THE RUSSAS PROJECT – A TROPICAL FOREST CONSERVATION PROJECT IN ACRE, BRAZIL

VCS VERIFICATION REPORT

Document Prepared By: Environmental Services, Inc.

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Summary:

Environmental Services, Inc., (ESI) was contracted by CarbonCo, LLC., on 15 April 2014 to conduct the first verification (17 March 2011 to 31 December 2013) of *The Russas Project: A Tropical Forest Conservation Project in Acre, Brazil* (Validated Project Description (PD) dated 13 March 2014). The Russas Project follows the framework of Reducing Emissions from Deforestation and Degradation (REDD) and is achieving Greenhouse Gas (GHG) emission reductions as well as tropical forest protection and conservation through payments for ecosystem services.

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

- Community outreach and education;
- Employment of local community members as project forest guards or other project staff (to replace other sources of income associated with deforestation and land use);
- Agricultural extension training which will help baseline agents to increase productivity on current lands (thus reducing the pressure to expand their farms in the adjacent forest);
- Supporting local farmers association;
- Assist communities in obtaining land tenure; and
- Sharing a portion of carbon related revenue for communities living on the Russas property (replacing other sources of income associated with deforestation and land use).

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

The scope of the verification included the GHG project implementation; physical infrastructure, activities, technologies and processes of the GHG project; GHG sources, sinks and/or reservoirs; types

of GHG's; and time periods covered. The geographic verification scope was defined by the project boundary, the carbon reservoir types, management activities, growth and yield models, inventory program, and contract periods.

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

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

ESI confirms all verification activities including objectives, scope and criteria, level of assurance, monitoring and project documentation adherence to VCS Version 3 and all associated updates as documented in this report are complete. ESI concludes without any qualifications or limiting conditions that the *2012-2013 Russas Project Monitoring Report* dated 16 December 2014 (v1.2) meets the requirements of VCS Version 3 and all associated updates.

The GHG assertion provided by CarbonCo and verified by ESI has resulted in the GHG emissions reduction or removal of 140,450 tCO2 equivalents by the project during the verification period/reporting period (17 March 2011 to 31 December 2013). This value is net of the 10% (18,970 tCO_2 equivalents) buffer withholding based on the non-permanence risk assessment tool.

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1 INTRODUCTION

1.1 Objective

The verification objective included an assessment of compliance with VCS Version 3 and all associated updates, the selected methodology (VM0007, v1.3), and the validated Project Description (PD) *The Russas Project: A Tropical Forest Conservation Project in Acre, Brazil* dated 13 March 2014. ESI assessed the Greenhouse Gas (GHG) emission removals for the verification period 17 March 2011 to 31 December 2013 through Agriculture, Forestry and Other Land Use (AFOLU) criteria, specifically, Reduced Emissions from Deforestation and Degradation – Avoided Unplanned Deforestation (REDD-AUD). ESI assessed whether the project proponent adequately addressed project emissions, unplanned reductions in carbon stocks, and any possible leakage outside of the project boundary.

1.2 Scope and Criteria

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

Baseline Scenario	Continued unplanned frontier deforestation - forest clearing for subsistence agriculture and cattle ranching.
Activities/Technologies/Processes	VM0007, v1.3 Avoided Unplanned Deforestation Monitoring and modelling forest resources, providing alternative sustainable economic activities for local communities, agricultural training classes.
Sources/Sinks/Reservoirs	Above-ground live tree biomass Below-ground live tree biomass Dead wood Biomass Burning - Source
GHG Type	CO_2 – Sinks; CH_4 and N_20 - Source
Time Period (state date, crediting period, verification period)	17 March 2011 – 31 December 2013
Project Boundary	The Russas Project is located in the state of Acre, Brazil, alongside the Jurua and Valparaiso Rivers, 41,976 ha.
GHG reduction and/or removal	140,450 tCO_2e

1.3 Level of Assurance

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

1.4 Summary Description of the Project

The Russas Tropical Forest Conservation Project was initiated by CarbonCo LLC to protect and conserve tropical forest in the state of Acre, Brazil by providing payments for ecosystem services. Economic incentives for preservation of the tropical forest are created by payments related to the sale of carbon credits generated by the project and issued by the Verified Carbon Standard (VCS). The project is also being developed and registered under the Climate, Community, and Biodiversity Standard (CCBS) for community development and biodiversity preservation.

The Brazilian state of Acre has historically had low deforestation rates until the recent paving of two primary roads near the project area. The previously inaccessible areas of forest in the project region are quickly opening opportunities for agents of deforestation, small subsidence farmers, to reach consumer markets farther away. The small scale farmers are able to clear forests over a period of months and subsequently plant crops or convert the land to pasture. Involving local officials and community members, the project aims to lessen deforestation pressures by implementing a series of community enrichment activities. The sustainable revenue stream from carbon credit sales will support local community development, provincial government infrastructure, and project area protection. Community involvement is enhanced through employment in the project area, agricultural extension services, and assistance to communities for obtaining land tenure.

2 VERIFICATION PROCESS

2.1 Method and Criteria

The verification assessed the Project's compliance with the VCS Version 3 and all associated updates, the selected methodology (VM0007, v1.3), and the validated PD. The verification assessed the GHG emission removals through AFOLU criteria, specifically, REDD-APD. According to the ISO14064-3, the verification criteria are the "policy, procedure or requirement used as a reference against which evidence is compared." For this project, the verification criteria followed the guidance documents provided by VCS and included the following: VCS Program Guide (08 October 2013, v3.5), Program Definitions (08 October 2013, v3.5), AFOLU Requirements (08 October 2013, v3.4), AFOLU Non-Permanence Risk Tool (4 October 2012,

v3.2), and the VCS Methodology VM0007: "REDD Methodology Modules (REDD-MF)" v1.3 (03 May 2013) and its associated modules and tools.

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

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

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

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

2.2 Document Review

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

The AFOLU Non-Permanence Risk Tool (04 October 2012, v3.2) was used by the Project Proponent to assess overall project risk. The Verification Team reviewed the Non-Permanence

Risk Report provided with the verification supporting documentation and confirmed that the Project adheres to the requirements set out in the VCS AFOLU Non-Permanence Risk Tool (04 October 2012, v3.2). Each risk factor was thoroughly assessed for conformance. Any identified NCR and/or CL findings related to the AFOLU Non-Permanence Risk Tool/Report are presented in Appendix B. The final score was calculated to be 10%.

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

2.3 Interviews

The verification site visit occurred between 12 August 2014 and 25 August 2014, it was performed in conjunction with the VCS verifications for the Purus and Valparaiso projects. Onsite interviews and informal discussions were conducted with project staff, members and leaders of the local communities, a not-for-profit organization, and Brazilian government representatives. During interviews with the local community some commented that they didn't fully understand the project and wanted clearer information. In most instances further discussion from ESI with the persons and/or the project proponent revealed that they had chosen not to attend the trainings or visit the headquarters for meetings.

The project proponent confirmed that 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 any disputes over land which may occur, the landowner, Ilderlei Souza Rodrigues Cordeiro had the property geo-referenced and officially registered in the cadaster (Cadastro Ambiental Rural), a process which involved on the ground assessment of all property boundaries and consultations with neighbouring landowners. The majority of locals indicated that the land titling aspect of the project is a desired benefit.

In addition, members of the ESI verification team met with individuals with various roles in the project. This included meetings with the biologist who installed and monitored the camera traps for biodiversity assessment, and we also met with the nurse who hands out mosquito nets and provides training and materials for dental health.

The following is a list of the main interviewees. Given that the two projects (Russas and Valpariaso) are essentially comprised of one community, interviews from both projects are included here:

Name	Title
Brian McFarland	**Director-Carbon Projects and Origination, Carbonfund.org – CarbonCo/Project Developer**
James Eaton	**Senior Manager-Forestry & Technical Services, TerraCarbon, LLC./Independent Consultant**
Pedro Freitas	**President, Freitas International Group, LLC. (Carbon**

	Securities)/Project Facilitator
Manoel Batista Lopes	**Landowner, Project Proponent, Project Manager (Valparaiso)**
Ilderlei Souza Rodrigues Cordeiro	**Landowner, Project Proponent, Project Manager (Russas)**
Marmoude Denis de Carvalho	**On-Site Project Staff (Russas)**
Sebastiao De Melo Carvalho	**Project Area Nurse**
Luis Henrique Mederio Borges	**Project Biologist**
Vagner Sales	**Mayor, Cruzeiro do Sul**
Maria R Francesca	**Environmental Secretary, Cruzeiro do Sul**
Jose Ribamar	**Local Resident (Valparaiso)**
Edivaldo Souza Silva	**Local Resident (Valparaiso)**
Arnold Amorin	**Local Resident (Valparaiso)**
Antonio Carvalho	**Local Resident (Russas)**
Maria de Fatima Carvalho Sarah	**Local Resident (Russas)**
Gerson Silva	**Local Resident (Russas)**
Rodson Chaves	**Local Resident (Valparaiso)**
Felix Sarah	**Local Resident (Russas)**
Fransisco de Sentos Silva	**Local Resident (Valparaiso)**
Antonio Josias dos Santos de Lima	**Local Resident (Russas)**
Julio Farras	**Local Resident (Valparaiso)**
Eliane Negreiro	**Local Resident (Valparaiso)**

Jose Coelho Farias	**Local Resident (Valparaiso)**
Diosdete do Nascimento	**Local Resident (Valparaiso)**
Jose Luis Ferriera de Melo	**Local Resident (Russas)**
Jacinto Filho da Silva	**Local Resident (Russas)**
Jose Maria	**Local Resident (leakage area)**
Maria Regiarne Menezes	**Local Resident (leakage area)**

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

2.4 Site Inspections

The verification site inspection followed our prepared Verification and Sampling Plan process and was conducted on 12-24 August 2014. The site visit aided the verification team to both understand application of the methodology on-site and to identify possible sources of error to focus desktop verification efforts.

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

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

1. Boundaries - reviewed boundaries using a Global Positioning System (GPS) and checked boundary signage
2. Stratification - checked vegetative cover classifications by taking waypoints and notes through direct observation with handheld GPS and maps.
3. Forest Protection - viewed areas of high likelihood of incursions
4. Reviewed and observed high risk areas and items:
    - Hot-spot areas of recent deforestation and degradation in project boundary, leakage area and carbon accounting area with confirmation of data collection methods in conformance with the stated Standard Operating Procedures (SOPs) for monitoring
    - This included assessments of:
        - Evidence of logging (degradation and deforestation)
        - Evidence of any Fire Hot Spots
        - Evidence of Land Clearing
5. Leakage

- Considered leakage monitoring as described in the validated PD and Monitoring Report.
- Review possibility of illegal expansion of other concessions
- Visited communities along adjacent ramal to assess the potential for current and future impacts to the project area.

6. Implementation of monitoring
7. Reported elements of the Risk Assessment

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

2.5 Resolution of Findings

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

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

Findings were characterized in the following manner:

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

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

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

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

During the course of the verification, 28 essential findings were identified; a count by type is presented in the table below. Detailed summaries of each finding, including the issue raised, responses, and final conclusions, are provided in Appendix B. All NCRs/CLs were satisfactorily addressed.

2.5.1 Forward Action Requests

No forward action requests were raised during the validation process.

2.6 Eligibility for Validation Activities

Validation activities were not undertaken as part of the verification.

3 VALIDATION FINDINGS

3.1 Participation under Other GHG Programs

The validation process for the PD entitled "*The Russas Project: A Tropical Forest Conservation Project in Acre, Brazil*" with a validation date of 13 March 2014 is described in the Validation Report, available on the VCS website. The Project Proponent has attested that none of the project area has been or will be registered under another carbon trading scheme during the VCS project lifetime, other than CCBA.

