative. This deviation may be used for the first and each subsequent monitoring period."
Final ESI Findings (31 March 2015)	This deviation is conservative (for the project scenario) 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. Finding is addressed.

Item Number	49
Approved VCS Module VMD0015, Version 2.1 (20 November 2012), REDD Methodological Module: Methods for monitoring of greenhouse gas emissions and removals (M-MON), Sectoral Scope 14	b. Data classification: Definition of the classes and categories; classification approach and classification algorithms; coordinates and description of the ground-truth data collected for training purposes; ancillary data used in the classification, if any; software and software version used to perform the classification; additional spatial data and analysis used for post-classification analysis, including class subdivisions using non-spectral criteria, if any; etc.
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	PD Section 4.3
ESI Findings - Round 1 (21 January 2015)	a) Forest and nonforest classes are mentioned in the PD monitoring plan, but no precise definitions of the land cover classes are described. b) Ground reference data used specifically for the accuracy assessment is described in the monitoring plan, "Samples used to assess classification accuracy should be well-distributed throughout the project area (as far as is possible considering availability of high resolution imagery and/or logistics of acquiring ground truth data), with a minimum sampling intensity of 50 points each for the forest and non-forest classes." Whether or not ground reference points were used to train the classification algorithm is not mentioned. Good remote sensing practice employs independent ground/high resolution reference points separately for classification and accuracy assessments.
Round 1 NCR/CL/OFI	CL: a) Please include precise definitions of landcover classes per this requirement in the monitoring plan. b) Please confirm and describe in the monitoring plan any ground reference data which may have been used to train the classification algorithm. In doing so, please differentiate between ground reference points for training classification and those employed in the accuracy assessment.
Round 1 Response from Project Proponent (26 February 2015)	A) The definition of a forest has been added to the PD in Section 4.3. B) In the description of the classification approach added to Section 4.3 of the PD the training data is described, and are collected through image examination of statistically homogenous areas of target classes and expert knowledge. Further, there is no overlap between the accuracy assessment points and the data used for classification.
Final ESI Findings (31 March 2015)	A) the definition of forest was appropriately added to section 4.3 of the PD. B) As seen in other VM0007 projects developed by the same PP, the explanation of image classification added to the PD and performed by UCEGEO is sufficient. The accuracy assessment was reviewed at length by validators. As many forest/nonforest points were viewed as possible in Google Earth using identical multispectral imagery as for the assessment. Coordinates and dates of image acquisition as noted in "AAPoints_2013_2014.06.30.xlsx" corroborate with Google Earth. Finding is addressed.

Item Number	50
Approved VCS Module VMD0015,Version 2.1 (20 November 2012), REDD Methodological Module: Methods for monitoring of greenhouse gas emissions and removals (M-MON), Sectoral Scope 14	<u>Regional Forest Cover / Non-Forest Cover Benchmark Map</u>
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	PD General
ESI Findings - Round 1 (21 January 2015)	No map has been provided showing the location of forest land within the reference region at the beginning of the project crediting period. Figure 1.1 contains sufficient scaling for a regional benchmark map.
Round 1 NCR/CL/OFI	NCR: Please include a regional benchmark map following the requirements for this parameter.
Round 1 Response from Project Proponent (26 February 2015)	No "Regional Forest Cover / Non-Forest Cover Benchmark Map" is warranted for this project as there is no reference region for a planned project. Further, information needed for monitoring with-project deforestation is the same as and that found in the "Project Forest Cover Benchmark Map". See response to Finding 51.
Final ESI Findings (31 March 2015)	Validators agree with the assertions by the PP, a regional forest cover map is not necessary as the project is planned deforestation and this criteria applies to unplanned projects. Finding is addressed.

Item Number	51
Approved VCS Module VMD0015,Version 2.1 (20 November 2012), REDD Methodological Module: Methods for monitoring of greenhouse gas emissions and removals (M-MON), Sectoral Scope 14	<u>Project Forest Cover Benchmark Map</u>
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	PD General
ESI Findings - Round 1 (21 January 2015)	Figure 1.7 illustrated the project area forest and nonforest in 2012 at project start and figure 1.6 at year 2002, but they are not identified as the "Benchmark maps". Benchmark map is needed to show the location of forestland within the project area at the beginning of each monitoring period. Benchmark map is missing stratification following the "other requirements". Further, an accuracy assessment is needed.
Round 1 NCR/CL/OFI	NCR: Please address all findings and identify a benchmark map in the PD, stratify and provide an accuracy assessment.

