VCS VERIFICATION REPORT

"THE KASIGAU CORRIDOR REDD PROJECT PHASE I – RUKINGA SANCTUARY" IN KENYA

MONITORING PERIOD:
1 JANUARY 2011 TO 31 DECEMBER 2011

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Prepared By	DET NORSKE VERITAS (U.S.A.) INC. Climate Change Services AS
Contact	155 Grand Avenue, 5th Floor Oakland, CA 94612 Tel: +1 510 891 0446
Approved By	Weidong Yang
Work Carried Out By	Andres Espejo, Pablo Reed
Technical review by:	Edwin Aalders

Summary:

DNV Climate Change Services AS (hereafter DNV) has performed the verification of the emission reductions reported for the "The Kasigau Corridor REDD Project Phase I – Rukinga Sanctuary" for the period 1 January 2011 to 31 December 2011, to review and verify the reported reductions in GHG emissions that have occurred as a result of the project activity.

The verification was performed on the basis of VCSA Programme Guidelines & Standard version 3.3 for the VCS projects, as well as criteria given to provide for consistent project operations, monitoring and reporting. The verification was conducted by means of document review, follow-up interviews and site inspection, and the resolution of outstanding issues.

In our opinion, the GHG emission reductions reported for the project in the monitoring report (version 04.10) of 27 October 2012) are fairly stated. The GHG emission reductions were calcualted correctly on the basis of approved methodology VM0009 (Version 1.0) and the monitoring plan contained in the VCS PD of 31 January 2011.

Hence, DNV is able to certify that the net anthropogenic GHG emission reductions and removals (i.e. net GHG benefits) from the "The Kasigau Corridor REDD Project Phase I – Rukinga Sanctuary" during the period amount to 250 465 tonnes CO_2 equivalent. DNV Climate Change Services AS verified that the non-permanence risk rating of the proposed project activity for this verification is 15% which is to be applied to the change in carbon stocks at this verification (i.e. equal to 37 570 tCO_2e). The amount of VCUs to be issued would be 212 895 tCO_2e.

DNV does not assume any responsibility towards the issuance and utilization of the VCUs hereby verified and certified. Request for issuance of VCUs shall be made by the project proponent to an approved VCS Program Registry based on the requirements set out under the most recent version of the VCS Program Guidelines clause on VCS Registration.

The verification of reported emission reductions is based on the information made available to DNV and the engagement conditions detailed in this report. DNV cannot be held liable by any party for decisions made or not made based on this report.

Table of Contents

1 Introduction 6
1.1 Objective 6
1.2 Scope and Criteria 6
1.3 Level of assurance 6
1.4 Summary Description of the Project 7
1.5 Validation Conclusion 9
2 Verification Process 10
2.1 Method and Criteria 10
2.2 Document Review 11
2.3 Interviews 11
2.4 Site Inspections 11
2.5 Resolution of Any Material Discrepancy 12
3 Verification Findings 13
3.1 Project Implementation Status 13
3.2 Accuracy of GHG Emission Reduction or Removal Calculations 18
3.3 Quality of Evidence to Determine GHG Emission Reductions or Removals 32
3.4 Management and Operational System 32
4 Verification conclusion 33
5 References 35
1 Internal Risks 71
3.1 Project Management 71
3.2 Financial viability 72
3.3 Opportunity Cost 73
3.4 Project Longevity 74

3.5 Total Internal Risk 75

4 External Risks 75

4.1 Land Ownership and Resource Access/Use Rights 75

4.2 Community Engagement 77

4.3 Political Risk 77

4.4 Total External Risk 78

5 Natural Risks 78

5.1 Fire (F) 78

5.2 Pest and Disease Outbreaks (PD) 78

5.3 Extreme Weather (W) 79

5.4 Geological Risk (G) 79

5.5 Other Natural Risk (ON) 79

5.6 Total Natural Risks 79

6 Total Risk 79

Appendix A Comparison of data and variables provided in the monitoring report and the VCS PD

Appendix B Assessment of compliance of monitoring with the monitoring plan

Appendix C VCS Non-permanence risk assessment

Appendix D Corrective Action Requests, clarification requests and Forward Action Requests

Appendix E Curricula Vitae of the verification team members

1 INTRODUCTION

Wildlife Works Carbon LLC has commissioned DNV to carry out the verification and certification of removals and emission reductions reported for the "The Kasigau Corridor REDD Project Phase I – Rukinga Sanctuary" (the project) in the period 1 January 2011 to 31 December 2011. This report contains the findings from the verification and includes a verification statement for the verified carbon units.

1.1 Objective

Verification is the periodic independent review and *ex-post* determination by an accredited Verification Body (VB) of the monitored emissions by sources and removals by sinks that have occurred as a result of the registered VCSproject activity during a defined verification period.

A verifications statement is the written assurance by a VB that, during a specific period in time, a project activity achieved the net anthropogenic GHG emissions or removals as verified.

The objective of this verification was to verify the net anthropogenic GHG emissions and removals reported for the "The Kasigau Corridor REDD Project Phase I – Rukinga Sanctuary" for the period 1 January 2011 to 31 December 2011.

1.2 Scope and Criteria

The scope of the verification is:

- To verify that actual monitoring systems and procedures are in compliance with the monitoring systems and procedures described in the monitoring plan.
- To evaluate the GHG removals and GHG emissions data and express a conclusion with a reasonable level of assurance about whether the reported GHG removals and GHG emissions data is free from material misstatement.
- To verify that reported GHG removals and GHG emissions data is sufficiently supported by evidence.

The verification shall ensure that reported net anthropogenic GHG emissions and removals are complete and accurate in order to be certified.

The criteria of the verification are:

- The approved VCS methodology VM0009 Version 1.0 /19/;
- VCS Standard version 3.3 and other relevant requirements defined by VCSA /20/;
- VCS AFOLU Requirements version 3.3 /23/;
- VCS Program Definitions: VCS Version 3.4 /22/.

The verification shall ensure that reported emission reductions or removals are complete and accurate in order to be verified.

1.3 Level of assurance

The verification report expresses a conclusion with a reasonable level of assurance about whether the reported net anthropogenic GHG emissions or removals data is free from material misstatement. DNV

applied a materiality threshold of 5% with respect to omission or misstatements concerning reported quantities as per VCS standard.

1.4 Summary Description of the Project

Project Proponents (Parties):	Wildlife Works Carbon LLC; 242 Redwood Hwy. Mill Valley, CA 94941 | (415) 331-4610 | www.wildlifeworks.com
Title of project activity:	The Kasigau Corridor REDD Project Phase I – Rukinga Sanctuary
Baseline and monitoring methodology	VM0009 Version 1.0
Location of the project activity	The project is located in the Rukinga sanctuary Marungu Sublocation, Voi Division, Taita Taveta District, Coast Province (Kenya)
Project's crediting period:	1 January 2005 to 31 December 2034
Period verified in this verification:	1 January 2011 to 31 December 2011

1.4.1 *Methodology Deviations*

DNV did identify as part of the verification, two possible deviations in the monitoring frequency of the following parameters:

Parameter		**Monitoring frequency as per VM0009 Version 1.0**	**Monitoring frequency in project activity**
$\rho_{soil,j,k}$	Bulk density of fine portion of soil sample in plot *j* in stratum *k*	Updated at each monitoring period.	Updated at every monitoring period (at least every 5 years)
$cf_{soil,j,k}$	Carbon fraction of soil sample j in plot in stratum k	Updated at each monitoring period.	Updated at every monitoring period (at least every 5 **years)**

DNV deems that these do not represent deviations as such since the methodology states in section 13.1 "*After the first monitoring period, all plots and all strata must be re-measured every five years, a process which may be accomplished on an intermittently rotating basis"* which should be applicable to the determination of soil carbon stocks too. DNV, based on its expertise deems that this would be acceptable since:

a) the stratification and sampling provisions should be applicable to all the parameters which are determined through sampling;
b) in the eventuality that degradation or deforestation occurs in the project area, the impact in the soil carbon levels would not be noticed before 3 years so 5 years would be reasonable;

c) conducting a soil sampling in every monitoring event would not be feasible as it would be anti-economical and it would not provide an increase in the accuracy on the estimations of GHG benefits.

DNV concludes that this apparent deviation does not in fact constitute a deviation, nor does it negatively impact the conservativeness of the quantification of GHG emission reductions or removals.

Following the provisions of paragraph 3.5.1 of *VCS Version 3.3*, since these apparent deviations represent a deviation from the criteria and procedures relating to monitoring or measurement set out in the methodology (i.e. frequency) it would be acceptable.

Furthermore, as part of the verification the following inconsistencies were identified in the formulae of the methodology:

1) The notation of equations [9] and [29] provided in the methodology was incorrect. DNV confirmed that the correct notation was initially applied by the project proponent.

Ref.	Equation
[9]	$\hat{\delta}_{LE} = \log(\hat{d}_t) + \log(1-\hat{d}_t) + \alpha + \hat{\theta}x^T$
[9] corrected	$\hat{\delta}_{LE} = \log(\hat{d}_t) - \log(1-\hat{d}_t) - \alpha - \hat{\theta}x^T$
[29]	$\sum_{i\in M} S\left(t_2^{[m-1]} - t_2^{[m-i-1]}, t_2^{[m]} - t_2^{[m-i]}, \hat{\lambda}, \hat{\ell}_{\max}\right) \cdot \left[F_{DF}\left(t_2^{[m-i]}, \hat{\eta}^{[m-i]}\right) - F_{DF}\left(t_2^{[m-i-1]}, \hat{\eta}^{[m-i-1]}\right)\right] \cdot C_{SOIL}^{[m-i]}$
[29] corrected	$\sum_{(m-i)\in M} S\left(t_2^{[m-1]} - t_2^{[m-i-1]}, t_2^{[m]} - t_2^{[m-i]}, \hat{\lambda}, \hat{\ell}_{\max}\right) \cdot \left[F_{DF}\left(t_2^{[m-i]}, \hat{\eta}^{[m-i]}\right) - F_{DF}\left(t_2^{[m-i-1]}, \hat{\eta}^{[m-i-1]}\right)\right] \cdot C_{SOIL}^{[m-i}$

2) Although the methodology establishes that the carbon stock in belowground standing dead wood for monitoring period [m] (tCO_2e) has to be calculated through equation [50], the same methodology establishes that "*The carbon stock of standing dead trees in decay class I is estimated using the same equations developed for live trees*". Hence, the methodology should have referred to [50] multiplied by $(1+r_{sp})$ in order to account for the belowground biomass of the SDW pool.

1.4.2 *Project Description CorrectionsDNV did identify project description deviations, which are mainly related to the correction of information that was inaccurate in the PDD:*

- $\delta_{LE}, \hat{\delta}_{LE}$ - Lag parameter of leakage model. According to the VCS-PD this value was 0.4498; however, this was an incorrect misstatement and it is in reality -0.564. The latter was used in the first verification and it has been applied in the second verification as confirmed by DNV.

DNV confirmed that this change would be a correction and it would not affect the applicability or application of the methodology, additionality or the scale of the project.

1.4.3 *New Project Activity Instances*

This is not a grouped project, so this would not be applicable.

1.5 Validation Conclusion

DNV is able to confirm the project is in compliance with the VCS requirements for validation.

2 VERIFICATION PROCESS

2.1 Method and Criteria

The verification was performed through means of the following three phases in accordance with the requirement of the registered VCS PD, the applied methodology, and VCS Version 3.3 and other relevant VCS requirements.

- A desk review of the monitoring report and all support documents.
- Follow-up interviews with project stakeholders and site inspection.
- The resolution of outstanding issues and the issuance of the verification report and statement.

The following sections outline each step in more detail.

The verification of the net GHG emissions or removals has assessed all factors and issues that constitute the basis for GHG removals and emissions from the project. These include:

i) Review of the monitoring report, the non-permanence risk assessment and other relevant documentation such as Standard Operating Procedures /1//4//3/;

ii) Remote verification of the project boundary using Landsat ETM+ high resolution image of 2012 /29/ and ESRI on-line NDVI visor /33/. DNV conducted a desk review of the project boundary delineation by selecting 50 random polygons of the project boundary's shapefile using an ArcGis tool, and checked visually the accuracy of the boundary delineation;

iii) Forest inventory field data sheets, forest inventory calculation spreadsheet, leakage calculation spreadsheet and net GHG emission reductions spreadsheet /7//10//8//9//5/;

iv) Geographical datasets with the delineation of the project area, the project strata, and the location of the permanent sample plots /12//13/;

Verification team

The verification team is in accordance with internal DNV qualification requirements.

				Type of involvement					
Role	***Last Name***	***First Name***	***Country***	Desk review	Site visit / Interviews	Reporting	Supervision of work	Technical review	TA 1.14 competence
Team leader (Verifier)	Espejo	Andres Bernabe	Italy	✓	✓	✓	✓		✓
Verifier	Reed	Pablo Eduardo	USA	✓	✓	✓			✓
Technical reviewer	Aalders	Edwin	Norway					✓	✓

Duration of verification

Preparations:	From 20 April 2012 to 4 May 2012
On-site verification:	From 8 May 2012 to 11 May 2012
Reporting, calculation checks and QA/QC:	From 16 May 2012 to 29 November 2012

2.2 Document Review

The monitoring report version 04.10 of 27 October 2012 /1/, the non-permanence risk assessment /3/, the monitoring Standard Operating Procedures (SOP) /4/, forest inventory field data sheets /5/, forest inventory calculation spreadsheet /7/, leakage calculation spreadsheet /8/, the soil loss model spreadsheet /9/ net GHG emission reductions spreadsheet /10/, the Landsat ETM+ high resolution image of 2012 /29/, geo datasets with the delineation of the project area and the project strata /12/, and the geo datasets with the location of the permanent sample plots /13/, were assessed as part of the verification.

In addition, the validated VCS PD (in particular the baseline estimations and the monitoring plan contained in the VCS PD) /2/, the final validation report of the registered VCS PD /27/, the final verification report of the first monitoring period /28/ and the applicable approved methodology VM0009 Version 1.0 /19/ were checked.

2.3 Interviews

In the period from 8 to 11 May 2012 DNV conducted various interviews at the Wildlife Works Carbon LLC's headquarters in Rukinga and at the Rukinga Sanctuary. The list of interviewed persons is detailed in section 6.

The following issues were checked during these interviews:

- ✓ The information flows for generating, aggregating and reporting the monitoring parameters were checked. The project proponent has in place a forest inventory system, which has Standard Operating Procedures (SOP) /4/ in place that governs the collection of data and its recording.
- ✓ Interviews with relevant personnel to confirm that the operational and data collection procedures are implemented in accordance with the monitoring plan of the VCS PD /41//42//43//44/.
- ✓ The assumptions of the GHG calculations of the Monitoring Report (MR) /1/ were checked against the information provided in the hard copy inventory information /5/ and the inventory excel spreadsheets /7//8//9//10/.
- ✓ The net GHG emissions and removals calculations were presented in an excel spreadsheet /10/. The calculations of the spreadsheet were checked during this phase.
- ✓ Quality control and quality assurance procedures as part of their quality management system were checked /14//15/.

2.4 Site Inspections

In the period from 8, to 11 May 2012, a site inspection was carried out in the project area which is part of the project activity. As part of this inspection the following activities were performed:

- ✓ An assessment of the implementation and operation of the proposed project activity through visual inspection and through interviews with the project proponent's staff.

- ✓ An assessment of the project boundaries and the stratum information were assessed using a Pocket PC with the geographical datasets /12//13/ uploaded and connected to a GPS receiver.
- ✓ Revisiting of randomly selected 4 inventory sampling plots which were part of the carbon stock inventory of the second monitoring period which were re-measured by the project proponent's staff under observation of DNV. While the project proponent was carrying out the re-measurement, DNV verified that the operational and data collection procedures were implemented in accordance with the SOP /4/ indicated in the VCS PD /2/ and verified the information flows for generating, aggregating and reporting the monitoring parameters. Furthermore, the monitoring methods were checked in order to confirm that the monitoring practices followed the requirements of the applicable methodology /19/. DNV also performed a consistency check in order to verify the consistency of the previous measurement and the re-measurement, and to verify the correctness of the reported stand growth.
- ✓ Confirmation that the quality control and quality assurance procedures were in place;

2.5 Resolution of Any Material Discrepancy

A corrective action request (CAR) is issued, where:

i. Non-conformities with the monitoring plan or methodology are found in monitoring and reporting, or if the evidence provided to prove conformity is insufficient;
ii. Mistakes have been made in applying assumptions, data or calculations of emission reductions which will impair the estimate of emission reductions;
iii. Issues identified in a FAR during validation to be verified during verification have not been resolved by the project participants.

A clarification request (CL) shall be raised if information is insufficient or not clear enough to determine whether the applicable VCS requirements have been met.

A forward action request (FAR) is issued for actions if the monitoring and reporting require attention and/or adjustment for the next monitoring period.

As part of the project verification 10 CARs were raised. The CARs were satisfactorily addressed by the project proponent by revising the net anthropogenic removals calculation and the monitoring report.

Five clarification requests (CL) were identified and were satisfactorily addressed by the project proponent by revising the monitoring report. Five forward action requests (FAR) were identified (refer to Appendix D).

3 VERIFICATION FINDINGS

This section summarizes the findings from the verification of the GHG removals reported for the "The Kasigau Corridor REDD Project Phase I – Rukinga Sanctuary" for the period 1 January 2011 to 31 December 2011.

3.1 Project Implementation Status

3.1.1 *Implementation status of the project activity(s)*

During the site visits, by observing, reviewing operation records and interviewing relevant staff, community members and affected stakeholders /41//45//46//49//50//51//52//53//54//55//56/, DNV was able to verify that the project has been implemented and operated as described in the VCS-PD of 31 January 2011 /2/.

Also during the site visit, the auditors assessed the progress made by Wildlife Works to implement the project activities outlined in the VCS-PD of 31 January 2011 /2/. Table 1 summarizes all the project activities that are being implemented by the project proponent. As this is the second verification, several project activities were either modified or replaced by others as experience on the ground and the first round of carbon revenues has changed on site conditions. Where the project activity was not fully implemented, DNV assessed the progress (administrative, business plans, financial projections, and stakeholder interviews). A summary of the auditor's assessment is given in the right hand column.

Table 1 Assessment of All Community Impact Monitoring Activities

Project Activity	Assessment/Observation
Organic Greenhouse.	During the previous monitoring period, an organic greenhouse had been implemented to grow citrus trees for shade and income /41//47/. These plants are now sold at a discount to local community members /41//47/. As part of this monitoring period, nurseries have been built in the communities of Maungu, Marungu, Sasenyi, Mukamenyi and Kisamenyi. The respective monitoring and evaluation teams have conducted a short orientation on how to collect data. Tree planting was conducted on the 4 and 5 October, 2011, at Kiteghe primary, Kisimenyi primary, Buguta primary, Mkamenyi primary, kale primary, Marungu primary and secondary and lastly Itinyi primary /41//47/. On 11 and 12 October 2011, Wildlife Works continued with the same activities in St Joseph secondary, Marasi primary, Mbele primary, Miasenyi primary and Misharinyi primary school. On 29th and 30th October 2011, Wildlife Works continued by visiting the community land /41//47/. DNV was able to confirm the progress of these activities

Project Activity	Assessment/Observation
	through on-site interviews and the revision of pertinent records.
Jojoba Propagation & Extension.	As of the last monitoring period, the project proponent was working in partnership with various Kenyan agricultural groups in a two-year trial period to explore the use of Jojoba as a cash crop /2/. Since the last verification, DNV can now confirm that the project proponent is now working with a PhD student from the Sokoine University of Agriculture in Tanzania to characterize, propagate and manage the old Jojoba plantation adjacent to Rukinga Ranch /42/. According to the project proponents, the aim here is to now determine the genetic diversity of the shrubs and finesse their multiplication methods in order to improve growth. Currently there is very high demand (along with relatively low supply) for Jojoba /42/. Thusly, the overall goal is through improved management and capacity building to improve the livelihoods of poor farmers in the communities /42/.
Marungu Hill Conservancy Association (Financial Aid and Project Proposal System).	The auditors met with the directors of the Marungu Hill Conservancy Association (MHCA) /49/. Through this meeting and through the review of pertinent indicators and documentation, DNV can confirm that the project proponents have continued to work with this local association, and that they have currently increased their support of MHCA to 94 500/= per month in order to incorporate salaries for a Project Coordinator, a Financial Manager, four Community Waste Technicians and six Community Wildlife Scouts for this monitoring period /49/.
Mushroom Farms from Elephant Dung.	This project has been discontinued by the project proponents since the last verification period, mainly due to feasibility issues and with the local women's groups interests shifting elsewhere /41/.
School Construction and Bursary Scheme.	Throughout the project area, initial community income (from carbon revenue) is being channeled into education, primarily though bursaries at this stage /53/. Over 700 students have been given bursaries in the first few months of 2012, where the money goes directly to their schools to ensure their education is secure /53/. The funding given ranges between