3.2 Methodology Deviations

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

Methodology Deviation	Verification Findings
Trees in the Cecropia genus were not measured as part of the forest inventory. This has been proposed as a deviation as it stands in conflict with the CP-AB requirement that "all the trees above some minimum DBH in the sample plots" be measured.	Verification 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	Verification team confirmed that project

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	proponents measured lying deadwood using two 92-meter transects and all dead wood greater than or equal to 10cm diameter was measured at the point of intersection. This measurement method differs from the requirements on module CP-D where Step 1 of Part 2: Lying Dead Wood states "Two 50-meter lines (164 ft) are established bisecting each sample plot and the diameters of the lying dead wood (≥ 10 cm diameter *≥ 3.9 inches+) intersecting the lines are measured. The first line is oriented along a random bearing, the second line is oriented perpendicular to the first." The PP established two 92-meter transect lines, greater in length, to capture a larger and more representative sample of lying dead wood. These sample lines were permitted not to intersect a given sample plot center, but instead run from one plot to another. This method still ensures a random, but systematic sample of lying dead wood along a transect. The Project Proponent followed the same minimum diameter rule as the requirement, where lying dead wood greater than or equal to 10cm which fell on the transect line was sampled. The first sample line was not at a randomized bearing but rather the two sample lines were oriented at the north and east. The verification team believes that consistent line bearings among sample lines is still in line with good forest sampling practice as no sampling bias is introduced. Field going personnel of varying forest measurement experience are better able to replicate sample line measurements which are consistent in bearing. Further, the bearing of sample lines follows the perpendicular rule stated in CP-D. These deviations from the criteria and procedures related to measurement are appropriate given the good forest measurement practices employed, consistency in sampling practices, and conservativeness in larger sample sizes of lying dead wood. Further, the deviations are permissible per VCS Standard Section 3.5.1 given that the

	issue is a monitoring/measurement deviation and its application does not negatively impact the conservativeness of the quantification of GHG emission reductions or removals.
Rather than using a root to shoot ratio to estimate belowground biomass as per the CP-AB module, belowground biomass was estimated using an allometric equation developed by Cairns et al.	The verification team has agreed to allow this deviation as it has been demonstrated by project proponents that using the Cairns [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 verification team to be a widely referenced method during a related literature search. The project proponent (PP) demonstrated the conservativeness of the root to shoot parameter (R) substitution in a separate analysis where the default root to shoot ratios were compared to the Cairns root to shoot ratio. The Cairns et al. method employs an average root to shoot ratio of 0.2286 versus the value of 0.24 (Table 4.4 IPCC GL AFOLU Tropical Forest >125 t.ha-1). This alternative method for determining below ground biomass is acceptable as it is more conservative and accurate. Further, this method for determining below-ground biomass is a parameter available at verification 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 r2 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 verification team has found this deviation to be permissible 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. Other assertions by the project proponent including the sole inclusion of stem biomass

[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.

the following reasons: • Volume is calculated as the volume a parabaloid rather than the volume of a cylinder; • Only stem biomass is estimated, thus conservatively excluding other aboveground biomass; and • A conservative measure of basal diameter (i.e., dbh) was used.	and lower dbh values employed are acceptable. Further, this method for determining above-ground biomass is a parameter available at validation.
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 verification 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 (PP) to address the monitoring/measurement of the dead wood densities. The PP 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 *DDWdc.* 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. Verification team concludes this deviation is acceptable per VCS Standard Section 3.5.1 as it is a parameter available at validation and does not negatively impact the conservativeness of the quantification of GHG emission reductions or removals.
The similarities of the project boundaries were assessed using population density rather than settlement density.	Settlement location data within Acre state is insufficient and therefore population density was used as a surrogate for settlement density to assess similarities in the project boundaries. The verification team interprets the intent of settlement density to capture the relative density of residents within the project boundaries. During validation, the PP stated that the Acre state level settlement density data is out-of-date (last updated 2006) and/or insufficient within the project boundaries. A demonstration was provided of the Acre state settlement data where it was illustrated that densely populated areas contain sufficient data but data was non-existent in many rural areas. Further, new settlements since 2006 are not

	evident but occur as confirmed by field visits. This is a permissible deviation because population density is also able to reflect land conversion pressure. Additionally it is a parameter available at validation and does not negatively impact the conservativeness of the quantification of GHG emission reductions or removals.
The parameter TOTFOR has not been "limited to forest areas within 5km of roads and rivers suitable for conversion to agriculture / livestock" as mentioned in the methodology.	TOTFOR was derived from the source: FAO publication Global Forest Resources Assessment 2010, Brazil Country Report[2]. As a result, the PROPLB parameter is smaller and produces a more conservative estimate as more leakage outside the leakage belt is accounted for. The verification team believes the monitored TOTFOR parameter is eligible as a methodology deviation because the alternative measurement method is more accurate and conservative. The verification team and the PP interpreted the comment noted for the monitored TOTFOR parameter "Limited to forest areas within 5km of roads and rivers suitable for conversion to agriculture / livestock" to be a mandatory requirement. The total available national forest area was derived from the Brazil FRA and it would largely be infeasible to determine an exact size of all forested areas within 5km of roads and suitable for conversion to agriculture/livestock. A total available national forest area available from the Brazil FRA is inherently more accurate and also conservative in the overall accounting of leakage outside the leakage belt. Additionally it is a parameter available at validation and does not negatively impact the conservativeness of the quantification of GHG emission reductions or removals
The parameter COLB has not been "limited to	During the course of the validation project

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

forest areas within 5km of roads and rivers suitable for conversion to agriculture / livestock" as mentioned in the methodology.	proponents adjusted this parameter from the FAO value for the Amazon basin to the country-specific Brazil value. ESI believes the COLB parameter is eligible as a methodology deviation because it pertains to the conservativeness of a measurement method. The COLB value has been set to a value which is not limited to areas suitable for agriculture or livestock ranching. During validation the PP adjusted the COLB aboveground carbon stock value to a country specific value which is larger than the FAO default value for the Amazon basin. This new COLB value represents a wide range of areas which may include areas unsuitable for agriculture or ranching. The larger COLB stocking value represents a more conservative approach as there is a larger proportional difference in carbon stocks between areas of forest available for unplanned deforestation inside and outside the leakage belt. This change to a larger value was deemed more conservative and it also resulted in a larger proportional difference in carbon stocks between areas of forest available for unplanned deforestation inside and outside the LB. While this change in the COLB represents a methodology deviation, the verification team believes it is appropriate given the desire to achieve a higher level of conservativeness. Additionally, it is a parameter available at validation and does not negatively impact the conservativeness of the quantification of GHG emission reductions or removals.
The AVFOR parameter used in leakage estimation was stratified using information and data derived from official (government) publications, peer-reviewed published sources, or other verifiable sources. Stratification is not limited to the delineation of different strata where contiguous areas of at least 100 ha differ in stocks by ≥20%.	The verification team found that AVFOR was stratified by Amazon biomes, source: FAO publication Global Forest Resources Assessment 2010, Brazil Country Report. The requirement in LK-ASU states (Step 4, Definition of the Leakage Belt Boundary), “AVFOR shall be separated into different strata where contiguous areas of at least 100 ha differ in stocks by ≥20%.” The project was stratified into contiguous natural forest biomes according to the FAO data that are larger than 100 ha and differ in in stocks by ≥20%, thus it meets the above quoted mandatory

	requirement. No divergences from the FAO document were identified during review. Since the AVFOR parameter is directly related to the TOTFOR parameter which contains a permissible methodology deviation, the verification team agreed with the PP it be mentioned along with the TOTFOR as a methodology deviation. However, the verification team concludes that the actual measurement method for AVFOR does not constitute a methodology deviation because this measurement was performed correctly.
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 $\leq$ 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 $\leq$ 10 years, putting it into alignment with modules CP-AB and CP-D.	Verification 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 verification team. The verification 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. Verification team concludes this deviation is acceptable.

The verification process confirmed that the above methodology deviations are reasonable and in compliance with the VCS Standard, Section 3.5 and have been appropriately justified. The listed deviations represent a deviation from the criteria and procedures relating to monitoring and/or measurement of GHG emission reductions or removals set out in the selected methodologies. Moreover, the deviations do not negatively impact the conservativeness of the quantification of GHG emissions reductions or removals (where degradation is deemed significant following the steps in T-SIG, it will be accounted for).

3.3 Project Description Deviations

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

included in the quantification of net GHG emission reductions and if plot level monitoring of degradation is warranted.

The project remains in compliance with the VCS Standard, Section 3.6.1 where Project Description Deviations are permissible at verification as long as the deviation does not impact the applicability of the methodology, additionality or the appropriateness of the baseline scenario, and the project remains in compliance with the applied methodology. Further, the project remains in compliance with VM0007 V1.3 (where degradation is determined to be significant per the T-SIG tool, it will be accounted for) and the PD deviation is described and appropriately justified in Section 2.2.2 of the Monitoring Report.

The project proponent's assessment of degradation was thoroughly reviewed and found to contain the appropriate data and conservative calculations. Emissions due to degradation were justified as insignificant following the proper steps of the T-SIG tool and plot level monitoring of degradation is not warranted at this time. This item however, should be re-assessed at future verifications.

A second Project Description Deviation was noted where, in the with-project case, C(post) is now assumed to be zero. This is the case for natural disturbance (CP,Dist,q,i , as stated in Section 5.2.3 of the M-MON module) 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 ΔCpools,Def,u,i,t is equal to C(BSL,i), which leads to the maximum emission in the with-project case. The verification 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.

3.4 Grouped Project

Not applicable, as this is not a grouped project.

4 VERIFICATION FINDINGS

4.1 Project Implementation Status

The Project Activities and Monitoring Plan, as described in the validated PD, have been fully implemented and the system is suitable. There are no remaining issues from validation. At this 1st verification, many activities are still being implemented, but the verification team observed considerable progress during the Verification Site Inspection. No material discrepancies were identified during the verification following the VCS materiality threshold and ISO 14064-3:2006. The verification team requested to visit examples of all activities during the site inspection and subsequently confirmed the initial implementation of all items, as discussed in Section 2.1 of the Russas Project's MR.

4.2 Accuracy of GHG Emission Reduction and Removal Calculations

ESI conducted an intensive review of all input data, parameters, formulas, calculations, conversions, statistics and resulting uncertainties and output data to ensure consistency with the

VCS standard, the project PD and the methodological modules. Further, ESI reproduced calculations for selected samples to ensure accuracy of the results. Conversion factors, formulas, and calculations were provided by the Project Proponent in spreadsheet format to ensure all formulas were accessible for review. The verification team recalculated subsets of the analysis to confirm correctness. The Project Proponent also provided a step-by-step overview of calculations to ensure ESI understood the approach and could confirm its consistency with the methodological modules and PD.

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

Data Parameter	Verification Team Findings
$\Delta C_{P,Def,i,t}$	This data/parameter was appropriately chosen because it pertains to net carbon stock change as a result of deforestation in the project case in the project area in stratum *i* at time *t*. This value was found to be calculated accurately in a spreadsheet ("2013_RussasMonitoring 2014.12.16.xls") according to the correct formula for the monitoring period.
$\Delta C_{P,DefLB,i,t}$	This data/parameter was appropriately chosen because it pertains to net carbon stock change as a result of deforestation in the project case in the leakage belt in stratum *i* at time *t*. This value was found to be calculated accurately in a spreadsheet ("2013_RussasMonitoring 2014.12.16.xls") according to the correct formula for the monitoring period.
$\Delta C_{P,DistPA,i,t}$	This data/parameter was appropriately chosen because it pertains to net carbon stock change as a result of natural disturbance in the project case in the project area in stratum *i* at time *t*. The value applied was 0. This was appropriate as there were no areas of natural disturbance reported in by on-the ground forest monitors/local land managers and none was distinguished (from anthropogenic deforestation) with remote sensing analyses.
$A_{DefPA,u,i,t}$	This data/parameter was appropriately chosen because it pertains to the area of recorded deforestation in the project area stratum *i* converted to land use *u* at time *t*. This value was found to be calculated accurately from remote sensing/GIS data and was implemented appropriately in the monitoring spreadsheet ("2013_RussasMonitoring 2014.12.16.xls") according to the correct formula for the two year monitoring period.
$A_{DefLB,u,i,t}$	This data/parameter was appropriately chosen because it pertains to the area of recorded deforestation in the leakage belt stratum *i* converted to land use *u* at time *t*. This value was found to be calculated accurately from remote sensing/GIS data and was

	implemented appropriately in the monitoring spreadsheet ("2013_RussasMonitoring 2014.12.16.xls") according to the correct formula for the two year monitoring period.
$A_{DistPA,q,i,t}$	This data/parameter was appropriately chosen because it pertains to area impacted by natural disturbance in post-natural disturbance stratum *q* in stratum *i,* at time *t.* The value applied was 0. This was appropriate as there were no areas of natural disturbance reported by on-the ground forest monitors/local land managers and none was distinguished (from anthropogenic deforestation) with remote sensing analyses.
$C_{BSL,i}$	This data/parameter was appropriately chosen because it pertains to the carbon stock in all pools in the baseline case in stratum *i*. This value was calculated and assessed ex ante (at validation). The appropriate ex ante estimates were found to be implemented appropriately in the quantification of net GHG emission reductions.
$\Delta Cpools,Def,u,i,t$	This data/parameter was appropriately chosen because it pertains to the carbon stock in all pools in post-deforestation land use *u* in stratum *i*. This value was found to be calculated accurately by strata in a spreadsheet ("2013_RussasMonitoring 2014.12.16.xls") according to the correct formula for the two year monitoring period.
$A_{DegW,i,t}$	This data/parameter was appropriately chosen because it pertains to the area potentially impacted by degradation processes in stratum *i*. The value applied was 0. This was appropriate as CarbonCo's assessment of degradation ("2013_RussasMonitoring 2014.12.16.xls") indicated that emissions due to degradation (for this monitoring period) are insignificant as per T-SIG.
$C_{DegW,i,t}$	This data/parameter was appropriately chosen because it pertains to the biomass carbon of trees cut and removed through degradation process from plots measured in stratum *i* at time *t*. The value applied was 0. This was appropriate as the project proponent's assessment of degradation indicated that emissions due to degradation (for this monitoring period) are insignificant as per T-SIG.
AP_i	This data/parameter was appropriately chosen because it pertains to the total area of degradation sample plots in stratum *i*. This parameter was not used during this monitoring period. This was appropriate as the project proponent's assessment of degradation indicated that emissions due to degradation (for this monitoring period) are insignificant as per T-SIG and plot level monitoring of degradation is not warranted at this time.