Round 1 Response from Project Proponent (26 February 2015)	Figure 1.6 has been retitled "2002 Forest Cover Benchmark Map." Figure 1.7 has been retitled "2012 Forest Cover Benchmark Map." A map which includes forest strata has been already been included in the PD as Figure 1.3. The 2013 Accuracy Assessment has been provided in the project database as part of the response to this finding. This accuracy assessment covers the entire classified area (i.e., the state of Acre) which includes the project area. This accuracy assessment of the 2013 Acre deforestation dataset has already been verified as part of the Russas and Valparaiso project.
Final ESI Findings (31 March 2015)	Re-titling of Figures 1.6 and 1.7 is sufficient. Map stratification pertains to the illustration and does not affect future monitoring where a comparison of forest/non forest change is made. Further accuracy is assessed on forest/nonforest change only. The accuracy assessment was reviewed at length by validators. As many forest/nonforest points were viewed as possible in Google Earth using identical multispectral imagery as for the assessment. Coordinates and dates of image acquisition as noted in "AAspoints_2013_2014.06.30.xlsx" corroborate with Google Earth. Finding is addressed.

Item Number	52
Approved VCS Module VMD0015, Version 2.1 (20 November 2012), REDD Methodological Module: Methods for monitoring of greenhouse gas emissions and removals (M-MON), Sectoral Scope 14	<u>Mean wood density of commercially harvested species (Dmn)</u>
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	PD Section 4.1, Env_ComVol_ 2014.10.21.xls
ESI Findings - Round 1 (21 January 2015)	In Table 3.31 of the PD it is noted that the value was determined from the forest inventory but the calc file does not appear to indicate wood density values are derived from inventory data. Use of Chave et al 2006 may or may not fall under the appropriate sources of data to meet requirements. Further, this data/parameter may not be in the correct section of the PD.
Round NCR/CL/OFI	1 CL: Please confirm the source of data for Dmn follows the priorities outlined in this requirement and justify the current approach. Please correct the reference to the source of data (inventory) and note more explicitly the source of data for the Dmn parameter in the PD. Please also ensure this data and parameter is in the appropriate section of the PD.

Round 1 Response from Project Proponent (26 February 2015)	The approach for determining Dmn uses a combination of project specific data on commercial log volume and estimates of wood density as found in Chave et al. This is the most appropriate approach as it uses site specific data. The source of data has been updated in both Table 3.31 and the parameter table in Section 4. Finally, the parameter has been moved to Section 4.1.
Final ESI Findings (31 March 2015)	Dmn value follows the priorities outlined in this requirement, and is calculated using a combination of project specific data on commercial log volume and estimates of wood density as found in Chave et al. 2006. See "Env_ComVol_ 2015.03.13.xls" file in project archive. Validators also confirmed that source of data has been updated in both Table 3.31 and the parameter table in Section 4. And, the parameter has been moved to Section 4.1.

Item Number	53
Approved VCS Module VMD0016, Version 1.0 (13 December 2010), REDD Methodological Module: Methods for stratification of the project area (X-STR), Sectoral Scope 14	Pre-stratification (prior to inventory) of the project area is not required, however, pre-stratification may serve to avoid requirements for post measurement stratification later (below).
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	PD Section 3.1.4; Forest Inventory Report Section 3.1.3
ESI Findings - Round 1 (21 January 2015)	Stratification was conducted prior to inventory and was based on a vegetation map from the Acre State publication "Ecological and Economical Zoning" where land cover is classified using the Brazilian Forest Classification System. The reference associated with this land cover classification method needs to be provided.
Round NCR/CL/OFI 1	CL: Please provide the publications the stratification was based on for validation. Please also provide any spatial data used for stratification purposes.
Round 1 Response from Project Proponent (26 February 2015)	The State of Acre publication, Zoneamento Ecológico-Econômico do Acre Fase II 2006 has been provided in response to this finding. The pdf is entitled "ZEE Acre 2006". The corresponding GIS file has also been provided in response to this finding. It is entitled "Ac_Vegetation.shp".
Final ESI Findings (31 March 2015)	Pre-stratification following the Acre State procedures is sufficiently captured in the publication file. Validators also confirm the base stratification file is the original data for project stratification. Finding is addressed.