Project Activity	Assessment/Observation
	on term to 4 years' sponsorship, depending on the candidate. Students have been funded to go to Universities, Colleges, Youth Polytechnics and Secondary Schools and the candidates include bright pupils, double orphans and vulnerable students /53/. Bursary distribution can be found in an annex to the project implementation report, and this was confirmed by DNV through onsite inspection and record review /53/.
Group Ranch Office Renovations/ Construction.	For this latest monitoring period, the project proponents have renovated 2 Ranch headquarters at Taita and Mgeno ranches, at a cost of approximately 35 000 USD. They have also renovated a ranger post at 6-0 on Rukinga Ranch, which will support local operations for phase II at a cost of 40 000 USD /41/. In addition, the project proponents are also currently in the process of building 2 new ranger posts, one on Sagalla Ranch and the other on Kutima Ranch /41/. Each of these new ranger posts will house a section of rangers that will be involved in alleviating human/wildlife conflict in the surrounding areas. Wildlife Works also plans on investing an additional 5 000 in upgrades to the solar/electrical systems in 3 of their existing ranger posts /41/.
Wildlife Works/Tsavo Soap Factory.	During the first monitoring period, the project proponent developed an independent organic handmade soap factory /41/. For this latest monitoring period, the soap project continues to employ only one person full time, though they do hire up to 4 casual/contract workers who we bring in to help during busy periods /41/. Now ecotourism camps and lodges who use their soaps in their guest accommodation and/or sell them in boutiques. The project proponent's plan is to continue to grow this business as well as to also produce gift sets incorporating high quality baskets produced in the Kasigau area /41/.
Ecotourism.	During this monitoring period, the project proponents have continued to directly assist (financially and organizationally) local ecotourism efforts on Taita Ranch, Kasigau Ranch, and Kiwanjani Ranch. According to the project implementation report, the status of these three facilities are as follows:

Project Activity	Assessment/Observation
	Taita Ranch Ecotourism: Proponents have had talks with a number of safari tour operators in preparation for ecotourism on Taita Ranch already, and they have been provided with financial assistance in the form of advances against their future share of carbon revenues, to assist them with the legal fees incurred in litigation with the Somali cattle operator. Operations on this project have been suspended pending completion of negotiations between the Taita Ranch shareholders and the cattle operator. *Kasigau Rangelands Trust and Ecolodge:* Project on hold pending refinancing structuring Kiwanjani Ecolodge: This project has been completed and is now fully operational. DNV can corroborate these claims through onsite inspection and interviews /41//46/.
Wildlife Works REDD Project Product Sales and Marketing.	Since the last monitoring period, Wildlife Works has purchased 2 plots of land adjacent to the Nairobi-Mombasa highway, where plans are to build a retail shop and themed restaurant overlooking Tsavo East national park and the Kasigau Corridor REDD project area /41/. In addition, through a small shop at Camp Tsavo on Rukinga Ranch and private sales, the project proponents have managed to increase the numbers of baskets sold from the Kasigau community /41/.
Kasigau Development Trust.	This CBO (community based organization) is now a legal entity, with the carbon project also having funded their office construction and equipment /46/. The CBO now meets and operates regularly, and is in the process of distributing the first trench of carbon payments to the greater Kasigau community /46/. They also now have a standard operating procedure in place /37/, and also work as a voice with which to bring community concerns and grievances to project proponents.
Project Broad Environmental Impact, Household Income, Support for	The project proponents are still in the midst of developing a baseline survey with which to guide all of their future social impact monitoring through Participatory Rural Appraisals

Project Activity	Assessment/Observation
Conservation.	/46/.
Wildlife Works Newsletter	Since the last monitoring period, Wildlife Works has begun to emit a newsletter that circulates to project stakeholders every four months /41//46/. As of today, the project proponents have enacted a new format for the monthly newsletters, with now approximately 5 000 total copies produced /41//46/ with each department now contributing to the letter in full (including the biodiversity monitoring team, the organic greenhouse team, the factory teams, etc.) /41//46/.
Expansion of eco-factories and corporate partnerships.	Since the last monitoring period, Wildlife Works has signed a partnership agreement with Puma to produce clothing at its local eco-factory for Puma's new "Wilderness Collection" /54//56/. WWC has agreed to build a new facility dedicated to production for Puma and in return, Puma agreed to purchase up to 140 000 t-shirts over the next 24 months /54//56/. Approximately 75 skilled and unskilled workers were hired from the Marungu Location, to build the factory /54//56/. 38 people are currently employed to produce the t-shirts, and WWC hopes to double this figure as production levels rise /54//56/. The first Puma shipment will be ready by the end of January, and will be sent to 10 Puma outlets worldwide. Through this partnership, WWC and Puma hope to create jobs for the local communities and emphasize to their customers the important part the Kasigau communities have played in protecting their environment and wildlife /54//56/.

3.1.2 *Implementation status of the monitoring plan and the completeness of monitoring*

- ***Information (data and variables) provided in the monitoring report that is different from that stated in the registered VCS-PD***

DNV checked the monitoring plan contained in the registered VCS-PD of 31 January 2011 /2/ and compared it with the monitoring report version 04.10 of 27 October 2012 /1/, to verify whether there was any difference that would cause an increase in estimates of the GHG removals in the current monitoring period. A detailed comparison of data/variables of each parameter included in the monitoring plan is contained within Appendix A.

DNV confirmed that there is no major variation between *ex-ante* estimates and *ex-post* estimated/calculated values/measurements.

- ***Compliance of monitoring with monitoring plan***

The monitoring has been carried out in accordance with the now revised monitoring plan and formulae contained in the registered VCS-PD of 31 January 2011 /2/.

As required by the monitoring plan /2/ and the applicable methodology VM0009 Version 1.0 the project proponent effectively monitors the required parameters to determine the project's removals by sinks and emissions by sources.

The parameters reported, including source, frequency and review criteria as indicated in the monitoring plan were verified to be correct and in line with the validated monitoring plan of the VCS-PD. Necessary management system procedures including responsibility and authority of monitoring activities have been verified to be consistent with the PDD. Knowledge of personnel associated with the project activity was also found to be satisfactory.

Further information on the verification of the information flow (from data generation, aggregation, to recording, calculation and reporting) for each parameter measured is included in Appendix B.

3.1.3 *Remaining issues from previous validation or verification*

DNV checked the VCS validation report /27/ and the verification report of the previous verification /28/ and confirmed that there are no remaining issues from previous validation or verification.

3.1.4 *Previously validated methodology deviations*

DNV checked the VCS validation report /27/ and the verification report of the previous verification /28/ and confirmed that there were no previous validated methodology deviations.

3.2 Accuracy of GHG Emission Reduction or Removal Calculations

According to the applicable methodology VM0009 Version 1.0 the net GHG emission reductions and removals ($C^{[m]}$) for the monitoring period [m] would be equal to the sum of the avoided baseline emissions ($C_{BE}^{[m]}$), the confidence deduction ($C_{U}^{[m]}$), the project emissions ($C_{PE}^{[m]}$) and the emissions from leakage ($C_{LE}^{[m]}$), as follows:

$$C^{[m]} = C_{BE}^{[m]} - C_{U}^{[m]} - C_{PE}^{[m]} - C_{LE}^{[m]}$$

3.2.1 *Baseline emissions and removals*

According to the applicable methodology VM0009 Version 1.0 the avoided baseline emissions ($C_{BE}^{[m]}$) for the monitoring period [m] would be equal to sum of estimated emissions over selected carbon pools:

$$C_{BE}^{[m]} = \sum_{j \in C} C_{BE,j}^{[m]}$$

According to the registered VCS PD /2/ no baseline emissions in wood products would be considered as this has been demonstrated to be *de-minimus* in the project activity. Furthermore, the project proponent has not selected the lying dead wood carbon pool /2/ and has not established a minimum diameter to define a small tree so the large tree biomass and small tree biomass would be accounted together /2/. Moreover, the project proponent has estimated together the baseline emissions in the above ground large trees (including small trees) and in standing dead wood as in the previous monitoring period these two

carbon pools were aggregated /2/. Therefore, the avoided baseline emissions for the monitoring period [m] would be equal to:

$$C_{BE}^{[m]} = \left(C_{BE,AGLT}^{[m]} + C_{BE,SDW}^{[m]}\right) + C_{BE,AGNT}^{[m]} + C_{BE,BGLT}^{[m]} + C_{BE,BGNT}^{[m]} + C_{BE,SOIL}^{[m]}$$

Where:

$C_{BE,AGLT}^{[m]}$ Sum of baseline emissions in above ground large trees (including small trees)

$C_{BE,AGNT}^{[m]}$ Baseline emissions in above ground non trees

$C_{BE,BGLT}^{[m]}$ Baseline emissions of below ground large trees (including small trees)

$C_{BE,BGNT}^{[m]}$ Baseline emissions in below ground non trees

$C_{BE,SDW}^{[m]}$ Baseline emissions in standing dead wood

$C_{BE,SOIL}^{[m]}$ Baseline emissions in soil

DNV has verified the calculation of the emissions from each of these carbon pools:

- ***Baseline emissions in above ground large trees (including small trees) and Aboveground Standing Dead Wood***

The project proponent has estimated the baseline emissions in above ground large trees together with small trees and the standing dead wood. Therefore, following the formulae of the applicable methodology VM0009 Version 1.0 the baseline emissions from the above ground large trees and standing dead wood for the monitoring period [m] ($C_{BE,AGLT}^{[m]} + C_{BE,SDW}^{[m]}$) would be equal to:

$$C_{BE,AGLT}^{[m]} + C_{BE,SDW}^{[m]} = F_{DF}\left(t_2^{[m]}, \hat{\eta}^{[m]}\right) \cdot \left(C_{AGLT}^{[m]} + C_{SDW}^{[m]}\right) - F_{DF}\left(t_2^{[m-1]}, \hat{\eta}^{[m-1]}\right) \cdot \left(C_{AGLT}^{[m-1]} + C_{SDW}^{[m-1]}\right)$$

Where:

$F_{DF}\left(t_2^{[m]}, \hat{\eta}^{[m]}\right)$ Predicted proportion of cumulative deforestation at monitoring period [m]. This would be equal to 0.221543 in the present monitoring period.

$F_{DF}\left(t_2^{[m-1]}, \hat{\eta}^{[m-1]}\right)$ Predicted proportion of cumulative deforestation at monitoring period [m-1]. This would be equal to 0.189894 in the previous monitoring period.

$C_{AGLT}^{[m]}$ Carbon stock in above-ground large trees for monitoring period [m] (tCO_2e). Considering equations [44], [45] and [50] of the applicable methodology, this would be calculated using the following formula:

$$C_{AGLT}^{[m]} = \sum_{k \in \delta} \frac{a_k}{n_k} \sum_{j \in P_k} \frac{1}{a_{j,k}} \sum_{i \in X_{j,k}} \frac{44}{12} \times \frac{1}{1{,}000} \times f_{sp}(\bullet) \times cf_{sp}$$

Where:

- a_k : Area of stratum k (ha). DNV verified the input values as assessed in Appendix C (c.f. Parameter "a_k - Area of stratum k") and confirmed that these verified values were used in the GHG benefits calculation spreadsheet /10/.
- $\hat{n}_k$: Estimated total number of plots required in stratum k (count). DNV confirmed that the correct number of plots per stratum /7/ have been used in order to determine the average stocks per plot /10/.

- $a_{j,k}$: Area of plot j in stratum k (ha). DNV verified the input values as assessed in Appendix C (c.f. Parameter "$a_{j,k}$: Area of plot j in stratum k") and confirmed that these verified values were used in the GHG benefits calculation spreadsheet /10/.
- $f_{sp}(\bullet)$: Allometric equation for species *sp*. (function). DNV checked the forest inventory calculation spreadsheet /7/ and confirmed that the project proponent has applied the allometric equations specified in annex of the VCS-PD /2/ and are consistent with the allometry produced for the project /11/. DNV also confirmed that these equations have been applied to the verified values of breast height diameter included in Appendix B (c.f. parameter "Diameter at breast height of the tree ith in plot j in stratum k - $dbh_{i,j,k}$ ")
- cf_{sp} : Carbon fraction of dry matter for species *sp.* (tC/t d.m.). The project proponent has applied 0.5 tC/t d.m in the GHG benefits calculation spreadsheet /10/ which is the value assumed in the VCS-PD /2/.

DNV confirmed that the carbon stock in above-ground large trees for monitoring period [m] would be equal to 1 549 477 tCO_2e.

$C_{SDW}^{[m]}$ Carbon stock in standing dead wood for monitoring period [m] (tCO_2e). Considering equations [44] and [66] of the applicable methodology, this would be calculated using the following formula:

$$C_{SDW}^{[m]} = \sum_{k \in \delta} \frac{a_k}{n_k} \sum_{j \in P_k} \left(y_{INTACT,j,k} + y_{DECAYED,j,k} \right)$$

Where:

- a_k : Area of stratum k (ha). DNV verified the input values as assessed in Appendix C (c.f. Parameter "$a_{j,k}$: Area of plot j in stratum k") and confirmed that these verified values were used in the GHG benefits calculation spreadsheet /10/.
- $\hat{n}_k$: Estimated total number of plots required in stratum k (count). DNV confirmed that the correct number of plots per stratum /7/ have been used in order to determine the average stocks per plot /10/.
- $y_{INTACT,j,k}$: Carbon stock in standing dead trees in decay class I, plot j, stratum (tCO_2e). This is calculated with as:

$$y_{INTACT,j,k} = \frac{1}{a_{j,k}} \sum_{i \in X_{j,k}} \frac{44}{12} \times \frac{1}{1{,}000} \times f_{sp}(\bullet) \times cf_{sp}$$

Where:

  - $f_{sp}(\bullet)$: Allometric equation for species *sp*. (function). DNV checked the forest inventory calculation spreadsheet /7/ and confirmed that the project proponent has applied the allometric equations specified in

annex of the VCS-PD /2/ and are consistent with the allometry produced for the project /11/. DNV also confirmed that these equations have been applied to the verified values of breast height diameter included in Appendix B (c.f. parameter "Diameter at breast height of the tree i[th] in plot j in stratum k - $dbh_{i,j,k}$ ").

- cf_{sp} : Carbon fraction of dry matter for species *sp.* (tC/t d.m.). The project proponent has applied 0.5 tC/t d.m in the GHG benefits calculation spreadsheet /10/ which is the value assumed in the VCS-PD /2/.

- $y_{DECAYED,j,k}$: Carbon stock in standing dead trees in decay class II, plot j, stratum k (tCO_2e). This is calculated with the following formula:

$$y_{DECAYED,j,k} = \frac{1}{a_{j,k}} \sum_{i \in X_{j,k}} \frac{44}{12} \times \frac{1}{1{,}000} \times cf_{sp} \times \rho_{sp} \times \frac{\pi \cdot h_{i,j,k} \cdot \left(dbh_{i,j,k}^2 / 8 + dbh_{i,j,k} / 4 \right)}{3}$$

Where:

- cf_{sp} : Carbon fraction of dry matter for species *sp.* (tC/t d.m.). The project proponent has applied 0.5 tC/t d.m in the GHG benefits calculation spreadsheet /10/ which is the value assumed in the VCS-PD /2/.
- ρ_{sp} : Wood density of species *sp* (kg m^{-3}). The project proponent has applied 0.24 kg m^{-3} in the GHG benefits calculation spreadsheet /10/ which is the value assumed in the VCS-PD /2/.
- $dbh_{i,j,k}$: Diameter at breast height of the tree i[th] in plot j in stratum k (Centimetres). DNV confirmed that the project proponent has applied in the verified values in Appendix B (c.f. parameter "Diameter at breast height of the tree i[th] in plot j in stratum k - $dbh_{i,j,k}$ ") in the forest inventory calculations /7/.
- $h_{i,j,k}$: Height of the ith tree in plot j in stratum k. These values have been verified in Appendix B (c.f. parameter "Height of the ith tree in plot j in stratum k. - $h_{i,j,k}$ ").

DNV confirmed that the carbon stock in standing dead wood for monitoring period [m] would be equal to 30 696 tCO_2e.

$C_{AGLT}^{[m-1]} + C_{SDW}^{[m-1]}$

The carbon stock in standing dead wood for monitoring period [m-1] and the carbon stock in above-ground large trees for monitoring period [m-1] were aggregated in the previous monitoring period and was equal to 1 604 351 tCO_2e as evidenced by the previous verification report and supporting documentation /28/.

Hence the baseline emissions from the above ground large trees and standing dead wood for the monitoring period [m] ($C_{BE,AGLT}^{[m]} + C_{BE,SDW}^{[m]}$) would be equal to 0.221543*(1 549 477+30 696)-0.189894*1 604 351 = **45 420 tCO_2e.**

- ***Baseline emissions in above ground non trees***

According to the applicable methodology VM0009 Version 1.0 the baseline emissions in above ground non trees ($C_{BE,AGNT}^{[m]}$) for the monitoring period [m] would be equal to:

$$C_{BE,AGNT}^{[m]} = F_{DF}\left(t_2^{[m]}, \hat{\eta}^{[m]}\right) \cdot C_{AGNT}^{[m]} - F_{DF}\left(t_2^{[m-1]}, \hat{\eta}^{[m-1]}\right) \cdot C_{AGNT}^{[m-1]}$$

Where:

$F_{DF}\left(t_2^{[m]}, \hat{\eta}^{[m]}\right)$ Predicted proportion of cumulative deforestation at monitoring period [m]. This would be equal to 0.221543 in the present monitoring period.

$F_{DF}\left(t_2^{[m-1]}, \hat{\eta}^{[m-1]}\right)$ Predicted proportion of cumulative deforestation at monitoring period [m-1]. This would be equal to 0.189894 in the previous monitoring period.

$C_{AGNT}^{[m]}$ Carbon stock in above-ground non trees for monitoring period [m] (tCO_2e). Considering equations [44], [45] and [54] of the applicable methodology, this would be calculated using the following formula:

$$C_{AGNT}^{[m]} = \sum_{k \in \delta} \frac{a_k}{n_k} \sum_{j \in P_k} \frac{1}{a_{j,k}} \sum_{i \in X_{j,k}} \frac{44}{12} \times \frac{1}{1{,}000} \times f_{sp}(v) \times cf_{sp}$$

Where:

- a_k : Area of stratum k (ha). Refer to the estimation of the carbon stock in above-ground large trees for monitoring period [m] above.
- $\hat{n}_k$: Estimated total number of plots required in stratum k (count). Refer to the estimation of the carbon stock in above-ground large trees for monitoring period [m] above.
- $a_{j,k}$: Area of plot j in stratum k (ha). Refer to the estimation of the carbon stock in above-ground large trees for monitoring period [m] above.
- $f_{sp}(v)$: Allometric equation for species *sp*. (function) or species/size class tables (number). DNV checked the forest inventory calculation spreadsheet /7/ and confirmed that the project proponent has applied the species/Size class defined values specified in annex of the VCS-PD /2/. DNV also confirmed that these values have been applied adequately to the bush species and size class values verified in Appendix B (c.f. parameter "Shrub size class per species - v").
- cf_{sp} : Carbon fraction of dry matter for species *sp.* (tC/t d.m.). Refer to the estimation of the carbon stock in above-ground large trees for monitoring period [m] above.

DNV confirmed that the carbon stock in above-ground non trees for monitoring period [m] would be equal to 267 637 tCO_2e.

$C_{AGNT}^{[m-1]}$ The carbon stock in above-ground non trees for monitoring period [m-1] was equal to 270 341 tCO_2e as evidenced by the previous verification report and supporting documentation /28/.

Hence the baseline emissions in above ground non trees ($C_{BE,AGNT}^{[m]}$) would be equal to 0.221543*270 341-0.189894*267 637 = **7 957 tCO_2e.**

- ***Baseline emissions in below ground large trees (including small trees) and below ground Standing Dead Wood***

According to the applicable methodology VM0009 Version 1.0 the baseline emissions in below ground large trees and below ground standing deadwood ($C_{BE,BGLT}^{[m]} + C_{BE,SDW}^{[m]}$) for the monitoring period [m] would be equal to:

$$C_{BE,BGLT}^{[m]} = F_{DF}\left(t_2^{[m]}, \hat{\eta}^{[m]}\right) \cdot \left(p_{BGLT} \cdot C_{BGLT}^{[m]} + C_{SDW}^{[m]}\right) - F_{DF}\left(t_2^{[m-1]}, \hat{\eta}^{[m-1]}\right) \cdot \left(p_{BGLT} \cdot C_{BGLT}^{[m-1]} + C_{SDW}^{[m-1]}\right)$$

Where:

p_{BGLT} Proportion of below-ground large tree biomass removed as a result of land conversion to agriculture. The project proponent assumed this to be 1 as evidenced by the VCS-PD /2/.

$F_{DF}\left(t_2^{[m]}, \hat{\eta}^{[m]}\right)$ Predicted proportion of cumulative deforestation at monitoring period [m]. This would be equal to 0.221543 in the present monitoring period.

$F_{DF}\left(t_2^{[m-1]}, \hat{\eta}^{[m-1]}\right)$ Predicted proportion of cumulative deforestation at monitoring period [m-1]. This would be equal to 0.189894 in the previous monitoring period.

$C_{BGLT}^{[m]}$ Carbon stock in below-ground large trees for monitoring period [m] (tCO_2e). Considering equations [44], [45] and [54] of the applicable methodology, this would be calculated using the following formula:

$$C_{BGLT}^{[m]} = \sum_{k \in \delta} \frac{a_k}{n_k} \sum_{j \in P_k} \frac{1}{a_{j,k}} \sum_{i \in X_{j,k}} \frac{44}{12} \times \frac{1}{1{,}000} \times f_{sp}(\bullet) \times cf_{sp} \times r_{sp}$$

Where:

Where:

- a_k : Area of stratum k (ha). Refer to the estimation of the carbon stock in above-ground large trees for monitoring period [m] above.
- $\hat{n}_k$: Estimated total number of plots required in stratum k (count). Refer to the estimation of the carbon stock in above-ground large trees for monitoring period [m] above.
- $a_{j,k}$: Area of plot j in stratum k (ha). Refer to the estimation of the carbon stock in above-ground large trees for monitoring period [m] above.
- $f_{sp}(\bullet)$: Allometric equation for species *sp*. (function). Refer to the estimation of the carbon stock in above-ground large trees for monitoring period [m] above.
- cf_{sp} : Carbon fraction of dry matter for species *sp.* (tC/t d.m.). Refer to the estimation of the carbon stock in above-ground large trees for monitoring period [m] above.