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

dbh	This data/parameter was appropriately chosen because it gives the tree diameter at breast height. DBH values were measured and assessed ex ante (at validation). The appropriate ex ante estimates were found to be implemented appropriately in the quantification of net GHG emission reductions.
dbasal	This data/parameter was appropriately chosen because it gives the basal diameter. Basal diameter values were measured and assessed ex ante (at validation). The appropriate ex ante estimates were found to be implemented appropriately in the quantification of net GHG emission reductions.
H	This data/parameter was appropriately chosen because it gives the height of a tree. Tree heights were measured and assessed ex ante (at validation). The appropriate ex ante estimates were found to be implemented appropriately in the quantification of net GHG emission reductions.
Dn	This data/parameter was appropriately chosen because it gives diameter of piece n of dead wood along a transect. Lying Dead Wood diameters were measured and assessed ex ante (at validation). The appropriate ex ante estimates were found to be implemented appropriately in the quantification of net GHG emission reductions.
N	This data/parameter was appropriately chosen because it gives the total number of wood pieces intersecting a transect. The numbers of Lying Dead Wood pieces were tallied and assessed ex ante (at validation). The appropriate ex ante estimates were found to be implemented appropriately in the quantification of net GHG emission reductions.
L	This data/parameter was appropriately chosen because it gives the length of a transect. Transects were installed, measured, and assessed ex ante (at validation). The appropriate ex ante estimates were found to be implemented appropriately in the quantification of net GHG emission reductions.
Cpost	This data/parameter was appropriately chosen because it pertains to the average carbon stocks remaining after deforestation. This value was found to be calculated accurately using the correct formula for the monitoring period.
Bi,t	This data/parameter was appropriately chosen because it pertains to the average aboveground biomass stock before burning stratum i,time *t*. This value was found to be calculated accurately using forest inventory data and implemented appropriately in the

	quantification of net GHG emission reductions.
EBSL SS,i, pool#	This data/parameter was appropriately chosen because it pertains to the carbon stock or GHG sources (e.g. trees, dead wood, soil organic carbon, emission from fertilizer addition, emission from biomass burning etc.) in the baseline case. This value was calculated and assessed ex ante (at validation). The appropriate ex ante estimates were found to be implemented appropriately in the quantification of net GHG emission reductions.
UBSL,SS,i,pool#	This data/parameter was appropriately chosen because it pertains to the percentage uncertainty (expressed as 95% confidence interval as a percentage of the mean where appropriate) for carbon stocks and greenhouse gas sources in the baseline case (1,2…n represent different carbon pools and/or GHG sources). This value was found to be calculated accurately by strata in a spreadsheet ("2013_RussasMonitoring 2014.12.16.xls") according to the correct formulae for the two year monitoring period.
E BiomassBurn,t	This data/parameter was appropriately included because it pertains to greenhouse emissions due to biomass burning as part of deforestation activities in stratum i in year t. This value was found to be calculated accurately using Equation 1 from the E-BB module and in a spreadsheet ("2013_RussasMonitoring 2014.12.16.xls") according to the correct formulae for the two year monitoring period.

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

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

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

4.3 Quality of Evidence to Determine GHG Emission Reductions and Removals

During ESI's verification, the evidence provided by the Project Proponent was more than sufficient in both quantity and quality to support the determination of GHG emission removals reported by the project. Throughout the verification, the Project Proponent demonstrated a

commitment toward conservativeness and took all measures appropriate to ensure the reliability of evidence provided.

The evidence provided to determine emission reductions reported in the monitoring report included values, notations, units and sources. This evidence has been cross checked with supplied emission reduction calculation spreadsheets and a comprehensive GIS dataset. The procedure for data recording, transfer and final transposition was also verified and found to be in compliance with the monitoring plan outlined in the PD. The verification team was able to confirm through cross checks that adequate monitoring mechanisms are in place where the required parameters need to be monitored.

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

4.4 Non-Permanence Risk Analysis

The AFOLU Non-Permanence Risk Tool (04 October 2012, v3.2) was used by the Project Proponent to assess overall project risk. The Verification Team reviewed the Non-Permanence Risk Report provided with the verification supporting documentation and confirmed that the Project adheres to the requirements set out in the VCS AFOLU Non-Permanence Risk Tool (04 October 2012, v3.2). Each risk factor was thoroughly assessed for conformance. Any identified NCR and/or CL findings related to the AFOLU Non-Permanence Risk Tool/Report are presented in Appendix B. The final score was calculated to be 10%. A brief review of each factor is found in the table below:

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

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

	positive community impacts can be clearly demonstrated, such as through certification against the Climate, Community & Biodiversity Standards or results of a participatory assessment of the project activities on the local communities which demonstrates net positive community benefits. Verifiers agree that the majority of the baseline activities are subsistence driven as evidenced by verifier's observations and discussions with community members in the project area. = 8. There is a legal contractual agreement to maintain the project area as forest for at least a 60 year period (i.e. greater than the length of the crediting period) from the project start date = -2.	
Project Longevity	There is a legal contractual agreement to maintain the project activities and maintain the project area as forest for at least a 60 year period from the project start date (30-(60/2)) = 0.	A risk rating of **0** is appropriate given the rationale provided.
	Total Internal Risks	**8**
External Risks		
Land Tenure and Resource Access Impacts	The provided documents were translated to the best of the verifier's ability and reviewed. These provided reasonable assurance that the individual Ilderlei Souza Rodrigues Cordeiro has full ownership and right of use for the properties at the time of verification = 0. It is understood that no communities live within the project area, rather they live within the boundaries of the land ownership, but they are excluded from project area. Thus, the land is owned by the project proponents. There are no disputes with the land tenureship area. The disputes have been addressed are outside of the scope of the project area = 0. There is a legal contractual agreement to maintain the project area as forest for at least a 60 year period (i.e. greater than the length of the crediting period) from the project start date = -2.	A risk rating of **0** is appropriate given the rationale provided.
Community Engagement	Given that 100% of the local communities have been consulted and are involved in the	A risk rating of **0** is appropriate given

	project neither A nor B is applicable, and thus the default risk value of zero is applicable.	the rationale provided.
Political Risk	Independent calculation of the governance score for Brazil is .057, which includes 2012 and is eligible for a score of 2. Acre, Brazil is participating in the Governors' Climate and Forest Taskforce. Further, Brazil has an established Designated National Authority under the CDM and has at least one registered CDM Afforestation/Reforestation project. "The jurisdiction in which the project is located is participating in the Governors' Climate and Forest Taskforce (GCF)." Independent web search reveals that the statement made by the Project Proponent is true = -2	A risk rating of **0** is appropriate given the rating for governance and participation in beneficial projects.
	Total External Risks	**0**
Natural Risks		
Fire, pests and disease, extreme weather, geologic risk,	Fire - justification for the 10-25 year return interval is sound. Given that the area of Acre has historically exhibited low fire incidence as described in (Cochrane and Laurance, 2002[3]), a low amount of forest edge, and a fire suppression program in the region that inherently would inhibit the positive feedback loop associated with fire incidence, the verifier believes that the associated risk for fire is reasonable = 2. Pest and Disease - The forests of the project area have a high diversity of tree species, with over 150 tree species >10 cm dbh, and like other diverse tropical forests, are not known to be subject to catastrophic disturbance by insect pests or forest diseases. Forest pests and diseases as a source of risk are more relevant in temperate forests or plantations, with low species diversity and consequently susceptible to extensive damage due to pest and disease outbreaks,	A risk rating of **2** is appropriate given the rationale provided for the greatest natural risk of fire.

[3] Cochrane M.A.& Laurance W.F., 2002. Fire as a large-scale edge effect in Amazonian forests, Journal Of Tropical Ecology, 18:311-325.

	which tend to be concentrated on single host species. Further, there is no history of catastrophic forest disturbance due to forest pests or diseases in the region. Verifiers independently searched the internet for any relevant forest pest or disease issues and could not locate any information that would lead verifiers to think that this item was scored incorrectly. Several references indicate that there are numerous endemic diseases and pests in the Amazon Forest, however none appear to be of epidemic proportions, nor is there much history of such occurrences. The diversity of the forested landscape appears to help to mitigate any widespread issues. Observations on the site visit and in flyovers in the region during previous travels have not ever revealed any widespread disease or pest outbreaks. Clearly climate change could play a greater role in this area in the future, however at this time, this element appears to be scored correctly = 0. Extreme Weather - While extreme weather events in the region include drought, flooding, and disturbance by wind, this analysis is limited to disturbance by wind as this is the only disturbance which has a direct effect on carbon stocks. As flooding within the project region is common, high water levels in the forest do not lead to a reduction in the forest carbon stocks. Drought does not have a direct effect on existing forest carbon stocks, but instead can increase the severity of forest fires and hence is covered above in the section on fire risk. In relation to disturbance by wind, the recurrence intervals for large blow down disturbances in the western Amazon have been estimated at 27,000 years. Verifiers independently searched the internet for any relevant weather related issues and could not locate any information that would lead verifiers to think that this item was scored incorrectly. Observations on the site visit and	

	in flyovers in the region during previous travels have not ever revealed any widespread disease or pest outbreaks. Clearly climate change could play a greater role in this area in the future, however at this time; this element appears to be scored correctly = 0. Geologic Risk - Neither volcanoes nor active tectonic fault lines are present within the project area. Landslides are not likely to occur within the project area because the project area is relatively level (less than 5% slope) terrain. Verifiers agree with this evaluation. This item is scored appropriately = 0	
	Total Natural Risks	**2**
Overall Risk Rating = 10		

5 VERIFICATION CONCLUSION

After review of all project information, procedures, calculations, supporting documentation and site visits, ESI confirms that the monitoring conducted by the Project Proponent, along with the supporting Monitoring Report, are accurate and consistent with all aforementioned VCS criteria, the validated PD, and the selected methodology (VM0007, v1.3). ESI confirms that the *2012-2013 Russas Project Monitoring Report* (v1.2 dated 16 December 2014) has been implemented in accordance with the validated PD.

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

The GHG assertion provided by the Project Proponent and verified by ESI has resulted in the GHG emission reduction or removal of 140,450 tCO2 equivalents by the project during the second monitoring/verification period (17 March 2011 to 31 December 2013). This value is net of the 10% (18,970 tCO2 equivalents) buffer withholding based on the non-permanence risk assessment tool.