Item Number	54
Approved VCS Module VMD0017, Version 2.0 (31 July 2012), REDD Methodological Module: ESTIMATION OF UNCERTAINTY FOR REDD PROJECT ACTIVITIES (X-UNC), Sectoral Scope 14	The uncertainty shall be equal to the 95% confidence interval as a percentage of the mean of the area deforested in each proxy (D%pn) divided by the number of years over which deforestation occurred in each proxy (Yrspn).
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	PD Section 3.4
ESI Findings - Round 1 (21 January 2015)	UncertaintyBSL,RATE was confirmed to be equal to the 95% confidence interval as a percentage of the mean of the area deforested in each proxy (D%pn) divided by the number of years over which deforestation occurred in each proxy (Yrspn). However, the PD Table 3.36 notes this value was derived from Equation 3 of X-UNC though the computation method is not noted by a specific equation in the module. Validators suggest omitting this specific reference.
Round NCR/CL/OFI 1	CL: Please remove the incorrect reference to Equation 3 in the PD.
Round 1 Response from Project Proponent (26 February 2015)	The reference to equation 3 has been removed from Table 3.36.
Final ESI Findings (31 March 2015)	Table 3.36 in the PD no longer refers to Equation 3. Text in section 3.4 of the PD correctly states, "Parameter UncertaintyBSL,SS is thus calculated to be 4.17%" to agree with table 3.36. Finding is addressed.

Item Number	55
Approved VCS Module VMD0017, Version 2.0 (31 July 2012), REDD Methodological Module: ESTIMATION OF UNCERTAINTY FOR REDD PROJECT ACTIVITIES (X-UNC), Sectoral Scope 14	Uncertainty should be expressed as the 95% confidence interval as a percentage of the mean using <u>Equation 4 on Page 8</u>
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	PD Section 3.4, Envira Amazonia 2014.10.24.xlsx
ESI Findings - Round 1 (21 January 2015)	The computations for combined baseline uncertainty were checked and confirmed to follow Equation 4 correctly. Values reported correctly in Section 4.1 of PD except for strata UncertaintyBSL,SS.
Round NCR/CL/OFI 1	CL: Please report the correct UncertaintyBSL,SS,I (%) for strata FAP + FAB + FD in Section 4.1 of PD.

Round 1 Response from Project Proponent (26 February 2015)	The UncertaintyBSL,SS,I (%) value for strata FAP + FAB + FD in Section 4.1 of PD has been updated to the correct value of 5.8%.
Final ESI Findings (31 March 2015)	Values for uncertainty for all strata are now reported correctly in the PD. Finding is addressed.

Item Number	56
Approved VCS Tool VT0001,Version 3.0 (1 February 2012), TOOL FOR THE DEMONSTRATION AND ASSESSMENT OF ADDITIONALITY IN VCS AGRICULTURE, FORESTRY AND OTHER LAND USE (AFOLU) PROJECT ACTIVITIES, Sectoral Scope 14	If applicable, explain why the similar activities did not face barriers to which the proposed VCS AFOLU project activity is subject.
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	PD Section 2.5.2
ESI Findings - Round 1 (21 January 2015)	It is unclear from the Common Practice discussion whether the similar activities in the proxy areas face barriers like the project (i.e. percentage of lands able to be deforested).
Round NCR/CL/OFI 1	CL: Please address the findings and elaborate within the PD on the applicability of barriers faced by similar activities as the project.
Round 1 Response from Project Proponent (26 February 2015)	All private owned lands including the project area and proxy areas are subject to limitations on the percentage of land they are able to legally clear. The text in section 2.5.2 of the PD has been revised to better reflect that statement. The revised text in Section 2.5.2 states "Conservation of privately owned forest land in Acre state, including the project area and proxy areas, is generally limited to the legal reserve and designated areas of permanent protection (APP). The legal reserve is a requirement of the Brazilian Forest Code for landowners in the Amazon to maintain 80% of privately owned property as forest. The landowners would be clearing the non-legal reserve on the property in the baseline. " Further, there are no other similar activities to the project on private lands without the aid of carbon finance, as mentioned in Section 2.6.2. This is primarily because the main project activity "Forego Clearing of the Project Area and Conversion to Pasture" is unlikely for most landowners.
Final ESI Findings (31 March 2015)	Revised text in section 2.5.2 of the PD clearly describes the barriers faced by similar activities as the project are present in the proxy areas as well. Finding is addressed.