- r_{sp} : Ratio of below-ground biomass to above-ground biomass (root to shoot ratio) for species sp. The project proponent applied the value of 0.4 in the in the GHG benefits calculation spreadsheet /10/ which is the value assumed in the VCS-PD /2/.

DNV confirmed that the carbon stock in below-ground large trees for monitoring period [m] would be equal to 619 791 tCO_2e.

$C_{SDW}^{[m]}$

Although the methodology establishes that the Carbon stock in belowground standing dead wood for monitoring period [m] (tCO_2e) has to be calculated through equation [50], the same methodology establishes that "*The carbon stock of standing dead trees in decay class I is estimated using the same equations developed for live trees*". Hence, the project proponent has also determined the below ground biomass of standing dead wood of trees in decay class I.

Carbon stock in belowground standing dead wood for monitoring period [m] (tCO_2e). Considering equations [44] and [66] of the applicable methodology, this would be calculated using the following formula:

$$C_{SDW}^{[m]} = \sum_{k \in \delta} \frac{a_k}{n_k} \sum_{j \in P_k} \left(y_{INTACT,j,k} + y_{DECAYED,j,k} \right)$$

Where:

- a_k : Area of stratum k (ha). DNV verified the input values as assessed in Appendix C (c.f. Parameter "$a_{j,k}$: Area of plot j in stratum k") and confirmed that these verified values were used in the GHG benefits calculation spreadsheet /10/.
- $\hat{n}_k$: Estimated total number of plots required in stratum k (count). DNV confirmed that the correct number of plots per stratum /7/ have been used in order to determine the average stocks per plot /10/.
- $y_{INTACT,j,k}$: Carbon stock in standing dead trees in decay class I, plot j, stratum (tCO_2e). As stated in the methodology, this would be calculated in the same way as the belowground large tree carbon pool. This is calculated with as:

$$y_{INTACT,j,k} = \frac{1}{a_{j,k}} \sum_{i \in X_{j,k}} \frac{44}{12} \times \frac{1}{1{,}000} \times f_{sp}(\bullet) \times cf_{sp} \times (1 + r_{sp})$$

Where:

  - $f_{sp}(\bullet)$: Allometric equation for species *sp*. (function). DNV checked the forest inventory calculation spreadsheet /7/ and confirmed that the project proponent has applied the allometric equations specified in annex of the VCS-PD /2/ and are consistent with the allometry produced for the project /11/. DNV also confirmed that these equations have been applied to the verified values of breast height diameter included in Appendix B (c.f. parameter "Diameter at breast height of the

tree i[th] in plot j in stratum k - $dbh_{i,j,k}$ ").

- cf_{sp} : Carbon fraction of dry matter for species *sp.* (tC/t d.m.). The project proponent has applied 0.5 tC/t d.m in the GHG benefits calculation spreadsheet /10/ which is the value assumed in the VCS-PD /2/.
- r_{sp} : Ratio of below-ground biomass to above-ground biomass (root to shoot ratio) for species sp. The project proponent applied the value of 0.4 in the in the GHG benefits calculation spreadsheet /10/ which is the value assumed in the VCS-PD /2/.

- $y_{DECAYED,j,k}$: Carbon stock in standing dead trees in decay class II, plot j, stratum k (tCO_2e). As stated in the methodology "*the carbon stock of standing trees in decay class II is conservatively estimated as the biomass in only the remaining bole*". Hence, this is not considered in the quantification of the belowground standing dead wood carbon pool.

DNV confirmed that the carbon stock in below-ground standing dead wood for monitoring period [m] would be equal to 10 650 tCO_2e.

$C_{BGLT}^{[m-1]} + C_{SDW}^{[m-1]}$ The carbon stock in below-ground large trees for monitoring period [m-1] was equal to 641 740 tCO_2e as evidenced by the previous verification report and supporting documentation /28/.

Hence the baseline emissions in below ground large trees ($C_{BE,BGLT}^{[m]}$) for the monitoring period [m] would be equal to 0.221543*(1*619 791+10 650)-0.189894*641 740 = **17 807 tCO_2e.**

- ***Baseline emissions in below ground non trees***

According to the applicable methodology VM0009 Version 1.0 the baseline emissions in below ground non trees ($C_{BE,BGNT}^{[m]}$) for the monitoring period [m] would be equal to:

$$C_{BE,BGNT}^{[m]} = F_{DF}\left(t_2^{[m]}, \hat{\eta}^{[m]}\right) \cdot C_{BGNT}^{[m]} - F_{DF}\left(t_2^{[m-1]}, \hat{\eta}^{[m-1]}\right) \cdot C_{BGNT}^{[m-1]}$$

Where:

$F_{DF}\left(t_2^{[m]}, \hat{\eta}^{[m]}\right)$ Predicted proportion of cumulative deforestation at monitoring period [m]. This would be equal to 0.221543 in the present monitoring period.

$F_{DF}\left(t_2^{[m-1]}, \hat{\eta}^{[m-1]}\right)$ Predicted proportion of cumulative deforestation at monitoring period [m-1]. This would be equal to 0.189894 in the previous monitoring period.

$C_{BGNT}^{[m]}$ Carbon stock in below-ground non trees for monitoring period [m] (tCO_2e). Considering equations [44], [45] and [50] of the applicable methodology, this would be calculated using the following formula:

$$C_{BGLT}^{[m]} = \sum_{k \in \delta} \frac{a_k}{n_k} \sum_{j \in P_k} \frac{1}{a_{j,k}} \sum_{i \in X_{j,k}} \frac{44}{12} \times \frac{1}{1{,}000} \times f_{sp}(v) \times cf_{sp} \times r_{sp}$$

Where:

- a_k : Area of stratum k (ha). Refer to the estimation of the carbon stock in above-

ground large trees for monitoring period [m] above.

- $\hat{n}_k$: Estimated total number of plots required in stratum k (count). Refer to the estimation of the carbon stock in above-ground large trees for monitoring period [m] above.
- $a_{j,k}$: Area of plot j in stratum k (ha). Refer to the estimation of the carbon stock in above-ground large trees for monitoring period [m] above.
- $f_{sp}(v)$: Allometric equation for species *sp*. (function) or species/size class tables (number). DNV checked the forest inventory calculation spreadsheet /7/ and confirmed that the project proponent has applied the species/Size class defined values specified in annex of the VCS-PD /2/. DNV also confirmed that these values have been applied adequately to the bush species and size class values verified in Appendix B (c.f. parameter "Shrub size class per species - v").
- cf_{sp} : Carbon fraction of dry matter for species *sp.* (tC/t d.m.). Refer to the estimation of the carbon stock in above-ground large trees for monitoring period [m] above.
- r_{sp} : Ratio of below-ground biomass to above-ground biomass (root to shoot ratio) for species sp. The project proponent applied the value of 0.4 in the in the GHG benefits calculation spreadsheet /10/ which is the value assumed in the VCS-PD /2/.

DNV confirmed that the carbon stock in below-ground non trees for monitoring period [m] would be equal to 107 055 tCO_2e.

$C_{BGNT}^{[m-1]}$ The carbon stock in below-ground non trees for monitoring period [m-1] was equal to 108 137 tCO_2e as evidenced by the previous verification report and supporting documentation /28/

Hence the baseline emissions in below ground large trees ($C_{BE,BGLT}^{[m]}$) for the monitoring period [m] would be equal to 0.221543*107 055-0.189894*108 137 = **3 183 tCO_2e.**

- ***Baseline emissions in soil***

According to the applicable methodology VM0009 Version 1.0 the baseline emissions in soil ($C_{BE,SOIL}^{[m]}$) for the monitoring period [m] would be equal to:

$$C_{BE,SOIL}^{[m]} = \sum_{i \in M} S\left(t_2^{[m-1]} - t_2^{[m-i-1]}, t_2^{[m]} - t_2^{[m-i-1]}, \hat{\lambda}, \hat{\ell}_{\max}\right) \cdot \left[F_{DF}\left(t_2^{[m-i]}, \hat{\eta}^{[m-i]}\right) - F_{DF}\left(t_2^{[m-i-1]}, \hat{\eta}^{[m-i-1]}\right)\right] \cdot C_{SOIL}^{[m-i]}$$

Where:

$S\left(t_2^{[m-1]} - t_2^{[m-i-1]}, t_2^{[m]} - t_2^{[m-i]}, \hat{\lambda}, \hat{\ell}_{\max}\right)$ The soil loss function. Where:

- $\hat{\lambda}$: Estimated mean rate of soil carbon loss. This would be equal to 0.55 as evidenced by the registered VCS-PD /2/.

- $\hat{\ell}_{max}$: The maximum proportion of soil carbon lost over time. This would be equal to 0.45 as evidenced by the registered VCS-PD /2/.

Hence, the soil loss function for the project activity would be:

$$0.4557 \cdot \left\{\left[1-\exp\left(-0.55\cdot\left(t_2^{[m]}-t_2^{[m-i-1]}\right)\right)\right]-\left[1-\exp(-0.55\cdot\left(t_2^{[m-1]}-t_2^{[m-i-1]}\right)\right]\right\}$$

$F_{DF}\left(t_2^{[m]},\hat{\eta}^{[m]}\right)$ Predicted proportion of cumulative deforestation at monitoring period [m]. This would be equal to 0.221543 in the present monitoring period.

$F_{DF}\left(t_2^{[m-1]},\hat{\eta}^{[m-1]}\right)$ Predicted proportion of cumulative deforestation at monitoring period [m-1]. This would be equal to 0.189894 in the previous monitoring period.

$C_{SOIL}^{[m-i]}$ The carbon stock in soil for monitoring period [m-i].

- $C_{SOIL}^{[m-1]}$ this would be equal to the carbon stocks in the previous monitoring period which is equal to 11 842 344 tCO_2e which is evidenced by the registered VCS-PD /2/.
- $C_{SOIL}^{[m]}$ This would be equal to 12 370 530 tCO_2e. Although the soil carbon stocks have not been measured in this monitoring period, the total carbon stocks have been updated. In the previous monitoring period a simple random sampling was conducted in order to determine the soil carbon stocks in the project area, none of the sampling points fell in two areas which presumably would have less carbon stocks than the rest of areas as it held agricultural activities more than 20 years ago /42//43/, so the project proponent excised conservatively these areas. In this monitoring period, these areas were included again since it would not be justified to excise these areas based on the sampling scheme /42//43/; the project proponent conducted as a simple random sampling whereby all the areas within the project boundary would have the chance to be sampled, so the average value provided should be representative of the soils in the project boundary; hence, excising areas which have not been sampled would not be justified. DNV deems that this would be correct. The measured parameters to calculate this parameter were verified by DNV in Appendix B (c.f. Parameters "Bulk density of fine portion of soil sample in plot *j* in stratum *k* - $\rho_{soil,j,k}$ " "Carbon fraction of soil sample j in plot in stratum k - $cf_{soil,j,k}$ "). DNV confirmed that the values have been estimated correctly.

Hence the baseline emissions in soil ($C^{[m]}_{BE,SOIL}$) for the monitoring period [m] would be equal to **176 099 tCO_2e.**

The baseline emissions from each of the above carbon pools would be added up in order to estimate the total baseline emissions:

$$C^{[m]}_{BE} = \left(C^{[m]}_{BE,AGLT} + C^{[m]}_{BE,SDW}\right) + C^{[m]}_{BE,AGNT} + \left(C^{[m]}_{BE,BGLT} + C^{[m]}_{BE,SDW}\right) + C^{[m]}_{BE,BGNT} + C^{[m]}_{BE,SOIL}$$

Hence, the total baseline emissions would be equal to 45 420 + 7 957 + 17 807 + 3 183 + 176 099 = **250 465 tCO_2e.**

3.2.2 *Project emissions and removals*

According to the applicable methodology VM0009 Version 1.0 the project emissions ($C^{[m]}_{PE}$) for the monitoring period [m] would be equal to the emissions due to burning within the project boundary. As stated in the registered VCS-PD /2/ and in line with the previous verification report /28/, no project emissions have been identified since no harvesting of biomass occurs within the project boundary by the project proponent as confirmed during the site visit through direct assessment and interviews with stakeholders /50//41//44//43//47//48//42/.

Hence, the project emissions ($C^{[m]}_{PE}$) for the monitoring period [m] would be equal to = **0 tCO_2e.**

3.2.3 *Leakage*

According to VM0009 Version 1.0, leakage is estimated as follows:

$$C^{[m]}_{LE} = \hat{r}^{[m]}_{LE} \times C^{[m]}_{BE}$$

Where:

$\hat{r}^{[m]}_{LE}$ The estimated leakage factor as a proportion of baseline emissions (t CO_2-e) which would be calculated with equation [33] of the applicable methodology:

$$\hat{r}^{[m]}_{LE} = \frac{a_{LE}}{p_{forest} \cdot a_{project}} \times \begin{cases} 0 if\ \bar{o}^{[m]} - x \le 0 \\ \bar{o}^{[m]} - x o.w. \end{cases}$$

Where:

- a_{LE}: Total leakage area (ha) which is equal to 30 168.66 ha as verified in Appendix A.
- p_{forest} : The proportion of the project area that is forested which is equal to 1 as verified in Appendix A.
- $a_{project}$: Total project area which would be equal to 30 168.66 ha as verified in Appendix A.

- $\bar{o}^{[m]}$: Average of state observations taken in the leakage area for the monitoring period which is equal to 0.5567 as verified in Appendix A.
- x: As per the applicable methodology, this would be equal to:

$$x = \max\begin{cases} F_{LE}\left(t_2^{[m]}, \hat{\eta}^{[m]}, \hat{\delta}_{LE}\right) \\ F_{LE}\left(t_2^{[reevaluation-1]}, \hat{\eta}^{[reevaluation-1]}, \hat{\delta}_{LE}\right) \\ \bar{o}^{[m-1]} \end{cases}$$

The first term would be the prediction of the cumulative leakage model at the monitoring period which would be equal to 0.57787884 using the leakage model with the lag parameter of leakage model and estimated deforestation rate as verified in Appendix A. The second term would not be applicable in this monitoring period since the baseline has not been reevaluated yet. The third term would not be applicable since the previous monitoring period was the first monitoring period in which the leakage model was built. Hence, this value would be equal to 0.57787884.

Since the difference between the average of state observations taken in the leakage area for the monitoring period ($\bar{o}^{[m]}$) and x is 0.5567 - 0.57787884 = 0.0211 < 0 $\hat{r}_{LE}^{[m]}$ would be zero.

$C_{BE}^{[m]}$ The avoided baseline emissions (tCO_2e) which are equal to 250 465 tCO_2e in this monitoring period as assessed above.

Hence, the total leakage in this monitoring period would be equal to 0 x 250 465 = **0 tCO_2e.**

3.2.4 *Confidence deduction*

According to VM0009 Version 1.0, the confidence deduction would be determined as follows:

$$C_U^{[m]} \begin{cases} 0 \; if \; U^{[m]} \le 0.15 \\ \dfrac{C_{BE}^{[m]}\left(U^{[m]} - 0.15\right)}{1 - 0.15} \; o.w. \end{cases}$$

Where $U^{[m]}$ is the average uncertainty in carbon stocks and the baseline model which is determined as follows:

$$U^{[m]} = \sqrt{\frac{C_{TOTAL}^{[m]} U_{DF}^2 + C_{TOTAL}^{[m]} \left(U_{TOTAL}^{[m]}\right)^2 + C_{SOIL}^{[m]} U_{SCL}^2}{2\, C_{TOTAL}^{[m]} + C_{SOIL}^{[m]}}}$$

Where:

$C_{TOTAL}^{[m]}$ Estimated total carbon stock in the project area at monitoring period [m] which would be equal to 14 955 836 tCO_2e /7//10/.

U_{DF} Estimated uncertainty in the cumulative deforestation model which would be equal to 5.9 as verified in Appendix A.

$U_{TOTAL}^{[m]}$ Estimated uncertainty of total carbon stocks which would be equal to 0.798 as verified in Appendix A.

$C_{SOIL}^{[m]}$ Estimated carbon stock in soil carbon at monitoring period [m] which would be equal to 12 370 530 tCO_2e as stated above.

U_{SCL} Estimated uncertainty in the soil carbon loss model which would be equal to 13.9 as verified in Appendix A.

Hence, the total uncertainty would be equal to 9.7% so, since this is below the 15% maximum allowable confidence as per the applicable methodology the confidence deduction would be equal to = **0 tCO_2e**.

3.2.5 *Buffer credits – Non-permanence risk assessment*

Following the provisions of paragraph 3.19.2 of the *VCS Version 3.3*, the project participant has conducted a non-permanence risk assessment /3/ following the provisions of the AFOLU Non-Permanence Risk tool: VCS Version 3.2. According to this assessment /3/ the overall non-permanence risk rating of the proposed project activity is **15%.**

Risk Category	Rating
a) Internal Risk	13
b) External Risk	0
c) Natural Risk	2
Overall Risk Rating (a + b + c)	**15 %**

Table 2. Risk ratings for the different risk categories of the proposed project activity.

DNV confirmed that the non-permanence assessment has been carried adequately and applying conservative assumptions where needed. A detailed assessment of the risk analysis carried out by the project proponent in the non-permanence report /3/ can be found in Table 2 of Appendix C of this report.

3.2.6 *Net anthropogenic GHG emission reductions and removals*

The net anthropogenic GHG emissions and removals from the project activity have been calculated as per the registered VCS-PD /2/ and applied methodology VM0009 Version 1.0 /19/.

According to the applicable methodology VM0009 Version 1.0 the net GHG emission reductions and removals ($C^{[m]}$) for the monitoring period [m] would be equal to the sum of the avoided baseline emissions ($C_{BE}^{[m]}$), the confidence deduction ($C_{U}^{[m]}$), the project emissions ($C_{PE}^{[m]}$) and the emissions from leakage ($C_{LE}^{[m]}$), as follows:

$$C^{[m]} = C_{BE}^{[m]} - C_{U}^{[m]} - C_{PE}^{[m]} - C_{LE}^{[m]}$$

The net anthropogenic GHG emissions and removals verified for the verification period are higher than the *ex-ante* estimated net GHG benefit /2/. The main reason is that in the carbon stocks have increased in relation to the previous estimation, mainly due to the inclusion of areas previously excised in the calculation of the soil carbon stocks, and due to the decrease in the risk buffer and non-existence of leakage in the verification period.

Item	Values applied in *ex-ante* calculation /2/ (tCO_2e) – Year 2011	*Ex-post* values /1/ (tCO_2e)
Avoided baseline emissions ($C_{BE}^{[m]}$)	239 112	250 465
Confidence deduction ($C_{U}^{[m]}$)	0	0
Project emissions ($C_{PE}^{[m]}$)	0	0
Emissions from leakage ($C_{LE}^{[m]}$)	47 822	0
Net anthropogenic GHG emission reductions and removals ($C^{[m]}$)	191 289	250 465
Buffer	38 257 (20%)	37 570 (15%)
VCUs	**153 031**	**212 895**

Table 3. Comparison of GHG benefits and VCUs reported in registered VCS-PD /2/ and the MR /1/

No significant reporting risks have been identified for the data reported. All the data required for net anthropogenic GHG removals calculations are obtained following the Standard Operating Procedures /4/. There are QA/QC measures in place to check the consistency and the correctness of the collected data /14//15/. After these checks, data is then transferred to specific databases in which a new quality check is done. Four permanent sampling plots are revisited by the plantation management responsible and the carbon project responsible to ensure the transparency and accuracy of the data being monitored and recorded /14//15/. All reported and consolidated data from the inventory database is processed in order to calculate the net anthropogenic GHG removals and emission reductions. Data collection procedures, QA/QC procedures and its implementation, and the specific databases were verified by DNV.

As this is the forest inventory is the major source of inherent risk, DNV performed a field verification in order to confirm that the inventory was performed following the SOP in place. DNV requested the project entity to revisit 4 random located sampling plots and to repeat measurements following the SOP in place.

Plot	First measurement		Verification measurement	
	t d.m/ha	Date of measurement	t d.m/ha	Date of measurement
1	31.46	01/09/2011	31.13	26/04/2012
2	45.60	10/5/2011	52.12	26/04/2012
3	52.44	28/4/2011	69.36	26/04/2012

4	44.45	10/5/2011	54.29	26/04/2012

Table 4. Comparison of volumes between first measurement and verification measurement.

The field verification confirmed that the SOPs were followed during the forest inventory and that any potential source of bias was reduced (i.e. operation of equipment; calibration). Furthermore, it was confirmed that the number of trees per plot and approximate diameter class of each tree were consistent with the previous inventory. DNV further analyzed the data applying a paired t-test and confirmed that the with a 80% of confidence it would not be possible to reject the null-hypothesis that the averages of the inventory measurement and the verification measurement are different.

As outlined above, the input data for calculating the net anthropogenic GHG removals, the calculating process and the result are complete and transparent /1/. Therefore, DNV is able to confirm the accuracy of the net anthropogenic GHG removals by sinks (i.e. net GHG benefits) and the VCUs to be issued.

3.3 Quality of Evidence to Determine GHG Emission Reductions or Removals

The net anthropogenic GHG emission reductions and removals by sinks in the monitoring period 1 January 2011 to 31 December 2011 was verified to be 250 465 tCO_2e.

Sufficient evidence was presented for the reported net anthropogenic GHG removals. The project entity has in place a monitoring system which has specific procedures for the main activities in which are defined responsibilities for the supervision of the activity, a description of the activity, the QA/QC measures in place, and the recording and archiving of the relevant information. As part of the quality system periodical internal audits are carried out by the quality management responsible to ensure the transparency and accuracy of the data being monitored and recorded. DNV verified that this system is in place and confirms the existence of a clear audit trail.

Furthermore, the recording, archiving and reporting of all data is done through a database, which assure that information is recorded and maintained. DNV verified the information stored in these systems and confirmed that these are consistent with invoices (i.e. seed and fertilizer purchase; inventory collection system, etc.).