Verification period: From 17 March 2011 to 31 December 2013

Verified GHG emission reductions and removals in the above verification period:

Year	Baseline emissions or removals (tCO_2e)	Project emissions or removals (tCO_2e)	Leakage emissions (tCO_2e)	Deductions for AFOLU pooled buffer account (tCO2e)	Net GHG emission reductions or removals (tCO_2e)
2012	34,205	22,388	30,280	1,182	-19,644
2013	190,265	12,802	0	17,788	160,094
Total	224,890	35,191	30,280	18,970	140,450

Submittal Information

Report Submitted to:	Verified Carbon Standard Association 1730 Rhode Island Ave. NW, Suite 803, Washington, D.C. 20036 CarbonCo, LLC 3 Bethesda Metro Center, Suite 700 Bethesda, Maryland 20814 USA 001-240-247-0630
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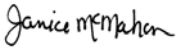
ESI Lead Verifier Name and Signature	 Shawn McMahon Lead Verifier
ESI Division Regional Technical Manager Name and Signature	 Janice McMahon Vice President and Forestry, Carbon and GHG Division Regional Technical Manager
Date:	22 December 2014

EMJ/SMM/ rb/VO13023.01/VCS Verification Report-final.doc
K pf 22 December 2014

APPENDIX A – DOCUMENTS RECEIVED/REVIEWED

Documents received 27 June 2014

- Russas Project CCBS PIR - English, 6-27-14.pdf

Documents received 11 July 2014

- Russas Project Summary Document (Final Version, Portuguese) 7-11-14.pdf
- Russas Project Summary Document (Final Version, English) 7-10-14.pdf
- Maps and GIS
    - 2012-2013 russas monitoring
        - Deforestation2012_2013_RussasPA.shx
        - 2013 deforestation tc
            - 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
        - Deforestation1988_2013_RussasRRL.dbf
        - Deforestation1988_2013_RussasRRL.prj
        - Deforestation1988_2013_RussasRRL.sbn
        - Deforestation1988_2013_RussasRRL.sbx
        - Deforestation1988_2013_RussasRRL.shp
        - Deforestation1988_2013_RussasRRL.shp.xml
        - Deforestation1988_2013_RussasRRL.shx
        - Deforestation2012_2013_RussasLB.dbf
        - Deforestation2012_2013_RussasLB.prj
        - Deforestation2012_2013_RussasLB.sbn
        - Deforestation2012_2013_RussasLB.sbx
        - Deforestation2012_2013_RussasLB.shp
        - Deforestation2012_2013_RussasLB.shp.xml
        - Deforestation2012_2013_RussasLB.shx
        - Deforestation2012_2013_RussasPA.dbf
        - Deforestation2012_2013_RussasPA.prj
        - Deforestation2012_2013_RussasPA.sbn
        - Deforestation2012_2013_RussasPA.sbx
        - Deforestation2012_2013_RussasPA.shp
        - Deforestation2012_2013_RussasPA.shp.xml
    - Geographical Boundaries
        - Russas Boundaries
            - RusVAL_RRL_2014.02.07.shx
            - RussasLB_2013.12.10.dbf
            - RussasLB_2013.12.10.prj
            - RussasLB_2013.12.10.sbn
            - RussasLB_2013.12.10.sbx
            - RussasLB_2013.12.10.shp
            - RussasLB_2013.12.10.shp.xml
            - RussasLB_2013.12.10.shx
            - RussasPA_2013.07.05.dbf
            - RussasPA_2013.07.05.prj
            - RussasPA_2013.07.05.sbn
            - RussasPA_2013.07.05.sbx
            - RussasPA_2013.07.05.shp
            - RussasPA_2013.07.05.shx
            - RusVAL_RRD_2013.2.18.dbf
            - RusVAL_RRD_2013.2.18.prj
            - RusVAL_RRD_2013.2.18.sbn
            - RusVAL_RRD_2013.2.18.sbx
            - RusVAL_RRD_2013.2.18.shp

- RusVAL_RRD_2013.2.18.shp.xml
- RusVAL_RRD_2013.2.18.shx
- RusVAL_RRL_2014.02.07.dbf
- \RusVAL_RRL_2014.02.07.prj
- RusVAL_RRL_2014.02.07.sbn
- RusVAL_RRL_2014.02.07.sbx
- RusVAL_RRL_2014.02.07.shp

▪ Valparaiso Boundaries

- ValparaisoRRD_2014.06.19b.shp.xml
- ValparaisoRRD_2014.06.19b.shx
- RusVAL_RRL_2014.02.07.dbf
- RusVAL_RRL_2014.02.07.kmz
- RusVAL_RRL_2014.02.07.prj
- RusVAL_RRL_2014.02.07.sbn
- RusVAL_RRL_2014.02.07.sbx
- RusVAL_RRL_2014.02.07.shp
- RusVAL_RRL_2014.02.07.shx
- ValparaisoLB_2014.06.23.dbf
- ValparaisoLB_2014.06.23.prj
- ValparaisoLB_2014.06.23.sbn
- ValparaisoLB_2014.06.23.sbx
- ValparaisoLB_2014.06.23.shp
- ValparaisoLB_2014.06.23.shp.xml
- ValparaisoLB_2014.06.23.shx
- ValparaisoPA_2014.06.19.dbf
- ValparaisoPA_2014.06.19.prj
- ValparaisoPA_2014.06.19.sbn
- ValparaisoPA_2014.06.19.sbx
- ValparaisoPA_2014.06.19.shp
- ValparaisoPA_2014.06.19.shp.xml
- ValparaisoPA_2014.06.19.shx
- ValparaisoRRD_2014.06.19b.dbf
- ValparaisoRRD_2014.06.19b.prj
- ValparaisoRRD_2014.06.19b.sbn
- ValparaisoRRD_2014.06.19b.sbx
- ValparaisoRRD_2014.06.19b.shp

o Inventory Plots

▪ RUSVAL_inventoryCompleted2013.06.24.shx
▪ RUSVAL_inventoryCompleted2013.06.24.dbf
▪ RUSVAL_inventoryCompleted2013.06.24.prj
▪ RUSVAL_inventoryCompleted2013.06.24.sbn
▪ RUSVAL_inventoryCompleted2013.06.24.sbx
▪ RUSVAL_inventoryCompleted2013.06.24.shp
▪ RUSVAL_inventoryCompleted2013.06.24.shp.xml

o Russas Strata

▪ RusStrataLB_2013.12.13.shx
▪ RusStrata_2013.12.13.dbf
▪ RusStrata_2013.12.13.prj
▪ RusStrata_2013.12.13.sbn
▪ RusStrata_2013.12.13.sbx
▪ RusStrata_2013.12.13.shp
▪ RusStrata_2013.12.13.shp.xml
▪ RusStrata_2013.12.13.shx
▪ RusStrataLB_2013.12.13.dbf
▪ RusStrataLB_2013.12.13.prj
▪ RusStrataLB_2013.12.13.sbn
▪ RusStrataLB_2013.12.13.sbx
▪ RusStrataLB_2013.12.13.shp
▪ RusStrataLB_2013.12.13.shp.xml

o Valparaiso Strata

        - ValStrataLB_2014.06.23.shx
        - ValStrata_2014.06.23.dbf
        - ValStrata_2014.06.23.prj
        - ValStrata_2014.06.23.sbn
        - ValStrata_2014.06.23.sbx
        - ValStrata_2014.06.23.shp
        - ValStrata_2014.06.23.shp.xml
        - ValStrata_2014.06.23.shx
        - ValStrataLB_2014.06.23.dbf
        - ValStrataLB_2014.06.23.prj
        - ValStrataLB_2014.06.23.sbn
        - ValStrataLB_2014.06.23.sbx
        - ValStrataLB_2014.06.23.shp
        - ValStrataLB_2014.06.23.shp.xml
- 2012-2013 Monitoring
    - Draft Russas CCBS PIR - July 2014
        - Russas Project CCBS PIR - English, 6-27-14.pdf
        - Russas Project CCBS PIR - English, 6-27-14.docx
    - Draft Russas VCS Monitoring - July 2014
        - 2013_RussasMonitoring 2014.07.03.xls
        - Additional Support
            - FAO 2004 UBET.pdf
            - 2013 Acuracy Assessment
                - AccuracyAssessment2013_2014.06.30.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
            - 2012_2013_RussasDegradation 2014.07.03.xlsx
            - 2014 Degradation and Immigrant Survey Results for Russas.xlsx
        - 2013_RussasMonitoring 2014.07.03.docx
        - 2013_RussasMonitoring 2014.07.03.pdf
    - Draft Valparaiso CCBS PIR - July 2014
        - Valparaiso Project CCBS PIR, English, 6-27-14.pdf
        - Valparaiso Project CCBS PIR, English, 6-27-14.docx

Documents received 28 July 2014

- Russas Project CCBS PIR, Portuguese, 7-28-14.pdf

Documents received 19 August 2014

- RusVAL_RRL_2014.02.07.kmz
- RussasLB_2013.12.10.kmz
- RussasPA_2013.07.05.kmz

Documents received 27 August 2014

- Cursos Projetos Russas e Valparaiso
    - Certificados
        - Certificado 01 - Cultivo da Banana.pptx
        - Certificado 02 - Cultivo do Milho.pptx
        - Certificado 03 - Cultivo da Macaxeira.pptx
        - Certificado 04 - Cultivo da Graviola.pptx
    - Criação de Galinha caipira
        - Sistema Alternativo de Criação de Galinha Caipira.docx
        - Documentos

- \texto.docx
- 3 passos.docx
- Como Iniciar a criação de Galinhas Caipipras.docx
- Instalaçao e fases da criação.docx
- Manejo Alimentar.docx
- Manejo reprodutivo.docx
- Manejo Sanitário.docx
- Reprodução.docx

- Apresentação.pptx
- Manual para criação de galinhas caipiras.pdf

- Listas de presenças digitalizadas dos cursos
  - Lista de presença digitalizada - Foz do Valparaiso
    - Lista de presença Foz do Valparaiso pag 2.tif
    - Lista de presença Foz do Valparaiso pag 1.tif
  - Lista de presença digitalizada - Lua Clara
    - Lista de presença Lua Clara pag 2.tif
    - Lista de presença Lua Clara pag 1.tif
  - Lista de Presença digitalizada - Terra Firme
    - Lista de Presença Terra Firme pag 3.tif
    - Lista de presença Terra Firme pag 1.tif
    - Lista de presença Terra Firme pag 2.tif
  - Lista de presença digitalizada - Três Bocas
    - Lista de presença Três Bocas pag 1.tif
    - Lista de presença Três Bocas pag 2.tif
    - Lista de presença Três Bocas pag 3.tif
- Manejo de Pastagem
  - Pastoreio Voisin.flv
  - Documentos
    - Controle de Moscas Sinantropicas.pdf
    - Amendoim Forageiro - Leguminosa para divesificação da Pastagens e conservação do solo.pdf
    - Brucelose, Diagnóstico e Controle.pdf
    - capim_mombaça.pdf
    - Cercas Vivas com espécies arbórias.pdf
    - controle da cigarrinha.pdf
    - folder_degradacao_pastagens_m...pdf
    - sistenas_sustentaveis_pecuaria..pdf
    - Manejo Rebanho Leiteiro.pdf
    - Sistemas Sustentaveis de Pecuária de Corte.pdf
  - Formação de pastagem
    - Problemas.docx
  - Vacinação
    - Vermifugos.docx
    - Controle de parasitas.docx
    - Tabela Vacinação.docx
    - Vacinas.docx
  - Apresentação.pptx
  - Como construir uma cerca eletrica agropecuaria.flv
  - Doenças em bezerros.docx
  - Pastagem.docx
- Materia Jurua Oline Valparaiso e Russas
  - Texto Jornal.docx
  - $xto Jornal.docx
  - Comunidade Foz do Valpaiso.JPG
  - Comunidade Lua Clara.JPG
  - Comunidade Terra Firme.JPG
  - Comunidade Três Bocas.JPG
- Materiais oudiovisuais utilizados nos Cursos
  - Folder.docx
  - Cultura da Banana

- Tratos culturais.docx
- Apresentação.pptx
- Pragas_de_bananeira.pdf

- Cultura da Graviola
  - Plantio da Graviola.docx
  - Apresentação.pptx"
  - Calda Bordaleza.doc
- Cultura da Macaxeira
  - Variedades.docx
  - Cultura da Macaxeira\Apresentação.pptx
  - Pragas.docx
- Cultura do Maracuja
  - Apresentação.pptx
- Cultura do Milho
  - Pragas.docx
  - Apresentação.pptx
- Produção de Mudas
  - Apresentação.pptx
- Banner.pptx

- Registro fotografico dos cursos – photos
- Relatórios dos Cursos
  - Relatório Três Bocas.docx
  - Relatório Foz Valparaiso.docx
  - Relatório Lua Clara.docx
  - Relatório Terra Firme.docx
- Project photos and videos

Documents received 29 August 2014

- SRC. Investimentos assessoria Ltda leva mais um beneficio a população do Projeto Russas e Valparaíso « A Crítica do Acre – Notícias do Acre, do Juruá e do Brasil.htm
- ISRC. Investimentos assessoria Ltda leva mais um beneficio a população do Projeto Russas e Valparaíso « A Crítica do Acre – Notícias do Acre, do Juruá e do Brasil_files
  - widgets.js
  - all.js
  - analytics.js
  - api.js
  - calixto.jpg
  - comments.css
  - comments.htm
  - count.json
  - jcarrousel.js
  - jquery(1).js
  - jquery.js
  - like.htm
  - likebox.htm
  - more.png
  - photo.jpg
  - ping.htm
  - plusone(1).js
  - plusone.js
  - scripts.js
  - show_ads.js
  - sociable.css
  - sociable.js
  - social.js
  - style.css
  - styles.css
  - vuible.js
  - vuible.png