Item Number	57
VCS AFOLU Non-Permanence Risk Tool, Version 3.2 04 Oct 2012	Project cash flow breakeven point is less than 4 years from the current risk assessment
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Envira Amazonia VCS Non-Permanence Risk Report 2014.10.27.pdf, and Envira Amazonia VCS PD 2014.10.27.pdf, and Pro Forma for Envira Amazonia Project (10-7-14).xls
ESI Findings - Round 1 (21 January 2015)	Project cash flow breakeven point is 4 years or less from the current risk assessment. Details are provided in a cash flow analysis which can be found in the project database (see Pro Forma for Envira Amazonia Project (10-7-14).xls). The project financial prospects show that the project would reach break-even well before the 4 year mark, however there is no support documentation for these numbers as required by the risk tool. It is not clear if any interest expenses, repayment of loans or forward purchase agreements, and any required equity distributions are considered, as stated as a minimum demonstration requirement in the tool. Further the document Pro Forma for Envira Amazonia Project (10-7-14).xls appears to include some references to the Russas-Valparaiso Projects (see Totals for Russas-Valparaiso Projects, Year 1 CCo's Envira Amazonia ProForma tab (rows 36 and 41)).
Round 1 NCR/CL/OFI	1 NCR: It is unclear what details were provided for evidence of this item. AFOLU Risk Tool indicates that "Projects may demonstrate that funding has been secured through, for example, financial statements, bank records, executed commodity purchase agreements, executed emission reduction purchase agreements, or other signed contractual agreements. Evidence shall be provided that agreement counterparties are in good financial standing, to demonstrate the ability to meet the financial obligations." Please provide appropriate evidence. CL: Please remove any incorrect references to Russas-Valparaiso Projects in the Cash Flow analysis file (Pro Forma for Envira Amazonia Project (10-7-14).xls).
Round 1 Response from Project Proponent (26 February 2015)	The Envira Amazonia Project Pro Forma was revised on January 30, 2015. In addition to the revised Pro Forma, CarbonCo also provided recent bank records to demonstrate funding has been secured.
Final ESI Findings (31 March 2015)	The Pro Forma file provided (Pro Forma for Envira Amazonia Project (1-30-15).xls indicates that the project cash flow breakeven point is 4 years or less (in year 3 from the Overall Paybacks tab). Finding is addressed.
Item Number	58

VCS AFOLU Non-Permanence Risk Tool, Version 3.2 04 Oct 2012	Mitigation: Project has available as callable financial resources at least 50% of total cash out before project reaches breakeven
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Envira Amazonia VCS Non-Permanence Risk Report 2014.10.27.pdf, and Envira Amazonia VCS PD 2014.10.27.pdf, and Pro Forma for Envira Amazonia Project (10-7-14).xls
ESI Findings - Round 1 (21 January 2015)	Project has available at least 50% of the total cash out before project reaches breakeven. Project proponents are utilizing internal, non-restricted funds as evidenced in the project database. Callable financial resources are those not included in secured funding, but that are readily available to the project. The availability of such resources may be indicated through letters of credit, revolving credit lines or other financial backing, as evidenced by signed agreements and which demonstrate the project's ability to access funding as needed. It does not appear that the project has provided evidence that they have callable resources available.
Round 1 NCR/CL/OFI	1 NCR: Please provide evidence of callable financial resources including "letters of credit, revolving credit lines or other financial backing, as evidenced by signed agreements and which demonstrate the project's ability to access funding as needed."
Round 1 Response from Project Proponent (26 February 2015)	CarbonCo has sufficient unrestricted, internal financial resources and an updated bank records were provided to ESI as evidence of such callable financial resources.
Final ESI Findings (31 March 2015)	Evidence provided demonstrates callable financial resources and secured financial resources. This risk tool defines callable financial resources as, " <i>Callable financial resources are those <u>not included in secured funding</u>, but that are readily available to the project. The availability of such resources may be indicated through letters of credit, revolving credit lines or other financial backing, as evidenced by signed agreements and which demonstrate the project's ability to access funding as needed</i> ". Any finding requests for this item would not change the projects total Final Financial Score, which may not be less than 0 regardless. Finding is addressed.