3.4 Management and Operational System

The project proponent has established management procedures and implemented the same effectively to ensure that the process is consistent. The procedures cover management responsibilities, data monitoring procedures, training procedures, periodical internal audits, management reviews and corrective actions in case of any deviations effectively. Quality control and quality assurance measures and calibration processes are followed as per defined procedures and carried out periodically.

The responsibility of gathering all data and performing the calculation of the net removals calculation is with the carbon projects manager. The responsibility that there is no data misstatement on the forest inventory data and the operational data is with the same person. Periodical internal audits are carried out to ensure the transparency and accuracy of the data being monitored and recorded. DNV was able to confirm that the responsibilities and authorities for monitoring and reporting are in accordance with the responsibilities and authorities stated in the monitoring plan.

4 VERIFICATION CONCLUSION

DNV Climate Change Services AS (DNV) has performed the verification of the net anthropogenic GHG removals that have been reported for the "The Kasigau Corridor REDD Project Phase I – Rukinga Sanctuary" for the period 1 January 2011 to 31 December 2011.

The project proponents are responsible for the collection of data in accordance with the monitoring plan and the reporting of the net anthropogenic GHG removals from the project.

It is DNV's responsibility to express an independent verification statement on the reported net anthropogenic GHG removals from the project. DNV does not express any opinion on the selected baseline scenario or on the validated and registered VCS-PD.

DNV conducted the verification on the basis of VCS requirements, the monitoring methodology VM0009 Version 1.0, the monitoring plan contained in the registered VCS-PD of 31 January 2011, the monitoring report (version 04.10) dated 27 October 2012 and the non-permanence risk report (version 1.1) dated 2 October 2012. The verification included:

i) Checking whether the project has been implemented in accordance with the project description;
ii) checking whether the provisions of the monitoring plan were consistently and appropriately applied;
iii) the collection of evidence supporting the reported data; and
iv) the assessment of the non-permanence risk analysis.

DNV's verification approach draws on an understanding of the risks associated with reporting of GHG removals and GHG emissions data and the controls in place to mitigate these. DNV planned and performed the verification by obtaining evidence and other information and explanations that DNV considers necessary to give reasonable assurance that reported net anthropogenic GHG removals are fairly stated.

In our opinion the net anthropogenic GHG removals of the "The Kasigau Corridor REDD Project Phase I – Rukinga Sanctuary" for the period 1 January 2011 to 31 December 2011 are fairly stated in the monitoring report (version 04.10) dated 27 October 2012.

The net anthropogenic GHG removals were calculated correctly on the basis of the approved baseline and monitoring methodology VM0009 Version 1.0 and the monitoring plan contained in the registered VCS-PD of 31 January 2011.

DNV Climate Change Services AS verified that the net anthropogenic GHG removals from the "The Kasigau Corridor REDD Project Phase I – Rukinga Sanctuary" in the reporting period from 1 January 2011 to 31 December 2011 are:

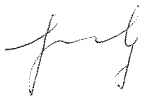
GHG Emission Reductions or Removals	tCO_2e
Baseline Emissions or Removals	250 465
Confidence deduction	0
Project Emissions or Removals	0
Leakage	0
Net GHG emission reductions or removals	250 465
Buffer (15%)	37 570

VCUs	**212 895**

DNV Climate Change Services AS verified that the non-permanence risk rating of the proposed project activity for this verification is 15% which is to be applied to the change in carbon stocks at this verification equal to 37 570 tCO_2e. The amount of VCUs to be issued would be **212 895 tCO_2e.**

Venice and Oslo, 29 November 2012.





Andres Espejo
VCS Verifier
DNV Italy

Weidong Yang
VCS Approver
DNV Climate Change Services AS

5 REFERENCES

Documents provided by the Project Participants that relate directly to the GHG components of the project. These have been used as direct sources of evidence for the periodic verification conclusions, and are usually further checked through interviews with key personnel.

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- Including additional VCS Project document dated 25 January 2011

/3/ Wildlife Works Carbon LLC: Non-permanence risk report: VCS version 3 – *"The Kasigau Corridor* REDD Project Phase I – Rukinga Sanctuary*"*, version 1.1, 2 October 2012

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- Soil Sampling, Version 1.0, 24 may 2011
- Leakage Plot Sampling, Version 1.0, 1 January 2011

/5/ Wildlife Works Carbon LLC: *Forest inventory field data sheets filled during the forest inventory, year 2011*
- Carbon stocks monitoring: Plots 55, 52, 43, 44
- Leakage monitoring: L22, L23, L12

/6/ Crop Nutrition Laboratory Services: *Soil analysis of bulk density and fraction of carbon including the coordinates of each sampling point:*
- Farms Bordering Rukinga, 16 August 2010
- Analysis of Rukinga, 19 July 2010

/7/ Wildlife Works Carbon LLC: *Spreadsheet with the forest inventory and aboveground and below-ground carbon stocks calculation in the monitoring period 2 – M_2 (Rukinga Carbon_M=2_Complete.xlsm),* May 2012

/8/ Wildlife Works Carbon LLC: *Spreadsheets with leakage model 2 – M_2 (*Leakage_Model_Expanded_fixed_PhaseI.xls*),* May 2012

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/19/ Wildlife Works Carbon LLC: *Approved VCS Methodology* VM0009 'Methodology for Avoided Mosaic Deforestation of Tropical Forests'', Version 1.0

/20/ VCSA: VCS *standards: VCS Version 3.3,* 4 October 2012

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/23/ VCSA: *AFOLU requirements: VCS Version 3.3,* 4 October 2012

/24/ VCSA: *VCS Monitoring Report Template 3.2,* 4 October 2012

/25/ ISO 14064-3:2006: *Greenhouse gases — Part 3: Specification with guidance for the validation and verification of greenhouse gas assertions*, First edition, 1 March 2006

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/40/ Leasehold titles and ownership structures to the ranch, various dates.

Persons interviewed during the initial verification, or persons who contributed with other information that are not included in the documents listed above.

/41/	Rob Dodson (General Manager)	Wildlife Works EPZ, Ltd.	8-11 May 2012
/42/	Jeremy Freund (VP, Carbon Development)	Wildlife Works Carbon LLC	8-11 May 2012
/43/	**Forest Inventory team:** Mwololo Muasa (Team leader 1) Joel Mwandiga (Team Leader 2) Mathias Kakoi Kitiro Tender Tall Cyprian Mwakasi Solomon Makau	Wildlife Works EPZ, Ltd.	8-11 May 2012
/44/	Defence Mdamu (Data entry responsible)	Wildlife Works EPZ, Ltd.	8-11 May 2012
/45/	Muange Githuru (Biodiversity and Social Monitoring Specialist)	Wildlife Works Carbon LLC	8 May 2012
/46/	Lenjo Laurian (Community Relations, Office Manager)	Wildlife Works Sanctuary, Ltd.	8-11 May 2012
/47/	Joseph Mwanganda (Greenhouse, Nurseries and Jojoba Project Manager)	Wildlife Works Sanctuary, Ltd.	8 May 2012
/48/	Jamie Hendriksen (Carbon Operations	Wildlife Works Sanctuary, Ltd.	8 May 2012

	Manager)		
/49/	**Shareholders**		10-11 May 2012
	Donald Mombu	Mgeno Ranch	
	Masai Kamando	Kasigau Ranch	
	Odilia Mwazaule	-	
	Leonard Ikuyu	Wangala Ranch	
	Christen Wasai	-	
	Alfonce Mwaghunda	-	
	Anderson Mombo	Kabangana Ranch	
	Bertlard Mwadime	-	
	Edwo Chege	Dawida Ranch	
	H Njai Mwangari	Taita Ranch	
	Elijah Mwakio	Dawida Ranch	
	Dominy Lenjo	Taita Ranch	
	Rensondio	-	
	Florence Mavua	Rukinga Ranch	
	S. Mwammga	Ndara Ranch	
	Alphonce Mwandoma	Kasigau Ranch	
	David Soma	Kushumbu Ranch	
	James Mgoda	-	
	Ronal Mwanyama	Sagala Ranch	
	Raymond Mwangola	Choke Ranch	
	Saul Mwangola	Kutima Ranch	
	Donald Konde	Marungu Hills Cons. Ass.	
	ET Mwanmuksa	Maungu Ranch	
	Jones M Mlolwa	-	
	Dawbin Marami	-	
	Reuben Mwaluma	-	
	Dalmas Moka	Rukinga Ranch	
	Geofrey Mugi	-	
	Clement Mwawuda	-	
	Venant Ludidi	-	
	Charles Musang”ond	-	
/50/	Justin Musanjense (Mold Range Officer)	Mold range	11 May 2012
/51/	Wilson Korir (Tsavo Conservation Area)	Kenya Wildlife Service	10 May 2012
/52/	Mama Merci (Leader of Community Based Women’s Organization)	Community Based Women’s Organization	11 May 2012
/53/	Daniel (School Principal)	School	11 May 2012

/54/	Scola	Clothes Factory Administrator	8-11 May 2012
/55/	Perpetual	School Bursaries Management	8-11 May 2012
/56/	Daniel (Textile quality auditor)	Puma	8 May 2012

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APPENDIX A

COMPARISON OF DATA AND VARIABLES PROVIDED IN THE MONITORING REPORT AND THE VCS PD

Data/Parameters included in the registered VCS-PD

Data / Parameter (VCS PD /2/)		Measured / Calculated / estimated (PDD /2/)	Data Unit (PDD /2/)	Value applied in the VCS PD /2/	Value applied in the monitoring report /1/	Data/Parameter has changed and this would increase the estimate in removals/emission reductions
Parameters fixed *ex-ante*						
$\delta_{LE}, \hat{\delta}_{LE}$	Lag parameter of leakage model.	c	Time	0.4498	-0.564	☐ Yes ☒ No ☐ N/A **Rationale: c.f. CAR3**
$\hat{\eta}$	Estimated linear predictor of cumulative deforestation model	c	Real	-1.08804558 0.0003792 Linear: 0.031649	-1.0805 0.000379 Linear: 0.031649	☒ Yes ☐ No ☐ N/A
$\hat{\lambda}$	Estimated mean rate of soil carbon loss	e	Proportion	0.55	0.55	☒ Yes ☐ No ☐ N/A
ρ_{sp}	Wood density of species *sp*	e	kg m^{-3}	-	0.24	☐ Yes ☒ No ☐ N/A **Rationale: c.f. CAR7**
$\hat{\sigma}_{DF}$	The estimated standard deviation of the state observations used to fit the cumulative deforestation model	c	Standard Deviation	0.3126732	0.3127	☒ Yes ☐ No ☐ N/A
$a_{project}$	Total project area	m	ha	38 168.66	30 168.66	☒ Yes ☐ No ☐ N/A
a_{LE}	Total leakage area	m	ha	38 889	30 168.66	☐ Yes ☒ No ☐ N/A **Rationale: c.f. CAR10**
cf_{sp}	Carbon fraction of dry matter for species *sp*	e	tC/t d.m.	0.5	0.5	☒ Yes ☐ No ☐ N/A
$d_{j,k}$	Depth of soil sample in plot j in stratum k	m	meters	1	1	☒ Yes ☐ No ☐ N/A

Data / Parameter (VCS PD /2/)		Measured / Calculated / estimated (PDD /2/)	Data Unit (PDD /2/)	Value applied in the VCS PD /2/	Value applied in the monitoring report /1/	Data/Parameter has changed and this would increase the estimate in removals/emission reductions
$f_{sp}(\bullet)$	Allometric equation for species *sp*.	e	Function	-	-	☒ Yes ☐ No ☐ N/A
$\hat{\ell}_{\max}$	The maximum proportion of soil carbon lost over time	c	Proportion	0.456	0.4557	☒ Yes ☐ No ☐ N/A
$\hat{m}_{LE}$	The estimated sample size in the leakage area	c	Count	38	38	☒ Yes ☐ No ☐ N/A
n_{SCL}	The actual sample size used to estimate the asymptotic soil carbon loss	c	Count	25	25	☒ Yes ☐ No ☐ N/A
p_{forest}	The proportion of the project area that is forested.	m	Proportion	0.92	1	☐ Yes ☒ No ☐ N/A **Rationale: c.f. CAR10**
p_{BGLT}	Proportion of below-ground large tree biomass removed as a result of land conversion to agriculture	e	Proportion	1	1	☒ Yes ☐ No ☐ N/A
r_{sp}	Ratio of below-ground biomass to above-ground biomass (root to shoot ratio) for species sp.	e	Unitless	0.4	0.4	☒ Yes ☐ No ☐ N/A
r_{WP}	Proportion of above-ground large tree biomass converted to long-lived wood products	e	Proportion	0	0	☒ Yes ☐ No ☐ N/A
x	Vector of observed covariates to deforestation	c	Real/Vector	0	0	☒ Yes ☐ No ☐ N/A
U_{DF}	Estimated uncertainty in the cumulative deforestation model	c	Percent	5.94	5.9	☒ Yes ☐ No ☐ N/A

Data / Parameter (VCS PD /2/)		Measured / Calculated / estimated (PDD /2/)	Data Unit (PDD /2/)	Value applied in the VCS PD /2/	Value applied in the monitoring report /1/	Data/Parameter has changed and this would increase the estimate in removals/emission reductions
U_{SCL}	Estimated uncertainty in the soil carbon loss model	c	Percent	13.91	13.9	☒ Yes ☐ No ☐ N/A
-	Moisture of trees and shrubs (*parameter not included in the methodology*)	e	%	0.5	Trees: 0.5 Shrubs: 0.45	☒ Yes ☒ No ☐ N/A **Rationale: c.f. CL3**
Parameters determined *ex-post*						
$\rho_{soil,j,k}$	Bulk density of fine portion of soil sample in plot *j* in stratum *k*	m	kg/m^3	-	-	☐ Yes ☐ No ☒ N/A
$a_{j,k}$	Area of plot j in stratum k	m	hectares	-	-	☐ Yes ☐ No ☒ N/A
a_k	Area of stratum k	m	hectares	-	-	☐ Yes ☐ No ☒ N/A
$cf_{soil,j,k}$	Carbon fraction of soil sample j in plot in stratum k	m	kg carbon per kg soil	-	-	☐ Yes ☐ No ☒ N/A
$dbh_{i,j,k}$	Diameter at breast height of the tree ith in plot j in stratum k	m	Centimetres	-	-	☐ Yes ☐ No ☒ N/A
$h_{i,j,k}$	Height of the ith tree in plot j in stratum k.	m	m	-	-	☐ Yes ☐ No ☒ N/A
v	Shrub size class per species	m	Count	-	-	☐ Yes ☐ No ☒ N/A
$m_{dry,j,k}$	Dry mass of non-tree sample harvested from clip plots in plot j, stratum k.	m	Kilograms (kg)			☐ Yes ☐ No ☒ N/A

Data / Parameter (VCS PD /2/)		Measured / Calculated / estimated (PDD /2/)	Data Unit (PDD /2/)	Value applied in the VCS PD /2/	Value applied in the monitoring report /1/	Data/Parameter has changed and this would increase the estimate in removals/emission reductions
$r_{BASE,i,j,k}$	Base radius of the tree i^{th} in plot j in stratum k.	m	Meters	-	-	☐ Yes ☐ No ☒ N/A
$r_{TOP,i,j,k}$	Top radius of the ith tree in plot j in stratum k	m	Proportion	-	-	☐ Yes ☐ No ☒ N/A
$y_{INTACT,j,k}$	Carbon stock in standing dead trees in decay class I, plot j, stratum k	c	Tonnes CO_2e per hectare	-	-	☐ Yes ☐ No ☒ N/A
$y_{DECAYED,j,k}$	Carbon stock in standing dead trees in decay class II, plot j, stratum k	c	Tonnes CO_2e per hectare	-	-	☐ Yes ☐ No ☒ N/A
$C_{AGLT}^{[m]}$	Estimated carbon stock in above-ground large trees at monitoring period [m]	c	Tonnes CO_2e			☐ Yes ☐ No ☒ N/A
$C_{AGNT}^{[m]}$	Estimated carbon stock in above-ground non tree biomass at monitoring period [m]	c	Tonnes CO_2e	-		☐ Yes ☐ No ☒ N/A
$C_{BGLT}^{[m]}$	Estimated carbon stock in below-ground large tree biomass at monitoring period [m]	c	Tonnes CO_2e	-		☐ Yes ☐ No ☒ N/A
$C_{BGNT}^{[m]}$	Estimated carbon stock in below-ground non tree biomass at monitoring period [m]	c	Tonnes CO_2e	-		☐ Yes ☐ No ☒ N/A
$C_{SDW}^{[m]}$	Estimated carbon stock in standing dead wood at monitoring period [m]	c	Tonnes CO_2e	-		☐ Yes ☐ No ☒ N/A
$C_{SOIL}^{[m]}$	Estimated carbon stock in soil carbon at monitoring period [m]	c	Tonnes CO_2e	-		☐ Yes ☐ No ☒ N/A

Data / Parameter (VCS PD /2/)		Measured / Calculated / estimated (PDD /2/)	Data Unit (PDD /2/)	Value applied in the VCS PD /2/	Value applied in the monitoring report /1/	Data/Parameter has changed and this would increase the estimate in removals/emission reductions
$o_i^{[m]}$	State observation for the sample point ith during monitoring period [m]	m	Proportion	-	-	☐ Yes ☐ No ☒ N/A
$\overline{o}^{[m]}$	Average of state observations taken in the leakage area for the during monitoring period	c	Proportion	-	-	☐ Yes ☐ No ☒ N/A
$\hat{r}_{LE}^{[m]}$	The estimated leakage factor as a proportion of baseline emissions	c	Proportion	-	-	☐ Yes ☐ No ☒ N/A
N_p	Total number of possible plots in project area	c	Count	-	-	☐ Yes ☐ No ☒ N/A
$N_{p,k}$	Total number of possible plots in stratum *k*	c	Count	-	-	☐ Yes ☐ No ☒ N/A

APPENDIX B

ASSESSMENT OF COMPLIANCE OF MONITORING WITH THE MONITORING PLAN

Measured parameters

Data / Parameter:		Measuring frequency/ Reporting frequency:	1) How this parameter is monitored? 2) How were the values in the monitoring report verified?	1) Does the data management (from monitoring equipment to removal calculation) ensure correct transfer of data and reporting of emission reductions 2) Are necessary QA/QC processes in place?
$\rho_{soil,j,k}$	Bulk density of fine portion of soil sample in plot *j* in stratum *k*	Updated at every monitoring period (at least every 5 years)	1) This parameter has not been updated in this monitoring period as the applicable methodology VM0009 Version 1.0 requires the measurement in the first monitoring period and then a re-measurement every five years, "*a process which may be accomplished on an intermittently rotating basis*" (c.f. section 13.1.Overview). This parameter is monitored in accordance to the applicable methodology /19/ and as per the provisions of the VCS PD /2/. The monitoring is done as follows: ✓ Stratification: Although the methodology recommends stratification as a tool to minimize standard error, the project proponent has not stratified the project area in order to determine the sample allocations. This was effectively confirmed by DNV through the VCS PD /2/, the soil samples data base /9/ and through interview with the project proponent /42/. ✓ Sampling: The sampling was conducted through a simple random selection of locations /9/ using a specific add-in of the GIS software which generates random	1) DNV verified the data management in order to confirm whether there was a correct transfer of data and reporting of net GHG emission reductions and removals: ✓ Data collection. The sample data is collected by personnel of the project proponent who will put the sample in a bag labeled with the number of the sample plot, the coordinates, sampling notes and the identification of it is top soil (0-30 cm) or sub soil (30 – 10 cm) /4/. ✓ Transfer: The samples as sent directly to the laboratory who received all the samples with their corresponding labels /35/, and any issue with the labels is reported /6/. ✓ Processing: The soil samples are processed in line with the internal procedures of the laboratory in charge of the soil analysis which are in compliance with the standard ISO 17025 /35/. Exact procedures for processing and avoiding any confusion or error are in place /35/. ✓ Calculation and reporting: The data is recorded in a spreadsheet and provided to

Data / Parameter:		Measuring frequency/ Reporting frequency:	1) How this parameter is monitored? 2) How were the values in the monitoring report verified?	1) Does the data management (from monitoring equipment to removal calculation) ensure correct transfer of data and reporting of emission reductions 2) Are necessary QA/QC processes in place?
			points geo datasets (i.e. Hawth's tools installed in ESRI ArcGIS) /42/. The number of samples was estimated to be 25 distributed randomly in the whole project area. These are then uploaded in a GPS receiver, which is used by the field team to find the exact point for collecting the soil sample /42/. ✓ Data collection. The sample collection is done in accordance to the *ad-hoc* SOP "Soil Sampling" /4/ which rules the collection of soil samples. According to this SOP, a pit of $1m^2$ is marked on the soil in order to dig a pit of 1m depth /4/. The soil from the pit will be piled together in two separate piles: the soil of the 30 cm; and the 30 – 100 cm /4/. The larger lumps are smashed with the back of the hoe after which all the soil is mixed thoroughly /4/. A sample of both piles is taken; it is introduced in a bag, and after tagging is sent to the laboratory. ✓ Transfer: The samples as sent directly to the laboratory. ✓ Processing: The soil samples have been processed by Crop Nutrition Laboratory Services /6/ that have a laboratory for soil	the carbon project responsible who will use the raw data provided and will enter it in the soil carbon model /42/. Therefore, DNV confirms that the data management ensures a correct transfer of data and reporting of GHG benefits. 2) As part of the monitoring period which is covered by this verification, this parameter was not monitored; therefore, DNV not verified whether QA/QC were in place at the time of the measurements. However, DNV found that the following QA/QC procedures were in place: ✓ QC: The carbon project responsible is identified, who is in charge of carrying-out consistency checks of all data and confirming that the field team has followed the SOPs /42/. ✓ QA: The processing of the samples and the soil analysis is done by a third party laboratory /6/; therefore, this would be considered as a QA measure as the third party has its own measures of control and its management is independent to that of the project proponent.