Documents received 04 November 2014

- Updated Pro Forma for Russas and Valparaiso Projects (9-17-14).xls
- 023_01- CCBA NCR Checklist Russas_round1, Brian's Responses (11-3-14).docx
- CCBA Announcement of Verification on IISD List.pdf
- CF Annoucement of Russas, Valparaiso and Purus Projects' Public Comment Period.pdf
- Russas Project CCBS PIR, Final Version 11-3-14.pdf
- Russas Project CCBS PIR, Tracked Changes 11-3-14.pdf

Documents received 24 November 2014

- Russas VCS Responses 2014.11.17.xlsx
- Russas and Valparaiso Additional
    - Valparaiso 2014 Degradation Surveys.pdf
    - August 2014 CC Checking Statement.pdf
    - Baker et al 2004 Variation in wood density in Amazon.pdf
    - CarbonCoCarbonNeutralSignedVERPADecember 302012.pdf
    - CC Vanguard June 2014 statement.pdf
    - Lehmann et al., 2002, WCSS Bangkok, paper no.0449.pdf
    - Russas 2014 Degradation Surveys.pdf
    - Updated Pro Forma for Russas and Valparaiso Projects (9-17-14).xls
- 2012_2013_RussasDegradation 2014.11.17.xlsx
- 2013_RussasMonitoring 2014.11.17.docx
- 2013_RussasMonitoring 2014.11.17.xls

Documents received 16 December 2014

- 2012_2013_RussasDegradation 2014.12.16.xlsx
- 2013_RussasMonitoring 2014.12.16 with track changes.docx
- 2013_RussasMonitoring 2014.12.16.docx
- 2013_RussasMonitoring 2014.12.16.xls
- Russas VCS Round 2 NCRs 2014.12.16.xlsx

Documents received 19 December 2014

- 2013_RussasNonPermanenceRiskReport 2014.12.16.pdf
- 2013_RussasMonitoring 2014.12.16.pdf

APPENDIX B – NCRS/CL/OFIS

Item Number	1
VCS Standard VCS Version 3 Requirements Document 08 October 2013, v3.4	2) Where the deviation does not impact the applicability of the methodology, additionality or the appropriateness of the baseline scenario, and the project remains in compliance with the applied methodology, the deviation shall be described and justified in the monitoring report. This shall include a description of when the changes occurred and the reasons for the changes. The deviation shall also be described in all subsequent monitoring reports. Examples of such deviations include changes in the procedures for measurement and monitoring, or project design changes that do not have an impact on the applicability of the methodology, additionality or the appropriateness of the baseline scenario.
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	2013_RussasMonitoring 2014.07.03.docx - Section 2.2.2; Validated PD
ESI Findings - Round 1 (15 September 2014)	MR States "Rather than initially assessing the significance of illegal logging using temporary sample plots covering 1% of the potential degradation area (ADegW,i) as proposed in the project document and monitoring module of the VM0007 methodology; information gathered during the course of the participatory appraisals including amounts of fuelwood, charcoal, and timber collected by communities members will be used along with conservative assumptions to assess whether emissions due to degradation are significant using the T-SIG tool, and plot level monitoring of degradation is warranted. This deviation will be used for the first and each subsequent monitoring period during this monitoring period." The deviation is reasonable and it does not impact the applicability of the methodology, additionality, or the appropriateness of the baseline scenario, and the project will remain in compliance with the applied methodology (where degradation is significant, it will be accounted for). However, the quoted text of the Monitoring Report does not sufficiently address this section of the VCS Standard V 3.4 and the last sentence is confusing. Additionally, there is no indication that the Monitoring Plan has changed due to the deviation.
Round 1 NCR/CL/OFI	CL: Please revise the last sentence of the quoted text identified in the findings and provide a justification for the PD deviation in MR Section 2.2.2, including when the changes occurred and the reasons for the changes. Please also indicate that the Monitoring Plan has been revised due to the PD Deviation.
Round 1 Response from Project Proponent (24 November 2014)	The follow text was revised/added to Section 2.2.2 of the MR: "This deviation may be used for the first and each subsequent monitoring period. This deviation was added during the course of the first verification event. This deviation was included as it was our understanding that we could use T-SIG to determine the significance of any with project emission. Further, this deviation was warranted due to the significant amount of work necessary to monitoring degradation using temporary plots and the likely insignificant amount of emissions resulting from degradation. The section on "Monitoring Illegal Degradation" in the monitoring plan has been updated to reflect this deviation."
ESI Findings - Round 2 (15 December 2014)	The last sentence of the quoted text from the finding has been appropriately revised and now includes the additional detail requested. This finding is addressed.

Item Number	2
VCS Standard VCS Version 3 Requirements Document 08 October 2013, v3.4	3.16.4 A monitoring plan for the project that includes roles and responsibilities shall be established.
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	PD Section 4.3; MR Section 3.3
ESI Findings - Round 1 (15 September 2014)	Initial monitoring plan was set at validation. Monitoring Plan as presented in the MR does not include all of the information as presented in the PD regarding Monitoring Deforestation and Natural Disturbance.
Round 1 NCR/CL/OFI	CL: Please ensure that the Monitoring Deforestation and Natural Disturbance Sub-Section of MR Section 3.3 includes all of the information as presented in the PD. Else, justify the omission of the information.
Round 1 Response from Project Proponent (24 November 2014)	This oversight was corrected by incorporating the information in the following PD excerpt into the MR: "This dataset is based on classification of a series of Landsat imagery. Each image selected for classification contains less than 10% cloud cover. This is followed by processing of the images by applying the filter HAZE. This algorithm was developed by Carlotto and aims to improve visibility by reducing the effect of atmospheric haze and smoke. This algorithm was applied using the software ENVI, version 4.6. This step was followed by geometric correction using base the NASA GeoCover 2000 product as the base data. ENVI + IDL, version 4.6 were used to group multispectral bands, while ERDAS IMAGINE 9.1 software was used for georeferencing. The RMS error of the georeferenced product was < 1 pixel, meeting good practice standards in remote sensing. Additional details on pre-processing can be found in the UCEGEO methodology. " Note the above information was not included verbatim due to reformatting and inclusion of additional information in response to other findings.
ESI Findings - Round 2 (15 December 2014)	The information presented as a response to the finding is present in Section 5 of the MR and now appropriately included in MR Section 3.3. The added detail to Section 3.3 is reflective of the PD and sufficient. Finding is addressed.

Item Number	3
VCS Standard VCS Version 3 Requirements Document 08 October 2013, v3.4	3.16.6 The monitoring report describes all the data and information related to the monitoring of GHG emission reductions or removals. The project proponent shall use the VCS Monitoring Report Template and adhere to all instructional text within the template.
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	MR General
ESI Findings - Round 1 (15 September 2014)	Confirmed that current template is employed. However, not all headings are displayed in the Table of Contents, for example MR and PD deviations sections, and page numbers are not current.

Round 1 NCR/CL/OFI	CL: Please address the findings and update the MR to be in line with the newest VCS template.
Round 1 Response from Project Proponent (24 November 2014)	There is no VCS guidance as to what is necessary to include in the Table of Contents. As such, only major headings (i.e., 1, 1.1, 1.2. 2, 2.1,etc.) have been included. All subheading have been left out to improve readability.
ESI Findings - Round 2 (15 December 2014)	Verifiers agree with the readability assertion of sub-heading omission. This finding is addressed.

Item Number	4
Approved VCS Methodology VM0007 Version 1.4, 3 May 2013 REDD Methodology Modules REDD Methodology Framework (REDD-MF) Sectoral Scope 14	Equation 1
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	MR Section 4.4; 2013_RussasMonitoring 2014.07.03.xls
ESI Findings - Round 1 (15 September 2014)	At time t = 2012, Total net greenhouse emission reductions is negative. The positive reductions in 2013 covers the loss. However, this is not appropriately accounted for in that the negative net emission reductions are calculated and reported a zero (0), which results in an overstatement of net GHG ER to date.
Round 1 NCR/CL/OFI	NCR: Please address the findings and update the quantification of Total net greenhouse emission reductions and MR Section 4.4 accordingly. Please accurately fill out the "Total" row of Table 4.11 as part of your revision.
Round 1 Response from Project Proponent (24 November 2014)	"The total GHG benefit generated this monitoring period" has been recalculated. Please see the response to finding 23 for justification of this approach.
ESI Findings - Round 2 (15 December 2014)	Please refer to finding 23 for more details. Finding here is addressed.

Item Number	5
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	If remotely sensed data have become available from new and higher resolution sources (e.g. from a different sensor system) during this period then it is possible to change the source of the remotely sensed data.
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	MR Section 5;Desmate_TC_1988_2013.shp

ESI Findings - Round 1 (15 September 2014)	The same remotely sensed dataset (updated each year) was employed for deforestation detection in this monitoring period as in previous. New and higher resolution sources do not appear to be available at this time. The MR states "In the case, where this dataset ceases to be available, ex-post deforestation will be determined by classification of remotely sensed imagery and land use change detection procedures." This statement does not indicate whether the project can adopt remotely sensed data from new and better sources.
Round 1 NCR/CL/OFI	CL: Please address the findings and clarify in the MR whether new and better remotely sensed data (if available) can be incorporated into the project during the period the baseline is fixed.
Round 1 Response from Project Proponent (24 November 2014)	The MR has been updated to reflect this change. The new section reads: "In the case where this dataset ceases to be available, or if newer and/or higher quality data becomes available, ex-post deforestation will be determined by classification of remotely sensed imagery and land use change detection procedures."
ESI Findings - Round 2 (15 December 2014)	This change was appropriately made in Section 3.3 of the MR. This finding is addressed.

Item Number	6
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	· Update the Forest Cover Benchmark Maps for the project area and leakage belt.
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	MR Sections 4.2 and 5; Desmate_TC_1988_2013.shp; Deforestation2012_2013_RussasPA.shp; Deforestation2012_2013_RussasLB.shp
ESI Findings - Round 1 (15 September 2014)	Forest benchmark was updated and reported as Figure 5.2 in MR. Heading should note "2013 Forest Cover Benchmark Map" A request is submitted in section 6.1 below. Verifiers confirmed that the map is accurately portrayed based on the UCEGEO dataset. However, the LB Boundary is not included in the Map.
Round 1 NCR/CL/OFI	CL: Please include the LB boundary in MR Figure 5.2.
Round 1 Response from Project Proponent (24 November 2014)	Figure 5.2 has been updated to include the LB boundaries. Further, Figure 5.2 has been retitled "Figure 5.2. 2013 forest benchmark map for the project area and leakage belt."
ESI Findings - Round 2 (15 December 2014)	Figure 5.2 has been appropriately updated and the LB can now be observed. Finding is addressed.

Item Number	7
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	· Update the remaining area of forest in RRL (ARRL,forest,t)
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	MR Sections 4.2 and 5; Desmate_TC_1988_2013.shp; Deforestation2012_2013_RussasPA.shp; Deforestation2012_2013_RussasLB.shp
ESI Findings - Round 1 (15 September 2014)	Value of 4,292,671 was reported in Data Parameters table ARRL, forest, 2013. The amount of hectares deforested in the of RRL were independently calculated and were found to be subtracted accordingly from the area of the RRL. However, PD Section 4.2 reports an ARRL,Forest2011 of 4,184,021 (the value at project start date). Subtracting the 2012 and 2013 deforestation from this value does not result in a value of 4,292,671 as reported in MR Section 3.2. Further, subtracting the hectares deforested in the RRL through 2011 from the RRL does not result in the value of 4,184,021 for ARRL,Forest2011 reported in the PD. Finally, he UCEGEO deforestation dataset is different for each year from validation to verification.
Round 1 NCR/CL/OFI	CL: Please address the findings and explain the stated discrepancies.
Round 1 Response from Project Proponent (24 November 2014)	ARRL,Forest2013 is calculated as the total area of the RRL (4,552,510 ha) minus the sum of all deforestation in the RRL in the 2013 deforestation dataset (259,839 ha); thus ARRL,Forest2013 = 4,292,671 ha. The sum of all deforestation in the RRL in 2013 is the sum of all deforestation present in the shapefile "Deforestation1988_2013_RussasRRL" which was provided in the project database at the time of the original submission of the MR. This shapefile was made by clipping the 2013 Acre State Deforestation layer with the RRL boundary. The value for ARRL,Forest2011 found in the PD is incorrect. This error was found post Russas validation during the Valparaiso validation and updated accordingly in the Valparaiso PD.
ESI Findings - Round 2 (15 December 2014)	Verifiers note the incorrect value for ARRL,Forest2011 reported in the PD. The value for ARRL,Forest2013 is correct in the MR as stated in the original finding. This finding is addressed.