Item Number	59
VCS AFOLU Non-Permanence Risk Tool, Version 3.2 04 Oct 2012	Mitigation: Project is protected by legally binding commitment (see Section 2.2.4) to continue management practices that protect the credited carbon stocks over the length of the project crediting period
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Envira Amazonia VCS Non-Permanence Risk Report 2014.10.27.pdf, and Envira Amazonia VCS PD 2014.10.27.pdf, and Duarte Tri-Party Agreement English, Fully Signed and Certified.pdf

ESI Findings - Round 1 (21 January 2015)	There is a legal contractual agreement to maintain the project area as forest for at least a 60 year period (i.e. greater than the length of the crediting period) from the project start date. This term does not appear to be entirely spelled out in the Tri Party Agreement alone. Please provide an addendum to this agreement that clearly indicates a 60 year period or point to the language in the existing agreement that specifies this length.
Round 1 NCR/CL/OFI	CL: Please provide an addendum to this agreement (as was done in the Russas and Valpariso projects) that spells out a 60 year period, or point to the language in the existing agreement that specifies this length.
Round 1 Response from Project Proponent (26 February 2015)	There is a contractual agreement to maintain the project area as forest for at least a 30 year period, as specified in the Tri-party agreement. This change has resulted in the updating of the risk score, and text as found throughout Appendix A.
Final ESI Findings (31 March 2015)	The PDD has been corrected in sections A1.1 and A1.2 to state, "There is a legal contractual agreement to maintain the project area as forest for at least a 30 year period (i.e. the length of the crediting period) from the project start date." This change has resulted in the updating of the risk score, and text as found throughout Appendix A. No addendum to the Tri-party agreement is needed as the agreement specifies this 30 year period. Finding is addressed.

Item Number	60
VCS AFOLU Non-Permanence Risk Tool, Version 3.2 04 Oct 2012	In more than 5% of the project area, there exist disputes over land tenure or ownership
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Envira Amazonia VCS Non-Permanence Risk Report 2014.10.27.pdf, and Envira Amazonia VCS PD 2014.10.27.pdf, Russas Project Final Draft VCS PD and site visit.
ESI Findings - Round 1 (21 January 2015)	Site visit observations and discussions with community members indicated that the communities who live within the project area do not own the land they are living on. While this was not presented as a dispute, it is important to note the ownership pattern and any issues that may arise due to the granting of ownership as a consequence of the project.
Round 1 NCR/CL/OFI	CL: The PDD also states that there are about 10 families in the project area, consisting of 60-70 people. Please describe the ownership in the project area in relation to the fact that the communities living in the project area do not have title to their land and explain how this is not considered to be a problem for the purposes of the Risk Assessment.

Round 1 Response from Project Proponent (26 February 2015)	The land tenure "dispute" concerns deforested areas, rather than forest areas which include the Envira Amazonia Project's Project Area. The following text has been added to the Land Tenure and Resource Access/Impacts Section of the Non-Permanence Risk Report and specifically row b-d): "Not applicable. Community members that have been living on land adjacent to the project area and who made the land productive (e.g., by growing crops or raising animals) for ten years, have the right to be titled. To resolve ongoing disputes over land, JR Agropecuária e Empreendimentos EIRELI will voluntarily recognize whatever area is currently deforested and under productive use by each family. However these land tenure "disputes" concern deforested areas, rather than the forested Project Area of the Envira Amazonia Project."
Final ESI Findings (31 March 2015)	The Mitigation Description included in the Non-Permanence report, i.e. granting previously deforested land to community members living both inside and adjacent to the project area, is sufficient to assume the Risk Rating for disputes over land tenure or ownership is zero. Finding is addressed.