Data / Parameter:		Measuring frequency/ Reporting frequency:	1) How this parameter is monitored? 2) How were the values in the monitoring report verified?	1) Does the data management (from monitoring equipment to removal calculation) ensure correct transfer of data and reporting of emission reductions 2) Are necessary QA/QC processes in place?
			analysis which is in compliance with the standard ISO 17025 /35/. 2) As part of the monitoring period which is covered by this verification, this parameter was not monitored; therefore, DNV not verified whether the SOP were followed or the actual values, but the correct use of the values provided by Crop Nutrition Laboratory in the calculations. DNV checked the soil carbon data base /9/ and confirmed that the value estimated of soil organic carbon is derived from the results of the soil analysis provided by the third party Crop Nutrition Laboratory Services /6/.	
$a_{j,k}$	Area of plot j in stratum k	20% of plots every year	1) As part of this monitoring period, 20% of the data has been updated; this is in compliance with the applicable methodology VM0009 Version 1.0 requires the measurement in the first monitoring period and then a re-measurement every five years, "*a process which may be accomplished on an intermittently rotating basis*" (c.f. section 13.1.Overview).This parameter is monitored in accordance to the applicable methodology /19/ and as per the provisions of the VCS PD /2/. The monitoring is done as follows:	1) DNV verified the data management in order to confirm whether there was a correct transfer of data and reporting of net GHG emission reductions and removals: ✓ Data collection. The data is collected by two persons through the use of a metering tape while a third person would introduce the data in a specific field data sheet /43/. This spreadsheet incudes a unique ID which corresponds to the sample plot being measured and it includes the date the measurement was done and the person

Data / Parameter:		Measuring frequency/ Reporting frequency:	1) How this parameter is monitored? 2) How were the values in the monitoring report verified?	1) Does the data management (from monitoring equipment to removal calculation) ensure correct transfer of data and reporting of emission reductions 2) Are necessary QA/QC processes in place?
			✓ Stratification: Stratification of the project area has been done. ✓ Sampling: The sampling applied for the determination of the biomass stocks is a stratified random sampling method /2/, where the sampling plots are allocated proportionally to each stratum. The location of the sample plots is determined through a random selection of locations /9/ using a specific add-in of the GIS software which generates random points geo datasets (i.e. Hawth's tools installed in ESRI ArcGIS) /42/. The total number of plots which were defined in the first monitoring period were 115, while in this monitoring period 21 were randomly selected and were re-measured (i.e. 20% are annually re-measured) /7/. These are then uploaded in a GPS receiver, which is used by the field team to find the exact point for collecting the biomass data /42/. Once the center of the plot is identified, this is marked with non-perceptible marking in order to allow the recognition of the inventory plot location for future measurements as DNV confirmed during the site visit.	responsible of the data collection. ✓ Transfer: The field data sheets are handled directly to the person in charge of entering the inventory data, who will enter all the data including the plot area /44/. ✓ Processing: The soft copies of the inventory data would be handled to the carbon project responsible that would integrate and process all the data /42/. ✓ Calculation and reporting: The processed data would then be introduced in the calculations /42/. Therefore, DNV confirms that the data management ensures a correct transfer of data and reporting of GHG benefits. 2) DNV confirmed that the following QA/QC procedures were in place: ✓ QC: As confirmed during the site visit, the forest inventory team is composed of 6 members: a tally, 2 persons measuring the canopy cover, 1 person measuring diameters and 2 persons with the metering tape and the compass. The tally would be the team leader, which may be considered as a senior and who will supervise the data

Data / Parameter:		Measuring frequency/ Reporting frequency:	1) How this parameter is monitored? 2) How were the values in the monitoring report verified?	1) Does the data management (from monitoring equipment to removal calculation) ensure correct transfer of data and reporting of emission reductions 2) Are necessary QA/QC processes in place?
			✓ Data collection. The data collection is done in accordance to the *ad-hoc* SOP "Biomass Plot Sampling" /4/ which rules the collection of biomass sample plots data. In line with the SOP, the size of the sample plot will vary in order to include a number sufficient of trees or shrubs /4/. For tree biomass plots the plot size used is 8 m radius for plots in steep slopes and 25 m radius for plots in the rest of the areas /7/, while the size plot for shrubs is 15 m /7/. Once the plot size is decided, a meter tape is used in order to define which trees are in the plot; this is repeated in every monitoring event /4/ in order to confirm whether there have been any changes. This is done by two persons while there is a third person who writes introduces the data in an *ad-hoc* field data sheet /5/ in which it is written the plot identification number. ✓ Transfer: Once the data sheets are filled-out these are provided to the person in charge who would enter all the data in ad-hoc spreadsheet as DNV confirmed during the site visit /44/. ✓ Processing: All the data would then be	collection by the other members of the team. This was effectively confirmed during the site visit and through interviews /43//44/. ✓ QC: The main QC measure would be the re-measurement of 5% of the plots in order to determine of any major errors or misstatements exists. The project proponent has in place a specific SOP which rules this measure /14/. DNV checked the results of the QA/QC and confirmed that these procedures are in place and that the errors found were acceptable /15/. Furthermore, as confirmed through interviews, in case any error is found, the plot would be repeated /43/. ✓ QA: The person responsible of entering the date would do an overall check of the data: would check that all data required is entered; would check that the number of trees is consistent with the previous inventory; would check the name of the identified species /44/. In the case the responsible finds an error or misstatement, she would call the team leader in order to correct any issue /44/. ✓ QA: The carbon project responsible is

Data / Parameter:		Measuring frequency/ Reporting frequency:	1) How this parameter is monitored? 2) How were the values in the monitoring report verified?	1) Does the data management (from monitoring equipment to removal calculation) ensure correct transfer of data and reporting of emission reductions 2) Are necessary QA/QC processes in place?
			processed and included in the inventory calculation spreadsheet /7/. 2) DNV verified the location of 4 randomly selected inventory plots using a GPS receiver and the location was found to be correct. Furthermore, it was confirmed that the plot size was consistent with the inventory data sheets /5/ and with the forest inventory data /7/. So DNV was able to confirm the accuracy of the data collected, the data transferred and processed.	identified, who is in charge of carrying-out consistency checks of all data received and confirming that the field team has followed the SOPs /42/.
a_k	Area of stratum k	May be updated prior to each carbon inventory (at least every 5 years)	1) As part of this monitoring period, 20% of the data has been updated; this is in compliance with the applicable methodology VM0009 Version 1.0 requires the measurement in the first monitoring period and then a re-measurement every five years, "*a process which may be accomplished on an intermittently rotating basis*" (c.f. section 13.1.Overview).This parameter is monitored in accordance to the applicable methodology /19/ and as per the provisions of the VCS PD /2/. The monitoring is done as follows: ✓ Data collection and transfer. The project proponent used 4 Landsat 7 ETM 2010 images sourced from Glovis /42/ for both	1) DNV verified the data management in order to confirm whether there was a correct transfer of data and reporting of net GHG emission reductions and removals: ✓ Data collection and transfer. The data is provided directly by the United States Geographical Service through the Glovis map server /42/. ✓ Processing: The geographical datasets were processed by the carbon responsible /42/ who transfer the results directly to the GHG calculations. ✓ Calculation and reporting: The processed data would then be introduced in the calculations /42/.

Data / Parameter:		Measuring frequency/ Reporting frequency:	1) How this parameter is monitored? 2) How were the values in the monitoring report verified?	1) Does the data management (from monitoring equipment to removal calculation) ensure correct transfer of data and reporting of emission reductions 2) Are necessary QA/QC processes in place?
			phases of the project. ✓ Processing: The satellite images were ortorectified by the project proponent /42/ and a supervised classification was conducted in order to define homogenous strata. The supervised classification was done with the support of the information of the carbon inventory plots and with georeferenced pictures taken for training purposes /42/. Once the strata were identified, sampling plots were allocated to each stratum and these were introduced in the forest inventory model. 2) DNV verified the accuracy of the stratification by: ✓ Landsat 7 ETM+ datasets of 2012 were downloaded from the Glovis server /29/ and were used in order to conduct a remote verification of the project area. 50 random points were generated in GIS software and were re-visited in order to evaluate the accuracy of the classification. DNV confirmed the accuracy of the classification and correctness of the stratification. ✓ The geographical datasets provided by the project proponent /12/ were uploaded in a	Therefore, DNV confirms that the data management ensures a correct transfer of data and reporting of GHG benefits. 2) DNV confirmed that the following QA/QC procedures were in place: ✓ QC: The carbon responsible checked the accuracy of the stratification with sample plot information sourced from the inventory data /42/ and also with other geographical datasets. ✓ QA: The accuracy of the classification would be checked partially by the CEO of Wildlife Works Carbon LLC /42/.

Data / Parameter:		Measuring frequency/ Reporting frequency:	1) How this parameter is monitored? 2) How were the values in the monitoring report verified?	1) Does the data management (from monitoring equipment to removal calculation) ensure correct transfer of data and reporting of emission reductions 2) Are necessary QA/QC processes in place?
			pocket pc connected to a GPS receptor and the accuracy of the stratification was checked through direct supervision on-site. DNV found the stratification dataset to be accurate.	
$cf_{soil,j,k}$	Carbon fraction of soil sample j in plot in stratum k	Updated at every monitoring period (at least every 5 years)	1) This parameter has not been updated in this monitoring period as the applicable methodology VM0009 Version 1.0 requires the measurement in the first monitoring period and then a re-measurement every five years, "*a process which may be accomplished on an intermittently rotating basis*" (c.f. section 13.1.Overview). This parameter is monitored in accordance to the applicable methodology /19/ and as per the provisions of the VCS PD /2/. The monitoring is done as follows: ✓ Stratification: Although the methodology recommends stratification as a tool to minimize standard error, the project proponent has not stratified the project area in order to determine the sample allocations. This was effectively confirmed by DNV through the VCS PD /2/, the soil samples data base /9/ and through interview with the project proponent /42/.	1) DNV verified the data management in order to confirm whether there was a correct transfer of data and reporting of net GHG emission reductions and removals: ✓ Data collection. The sample data is collected by personnel of the project proponent who will put the sample in a bag labeled with the number of the sample plot, the coordinates, sampling notes and the identification of it is top soil (0-30 cm) or sub soil (30 – 10 cm) /4/. ✓ Transfer: The samples as sent directly to the laboratory who received all the samples with their corresponding labels /35/, and any issue with the labels is reported /6/. ✓ Processing: The soil samples are processed in line with the internal procedures of the laboratory in charge of the soil analysis which are in compliance with the standard ISO 17025 /35/. Exact procedures for

Data / Parameter:		Measuring frequency/ Reporting frequency:	1) How this parameter is monitored? 2) How were the values in the monitoring report verified?	1) Does the data management (from monitoring equipment to removal calculation) ensure correct transfer of data and reporting of emission reductions 2) Are necessary QA/QC processes in place?
			✓ Sampling: The sampling was conducted through a simple random selection of locations /9/ using a specific add-in of the GIS software which generates random points geo datasets (i.e. Hawth tool installed in ESRI ArcGIS) /42/. The number of samples was estimated to be 25 distributed randomly in the whole project area. ✓ Data collection. The sample collection is done in accordance to the *ad-hoc* SOP "Soil Sampling" /4/ which rules the collection of soil samples. According to this SOP, a pit of $1m^2$ is marked on the soil in order to dig a pit of 1m depth /4/. The soil from the pit will be piled together in two separate piles: the soil of the 30 cm; and the 30 – 100 cm /4/. The larger lumps are smashed with the back of the hoe, after which all the soil is mixed thoroughly /4/. A sample of both piles is taken; it is introduced in a bag, and after tagging is sent to the laboratory. ✓ Transfer: The samples as sent directly to the laboratory. ✓ Processing: The soil samples have been processed by Crop Nutrition Laboratory Services /6/ that have a laboratory for soil	processing and avoiding any confusion or error are in place /35/. ✓ Calculation and reporting: The data is recorded in a spreadsheet and provided to the carbon project responsible who will use the raw data provided and will enter it in the soil carbon model /42/. Therefore, DNV confirms that the data management ensures a correct transfer of data and reporting of GHG benefits. 2) As part of the monitoring period which is covered by this verification, this parameter was not monitored; therefore, DNV not verified whether QA/QC were in place at the time of the measurements. However, DNV found that the following QA/QC procedures were in place: ✓ QC: The carbon project responsible is identified, who is in charge of carrying-out consistency checks of all data and confirming that the field team has followed the SOPs /42/. ✓ QA: The processing of the samples and the soil analysis is done by a third party laboratory /6/; therefore, this would be considered as a QA measure as the third

Data / Parameter:		Measuring frequency/ Reporting frequency:	1) How this parameter is monitored? 2) How were the values in the monitoring report verified?	1) Does the data management (from monitoring equipment to removal calculation) ensure correct transfer of data and reporting of emission reductions 2) Are necessary QA/QC processes in place?
			analysis which is in compliance with the standard ISO 17025 /35/. 2) As part of the monitoring period which is covered by this verification, this parameter was not monitored; therefore, DNV have not verified whether the SOP were followed or the actual values, but the correct use of the values provided by Crop Nutrition Laboratory in the calculations. DNV checked the soil carbon data base /9/ and confirmed that the value estimated of soil organic carbon is derived from the results of the soil analysis provided by the third party Crop Nutrition Laboratory Services /6/.	party has its own measures of control and its management is independent to that of the project proponent.
$dbh_{i,j,k}$	Diameter at breast height of the tree i^{th} in plot j in stratum k	20% of plots every year	1) As part of this monitoring period, 20% of the data has been updated; this is in compliance with the applicable methodology VM0009 Version 1.0 requires the measurement in the first monitoring period and then a re-measurement every five years, "*a process which may be accomplished on an intermittently rotating basis*" (c.f. section 13.1.Overview).This parameter is monitored in accordance to the applicable methodology /19/ and as per the provisions of the VCS PD /2/. The monitoring is done as follows:	1) DNV verified the data management in order to confirm whether there was a correct transfer of data and reporting of net GHG emission reductions and removals: ✓ Data collection. The data is collected by one person through the use of a diameter tape while a third person would introduce the data in a specific field data sheet /43/. This spreadsheet incudes a unique ID which corresponds to the sample plot being measured and it includes the date the measurement was done and the person

Data / Parameter:		Measuring frequency/ Reporting frequency:	1) How this parameter is monitored? 2) How were the values in the monitoring report verified?	1) Does the data management (from monitoring equipment to removal calculation) ensure correct transfer of data and reporting of emission reductions 2) Are necessary QA/QC processes in place?
			✓ Stratification: Stratification of the project area has been done. ✓ Sampling: The sampling applied for the determination of the biomass stocks is a stratified random sampling method /2/, where the sampling plots are allocated proportionally to each stratum. The location of the sample plots is determined through a random selection of locations /9/ using a specific add-in of the GIS software which generates random points geo datasets (i.e. Hawth's tools installed in ESRI ArcGIS) /42/. The total number of plots which were defined in the first monitoring period were 115, while in this monitoring period 21 were randomly selected and were re-measured (i.e. 20% are annually re-measured) /7/. These are then uploaded in a GPS receiver, which is used by the field team to find the exact point for collecting the biomass data /42/. Once the center of the plot is identified, this is marked with non-perceptible marking in order to allow the recognition of the inventory plot location for future measurements as DNV confirmed during the site visit.	responsible of the data collection. ✓ Transfer: The field data sheets are handled directly to the person in charge of entering the inventory data, who will enter all the data including the plot area /44/. ✓ Processing: The soft copies of the inventory data would be handled to the carbon project responsible that would integrate and process all the data /42/. ✓ Calculation and reporting: The processed data would then be introduced in the calculations /42/. Therefore, DNV confirms that the data management ensures a correct transfer of data and reporting of GHG benefits. 2) DNV confirmed that the following QA/QC procedures were in place: ✓ QC: As confirmed during the site visit, the forest inventory team is composed of 6 members: a tally, 2 persons measuring the canopy cover, 1 person measuring diameters and 2 persons with the metering tape and the compass. The tally would be the team leader, which may be considered as a senior and who will supervise the data

Data / Parameter:		Measuring frequency/ Reporting frequency:	1) How this parameter is monitored? 2) How were the values in the monitoring report verified?	1) Does the data management (from monitoring equipment to removal calculation) ensure correct transfer of data and reporting of emission reductions 2) Are necessary QA/QC processes in place?
			✓ Data collection. The data collection is done in accordance to the *ad-hoc* SOP "Biomass Plot Sampling" /4/ which rules the collection of biomass sample plots data. The measurement of the diameter would be conducted with a steel diameter tape, measuring the diameter at the heights established in the SOPs /4/, which are consistent with the diameters at which the allometric equations were built /11/. As DNV was able to confirm during the site visit, the operator indicates to the tally whether the tree is a dead tree or a lying tree, and what would be its class. ✓ Transfer: Once the data sheets are filled-out these are provided to the person in charge who would enter all the data in *ad-hoc* spreadsheet as DNV confirmed during the site visit /44/. ✓ Processing: All the data would then be processed and included in the inventory calculation spreadsheet /7/. 2) DNV verified the location of 4 randomly selected inventory plots using a GPS receiver and the location was found to be correct.	collection by the other members of the team. This was effectively confirmed during the site visit and through interviews /43//44/. ✓ QC: The main QC measure would be the re-measurement of 5% of the plots in order to determine of any major errors or misstatements exists. The project proponent has in place a specific SOP which rules this measure /14/. DNV checked the results of the QA/QC and confirmed that these procedures are in place and that the errors found were acceptable /15/. Furthermore, as confirmed through interviews, in case any error is found, the plot would be repeated /43/. ✓ QA: The person responsible of entering the date would do an overall check of the data: would check that all data required is entered; would check that the number of trees is consistent with the previous inventory; would check the name of the identified species /44/. In the case the responsible finds an error or misstatement, she would call the team leader in order to correct any issue /44/. ✓ QA: The carbon project responsible is

Data / Parameter:		Measuring frequency/ Reporting frequency:	1) How this parameter is monitored? 2) How were the values in the monitoring report verified?	1) Does the data management (from monitoring equipment to removal calculation) ensure correct transfer of data and reporting of emission reductions 2) Are necessary QA/QC processes in place?
			Furthermore, it was confirmed that the diameters were fairly consistent with the inventory data sheets /5/ and with the forest inventory data /7/. In order to confirm whether the differences seen would have an impact at plot level, DNV conducted a paired t-test comparing the total above-ground per plot for both measurements for the 4 plots and confirmed that the it could not be affirmed that the difference is equal zero at the 80% of confidence (i.e. p-value 0.28 > 0.05). So DNV was able to confirm the accuracy of the data collected, the data transferred and processed.	identified, who is in charge of carrying-out consistency checks of all data received and confirming that the field team has followed the SOPs /42/.
$h_{i,j,k}$	Height of the ith tree in plot j in stratum k.	20% of plots every year	1) As part of this monitoring period, 20% of the data has been updated; this is in compliance with the applicable methodology VM0009 Version 1.0 requires the measurement in the first monitoring period and then a re-measurement every five years, "*a process which may be accomplished on an intermittently rotating basis*" (c.f. section 13.1.Overview).This parameter is monitored in accordance to the applicable methodology /19/ and as per the provisions of the VCS PD /2/. The monitoring is done as follows: ✓ <u>Stratification</u>: Stratification of the project	1) DNV verified the data management in order to confirm whether there was a correct transfer of data and reporting of net GHG emission reductions and removals: ✓ <u>Data collection</u>. The data is collected by one person through the use of a diameter tape while a third person would introduce the data in a specific field data sheet /43/. This spreadsheet incudes a unique ID which corresponds to the sample plot being measured and it includes the date the measurement was done and the person responsible of the data collection.