Item Number	8
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	Carbon stocks in the selected pools (must be the same as those used in the baseline modules) must be measured and estimated using the methods given in modules CP-AB, CP-D, CP-L, CP-S.
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	MR Section 4.2 and 4.3 ;2013_RussasMonitoring 2014.07.03.xls; PD Table 3.12
ESI Findings - Round 1 (15 September 2014)	Cpost value of 35.2 mTCO2e/ha is sourced from Salimon et al. Values were converted to the total aboveground and belowground biomass stock using allometric root equation developed by Cairns et al and using a carbon fraction of 0.47, as per the VM007 module. A value of zero is conservatively used for dead wood. This is justified as nonforested areas are periodically burnt. However, it is unclear how using the values used for the quantification of baseline missions, sourced from Salimon et al, meets this requirement of M-MON. The highest carbon stock of the post-deforestation land uses (pasture) was used. It does not appear that these have not been measured and estimated using the methods given in modules CP-AB, CP-D and are not the same pools that are included in the baseline carbon stocks (i.e. Live Tree AGB and BGB and standing lying and dead wood). It seems that pasture land would only include herbaceous live vegetation, which "is considered to be de minimis in all instances." Although Module BL-PL states "Post-deforestation carbon stocks can be measured in proxy areas or values can be taken from credible and representative literature sources (e.g. the peer-reviewed literature or data published by the IPCC or the FAO)," the use of the values used in the baseline do not result in a conservative quantification of project emissions (i.e. higher Cpost = lower project emissions).
Round 1 NCR/CL/OFI	NCR: C post value of 35.2 mTCO2e/ha is sourced from Salimon et al. Please justify how this value is representative of the carbon pools included in the project boundary and is a result of measurement and estimation using the methods given in modules CP-AB and CP-D, as required by M-MON. Else, measure and estimate Cpost using the methods given in modules CP-AB and CP-D or consider it de minimis.

Round 1 Response from Project Proponent (24 November 2014)	Cpost has been updated to conservatively assume Cpost = 0 and project calculations have been updated. The following text has been added to Section 2.2.2 of the MR as a project description 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 ΔCpools,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."
ESI Findings - Round 2 (15 December 2014)	The Cpost value was confirmed to have been set to 0 for this monitoring period and resulting changes to computations appropriately updated in the MR. The wording is acceptable. Finding is addressed.

Item Number	9
Approved VCS Module VMD0015,Version 2.1 (20 November 2012), REDD Methodological Module: Methods for monitoring of greenhouse gas emissions and removals (M-MON), Sectoral Scope 14	For the project area, the net greenhouse gas emissions resulting from degradation is equal to the sum of stock changes due to degradation through extraction of trees for illegal timber or fuelwood and charcoal, and extraction of trees for selective logging from forest management areas possessing a FSC certificate (Calculated using ***Equation 7 on page 11***)
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	MR Section 4.2; 2012_2013_RussasDegradation 2014.07.03.xlsx; 2014 Degradation and Immigrant Survey Results for Russas.xlsx
ESI Findings - Round 1 (15 September 2014)	Equation 7 not utilized and a de-minimis analysis was provided. This analysis needs updated for the change in Net GHG emission reductions resulting from the NCR for Equation 1 in REDD-MF. This item is also pending, the Wood Density CL below, documentary evidence of the Degradation Survey CL below, the T-SIG NCR below, and the CL regarding the parameter "Result of Limited Degradation Survey" below..
Round 1 NCR/CL/OFI	CL: Please update "the total GHG benefit generated this monitoring period" of the Degradation Analysis to match the revised estimate resulting from the NCR for Equation 1 in REDD-MF.
Round 1 Response from Project Proponent (24 November 2014)	"The total GHG benefit generated this monitoring period" has been recalculated. Please see the response to finding 23 for justification of this approach. The values in the degradation analysis have also been updated, see the excel file "2012_2013_RussasDegradation 2014.11.17."
ESI Findings - Round 2 (15 December 2014)	The finding here is closed in deference to the response below and others which visit the degradation analysis. Finding is addressed.

Item Number	10
Approved VCS Module VMD0015,Version 2.1 (20 November 2012), REDD Methodological Module: Methods for monitoring of greenhouse gas emissions and removals (M-MON), Sectoral Scope 14	For the project area, the net greenhouse gas emissions resulting from degradation is equal to the sum of stock changes due to degradation through extraction of trees for illegal timber or fuelwood and charcoal, and extraction of trees for selective logging from forest management areas possessing a FSC certificate (Calculated using ***Equation 7 on page 11***)
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	MR Section 4.2; 2012_2013_RussasDegradation 2014.07.03.xlsx; 2014 Degradation and Immigrant Survey Results for Russas.xlsx
ESI Findings - Round 1 (15 September 2014)	Equation 7 not utilized and a de-minimis analysis was provided. The wood density used in the analysis is "species level mean wood density for Amazonian forests calculated by Baker et al 2004 and subsequently validated for western Amazonia by Anderson et al 2009." Verifiers reviewed both documents and could not readily discern how a mean of 0.62 g/cm3 was determined from either of the documents.
Round 1 NCR/CL/OFI	CL: Please clearly demonstrate how the mean wood density value utilized in the Degradation Analysis was determined from the referenced documents.
Round 1 Response from Project Proponent (24 November 2014)	The wood density value was taken from Baker et al 2004. Baker et al 2004 states: "The overall species-level mean (0.62 g cm 3) was used for stems with no taxonomic information and for families where no specific gravity information was available." As Baker's area of study covers the project area, their values used are appropriate as there is no species or genus level data available for the degradation data. Baker et al 2004 has been added to the project archive.
ESI Findings - Round 2 (15 December 2014)	Baker et al 2004 was reviewed and the value of 0.62 g cm 3 is acceptable for wood density. Finding is addressed.

Item Number	11
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	The first step in addressing forest degradation is to complete a participatory rural appraisal (PRA) of the communities inside and surrounding the project area to determine if there is the potential for illegal extraction of trees to occur.

Evidence Used to Assess (Location in PD/MR or Supporting Documents)	MR Section 4.2; 2012_2013_RussasDegradation 2014.07.03.xlsx; 2014 Degradation and Immigrant Survey Results for Russas.xlsx
ESI Findings - Round 1 (15 September 2014)	Degradation Survey was conducted in April 2014 by CarbonCo and Carbon Securities. Actual Survey records could not be located - only provided in Excel.
Round 1 NCR/CL/OFI	CL: Please provide copies of the Degradation survey sheets as documentary evidence of the results provided in Degradation and Immigrant Survey Results for Russas.xlsx.
Round 1 Response from Project Proponent (24 November 2014)	Copies of the degradation survey sheets have been added to the project archive as documentary evidence.
ESI Findings - Round 2 (15 December 2014)	75 pages of the degradation survey sheets were submitted to verifiers and corroborate with values reported in the analysis workbook file. Finding is addressed.

Item Number	12
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	If there is little to no evidence that trees are being harvested (see next paragraph on how to estimate emissions and use tool T-SIG to determine if significant or not) then degradation can be assumed to be zero and no monitoring is needed.
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	MR Section 4.2; 2012_2013_RussasDegradation 2014.07.03.xlsx; 2014 Degradation and Immigrant Survey Results for Russas.xlsx
ESI Findings - Round 1 (15 September 2014)	MR States "Degradation emissions over the two year monitoring period from 2012-2013 (4,095 t CO2) are de minimis, representing 2.5% of total GHG benefits generated during the same monitoring period (161,011 t CO2), less than the five percent threshold set by the T-SIG tool, and consequently are not accounted for." However, verifiers reviewed 2012_2013_RussasDegradation 2014.07.03.xlsx and independently assessed significance following the stepwise procedures outlined in T-SIG and found the emissions associated with degradation to be significant. Specifically, steps 5, 6, and 7 marked all sources (i.e. Deforestation, leakage, and Degradation) as significant except for the emissions associated with Biomass burning as part of the deforestation process in the PA. However, it does not appear field sampling (degradation monitoring plots) has been undertaken as per the PD Deviation and MR Section 3.3.
Round 1 NCR/CL/OFI	NCR: Please clearly demonstrate how degradation emissions are insignificant when following the stepwise procedures outlined in T-SIG. Else, implement the monitoring methods of MR Section 3.3: "Monitoring Illegal Degradation" and include a description of the results in the Monitoring Report. Please identify where this was added and provide any appropriate supporting calculations files.

Round 1 Response from Project Proponent (24 November 2014)	Degradation emissions are shown to be insignificant following the stepwise procedures outlined in T-SIG in the excel file "2012_2013_RussasDegradation 2014.11.17" which can be found in the project database. One error of note included the use of the logging damage factor when estimating fuelwood emissions rather than only for the harvested timber. This error has been corrected. In addition, the full rank of all emissions sources has been added.
ESI Findings - Round 2 (15 December 2014)	Verifiers ranked the project emission sources (baseline sources omitted) following the stepwise procedure of T-SIG and found degradation to be de minimis. The logging damage factor was confirmed to have been included only in construction wood collection, which is appropriate.
Round 2 NCR/CL/OFI	NCR: Please follow the T-SIG stepwise procedure and re-submit. Please also explain the source for "the total GHG benefit generated this monitoring period" in cell B10 of the degradation calcs worksheet.
Round 2 Response from Project Proponent (16 December 2014)	Project emissions can be considered de minis using either TerraCarbon's or ESI's approach to the T-SIG tool, i.e. comparing degradation to the net GHG emission reduction or comparing degradation to the sum of with project emission and leakage emissions. Both of these comparison along with the Rank have been provided in the attached excel file "2012_2013_RussasDegradation 2014.12.16".
Final ESI Findings	Project proponent and verifier T-SIG interpretation and de minimis analyses are now in close enough agreement to render degradation insignificant. No further action is needed on degradation sources. Clarification was issued by VCS which confirmed that the ranking of emissions sources occurs by net anthropogenic totals. Finding is addressed.

Item Number	13
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	Where natural disturbances occur ex-post in the project area such as tectonic activity (earthquake, landslide, volcano), extreme weather (hurricane), pest, drought, or fire that result in a degradation of forest carbon stocks, the area disturbed shall be delineated and the resulting emissions estimated.
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	MR Section 4.2

ESI Findings - Round 1 (15 September 2014)	MR States "No areas of natural disturbance were reported in the area of projected deforestation in the baseline during the 2012-2013 period by forest monitors or local land managers, nor was evident or could be distinguished (from anthropogenic deforestation, accounted for above) with remote sensing, and therefore ADistPA,q,i,t is assumed to be 0. As there is no ground based evidence of natural disturbance, net carbon stock changes resulting from natural disturbance in the project area in the project case are reported to be zero (i.e., ΔCP,DistPA,i,t = 0)." Verifiers reviewed imagery and the UCEGEO deforestation dataset and have confirmed that loss of tree cover due to small scale natural disturbances is not readily distinguishable from anthropogenic deforestation. Through the review of other sections of this module, the verifiers confirmed that the UCEGEO dataset is adequately accounting for deforestation. Further, no evidence of significant natural disturbance was encountered during the site visit. As such, reporting an ADistPA,q,i,t of zero (0) is warranted. However the quoted text from MR Section 4.2 needs revised to indicate that no areas of natural disturbance were reported in the Project Area vs. in the area of projected deforestation in the baseline.
Round 1 NCR/CL/OFI	CL: Please address the findings and update MR Section 4.2 accordingly.
Round 1 Response from Project Proponent (24 November 2014)	The text in Section 4.2 was revised to read "No areas of natural disturbance were reported in the project area during the 2012-2013 period by forest monitors or local land managers"
ESI Findings - Round 2 (15 December 2014)	The response and adjustment to language in Section 4.2 sufficiently satisfies the clarification request. Finding is addressed.

Item Number	14
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)	MR, Section 3.3 and 5

ESI Findings - Round 1 (15 September 2014)	a) Forest and nonforest classes are mentioned in the MR, but no precise definitions of the land cover classes are described. For instance there are many definitions of "forest" in land cover classification. b) Land cover classification in a general sense is described in the MR, "This dataset is based on classification of a series of Landsat imagery," but specific details about a classification algorithm are absent. c) Ground reference data used specifically for the accuracy assessment is well-described in the MR, "Samples used to assess classification accuracy were 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). Figure 5.3 below shows the distribution of these points. All verification samples gathered from high-resolution imagery are from images as close as possible to classification date." 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 for a) classification and b) accuracy assessments. d) The MR states "Deforestation and natural disturbance will be distinguished using ancillary data which may include but is not limited to high resolution imagery, digital elevation models (to identify steep areas prone to landslides), information from local land managers, etc." However it is unclear whether ancillary data was used in this reporting period to detect deforestation/disturbance in addition to the UCEGEO deforestation dataset. e) Section 3.3 of the MR refers to spectral bands used in final classification maintained in the archive and section 5 notes that "ENVI + IDL, version 4.6 were used to group multispectral bands". It is unclear which bands were grouped as part of classification.
Round 1 NCR/CL/OFI	CL: a) Please include precise definitions of landcover classes per this requirement in the MR. b) Please describe in additional detail in the MR how the actual land cover classification was performed, (i.e. supervised, unsupervised etc.). c) Please confirm and describe in the MR 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. d) Please address the findings and state in the MR whether ancillary data (as stated in the Monitoring Plan) was used to detect deforestation/disturbance during this reporting period. e) Please address the findings and define the spectral bands used in final classification in the MR.

Round 1 Response from Project Proponent (24 November 2014)	A) The definition of a forest has been added to the MR in Section 3.3. B) A section was added to the Section 3.3 of the MR detailing the classification approach used by UCGEO. C) In the description of the classification approach added to Section 3.3 of the MR 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. D) No ancillary data was required for detection of deforestation or natural disturbance in this monitoring period. The following text was added to Section 3.3 "For this monitoring period no ancillary data was required and all information on deforestation was acquired from the UCGEO classification". E) The spectral bands used in the classification, (Landsat 3,4 & 5), were identified and added to Section 3.3 and 5 of the MR section which details the classification approach.
ESI Findings - Round 2 (15 December 2014)	The CDM definition of forest is sufficient and confirmed to have been added to the MR. The detail requested for the land cover classification is reflective of the UCEGEO reference document and sufficient. The other items requested have been adequately addressed within the MR and confirmed to have been included where appropriate. Landsat bands for Landsat 8 correspond to 3 = green, 4 = red, 5 = near IR (http://landsat.usgs.gov/band_designations_landsat_satellites.php).
Round 2 NCR/CL/OFI	CL: Please fix the Landsat band designations as noted in the finding.
Round 2 Response from Project Proponent (16 December 2014)	We have specified the blue, green, and red Landsat bands were used rather than identifying the band numbers, as band numbers do not correlate to the same color bands in Landsat 8 as on the previous Landsat satellites.
Final ESI Findings	This change in the description for Landsat imagery employed is acceptable. Finding is addressed.

Item Number	15
Approved VCS Module VMD0015,Version 2.1 (20 November 2012), REDD Methodological Module: Methods for monitoring of greenhouse gas emissions and removals (M-MON), Sectoral Scope 14	c. Classification accuracy assessment: Accuracy assessment technique used; coordinates and description of the ground-truth data collected for classification accuracy assessment; and final classification accuracy assessment.
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	MR, Section 3.3 and 5, AApoints_2013_2014.06.30.xlsx, AccuracyAssessment2013_2014.06.30.docx

ESI Findings - Round 1 (15 September 2014)	An accuracy assessment was included in section 5 of the MR which describes the comparison between the landcover classification and ground reference points. This section defines the results of the assessment including; short description of ground reference points taken, a confusion matrix, and a statement of overall accuracy of the classification performed. However, no mention was made of whether the accuracy assessment was performed exclusively for this monitoring period. Likewise, image acquisition dates used for the ground reference points are not specified. Ground reference points assessed were supplied and reviewed by verifiers. The points were independently evaluated using best available imagery and verifiers agree with landcover calls. Points outside the classified boundary were omitted. The date of the higher resolution imagery used for the verifier ground reference points varies between 2011 and 2013. The accuracy assessment document illustrates an error matrix with 100 points for each class, including additional points taken due to points falling outside the classified boundary and factored into the assessment. Computations for user's accuracy was performed correctly but not for producer's accuracy with AccuracyAssessment2013_2014.06.30.docx, the MR reports the correct values. Overall accuracy was computed correctly at 98%.
Round 1 NCR/CL/OFI	CL: Please clarify the time period for which the accuracy assessment performed is relevant as well as the dates of imagery acquisition for the high resolution images used for ground reference points. Please fix the computation for producers accuracy in the error matrix (AccuracyAssessment2013_2014.06.30.docx) and keep consistent the decimal places in the error matrix contained in the MR.
Round 1 Response from Project Proponent (24 November 2014)	The accuracy assessment was conducted for the most recent time period which is relevant to this monitoring period. Details were added to the Section 5.0 of the monitoring report explaining this procedure. All ground reference points were collected from imagery acquired between 2011-2013. The computations were fixed in the error matrix. The following text was added to Section 5.0 of the MR: "All samples were collected from imagery acquired between 2011-2013, and hence the accuracy assessment is relevant through 2013. This range was necessary to collect sufficient data points with good distribution. "
ESI Findings - Round 2 (15 December 2014)	Revisions requested of the accuracy assessment have been appropriately fixed in Section 5 of the MR. Response and revisions are sufficient to close this request. Finding is addressed.

Item Number	16
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	Project Forest Cover Monitoring Map

Evidence Used to Assess (Location in PD/MR or Supporting Documents)	MR, Section 5
ESI Findings - Round 1 (15 September 2014)	Figure 5.1 in the MR illustrates deforestation in the project area and leakage belt which has occurred to this monitoring period. The map was generated from UCEGEO deforestation dataset and was subject to the accuracy assessment in Step 3 above. Figure 5.2 illustrates the forest/nonforest cover at the end of this monitoring period and does not completely display the project area/leakage belt. The UCEGEO dataset provided by the PP was ocularly checked to the newest available Landsat imagery (http://landsatlook.usgs.gov/) and deforestation patterns were in agreement. However, neither map is stratified per this requirement (see Notes section of this parameter).
Round 1 NCR/CL/OFI	CL: Please revise Figure 5.1 or 5.2 to illustrate stratification in the project area per the requirements for this parameter.
Round 1 Response from Project Proponent (24 November 2014)	Figure 5.1 has been revised to show stratification in the project area and leakage belt.
ESI Findings - Round 2 (15 December 2014)	Figure 5.1 was appropriately adjusted per this request and requirement. Finding is addressed.

Item Number	17
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	Leakage Belt Forest Cover Monitoring Map
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	MR, Section 5
ESI Findings - Round 1 (15 September 2014)	Depending on whether Figure 5.1 or 5.2 are assumed to be the map to meet this requirement, stratification needs to be illustrated. See similar finding above "Project Forest Cover Monitoring Map" for further details.
Round 1 NCR/CL/OFI	CL: Please revise Figure 5.1 or 5.2 to illustrate stratification in the leakage belt per the requirements for this parameter.
Round 1 Response from Project Proponent (24 November 2014)	Figure 5.1 has been revised to show stratification in the project area and leakage belt.
ESI Findings - Round 2 (15 December 2014)	Figure 5.1 was appropriately adjusted per this request and requirement. Finding is addressed.

Item Number	18
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	Result of Limited Degradation Survey
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	MR Section 3.3 and 4.2; 2012_2013_RussasDegradation 2014.07.03.xlsx; 2014 Degradation and Immigrant Survey Results for Russas.xlsx
ESI Findings - Round 1 (15 September 2014)	This survey is not required per the PD deviation being invoked for this monitoring period. However, the PRA survey effectively represents the limited degradation survey. MR Section 3.3 States "The information collected in the PRAs will be used to calculate logging emissions in conjunction with conservative assumptions/estimates including that all wood collected was live, use of a regional charcoal recovery rate, use of a logging damage factor from the methodology, and that trees harvested were in the 99th percentile in terms of dbh." The 99th percentile of DBH approach was not implemented.
Round 1 NCR/CL/OFI	CL: Please justify the validity and conservativeness of the approach used to quantify the emissions associated with construction wood collection as it is not in-line with the approach described in MR Section 3.3.
Round 1 Response from Project Proponent (24 November 2014)	Inclusion of the text "that trees harvested were in the 99th percentile in terms of dbh" in the MR was an oversight. PRA surveys did not collect information on the number of trees, hence this statement should not have been included in Section 3.3 of the MR. We have removed this text from the monitoring report. There are no set procedures for the exact type of data collected in the degradation surveys. This approach allows flexibility in the field while interviewing communities on this delicate subject. The conservativeness of the degradation emission calculations is evident as the analysis assumes that all wood used for fuelwood was live and all fuelwood and timber was collected from within project area.
ESI Findings - Round 2 (15 December 2014)	The statement regarding 99th percentile has been removed from the MR. As seen in the previous verification, the survey questions were relevant enough to collect data on types of wood collected by local people ensuring reasonable answers. Live fuelwood collected and within the PA are conservative assumptions. This finding is addressed.

Item Number	19
Approved VCS Module VMD0010 Version 1.0 REDD Methodological Module: Estimation of emissions from activity shifting for avoided unplanned deforestation (LK-ASU) Sectoral Scope 14	**Refer to end of page 10 for equation**
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	MR: Table 4.10, 2013_RussasMonitoring 2014.07.03.xls
ESI Findings - Round 1 (15 September 2014)	Calculation of ΔCLK-AS, unplanned (t CO2-e) was confirmed correct and values are reported properly in MR Section 4.3 in Table 4.10.
Round 1 NCR/CL/OFI	NCR: Calculation of ΔCLK-AS, unplanned (t CO2-e) was confirmed correct. However, the values are not reported properly in MR Section 4.3.
Round 1 Response from Project Proponent (24 November 2014)	Net GHG ER calculations have been corrected per this finding, however the issue remains that the methodology is estimating leakage that exceeds the amount of baseline emissions potentially displaced by the project (i.e. baseline emissions minus actual project emissions). Per the VCS Program Definitions, leakage is defined as "Net changes of anthropogenic emissions by GHG sources that occur outside the project boundary, but are measurable and attributable to the project" (also in VCS AFOLU Requirements 4.6.1). Logically, the maximum amount of deforestation outside the project area that can be attributable to displacement by the project activity (i.e. leakage) is the amount of deforestation required to replace the production in the baseline that is prevented by the project activity. While this treatment is not explicitly imposed in VM7 ex post accounting, the logic is implicit in module LK-ASU, Step 3a ex ante assessment: "…conservatively estimate the carbon stock changes and greenhouse gas emissions in the Leakage Belt that are expected to occur due to the implementation of the REDD project activity and that would not occur in the baseline case. This shall be done by multiplying the estimated baseline carbon stock changes and greenhouse gas emissions for the project area by a factor < 1.0 representing the % of deforestation expected to be displaced into the Leakage Belt" And "…the difference between project and baseline carbon stock changes and greenhouse gas emissions in the Leakage Belt is the ex ante estimated leakage due to displacement of unplanned deforestation from the project area to the Leakage Belt." In the above, attributability is invoked by defining leakage as inherently a percentage of baseline emissions, and that leakage cannot be expected to exceed 1.0 * baseline emissions (i.e. 100% leakage).

	Conservatively assuming all production displaced by the project activity is replaced elsewhere, and conservatively assuming that all production displaced is replaced on forest lands, the maximum ΔCLK would be equal to ΔCBSL - ΔCP. This of course assumes that the same amount of emissions result from equal production inside and outside the project area, which is reasonably assumed in this case, as the project area and leakage belt feature similar compositions of soil types, elevation, slopes and other criteria driving production potential, documented and validated in the Russas PD (Table 3.1); note that activity-shifting leakage outside the leakage belt and leakage due to market effects are both zero for this monitoring period. To address this issue, we calculated leakage in Table 4.10 as per the methodology. However in Table 4.11, we set the leakage equal to ΔCBSL - ΔCP, or the baseline emissions minus the with project emissions, as this is the maximum amount of displaced emissions attributable to the project activity. This constitutes a deviation from the methodology (per VCS 3.5.1), as it alters the procedure related to monitoring the value of parameter ΔCLK, and results in increased accuracy of the GHG accounting (while still incorporating important elements of conservatism), as explained above.
ESI Findings - Round 2 (15 December 2014)	Setting leakage equal to ΔCBSL - ΔCP does not result in increased accuracy or represent a conservative approach. The methodology states that net emissions reductions must be baseline - project - leakage - buffer pool. The PP proposed alternative represents a methodology revision not a deviation as a direct measurement is not being deviated from. Further, the proposed computation alternative would apply to only 1 year of the monitoring period and not both. The value for estimated leakage emissions (or ΔCLK-AS, unplanned (t CO2-e)) is no longer reflected in the estimate of net emission reduction credits (Table 4.11 of MR) and instead leakage is now simply baseline minus project. Estimated leakage emissions in Table 4.11 of the MR should be reported as 30,280. All other computations traced to the "GHG credits eligible for issuance as VCUs (tCO2e)" were confirmed correct, including new application of LB biomass burning. The Cpost value was confirmed to have been set to 0 for this monitoring period. All resulting computations traced to the "GHG credits eligible for issuance as VCUs (tCO2e)" were confirmed correct.
Round 2 NCR/CL/OFI	NCR: Please report the correct values of ΔCLK-AS, unplanned (t CO2-e) in Table 4.11 of the MR and re-compute GHG credits eligible for issuance as VCUs (tCO2e).
Round 2 Response from Project Proponent (16 December 2014)	Cell E3 on the "4.4 Net ER Calculations" tab the excel workbook "2013_RussasMonitoring 2014.12.16" has been updated to be in line with the methodology. These changes are reflected in the updated values in Table 4.11 and other tables reliant on this value.
Final ESI Findings	Net GHG computations have been corrected to be in line with VM0007 requirements. Estimated leakage emissions were also corrected and all values are correctly illustrated in Table 4.11 of the MR. Finding is addressed.