Data / Parameter:		Measuring frequency/ Reporting frequency:	1) How this parameter is monitored? 2) How were the values in the monitoring report verified?	1) Does the data management (from monitoring equipment to removal calculation) ensure correct transfer of data and reporting of emission reductions 2) Are necessary QA/QC processes in place?
			area has been done. ✓ Sampling: The sampling applied for the determination of the biomass stocks is a stratified random sampling method /2/, where the sampling plots are allocated proportionally to each stratum. The location of the sample plots is determined through a random selection of locations /9/ using a specific add-in of the GIS software which generates random points geo datasets (i.e. Hawth's tools installed in ESRI ArcGIS) /42/. The total number of plots which were defined in the first monitoring period were 115, while in this monitoring period 21 were randomly selected and were re-measured (i.e. 20% are annually re-measured) /7/. These are then uploaded in a GPS receiver, which is used by the field team to find the exact point for collecting the biomass data /42/. Once the center of the plot is identified, this is marked with non-perceptible marking in order to allow the recognition of the inventory plot location for future measurements as DNV confirmed during the site visit. ✓ Data collection. The data collection is done	✓ Transfer: The field data sheets are handled directly to the person in charge of entering the inventory data, who will enter all the data including the plot area /44/. ✓ Processing: The soft copies of the inventory data would be handled to the carbon project responsible that would integrate and process all the data /42/. ✓ Calculation and reporting: The processed data would then be introduced in the calculations /42/. Therefore, DNV confirms that the data management ensures a correct transfer of data and reporting of GHG benefits. 2) DNV confirmed that the following QA/QC procedures were in place: ✓ QC: As confirmed during the site visit, the forest inventory team is composed of 6 members: a tally, 2 persons measuring the canopy cover, 1 person measuring diameters and 2 persons with the metering tape and the compass. The tally would be the team leader, which may be considered as a senior and who will supervise the data collection by the other members of the

Data / Parameter:		Measuring frequency/ Reporting frequency:	1) How this parameter is monitored? 2) How were the values in the monitoring report verified?	1) Does the data management (from monitoring equipment to removal calculation) ensure correct transfer of data and reporting of emission reductions 2) Are necessary QA/QC processes in place?
			in accordance to the *ad-hoc* SOP "Biomass Plot Sampling" /4/ which rules the collection of biomass sample plots data. The measurement of the diameter would be conducted with a steel diameter tape, measuring the diameter at the heights established in the SOPs /4/, which are consistent with the diameters at which the allometric equations were built /11/. As DNV was able to confirm during the site visit, the operator indicates to the tally whether the tree is a dead tree or a lying tree, and what would be its class. ✓ Transfer: Once the data sheets are filled-out these are provided to the person in charge who would enter all the data in *ad-hoc* spreadsheet as DNV confirmed during the site visit /44/. ✓ Processing: All the data would then be processed and included in the inventory calculation spreadsheet /7/. 2) DNV verified the location of 4 randomly selected inventory plots using a GPS receiver and the location was found to be correct. Furthermore, it was confirmed that the diameters	team. This was effectively confirmed during the site visit and through interviews /43//44/. ✓ QC: The main QC measure would be the re-measurement of 5% of the plots in order to determine of any major errors or misstatements exists. The project proponent has in place a specific SOP which rules this measure /14/. DNV checked the results of the QA/QC and confirmed that these procedures are in place and that the errors found were acceptable /15/. Furthermore, as confirmed through interviews, in case any error is found, the plot would be repeated /43/. ✓ QA: The person responsible of entering the date would do an overall check of the data: would check that all data required is entered; would check that the number of trees is consistent with the previous inventory; would check the name of the identified species /44/. In the case the responsible finds an error or misstatement, she would call the team leader in order to correct any issue /44/. ✓ QA: The carbon project responsible is identified, who is in charge of carrying-out

Data / Parameter:		Measuring frequency/ Reporting frequency:	1) How this parameter is monitored? 2) How were the values in the monitoring report verified?	1) Does the data management (from monitoring equipment to removal calculation) ensure correct transfer of data and reporting of emission reductions 2) Are necessary QA/QC processes in place?
			were fairly consistent with the inventory data sheets /5/ and with the forest inventory data /7/. In order to confirm whether the differences seen would have an impact at plot level, DNV conducted a paired t-test comparing the total above-ground per plot for both measurements for the 4 plots and confirmed that the it could not be affirmed that the difference is equal zero at the 80% of confidence (i.e. p-value 0.28 > 0.05). So DNV was able to confirm the accuracy of the data collected, the data transferred and processed.	consistency checks of all data received and confirming that the field team has followed the SOPs /42/.
v	Shrub size class per species	20% of plots every year	1) As part of this monitoring period, 20% of the data has been updated; this is in compliance with the applicable methodology VM0009 Version 1.0 requires the measurement in the first monitoring period and then a re-measurement every five years, "*a process which may be accomplished on an intermittently rotating basis*" (c.f. section 13.1.Overview). However, this parameter is not required by the applicable methodology /19/ and it represents a part of the methodology deviation as the non-tree above ground biomass is not estimated through allometric equations but by multiplying the number of shrubs per species and per size class	1) DNV verified the data management in order to confirm whether there was a correct transfer of data and reporting of net GHG emission reductions and removals: ✓ Data collection. The data is collected by one person through direct recognition while a third person would introduce the data in a specific field data sheet /43/. This spreadsheet incudes a unique ID which corresponds to the sample plot being measured and it includes the date the measurement was done and the person responsible of the data collection. ✓ Transfer: The field data sheets are handled

Data / Parameter:		Measuring frequency/ Reporting frequency:	1) How this parameter is monitored? 2) How were the values in the monitoring report verified?	1) Does the data management (from monitoring equipment to removal calculation) ensure correct transfer of data and reporting of emission reductions 2) Are necessary QA/QC processes in place?
			by the standard weight per species and per size class. The monitoring is done as follows: ✓ Stratification: Stratification of the project area has been done. ✓ Sampling: The sampling applied for the determination of the non-tree carbon stocks is a stratified random sampling method /2/, where the sampling plots are allocated proportionally to each stratum. The location of the sample plots is determined through a random selection of locations /9/ using a specific add-in of the GIS software which generates random points geo datasets (i.e. Hawth's tools installed in ESRI ArcGIS) /42/. The total number of plots which were defined in the first monitoring period were 115, while in this monitoring period 21 were randomly selected and were re-measured (i.e. 20% are annually re-measured) /7/. These are then uploaded in a GPS receiver, which is used by the field team to find the exact point for collecting the biomass data /42/. Once the center of the plot is identified, this is marked with non-perceptible marking in order to allow the recognition of the inventory plot location for future	directly to the person in charge of entering the inventory data, who will enter all the data including the plot area /44/. ✓ Processing: The soft copies of the inventory data would be handled to the carbon project responsible that would integrate and process all the data /42/. ✓ Calculation and reporting: The processed data would then be introduced in the calculations /42/. Therefore, DNV confirms that the data management ensures a correct transfer of data and reporting of GHG benefits. 2) DNV confirmed that the following QA/QC procedures were in place: ✓ QC: As confirmed during the site visit, the forest inventory team is composed of 6 members: a tally, 2 persons measuring the canopy cover, 1 person measuring diameters and 2 persons with the metering tape and the compass. The tally would be the team leader, which may be considered as a senior and who will supervise the data collection by the other members of the team. This was effectively confirmed during

Data / Parameter:		Measuring frequency/ Reporting frequency:	1) How this parameter is monitored? 2) How were the values in the monitoring report verified?	1) Does the data management (from monitoring equipment to removal calculation) ensure correct transfer of data and reporting of emission reductions 2) Are necessary QA/QC processes in place?
			measurements as DNV confirmed during the site visit. ✓ Data collection. The data collection is done in accordance to the *ad-hoc* SOP "Biomass Plot Sampling" /4/ which rules the collection of biomass sample plots data. In line with the SOP, once a shrub is identified, the operator would determine the species and the size class in order to determine indirectly what would be the dry weight through the use of ad-hoc tables which were built from destructive sampling. ✓ Transfer: Once the data sheets are filled-out these are provided to the person in charge who would enter all the data in ad-hoc spreadsheet as DNV confirmed during the site visit /44/. ✓ Processing: All the data would then be processed and included in the inventory calculation spreadsheet /7/. 2) DNV verified the location of 4 randomly selected inventory plots using a GPS receiver and the location was found to be correct. Furthermore, it was confirmed that the plot size was consistent with the inventory data sheets /5/	the site visit and through interviews /43//44/. ✓ QC: The main QC measure would be the re-measurement of 5% of the plots in order to determine of any major errors or misstatements exists. The project proponent has in place a specific SOP which rules this measure /14/. DNV checked the results of the QA/QC and confirmed that these procedures are in place and that the errors found were acceptable /15/. Furthermore, as confirmed through interviews, in case any error is found, the plot would be repeated /43/. ✓ QA: The person responsible of entering the date would do an overall check of the data: would check that all data required is entered; would check that the number of trees is consistent with the previous inventory; would check the name of the identified species /44/. In the case the responsible finds an error or misstatement, she would call the team leader in order to correct any issue /44/. ✓ QA: The carbon project responsible is identified, who is in charge of carrying-out consistency checks of all data received and

Data / Parameter:		Measuring frequency/ Reporting frequency:	1) How this parameter is monitored? 2) How were the values in the monitoring report verified?	1) Does the data management (from monitoring equipment to removal calculation) ensure correct transfer of data and reporting of emission reductions 2) Are necessary QA/QC processes in place?
			and with the forest inventory data /7/. So DNV was able to confirm the accuracy of the data collected, the data transferred and processed.	confirming that the field team has followed the SOPs /42/.
$m_{dry,j,k}$	Dry mass of non-tree sample harvested from clip plots in plot j, stratum k.	Updated at every monitoring period (at least every 5 years)	1) This parameter has not been updated in this monitoring period as the applicable methodology VM0009 Version 1.0 requires the measurement in the first monitoring period and then a re-measurement every five years, "*a process which may be accomplished on an intermittently rotating basis*" (c.f. section 13.1.Overview). This parameter is monitored in accordance to the applicable methodology /19/ and as per the provisions of the VCS PD /2/. The monitoring is done as follows: ✓ Stratification: Stratification of the project area has been done. ✓ Sampling:. In the case of the herbaceous biomass, the monitoring consists on nested sub-plots, 4 per plot in which a destructive sampling is done. ✓ Data collection. The data collection is done in accordance to the *ad-hoc* SOP "Biomass Plot Sampling" /4/ which rules the collection of biomass sample plots data. The measurement of the dry mass of herbaceous biomass is determined directly by cutting the	1) DNV verified the data management in order to confirm whether there was a correct transfer of data and reporting of net GHG emission reductions and removals: ✓ Data collection. The data is collected by one person through direct recognition while a third person would introduce the data in a specific field data sheet /43/. ✓ Transfer: The field data sheets are handled directly to the person in charge of entering the inventory data, who will enter all the data including the plot area /44/. ✓ Processing: The soft copies of the inventory data would be handled to the carbon project responsible that would integrate and process all the data /42/. ✓ Calculation and reporting: The processed data would then be introduced in the calculations /42/. Therefore, DNV confirms that the data management ensures a correct transfer of data and reporting of GHG benefits.

Data / Parameter:		Measuring frequency/ Reporting frequency:	1) How this parameter is monitored? 2) How were the values in the monitoring report verified?	1) Does the data management (from monitoring equipment to removal calculation) ensure correct transfer of data and reporting of emission reductions 2) Are necessary QA/QC processes in place?
			biomass in each sub-plot, aggregating it and leaving it to dry for a period of time in order to determine directly the dry weight /4/. ✓ Transfer: The same procedure as with the collection of other dasometric information. ✓ Processing: The same procedure as with the collection of other dasometric information. 2) As part of the monitoring period which is covered by this verification, this parameter was not monitored; therefore, DNV not verified whether the SOP were followed or the actual values.	2) As part of the monitoring period which is covered by this verification, this parameter was not monitored; therefore, DNV not verified whether QA/QC were in place at the time of the measurements.
$o_i^{[m]}$	State observation for the sample point i^{th} during monitoring period [m]	Updated at every monitoring period	1) This parameter is monitored in accordance to the applicable methodology /19/ and as per the provisions of the VCS PD /2/. The monitoring is done as follows: ✓ Stratification: No stratification of the leakage area is required as per the applicable methodology /19/. ✓ Sampling: The sampling applied for the determination of the leakage is a simple random sampling method /2/. The location of the sample plots is determined through a random selection of locations /9/ using a specific add-in of the GIS software which	1) DNV verified the data management in order to confirm whether there was a correct transfer of data and reporting of net GHG emission reductions and removals: ✓ Data collection. As confirmed during the site visit, the data is collected by a team of 7 persons: a person indicating the path of the transect, a team of two persons at 10 m distance and another team of two persons at a 10 m distance, and two persons which are auxiliary team members /43/. After concluding the transect, the different teams would decide on the observed degradation

Data / Parameter:		Measuring frequency/ Reporting frequency:	1) How this parameter is monitored? 2) How were the values in the monitoring report verified?	1) Does the data management (from monitoring equipment to removal calculation) ensure correct transfer of data and reporting of emission reductions 2) Are necessary QA/QC processes in place?
			generates random points geo datasets (i.e. Hawth's tools installed in ESRI ArcGIS) /42/. The total number of plots which were defined for the monitoring period is 38 /8/. These are then uploaded in a GPS receiver, which is used by the field team to find the beginning point of the transect /42/, which is the North-East corner of a 145 m x 145 m squared plot. ✓ Data collection. The data collection is done in accordance to the *ad-hoc* SOP "Leakage Plot Sampling" /4/ which rules the collection of degradation observations. In line with the SOP, the inventory team would walk along the diagonal due Southwest 205 m to the Southwest corner of the 2 ha square plot, afterwards it would turn due north and walk 145 m to the next vertex turn due East and walk 145m back to the North-East corner starting point /4/. As part of the transect, the team would make a degradation assessment of the plot area by evaluating whether there is any human induced degradation (i.e. visible stumps, or anthropogenically cleared areas) /4/. At the end of the transect, the team would agree on the level of	and would fill-out the field data sheet This spreadsheet incudes a unique ID which corresponds to the sample plot being measured and it includes the date the measurement was done and the person responsible of the data collection. ✓ Transfer: The field data sheets are handled directly to the person in charge of entering the inventory data, who will enter all the data including the plot area /44/. ✓ Processing: The soft copies of the inventory data would be handled to the carbon project responsible that would integrate and process all the data /42/. ✓ Calculation and reporting: The processed data would then be introduced in the calculations /42/. Therefore, DNV confirms that the data management ensures a correct transfer of data and reporting of GHG benefits. 2) DNV confirmed that the following QA/QC procedures were in place: ✓ QC: As confirmed during the site visit, the data is collected by a team of 7 persons: a person indicating the path of the transect, a

Data / Parameter:		Measuring frequency/ Reporting frequency:	1) How this parameter is monitored? 2) How were the values in the monitoring report verified?	1) Does the data management (from monitoring equipment to removal calculation) ensure correct transfer of data and reporting of emission reductions 2) Are necessary QA/QC processes in place?
			degradation using a scale from 1 to 6 /4/. The data would be entered in an ad-hoc field datasheet /5/. ✓ Transfer: Once the data sheets are filled-out these are provided to the person in charge who would enter all the data in ad-hoc spreadsheet as DNV confirmed during the site visit /44/. ✓ Processing: All the data would then be processed and included in the leakage calculation spreadsheet /8/. 2) DNV verified the location of 1 randomly selected inventory plots using a GPS receiver and the location was found to be correct. Furthermore, it was confirmed that the team followed strictly the SOP in place /4/, that the value estimated was consistent with the field datasheet /5/ and with the leakage calculation spreadsheet /8/. So DNV was able to confirm the accuracy of the data collected, the data transferred and processed.	team of two persons at 10 m distance and another team of two persons at a 10 m distance, and two persons which are auxiliary team members /43/. After the transect the two teams would inform on the observed degradation. In the case the observed degradation diverged substantially, the two auxiliary members would repeat the transect and would give their opinion which would serve to define the final degradation level. This was effectively confirmed during the site visit and through interviews /43//44/. ✓ QA: The leakage estimation responsible would check the data provided by the field team and would check whether this is reasonable /45/. Furthermore, the leakage estimation responsible would check whether the field team had followed the SOPs /45/. ✓ QC: The carbon project responsible is identified, who is in charge of carrying-out consistency checks of all data received and confirming that the field team has followed the SOPs /42/. Furthermore, the carbon project responsible would check whether there is any major divergence between the

Data / Parameter:		Measuring frequency/ Reporting frequency:	1) How this parameter is monitored? 2) How were the values in the monitoring report verified?	1) Does the data management (from monitoring equipment to removal calculation) ensure correct transfer of data and reporting of emission reductions 2) Are necessary QA/QC processes in place?
				previous estimation and the current estimation /42/.
$r_{BASE,i,j,k}$	Base radius of the tree ith in plot j in stratum k.	20% of plots every year	Same as $dbh_{i,j,k}$	Same as $dbh_{i,j,k}$
$r_{TOP,i,j,k}$	Top radius of the ith tree in plot j in stratum k	20% of plots every year	This is equal to zero.	This is equal to zero.

APPENDIX C

VCS NON-PERMANENCE RISK ASSESSMENT

Table 2 VCS Risk assessment checklist

Checklist Question	Value report /3/	Assessment by DNV	Draft Conc.	Final Concl.
1 Internal Risks				
3.1 Project Management				
a) Species planted (where applicable) associated with more than 25% of the stocks on which GHG credits have previously been issued are not native or proven to be adapted to the same or similar agro-ecological zone(s) in which the project is located (Score 2).	0	Not applicable.		0
b) Ongoing enforcement to prevent encroachment by outside actors is required to protect more than 50% of stocks on which GHG credits have previously been issued (Score 2).	2	Ongoing enforcement has to be in place in order to protect more than 50% of the stocks /2/. Hence a score of 2 would be reasonable.		2
c) Management team does not include individuals with significant experience in all skills necessary to successfully undertake all project activities (i.e., any area of required experience is not covered by at least one individual with at least 5 years experience in the area) (Score 2).	0	Management team has management experience as confirmed by the fact that Phase I of the project commenced more than 5 years ago /2/, being the necessary skills justified Hence a value of 0 would be reasonable.		0
d) Management team does not maintain a presence in the country or is located more than a day of travel from the project site, considering all parcels or polygons in the project area (Score 2).	0	Management team is present in the project area /2/ as confirmed by DNV during the site visit, being the necessary skills justified Hence a value of 0 would be reasonable.		0
e) **Mitigation:** Management team includes individuals with significant experience in AFOLU project design and implementation, carbon accounting and reporting	-2	The project activity has been registered and has already issued carbon credits /2/. Hence a value of -2 would be reasonable.		-2

Checklist Question	Value report /3/	Assessment by DNV	Draft Conc.	Final Concl.
(eg, individuals who have successfully managed projects through validation, verification and issuance of GHG credits) under the VCS Program or other approved GHG programs (Score -2).				
f) **Mitigation:** Adaptive management plan in place (Score -2).	-2	The project proponent has in place an adaptive management plan as confirmed during the site visit /41/. In fact this plan is registered under the CCBS scheme.		-2
Total Project Management (PM)	-2			-2
3.2 Financial viability				
a) Project cash flow breakeven point is greater than 10 years from the current risk assessment b) Project cash flow breakeven point is between 7 and up to 10 years from the current risk assessment c) Project cash flow breakeven point between 4 and up to 7 years from the current risk assessment d) Project cash flow breakeven point is less than 4 years from the current risk assessment	0 d)	Project reached breakeven at the end of the first full year based on up-front investment by Wildlife Works and market sales of Carbon credits; this was effectively confirmed by DNV through the company's financial statements and P&L which indicates that the project proponent has already reached the breakeven /17//18/. Hence, project cash flow breakeven point is less than 4 years from the current risk assessment.		0
e) Project has secured less than 15% of funding needed to cover the total cash out before the project reaches breakeven f) Project has secured 15% to less than 40% of funding needed to cover the total cash out required before the project reaches breakeven g) Project has secured 40% to less than 80% of funding needed to cover the total cash out required before the project reaches breakeven h) Project has secured 80% or more of funding needed	0 d)	Project reached breakeven at the end of the first full year based on up-front investment by Wildlife Works and market sales of Carbon credits; this was effectively confirmed by DNV through the company's financial statements and P&L which indicates that the project proponent has already reached the breakeven /17//18/. Hence, the project has secured 80% or more of funding needed to cover the total cash out before the project reaches breakeven.		0

Checklist Question	Value report /3/	Assessment by DNV	Draft Conc.	Final Concl.
to cover the total cash out before the project reaches breakeven				
i) **Mitigation:** Project has available as callable financial resources at least 50% of total cash out before project reaches breakeven	-2	Project reached breakeven at the end of the first full year based on up-front investment by Wildlife Works and market sales of Carbon credits; this was effectively confirmed by DNV through the company's financial statements and P&L which indicates that the project proponent has already reached the breakeven /17//18/ and it has cash equal to three years project cash out. Hence, the project has available as callable financial resources at least 50% of total cash out before project reaches breakeven		-2
Total Financial Viability (FV)	0 (-2)			0
3.3 Opportunity Cost				
a) 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 b) NPV from the most profitable alternative land use activity is expected to be between 50% and up to100% more than from project activities c) NPV from the most profitable alternative land use activity is expected to be between 20% and up to 50% more than from project activities d) NPV from the most profitable alternative land use activity is expected to be between 20% more than and up to 20% less than from project activities; or where	0 d)	Baseline activities are subsistence-driven /2/ and the project has achieved the CCBS registration and together with the current VCS verification it has been demonstrated net positive community impacts.		0

Checklist Question	Value report /3/	Assessment by DNV	Draft Conc.	Final Concl.
baseline activities are subsistence-driven, net positive community impacts are demonstrated e) NPV from project activities is expected to be between 20% and up to 50% more profitable than the most profitable alternative land use activity f) NPV from project activities is expected to be at least 50% more profitable than the most profitable alternative land use activity				
g) **Mitigation:** Project proponent is a non-profit organization	0	Not applicable since the project proponent is not an NGO.		0
h) **Mitigation:** Project is protected by legally binding commitment (see Section 2.2.4) to continue management practices that protect the credited carbon stocks over the length of the project crediting period	-2	All ranches are under Carbon Rights Agreements covering entire crediting period /2/.		-2
i) **Mitigation:** Project is protected by legally binding commitment (see Section 2.2.4) to continue management practices that protect the credited carbon stocks over at least 100 years	0	Not Applicable since the duration of the agreement is for 30 years /2/.		0
Total Opportunity Cost (OC)	0 (-2)			0
3.4 Project Longevity				
a) Without legal agreement or requirement to continue the management practice (Score is 24 - (project longevity/5) b) With legal agreement or requirement to continue the management practice (Score is 30 - (project longevity/2)	15 b)	Since the duration of the carbon rights agreement is for 30 years, the project longevity has been fixed to 30 years /2/. This carbon rights agreement constitutes a legal agreement to continue the management practice /2/. Hence, the score would be 30-30/2=15.		15

Checklist Question	Value report /3/	Assessment by DNV	Draft Conc.	Final Concl.
Total Project Longevity (PL)	15			15
3.5 Total Internal Risk				
Total Internal Risks (PM+FV+OC+PL)	13			13
4 External Risks				
4.1 Land Ownership and Resource Access/Use Rights				
a) Ownership and resource access/use rights are held by same entity(s) b) Ownership and resource access/use rights are held by different entity(s) (eg, land is government owned and the project proponent holds a lease or concession)	0 a)	The project proponent and the project developer is Wildlife Works Carbon LLC. DNV, through its review of pertinent documentation and onsite inspection, can confirm that Wildlife Works Carbon LLC holds all the pertinent ownership and user-rights for the project, as well as the rights to all and any reductions generated by the project during the Project Crediting Period. The legal status and property ownership was confirmed by DNV by reviewing two types of documents provided by Wildlife Works, the leasehold titles of the ranch /40/, and the Carbon Rights Agreement /39/. In addition, DNV can also confirm that the project is not included in any other emission trading program and is not subject to binding GHG emissions limits. Ownership and access/use rights are held by the Group Ranch Companies /2/. All ranches are under Carbon Rights Agreements covering entire crediting period /2/.		0
c) In more than 5% of the project area, there exist disputes over land tenure or ownership	0	There are no disputes identified as confirmed by DNV during the site visit.		0
d) There exist disputes over access/use rights (or	0	There is no overlap in access/use rights or disputes.		0

Checklist Question	Value report /3/	Assessment by DNV	Draft Conc.	Final Concl.
overlapping rights)				
e) WRC projects unable to demonstrate that potential upstream and sea impacts that could undermine issued credits in the next 10 years are irrelevant or expected to be insignificant, or that there is a plan in place for effectively mitigating such impacts.	0	Not applicable.		0
f) Mitigation: Project area is protected by legally binding commitment (e.g., a conservation easement or protected area) to continue management practices that protect carbon stocks over the length of the project crediting period	-2	The project proponent and the project developer is Wildlife Works Carbon LLC. DNV, through its review of pertinent documentation and onsite inspection, can confirm that Wildlife Works Carbon LLC holds all the pertinent ownership and the rights to all and any reductions generated by the project during the Project Crediting Period. The legal status and property ownership was confirmed by DNV by reviewing two types of documents provided by Wildlife Works, the leasehold titles of the ranch /40/, and the Carbon Rights Agreement /39/. In addition, DNV can also confirm that the project is not included in any other emission trading program and is not subject to binding GHG emissions limits. Ownership and access/use rights are held by the Group Ranch Companies /2/. All ranches are under Carbon Rights Agreements covering entire crediting period /2/.		-2
g) Mitigation: Where disputes over land tenure, ownership or access/use rights exist, documented evidence is provided that projects have implemented activities to resolve the disputes or clarify overlapping claims	0	No disputes have been identified as the ownership and the access rights are clear.		0
Total Land Tenure (LT)	0 (-2)			0

Checklist Question	Value report /3/	Assessment by DNV	Draft Conc.	Final Concl.
4.2 Community Engagement				
a) Less than 50 percent of households living within the project area who are reliant on the project area, have been consulted	0	No communities live within the project area /2/.		0
b) Less than 20 percent of households living within 20 km of the project boundary outside the project area, and who are reliant on the project area, have been consulted	0	No communities are reliant on the project area /2/. DNV further confirmed that the project is CCBS registered and verifications have been conducted which show that consultation with communities surrounding the project area has been conducted.		0
c) **Mitigation:** The project generates net positive impacts on the social and economic well-being of the local communities who derive livelihoods from the project area	-5	DNV confirmed that the project is CCBS registered and verifications have been conducted which show that consultation with communities surrounding the project area has been conducted. The project has sufficiently demonstrated that it generates net positive impacts on the social and economic well-being of the local communities who derive livelihoods from the project area		-5
Total Community Engagement (CE)	-5			-5
4.3 Political Risk				
a) Governance score of less than -0.79 (Score 6) b) Governance score of -0.79 to less than -0.32 (Score 4) c) Governance score of -0.32 to less than 0.19 (Score 2) d) Governance score of 0.19 to less than 0.82 (Score 1) e) Governance score of 0.82 or higher (Score 0)	b) 4	DNV checked the non-permanence risk report and confirmed that it has been updated with the latest available information. Using the latest available date from the period 2006-2010, the average index would be -0.70. Therefore a risk of 4 would have to be considered.		4
f) Mitigation: Country is implementing REDD+ Readiness or other activities, as set out in this Section	-2	DNV checked the sites of the Forest Carbon Partnership Facility /31/ and confirmed that Kenya has prepared a		-2

Checklist Question	Value report /3/	Assessment by DNV	Draft Conc.	Final Concl.
2.3.3.		Readiness preparation proposal to be approved by the World Bank. Furthermore, Kenya has an established DNA under the CDM and has various CDM Afforestation/Reforestation project activities registered /32/.		
Total Political Risk (PC)	2	The total political risk is 2.		2
4.4 Total External Risk				
Total External Risk (LT+CE+PC)	0			0
5 Natural Risks				
5.1 Fire (F)				
5.1.1 Significance and Likelihood (LS)	2	DNV confirmed that significance of any event would be Insignificant as fires (which are frequent) only affect the herbaceous and non-tree vegetation which represents the lesser part of the total carbon stocks. The frequency of these events is less than every 10 years (twice in 15 years), which is the maximum frequency. Hence the LS score is 2.		2
5.1.2 Mitigation (M)	-	No mitigation is identified.		-
5.1.3 Score (LSxM)	2			2
5.2 Pest and Disease Outbreaks (PD)				
5.2.1 Significance and Likelihood (LS)	0	Since this is a natural ecosystem there is no risk of pest and disease outbreaks as occurs in plantations or other activities.		0
5.2.2 Mitigation (M)	-			-
5.2.3 Score (LSxM)	0			0

Checklist Question	Value report /3/	Assessment by DNV	Draft Conc.	Final Concl.
5.3 Extreme Weather (W)				
5.3.1 Likelihood (LS)	0	Since this is a natural ecosystem there is no risk of pest and disease outbreaks as occurs in plantations or other activities.		0
5.3.2 Mitigation (M)	-			-
5.3.3 Score (LSxM)	0			0
5.4 Geological Risk (G)				
5.4.1 Likelihood (LS)	0	Since this is a natural ecosystem there is no risk of pest and disease outbreaks as occurs in plantations or other activities.		0
5.4.2 Mitigation (M)	-			-
5.4.3 Score (LSxM)	0			0
5.5 Other Natural Risk (ON)				
5.5.1 Likelihood (LS)	0	Since this is a natural ecosystem there is no risk of pest and disease outbreaks as occurs in plantations or other activities.		0
5.5.2 Mitigation (M)	-			-
5.5.3 Score (LSxM)	0			0
5.6 Total Natural Risks				
Total Natural Risks (F + PD + W + G + ON)	2			2
6 Total Risk				
Overall Risk Rating	15	The overall risk rating is 15		15

APPENDIX D

CORRECTIVE ACTION REQUESTS, CLARIFICATION REQUESTS AND FORWARD ACTION REQUESTS

Corrective action requests and clarification requests

CAR ID	Corrective action request	Response by project proponents	DNV's assessment of response by project proponents
CAR1	Requirement "*At a minimum, project lands must meet the definition of forest given in the definitions in section 3. The project area may consist of multiple contiguous or discontinuous forested parcels*" (c.f. Section 5.1. VM0009 Version 1.0) Evidence According to the registered VCS PD /2/ the project area contains a stratum named "grassland". During the site visit, DNV confirmed that areas corresponding to this stratum do not comply with the definition of forest and are dominated by herbaceous species (i.e. are grasslands). DNV checked the GHG accounting and confirmed that these areas have been included within the project boundary (i.e. GHG accounting). Failure The areas of grasslands have not been removed from the project area or the carbon stocks of all carbon pools within the stratum "grassland" have not been accounted as zero.	**Accepted** Wildlife Works feels that the approved baseline scenario described in this project is directly applicable to the stratum in question. This stratum was accepted for inclusion in the project at the time of validation and first verification, and we measured carbon values within this stratum that were included in the overall project accounting at this time. The strata will continue to be considered part of the forested land of the project currently and in the future, and will be treated identically to all other strata in the project as forested land. **Round 2 WWC Response** Wildlife Works indeed included mixed grassland /forestland strata, like the strata in question in the project area in the Cumulative Deforestation Model (CDM), as is evidenced by the classified grids associated with each year of imagery in the model. Specifically, there are areas in the model that started out as the described mixed strata, containing patches of natural grassland, that were recorded in the model as being converted to the "non-forest" state. This, in turn, is inherently included in the CDM model. Wildlife Works contends that the inclusion of this stratum neither affects the model in a conservative nor non-conservative manner. If these areas were originally classified as "non-forest", they	As part of the project verification, DNV identified that areas which would comply with the definition of Grassland and which can be considered as natural grasslands (i.e. not areas temporarily unstocked due to natural conditions or in-mature forest or areas that could be considered as forestland; which have vegetative and geomorphological conditions which differ from other strata; which are dominated by herbaceous species presenting very few trees) were included within the project boundary. In order to assess the consistency of the GHG accounting between the reference area and the project area, DNV checked the method used for building the baseline model. DNV was able to confirm through the registered VCS-PD /2/ that the CDM model was built considering also the conversion from grassland to forestland, which would confirm that the CDM model considers not only the conversion of forest to cropland but also the conversion of grassland to cropland, which would show consistency in the assumptions made to build the CDM and the lands included in the project area. In order to check the effect of this inclusion

CAR ID	Corrective action request	Response by project proponents	DNV's assessment of response by project proponents
		would have been removed from the model altogether, according to the CDM algorithm employed by the methodology. Therefore, it is not possible to know whether the model would have resulted in higher or lower deforestation rates. If in fact this area was removed from the model originally, the corresponding area would also be removed from the reference area, and therefore the deforestation model simply would be focused on a smaller reference area. The methodology does not place a maximum limit on area on the reference area; therefore, it is the prerogative of the developer to choose the area of the reference area, provided that it contains at least as much "forested area" as in the project area at some point during the historical reference period. In this case, some mixed forest/grassland area was included in the reference area, and considered "forest" in the CDM, because it is as susceptible to deforestation as the dryland fully-forested areas. That said, these areas are susceptible to deforestation, but that doesn't guarantee that they would have been deforested. It remains the task of the analyst to observe anthropogenic deforestation in this mixed area, and we contend that the inclusion of this mixed area neither helps, nor hinders the deforestation rate, and therefore the conservativeness of the baseline model.	and in order to confirm whether the inclusion of these grasslands would represent a possible material misstatement or material error as defined by paragraph 5.3.1 of the VCS standard version 3, DNV checked the carbon model /10/ and confirmed that this inclusion in any case would not be material as it would be below the 5% threshold. Hence, DNV confirms that this CAR can be closed as the inclusion of these grasslands in the project boundary would be consistent with the assumptions made to build the baseline model and this inclusion in any case will not lead to a material misstatement or mistake. **CAR1 is closed.**

CAR ID	Corrective action request	Response by project proponents	DNV's assessment of response by project proponents
		WWC Final Response Wildlife Works submits the following response, addressing each of the validators' concerns below: **1) VCS 2007.1 definition of forest** The auditor has stated that Wildlife Works must show that the project meets the VCS standard definition of forest. We certainly agree with the auditor's assertion that a REDD project must be "forested" under VCS rules. The question remains, however, how large a patch of natural vegetation that is not underneath the tree canopy may be inside the boundary of a natural forest and the area inside that boundary still qualify as forested. We contend that the standard does not directly address this issue. It does, however suggest that REDD projects must conform to the UNFAO or national standard on forest definition. Both UNFAO and Kenya's official definitions describe forest in terms of canopy cover (15% for Kenya), tree height at maturity (2m for Kenya), and minimum forest size (0.1 ha for Kenya). It must be noted that this minimum forest size is the minimum overall size of a patch of "forest" in order to qualify as a forest. This is clearly intended to stop developers or proponents from claiming two trees on their land as a forest. It has absolutely nothing to	

CAR ID	Corrective action request	Response by project proponents	DNV's assessment of response by project proponents
		do with the minimum size of non-treed patches within the overall forest boundary that are allowable, and we reject the notion that the Kenyan DNA intended to describe forest as an area that cannot contain non-forest patches within its boundary no larger than 0.1 ha. This would literally disqualify most of the Earth's forest as being defined as forest. The implications of the 15% Canopy cover minimum are as follows: In Kenya, in any given natural habitat that qualifies as forest under the UNFAO and Kenyan national guidelines, 85% of the land surface is allowed to be NOT under tree canopy. Nowhere in the VCS standard is it dictated what Land Cover type the other 85% must be. Wildlife Works naturally assumes that it should not be anthropogenically cleared areas (cropland, built-up, etc.), so clearly must be part of the natural forest ecosystem, within the overall perimeter of the forest, and must be subject to the same conversion pressure as the rest of the forest. This was absolutely our intent when we authored the double-validated and accepted VCS methodology, VM0009, specifically for this project. However, we accept that the original version of VM0009 did not clearly explain that forested areas should be "on average" allowable within the forest boundary. In light of the aforementioned lack of clarity in the VCS Standard, and in VM0009 v1.0, Wildlife Works subsequently made absolutely sure	

CAR ID	Corrective action request	Response by project proponents	DNV's assessment of response by project proponents
		to clarify in no uncertain terms that which we believe to be acceptable for inclusion in the revised version of our methodology, VM0009 v2.0. This version of the methodology, VM0009 v2, has been double-validated and is now simply waiting for VCS' final approval, to be issued any day now. The specific language included in VM0009, v2.0 to clarify this issue is included here (the following are direct excerpts from multiple sections within VM0009, v2.0): **3 Definitions** Forested: Is forested on average across the area to which it is applied. **4 Applicability Conditions** 2. Land in all project accounting areas has qualified as forest on average across the project accounting areas as defined by FAO 2010 or as defined by the residing designated national authority (DNA) for the project country for a minimum of 10 years prior to the project start date. **Section 5.1** **5.1 Delineating the Spatial Boundaries**	

CAR ID	Corrective action request	Response by project proponents	DNV's assessment of response by project proponents
		On average, all project accounting areas shall meet the definition of forest given in section 3 (this does not mean that every stratum must meet the definition of forest). The project area may consist of multiple contiguous or discontinuous parcels. **2) Kenya's definition of forest** As stated above, UNFAO and Kenya's definition of forest describe forest in terms of canopy cover (15% for Kenya) tree height at maturity (2m for Kenya), and minimum forest size (0.1 ha for Kenya). For the Rukinga project, we empirically measured overall canopy cover at 38%. This calculation includes the plots that fell in the disputed strata, meaning that only 62% of the surface is not under tree canopy. Trees in the Kasigau ecosystem reach approximately 6m at maturity, and the overall project area is well over the 0.1 ha minimum threshold for forest. All of these parameters fall well within the UNFAO and Kenyan National guidelines. **3) Conservativeness of the addition of the disputed stratum:** The validator had been going down a path of asking Wildlife Works to prove that inclusion of the disputed stratum is "conservative". Wildlife Works has always	

CAR ID	Corrective action request	Response by project proponents	DNV's assessment of response by project proponents
		contended that it is clearly impossible that the inclusion of any area that enlarges a project (even by a very small amount) can be conservative relative to leaving that area out of the project. Even if the carbon values for the additional inclusion were miniscule relative to the rest of the strata, as they are in this particular case, the inclusion of any area to a project necessarily is mathematically non-conservative. However, Wildlife Works did provide evidence of an analysis demonstrating that when we included the same native stratum in the reference (they were part of the baseline deforestation rate that was used), we showed that that stratum was deforested as was every other strata. We also showed that if that stratum is removed from the deforestation analysis, the ensuing deforestation rate decreased NERs by 0.5%. This demonstrates that the disputed stratum patches within the forest were in fact being converted at a slightly HIGHER rate than the other strata (remaining forest). This stands to reason, as this stratum is actually easier to convert to farmland than a thick forest is. We have therefore shown that this stratum passes the test that all strata should be subject to similar baseline conversion pressures. The validator claims to have achieved a result of a 3.8% decrease in NERs when he allegedly repeated	

CAR ID	Corrective action request	Response by project proponents	DNV's assessment of response by project proponents
		our calculations on the deforestation rate, but as he did not possess our "R" code (used for the logistic regression described in version 6 of VM0009, v1.0), or the sophisticated NER worksheet that we used in the analysis (which employs highly specific excel formulas), it is impossible for us to know how he achieved this result. For example, in order to obtain an accurate result for this analysis, we first had to reverse the VCUs issued since the historical start date of the project, and then rerun the analysis back to the project start date. If the validator failed to perform this step (we have no evidence that he understood this step to be important or necessary) he would have obtained a higher rate of change than we did. Without highlighting much more detail, we note the following: we are experts in our own methodology. We were asked to perform an analysis for the auditor, and in fact did so, presenting the results that were requested of us. The validator then proceeded to ask for the data that we used in this analysis, perform the analysis in parallel using unknown techniques and/or software, and simply came to the conclusion that as the two results differed, he was correct, and we were incorrect. We reject this form of analysis, and feel that we were not given a chance to a) show that our analysis is correct and b) how he performed his analysis, thereby arriving at a different result when compared to our official analysis.	

CAR ID	Corrective action request	Response by project proponents	DNV's assessment of response by project proponents
		We were able to produce an NER reduction of approximately 3.5% by removing the strata in question from the Project Area, however. This de minimus reduction takes place because of the very low carbon values of the stratum in question relative to the other project strata. Wildlife Works believes that proceeding with denial of this stratum is not consistent with the current VCS Standard, which now allows for Avoided Conversion of Ecosystems, and that it is not consistent with the new version of VM0009 v2.0 which does not require that all strata meet the forest definition, as long as the project meets that definition on average.	
CAR2	Requirement "*At a minimum, project lands must meet the definition of forest given in the definitions in section 3. The project area may consist of multiple contiguous or discontinuous forested parcels*" (c.f. Section 5.1. VM0009 Version 1.0) Evidence and failure a) DNV checked the stratification map /12/ and confirmed that the roads and other infrastructure were not removed from the project area or delineated as an independent stratum.	**Accepted and implemented** Wildlife Works has reviewed the project area stratification as well as the carbon model and it was found that these out areas were [erroneously] not removed from the project area. As suggested by the auditors, we have re-stratified the project area with the specified out areas - totaling 108.8 ha – now depicted as a separate strata with Carbon = 0. This new stratification has been double-checked and verified to aggregate to the prior total project area as listed in the PD (30,168.6 ha). **Round 2 WWC Response** The shapefile representing the new stratification	DNV checked the revised shapefile with the project stratification and confirmed that the roads were considered as a new stratum named Out Stratum /12/. DNV confirmed the accuracy of this mapping and also confirmed that this stratum has been included in the GHG benefits calculation as a stratum with carbon equal to zero /10/. **CAR2 is closed**.

CAR ID	Corrective action request	Response by project proponents	DNV's assessment of response by project proponents
	b) Furthermore, DNV checked the forest inventory calculations /7/ and the GHG emission reductions and removals calculations /10/ and found that roads and other infrastructure were not accounted as zero.	have been sent in an e-mail to the validator, entitled 'Rukinga_LULC_phaseI_raster_out_complete.shp'	
CAR3	Requirement "*Describe data and parameters available at validation using the following table (copy table for each data unit/parameter)".* (c.f. section 3.1.Data and Parameters Available at Validation of AFOLU requirements: VCS Version 3.3) Evidence and failure DNV checked the MR /1/ and found that as part of section 3.1, the project proponent has not included all the parameters that were fixed at validation included in Section 12 of the VM0009 Version 1.0 and applicable to the project activity.	**Accepted and Implemented** The first monitoring report (written for m=1 last year) was developed *prior to the existence* of a VCS monitoring report template. Therefore, the original MR did not contain a table listing all variables "fixed at validation". The monitoring report for the current monitoring period (m=2) was written in the same manner as the first monitoring report. In an effort to facilitate future verifications, Wildlife Works agrees to conform to the auditor's request to use the current VCS monitoring report template. The aforementioned table will be inserted into the current (m=2) and all subsequent monitoring reports. **WWC Final Responses** • Linear rate of deforestation = 0.03164. We have updated the MR to list this value (n_hat) as a parameter. • ρ_{sp} has been updated as requested. • cf_{dw} Carbon fraction of dry matter has been	DNV checked the MR and confirmed that the project proponent has included as part of section 3.1.Data and Parameters Available at Validation of AFOLU requirements: VCS Version 3.3 all the parameters that were defined at validation stage and which are to be used in future monitoring periods for the estimation of the GHG benefits. • $\delta_{LE}, \hat{\delta}_{LE}$: Regarding the lag parameter of the leakage model, the value provided in the VCS-PD has been corrected. According to the VCS-PD this value was 0.4498; however, this was an incorrect misstatement and it is in reality -0.564. The latter was used in the first verification and it has been applied in the second verification as confirmed by DNV.