Item Number	20
Approved VCS Module VMD0010 Version 1.0 REDD Methodological Module: Estimation of emissions from activity shifting for avoided unplanned deforestation (LK-ASU) Sectoral Scope 14	CLB (t CO2-e ha-1)
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	MR, section 3.2
ESI Findings - Round 1 (15 September 2014)	This parameter is not included in the MR.
Round 1 NCR/CL/OFI	CL: Please include the parameter "CLB" in MR Section 3.1.
Round 1 Response from Project Proponent (24 November 2014)	CP,LB was already contained in Section 3.1 of the MR, although it had been called ΔCP,LB. It has been renamed CP,LB.
ESI Findings - Round 2 (15 December 2014)	This parameter was appropriately changed in Section 3.1 of the MR. Finding is addressed.

Item Number	21
Approved VCS Module VMD0010 Version 1.0 REDD Methodological Module: Estimation of emissions from activity shifting for avoided unplanned deforestation (LK-ASU) Sectoral Scope 14	PROPIMM (proportion)
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	MR, section 3.2
ESI Findings - Round 1 (15 September 2014)	This parameter was appropriately included in section 3.1 of the MR. Proportion of immigrants estimated 0.000 (0/15) (ALK-ACT-IMM,t) and the baseline where PROPIMM is reported as 0.053. The PROPIMM value reported for this monitoring period is presumed to have been determined from the PRA (2013) which was used for validation. As no other PRA has been performed, the results of this PRA should have been used to determine PROPIMM.

Round 1 NCR/CL/OFI	CL: Please explain how the PROPIMM value used at this monitoring period was determined (0.000) and whether the previously validated value should be reported.
Round 1 Response from Project Proponent (24 November 2014)	PROPIMM has been calculated, as noted in cell C25 by the auditor, with the most recent immigrant survey data from the excel file "2014 Degradation and Immigrant Survey Results for Russas-Valparaiso Projects.xls" which has been added to the project database. The previous value should not be used as it is not reflective of the most recent monitoring data.
ESI Findings - Round 2 (15 December 2014)	The survey results for this monitoring period did not reveal any baseline deforestation caused by immigrants which migrated into the Leakage Belt and project area in the past 5 years. Therefore, the value reported as 0 is appropriate. Finding is addressed.

Item Number	22
Approved VCS Module VMD0010 Version 1.0 REDD Methodological Module: Estimation of emissions from activity shifting for avoided unplanned deforestation (LK-ASU) Sectoral Scope 14	PROPRES (proportion)
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	MR, section 3.2
ESI Findings - Round 1 (15 September 2014)	This parameter was appropriately included in section 3.1 of the MR. Proportion of baseline deforestation caused by population that has been resident for >5 years for this monitoring period computed as 1.000 and the baseline where PROPRES is reported as 0.947. The PROPRES value reported for this monitoring period is presumed to have been determined from the PRA (2013) which was used for validation. As no other PRA has been performed, the results of this PRA should have been used to determine PROPRES.
Round 1 NCR/CL/OFI	CL: Please explain how the PROPRES value used at this monitoring period was determined (1.000) and whether the previously validated value should be reported.
Round 1 Response from Project Proponent (24 November 2014)	PROPRES is a function of PROPIMM. As PROPIMM has been updated, PROPRES has been recalculated as (1 - PROPIMM). Regardless the parameter PROPRES is not used in any calculations in the with project case.
ESI Findings - Round 2 (15 December 2014)	Value reported for PROPRES is acceptable as a ratio of PROPIMM. Please see finding directly above. Finding is addressed.

Item Number	23
Approved VCS Module VMD0010 Version 1.0 REDD Methodological Module: Estimation of emissions from activity shifting for avoided unplanned deforestation (LK-ASU) Sectoral Scope 14	**EBiomassBurn,i,t (t CO2-e)**
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	MR, section 3.2
ESI Findings - Round 1 (15 September 2014)	This parameter is not included in the MR.
Round 1 NCR/CL/OFI	CL: Please include this required parameter in the MR.
Round 1 Response from Project Proponent (24 November 2014)	EBB has been added to Section 3.2 of the MR.
ESI Findings - Round 2 (15 December 2014)	Parameter E BiomassBurn,t was appropriately included at the end of section 3.2 in the MR. Values reported within the table are correct per computation checks. Finding is addressed.

Item Number	24
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)	MR, Appendix A. VCS NON-PERMANENCE RISK REPORT
ESI Findings - Round 1 (15 September 2014)	Project cash flow breakeven point is less than 4 years from the current risk assessment. Risk report states "Details are provided in a cash flow analysis which can be found in the project database." The cash flow analysis has not been provided, but should show the point in time when cumulative cash flow is positive and stays. 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.
Round 1 NCR/CL/OFI	CL: Please provide project current cash flow analysis used to establish the breakeven point (i.e. number of years until this point is reached), taking into account the Risk Tool requirements in Section 2.2.2.

Round 1 Response from Project Proponent (24 November 2014)	CarbonCo has provided a revised pro forma to demonstrate a breakeven point of less than 4 years. CarbonCo's cash flow was been generated through VER sales as demonstrated by the two VERPAs submitted to ESI. Other than CarbonCo's relationship with Carbonfund.org, there are no other loan repayments or interest expenses or equity distributions.
ESI Findings - Round 2 (15 December 2014)	A VER sales document for the Purus project was submitted to verifiers. The breakeven point is well demonstrated in the updated pro forma worksheet and is sufficient. Finding is addressed.

Item Number	25
VCS AFOLU Non-Permanence Risk Tool, Version 3.2 04 Oct 2012	Project has secured 80% or more of funding needed to cover the total cash out before the project reaches breakeven
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	MR, Appendix A. VCS NON-PERMANENCE RISK REPORT
ESI Findings - Round 1 (15 September 2014)	Project has secured 100% of funding needed to cover the total cash out before the project reaches breakeven. Risk report states "Details are provided in a cash flow analysis which can be found in the project database." A demonstration that 80% or more funding has been procured needs to be provided to support the assertion. 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.
Round 1 NCR/CL/OFI	CL: Please supply a demonstration that sufficient funding has been procured to meet 80% or more of the funding needed to cover costs prior to the breakeven point.
Round 1 Response from Project Proponent (24 November 2014)	CarbonCo's current bank statement has been provided to ESI to demonstrate sufficient funding has been procured.
ESI Findings - Round 2 (15 December 2014)	Callable financial resources are sufficiently demonstrated from the bank statement and investment account statements supplied to cover >50% of cash out. Finding is addressed.

Item Number	26
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)	MR, Appendix A. VCS NON-PERMANENCE RISK REPORT

ESI Findings - Round 1 (15 September 2014)	Risk report states "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." Evidence of callable financial resources is needed to support this assertion. 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	CL: Please provide evidence, per Risk Tool section 2.2.2, that callable financial resources at least 50% of total cash out are available before project breakeven point.
Round 1 Response from Project Proponent (24 November 2014)	In addition to CarbonCo's current bank statement, two multi-year VERPAs were provided to ESI to demonstrate callable financial resources.
ESI Findings - Round 2 (15 December 2014)	Callable financial resources are sufficiently demonstrated from the bank statement and investment account statements supplied to cover >50% of cash out. Finding is addressed.

Item Number	27
VCS AFOLU Non-Permanence Risk Tool, Version 3.2 04 Oct 2012	NPV from the most profitable alternative land use activity is expected to be at least 100% more than that associated with project activities; or where baseline activities are subsistence-driven, net positive community impacts are not demonstrated
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	MR, Appendix A. VCS NON-PERMANENCE RISK REPORT and site visit observations and interviews
ESI Findings - Round 1 (15 September 2014)	Risk Report states "As the majority of baseline activities over the length of the project crediting period are subsistence-driven and that the project proponent has selected the highest risk score, an NPV analysis is not required. This risk category will be revised downward, once net positive community impacts can be clearly demonstrated, such as through certification against the Climate, Community & Biodiversity Standards or results of a participatory assessment of the project activities on the local communities which demonstrates net positive community benefits." Verifiers agree that the majority of the baseline activities are subsistence driven and this is demonstrated by verifier observations and discussions with community members in the project area during the site visit. However, "an assessment of the net impacts of the project on the social and economic well-being of the communities who derive livelihoods from the project area" could have been undertaken based upon CCBS implementation and an opportunity cost score applied.
Round 1 NCR/CL/OFI	CL: Per this requirement, please provide an assessment of the net impacts of the project on the social and economic well-being of the communities who derive livelihoods from the project area.

Round 1 Response from Project Proponent (24 November 2014)	No assessment of the net impacts is required as the project is taking the highest (and most conservative) risk rating in this category. The Russas Project, and the adjacent Valparaiso Project, have had a net positive impact on the social and economic well-being of the local communities. This includes hiring local project managers, distributing mosquito nets, delivery of 400 dental care kits (i.e., toothbrushes, toothpaste and dental hygiene course) to children, and more than 100 people throughout the Project Zone have participated in agricultural extension training courses. Furthermore, these net positive social and economic impacts are being assessed against the Climate, Community and Biodiversity Standard.
ESI Findings - Round 2 (15 December 2014)	Assertion by the PP that no assessment of the net impacts is needed due to taking the highest risk rating is reasonable. Further, the explanation given is sufficient to address the clarification request. The finding is addressed.

Item Number	28
Approved VCS Module VMD0013,Version 1.0 (3 December 2010), REDD Methodological Module: Estimation of greenhouse gas emissions from biomass burning (E-BB), Sectoral Scope 14	Where fires occur ex-post the module shall be used to account greenhouse gas emissions.
Evidence Used to Assess (Location in PD/MR or Supporting Documents)	Monitoring Report Section 4.2
ESI Findings - Round 1 (15 September 2014)	Monitoring Report states "As forest monitors reported evidence of fire on recently cleared land, N2O and CH4 emissions from biomass burning have been accounted for. Using parameters found in Section 3.1 and 3.2 and Table 3.3, emissions from biomass burning (EBB) were calculated as the product of the area burned, the aboveground carbon stocks, a combustion factor, a GHG emission factor, and the global warming potential. It was conservatively assumed that Aburn,i,t = ADefPA,u,i,t (i.e., all areas deforested in the project area were burnt)." However, emissions associated with Biomass Burning in the leakage belt and outside the leakage belt were not quantified.
Round 1 NCR/CL/OFI	CL: Please justify the non-quantification of emissions associated with Biomass Burning in and outside of the leakage belt. Else, conservatively quantify and update the MR accordingly. Please also indicate in MR Section 3.3 how Aburn,i,t relates to ADefLB,i,t and ALK-OLB,t, as well as how Monitoring accounts for Biomass Burning in and outside of the leakage Belt.
Round 1 Response from Project Proponent (24 November 2014)	Emissions associated with biomass burning in the leakage belts have been incorporated in project calculations and into the monitoring report, as per ESI's suggestion. There is no requirement to incorporate emissions from biomass burning outside the leakage belt. The following sentence has been added to Section 3.3. "Aburn,i,t is assumed to be equal to ADefLB,i,t unless monitoring and on the ground observations demonstrate otherwise."

ESI Findings - Round 2 (15 December 2014)	The verifiers agree that biomass burning does not need to be accounted for outside the leakage belt as this is not specified. The added statement clarifies the relationship between Aburn,i,t and ADefLB,i,t. Table 4.8a was added to section 4.3 of the MR which actually reflects biomass burning in the project area, not in the leakage belt.
Round 2 NCR/CL/OFI	CL: Please address the findings related to inclusion of new Table 4.8a in the MR.
Round 2 Response from Project Proponent (16 December 2014)	Table 4.8a was updated to report the emissions from biomass burning in the leakage belt.
Final ESI Findings	Table 4.8a was appropriately updated and reflects the correct values. Finding is addressed.