CAR ID	Corrective action request	Response by project proponents	DNV's assessment of response by project proponents
		deleted from the MR. • The Moisture content for shrubs has been added to the parameters tables. For the source of this value please find the supplied documents 'Method to Estimate Dry-Kiln Schedules and Species Groupings.pdf' and 'Dry wet weight ratios.xlsx'. 0.45 was chosen as a conservative estimate for shrub wet to dry ratio based on the results of the above spreadsheet and Commiphora campestris, the softest species in the Kasigau ecosystem.	**CAR3 is closed.**
CAR4	Requirement "*Describe data and parameters monitored subsequent to validation using the following table (copy table for each data unit/parameter)".* (c.f. section 3.2.Data and Parameters Monitored of AFOLU requirements: VCS Version 3.3) Evidence and failure DNV checked the MR /1/ and found that as part of section 3.2, the project proponent has not included all the parameters that are monitored (i.e. measured parameters).	**Accepted and Implemented** For the same reason given in CAR3 (the MR was written *prior to the existence* of a VCS template), the original and current monitoring report did not include all "measured parameters" involved in verification. We agree to place a table containing all of these variables in the current and all future MRs in the interest of facilitating all future verifications. **Round 2 WWC Response** Wildlife Works was unsure based on the first round response from the validator, what was expected to be added to the monitoring report. Again, as with the previous CAR, we were under the impression that we could use the list of variables provided in the preliminary Verification report, provided to Wildlife Works by DNV. However, now that this has been clarified, WW has removed "calculated" parameters	DNV checked the latest version of the MR provided by the project proponent and confirmed that as part section 3.2.Data and Parameters Monitored of AFOLU requirements: VCS Version 3.3 it provides all the necessary parameters which are monitored, in particular those necessary for the estimation of the GHG benefits: -Measured parameters obtained through field measurement. -Parameters to be reported which will be necessary for the calculation of GHG benefits in ulterior monitoring periods. **CAR4 is closed.**

CAR ID	Corrective action request	Response by project proponents	DNV's assessment of response by project proponents
		from this section, and left remaining all "measured" parameters, according to the preliminary Verification report. The remaining table has been modified to include the rows provided in the VCS MR Template, including: • Data Unit • Description • Source of Data • Description of measurement methods and procedures to be applied • Frequency of monitoring/recording • Value monitored • Monitoring equipment • QA/QC procedures to be applied • Calculation method • Any comment For each and every variable measured. It is noted that we can provide tables containing multiple measured values in the «Value Monitored» row. **WWC Final Response** The MR has been altered according to the VCS MR template, with all parameters monitored at validation formatted correctly in the provided table. **WWC Response** a) These parameters were included in the MR because we were instructed to do so by the auditor in the tables included in the initial	

CAR ID	Corrective action request	Response by project proponents	DNV's assessment of response by project proponents
		monitoring report. We regret needing to initially include, and now exclude, variables from the MR. However, we will comply with any request that seems to be within reason from the auditor. All calculated parameters (except for those listed in the CAR) have been removed from the MR. **b)** Wildlife Works measured dry mass directly for non-tree biomass for Phase I. We collected wet bundles and allowed them to dry over a period of 2 weeks. Therefore, the last 2 parameters: -Wet mass of non-tree sample harvested from clip plots in plot j, stratum k -Wet mass of subsample of non-tree biomass collected to estimate dry:wet ratio Are not applicable and have been omitted from the MR. The parameter "Dry mass of subsample of non-tree biomass collected from clip plots" has been added to the MR.	
CAR5	Requirement "*The monitoring report shall include all the data and information as set out in the monitoring requirements of the project description and the applied methodology. It shall be prepared using the VCS Monitoring Report Template and shall include the*	**Accepted and Implemented** Wildlife Works concedes that the MR was not written using the current VCS template (for the same reasons listed above for CAR3 and CAR4 – again, the template did not exist when the first MR was written). However, we do not agree that we have not "explained transparently how [we have]	DNV checked the forest inventory calculations /7/ and confirmed that the project proponent included a new tab named "VM0009 Equations" by which it is traceable the use of the equations of the applicable methodology. Furthermore, DNV confirmed that the

CAR ID	Corrective action request	Response by project proponents	DNV's assessment of response by project proponents
	following: The calculation of net GHG emission reductions and removals". (c.f. paragraph 3.17.6 of *VCS Version 3.3*) Evidence and failure a) DNV checked the MR /1/ and found that as part of section 4, the project proponent has not included all the formulae required by the applicable methodology VM0009 Version 1.0 and has not explained transparently how it has applied the different methodological options to estimate the GHG emission reductions and removals. b) Furthermore, the project proponent has not provided a spreadsheet following the formulae of the applicable methodology.	applied the different methodological options to estimate the GHG emission reductions and removals." We believe that we have used transparency in producing carbon estimates, and every portion of the GHG accounting model was made available to the auditor both during the site visit and subsequently. Wildlife Works agrees to modify the manner in which it depicts GHG accounting to suit the auditor's preference, but as we were not given specific examples as to how GHG accounting should be depicted, we request further elaboration to help us provide results in a manner that satisfies the auditor's requests (and to prevent multiple iterations of this process). We have currently provided a summary spreadsheet for the carbon inventory, which follows the measurement of each individual tree's DBH to its Carbon value (equation[50]), through to the aggregate carbon values for each plot (equation [45]) and then an aggregation for each strata and eventually for the entire ranch (equation [44] or equation [62]). We have also provided another spreadsheet showing the various aggregated carbon pools and the application of the baseline model (cumulative deforestation model) to those pools (equations [21],[22],[23],[24],[25],[26] ultimately showing net emissions reductions for each year of the carbon project crediting period.	calculation methods applied by the project proponent would lead to similar results as the calculation using the formulae of the methodology, since the calculations spreadsheet aggregates various carbon pools in order to reduce the complexity of the calculations. Considering the number of parameters and formulae, DNV confirms that it would not be necessary to include in section 4 all the applicable formulae. **CAR5 is closed.**

CAR ID	Corrective action request	Response by project proponents	DNV's assessment of response by project proponents
		Wildlife Works agrees to add to the aforementioned spreadsheets additional information that we estimate to be results of the equations in the methodology that have seemingly not been disseminated and/or followed (e.g. The baseline emissions are not broken out by "Standing Dead Wood" per equation [27], and we will provide this additional line item for the auditors). Wildlife Works will also try to consolidate the results of all equations where it is possible to report on a single spreadsheet. We request further feedback from the auditors once they have seen these spreadsheet(s) produced in response to this CAR to ensure that we are meeting the requirements of the auditor. **WWC Final Response** • Calculation of Below-ground SDW Calculation of below ground biomass for SDW is neither allowed nor disallowed in the methodology VM0009 v1.0.However, it is stated in section 13.7 "Estimating Carbon in Standing Dead Wood" (pg. 78): `Standing dead trees shall be measured using the same procedures developed for measuring standing live trees.` Wildlife Works has therefore chosen to include	

CAR ID	Corrective action request	Response by project proponents	DNV's assessment of response by project proponents
		this carbon pool for the Kasigau Corridor Projects using the same logic as was used to include above-ground SDW. As this carbon pool is allowed, we see no reason why below-ground SDW should not be calculated using the root::shoot relationship used for all other trees. Should the validator provide evidence indicating that this pool "should not be included", we would be happy to remove it. • Wildlife Works contends that the latest soil carbon model is correct, called 'Rukinga Deep 1m Soil Analysis - RA V2.xlsx'. We were encouraged by the verification auditor during the site visit to include the entire project area in the soil model, as there was no material reason to exclude any of the area. We therefore have done so in the soil model, which reflects the entire project area: (411.53 tCO_2e * 30 168.66 ha = 12,415,304.67 tCO_2e). **WWC RESPONSE Oct. 18th:** • WWC accepts the validator's contention that the methodology will allow for the inclusion of below-ground biomass for intact standing dead trees (decay class 1) but not for standing trees showing decay (decay class 2). The carbon model, NERs and monitoring report have all been updated to reflect this change in the quantification. Please see the files: monitoring_report_kasigau_phase_i_m=2_v4.8.	

CAR ID	Corrective action request	Response by project proponents	DNV's assessment of response by project proponents
		docx and Rukinga Carbon_M=2_Complete V2.11.xlsm to see these changes. • WWC agrees that roads and other developed areas should not be included in the soil accounting area. It was an oversight that this stratum was included in the soil accounting area. The "out areas" strata that was created for use by the other carbon pools, and that contains all roads, biomass, water tanks and other developed areas within the project area has been subtracted from the soil accounting area. The soil carbon as calculated in the previous monitoring period (m=1) was maintained as previously calculated and verified. Please see the files: Rukinga Deep 1m Soil Analysis - RA V2.1.xlsx, monitoring_report_kasigau_phase_i_m=2_v4.8.docx and Rukinga Carbon_M=2_Complete V2.11.xlsm to see these changes.	
CAR6	Requirement According to the registered VCS PD /2/ the carbon pool "Lying dead wood" has been conservatively excluded and has not been included in the project boundary. Evidence and failure DNV checked the forest inventory calculations /7/ and found that the project proponent has considered "Lying dead wood" in the GHG accounting.	**Accepted and Implemented** Wildlife Works has verified that we had erroneously included lying dead wood in the carbon inventory. This was an oversight on our part, as the methodology VM0009 does allow for the inclusion of lying dead wood, but we had in fact stated in the PD that were going to conservatively exclude this pool from the carbon inventory. We have thus removed all instances of lying dead wood from the carbon inventory by creating a new version of the carbon	DNV checked the forest inventory calculations /7/ and confirmed that lying dead wood is no longer considered in the ER estimations in line with the VCS PD /2/. **CAR6 is closed.**

CAR ID	Corrective action request	Response by project proponents	DNV's assessment of response by project proponents
		inventory model which assigns zero carbon to each lying dead tree.	
CAR7	Requirement "*Standing dead trees shall be categorized into two decomposition classes: Trees with branches and twigs that resemble live trees (except for leaves) (Class I) Trees that show loss of twigs, branches or bole mass (Class II)… The carbon stock of standing dead trees in decay class I is estimated using the same equations developed for live trees… The carbon stock of standing trees in decay class II is conservatively estimated as the biomass in only the remaining bole."* (Section 13.7 of VM0009 Version 1.0) Evidence and failure DNV checked the forest inventory calculations /7/ and found that the project proponent has calculated all the standing dead wood as the living trees and that it has not applied the provisions of the methodology for calculating the standing dead wood carbon stocks.	**Accepted and implemented** Wildlife Works verified that we had erroneously counted all standing dead wood as living trees. To fix this error, we used the provisions stated in VM0009, v1.0. We left all class I trees as they were (treated like living trees). For class II and III, we created a single class (II) and calculated the volume of these trees assuming that they contain only a bole (using a conical equation) and then converted to carbon using a specific gravity value taken from literature (Harmon et. al 2011) (0.24). **Round 2 Response** Wildlife Works provided the specific gravity used in the previous response. The value is **0.24** as stated above. We are unsure what is being requested in addition to the value of the specific gravity which has been already listed.	DNV checked the forest inventory calculations /7/ and confirmed that the project proponent has corrected the calculations. All class I trees were left as they were and the carbon stocks from these were estimated using the formulae of living trees. For class II and III, the project proponent created a single class (II) and calculated the volume of these trees assuming a conical form and then converted to carbon using a specific gravity value taken from literature (Harmon et. al 2011) (0.24) /36/. Hence this CAR can be considered to be closed. **CAR7 is closed.**
CAR8	Requirement "*Non-tree Woody Biomass: Biomass that includes woody shrubs and any trees too small for carbon stock estimation using the allometric equations derived or selected for trees"* (Section 3.Definitions of VM0009	**Rejected** Wildlife Works agrees that herbaceous biomass does not meet the specific definition of non-tree woody biomass listed in the definitions section of VM0009. However, the table that lists carbon pools that may be included in a project (pg. 24, Section	DNV checked the approved methodology and it seems that it refers indistinctly to non-tree biomass and non-tree woody biomass. Section 13.5.3 Estimating Carbon in Above-ground Non-trees of the applicable methodology states "*Non-tree woody*

CAR ID	Corrective action request	Response by project proponents	DNV's assessment of response by project proponents
	Version 1.0) Evidence and failure DNV checked the forest inventory calculations /7/ and the net GHG emission reductions and removals calculation spreadsheet and confirmed that the project proponent has accounted for herbaceous biomass which does not comply with the definition on non-tree woody biomass.	5.4) allows for the inclusion of "Above-ground non tree biomass" as well as "Below-ground non tree biomass". We contend that this pool is in contrast to the definition of "Non-tree *Woody* Biomass" (and in fact is unrelated to the definition, which refers to only woody biomass and not herbaceous biomass). We contend that herbaceous biomass falls under the category of "non-tree biomass" and thus is allowed for inclusion under VM0009, section 5.4. We agree to modify the definition for "non-tree woody biomass", changing it to "non-tree biomass" in future versions of VM0009 to clarify the inclusion of herbaceous matter in projects. Wildlife Works is the author of VM0009, and has *always intended to allow for the inclusion of herbaceous biomass*, and in fact has *included grasses as a carbon pool in each of its validated projects in the Kasigau Corridor Phases I and II*. We feel that grassland should be allowed as a carbon pool for this and all subsequent monitoring periods. As far as measuring the carbon pool, Wildlife Works will measure herbaceous carbon at least once every five years, the same manner we are measuring above-ground forest biomass.	*biomass includes woody shrubs and any trees smaller than the minimum diameter appropriate for using the methods described for tree biomass. Non-tree biomass can be estimated using either destructive sampling in a clipped plot, allometric equations, or a combination of the two approaches.* In fact DNV checked DNV's checked the methodology validation report and confirmed that the use of non-tree woody biomass and non-tree biomass is used indistinctly. However, considering that this was accepted as part of the validation and that the VCS version 2007.1 does not provide specific provisions with this regard, DNV accepts the inclusion of herbaceous biomass. **CAR8 is closed.**
CAR9	Evidence and failure DNV checked the allometric equations included in the forest inventory calculations /7/ and compared them with the allometric equations showed in the VCS PD /2/ and	**Accepted and implemented** a) Wildlife Works has verified that the allometric equation for Boscia Coriacea was erroneously applied to Boswellia Neglecta. We have corrected the problem by replacing the equation for Boswellia	DNV checked the forest inventory calculations /7/ and confirmed that the two identified mistakes were corrected /2/. **CAR9 is closed.**

CAR ID	Corrective action request	Response by project proponents	DNV's assessment of response by project proponents
	found the following issues: a)The equation of Boswellia neglecta used in the calculations is that of Boscia coriacea; b) The parameters of the allometric equation for all species (<35 cm) are not consistent.	Neglecta with its correct equation (Biomass=1.3025[dbh]$^{1.8332}$) in the allometry lookup table. b) We have observed that in fact there was an error made in "copying down" the equations for all species (<35) so that the last decimal place was erroneously incremented by 1. This error was fixed in the allometry lookup table.	
CAR10	Requirement "*The quantity of degradation and deforestation that may shift outside the project area cannot exceed what would have occurred in the project area, which is a reasonable assumption for the accounting of emissions from leakage. However, the size of the leakage area may exceed the size of the project area as defined in section 10.2. Therefore, equation [33] normalizes the estimated proportion of degradation and deforestation observed in the leakage area such that this proportion is comparable to that that would have occurred in the project area*" (c.f. section 10.4 of VM0009 Version 1.0) Evidence and failure DNV checked the leakage calculation spreadsheet /8/ and found that the project proponent has not normalized the estimated proportion of degradation and deforestation	**Accepted and implemented** Wildlife Works has investigated the leakage model, and it was found that indeed the normalization factor was erroneously omitted. The normalization factor has been calculated as 1.0 and applied to the leakage model, resulting in an unchanged leakage % for monitoring period 2. The *revised version of VM0009* contains a clarification stating that the leakage area shall not be larger than the project area (in recognition that the entire leakage area must be accessible to the project proponent for recurring monitoring/measurement). Therefore the maximum normalization factor will be constrained to be less than or equal 1. **WWC Round 2 Response** Wildlife Works rejects the notion of referring to the VCS PD for monitored variables. As we have repeatedly argued, variables measured each monitoring event will inevitably vary from the values reported in the PD, even . In Wildlife Works' opinion,	DNV checked the leakage emissions calculations /8/ and confirmed that these have been revised considering a leakage area equivalent to the project area and considering that the proportion of the project area that is forested. DNV checked the applicable methodology and equation [33] and believes that it is correct since the objective is to make the degradation values of the leakage area and the project area equivalent. $\hat{r}_{LE}^{[m]} = \frac{a_{LE}}{p_{forest} \cdot a_{project}} \times \begin{cases} 0 \; if \; \bar{o}^{[m]} - x \le 0 \\ \bar{o}^{[m]} - x \; o.w. \end{cases}$ For instance, if the degradation agents move from an area of 10 to an area of 20 (leakage area), it would expected that the average degradation in an area of 20 would be lower

CAR ID	Corrective action request	Response by project proponents	DNV's assessment of response by project proponents
	observed in the leakage area.	this is the function of the VCS Monitoring Report. That said, for this monitoring period (m2), the leakage area has been reduced to equal the project area. This is in line with the methodology, VM0009, which only requires that the leakage area is as large or larger than the forested area in the project. When investigating the size of the leakage area used for the first monitoring report (38,889 ha), we found that this area was larger than necessary. Reducing the overall *size* of the leakage area has no bearing on the location of the leakage plots, and therefore Wildlife Works finds no reason to arbitrarily hold the leakage area larger than the forested area, as the only purpose this would serve would be to reduce crediting, and we contend that we should not be penalized arbitrarily simply because the leakage area was listed as too large previously. Because VM0009 allows for a leakage area the same size as the forested project area, Wildlife Works has changed the size of the leakage area to equal 30,168.66, identical to the project area. This area has been reflected in the leakage worksheet for this monitoring period, 'Leakage_Model_Expanded_fixed_PhaseI.xls' and provided to the auditor. In addition, the variable representing leakage area, a_{LE}, has been listed with its new value (30,168.66) in the MR in setion 3.1 'Variables Available at Validation' on page 12.	than in an area of 10, so in order to make things comparable you would have to multiply by 20 and divide by 10. However, DNV agrees that the leakage area delimitation is rather subjective and that it is not clear its effect in the GHG accounting. On the other hand, the proposed deviation by the project proponent would be a deviation related to quantification procedures which is not accepted under the VCS standard version 3 (c.f. section 3.5.1). Considering that as part of this verification no leakage will be deducted, this possible deviation would not be material in this verification so DNV decides to close this CAR. However, DNV opens FAR5 in order to discuss the acceptability of this deviation in the next verification event. **CAR10 is closed.**

Clarification requests

CL ID	Clarification request	Response by project proponents	DNV's assessment of response by project proponents
CL1	Requirement "*At a minimum, project lands must meet the definition of forest given in the definitions in section 3. The project area may consist of multiple contiguous or discontinuous forested parcels*" (c.f. Section 5.1. VM0009 Version 1.0) Evidence According to the registered VCS PD /2/ the project area contains a stratum named "agriculture", and according to the carbon stocks calculation spreadsheet /7/ this would not be forested and it has been accounted in the GHG benefit calculations. Failure Clarification is sought on whether these areas were not forested at the beginning of the project and whether these shall not be part of the project boundary or would have to be stratified with carbon equal zero.	**Clarification** The stratum named "agriculture" was mis-named. When the land-use/ land-cover classification was originally performed, one of the strata was called "agriculture" as it possibly represented an area that had been converted many years ago. This stratum has been regenerating for many years, and was decidedly forest as of the project start date. Evidence of this statement is provided by examining the measured carbon stocks of the "agriculture" strata compared to carbon stocks in the other strata. This stratum was actually measured as the highest mean aboveground and belowground forest carbon stock of any strata in the project at project commencement (172.2 tCO_2e/ha), proving that the stratum was not "agriculture" in actuality. As a reference, and further evidence of the misnaming of this stratum, the mean forest carbon stock for all strata combined is (97.1 tCO_2e/ha). If the auditors feel it would be less misleading, Wildlife Works would be happy to change the stratum name.	DNV checked the forest inventory calculations and confirmed that the plots located in the stratum "agriculture" /7/ would generally comply with the definition of forest as the crown canopy cover and the height would be above the minimum thresholds set by the Kenyan DNA. Therefore, this stratum would be classified as forest. Furthermore, DNV checked the final calculations and confirmed that the average Tree biomass in this stratum would be 46.63 td.m./ha which is approximately equal to the average of the forested strata. Therefore, it can be concluded that this stratum would be a forested stratum. **CL1 is closed.**
CL2	Evidence According to the registered VCS PD "*The*	**Clarification** The destructive harvest conducted by Wildlife	During the site visit DNV confirmed that the rules followed in order to define the height to

CL ID	Clarification request	Response by project proponents	DNV's assessment of response by project proponents
	allometric equations for the project area, based on the aforementioned, field-collected destructive harvest data, were produced for Wildlife Works by Ryan Anderson of EcoPartners. These equations predict green weight (kg) as a function of DBH(cm)". However, during the site visit it was confirmed that the rules for measuring diameters were: 1) if the bifurcation of the tree occurs at the ground, the diameter is measured at 10 cm height; 2) if the bifurcation occurs below 1.3 m the diameter is measured at 10 cm above the bifurcation; if the bifurcation occurs at 1.3 m, the diameter is measured at 10 cm above the bifurcation; if the bifurcation is above 1.3 m and the tree's height is >2.6 m, then the diameter is measured at 1.3 m; if the bifurcation is below 1.3 m and the tree's height is <2.6 m, then the diameter is measured at h/2 m; if the tree is a single stemmed tree, the diameter is measured at 1.3m. Clarification Clarification is sought on whether the measuring procedures described and the dendrometric data obtained is consistent with the allometric equations used.	Works utilized only single-stemmed trees. Therefore, the manner in which multi-stemmed trees were measured in the field would not differ materially from the manner in which the same species were measured during destructive harvest. The current rules for measuring multi-stemmed trees were developed as a result of a CAR (CAR3, Phase II VCS validation) and the field crews updated their practices accordingly.	measure DBH was not always in accordance to the SOP "Biomass Plot Sampling" /4/. For instance, in a number of cases (i.e. when the pith forking was at ground level) the diameter was measured at 10 cm instead of 1.3 m; in other cases (i.e. Tree is forking, with the pith forking between 0.3 and 1.3 m) diameter was measured 10 cm above point where pith forks instead of 1 m as specified in the SOP. This was done systematically. However, considering the specific dendometry (form factor) of the trees involved with a very wide crown and multi-stemmed diameter and a stem with very irregular shape and irregular stem form diagram, DNV considers that measurements below 1.3 m in this case would not have caused a significant change in the carbon stock estimations which would lead to a material misstatement in the verified GHG benefits. However, since in these cases the SOP was not followed strictly, DNV has open FAR3 requesting to ensure the implementation of the SOP in the next periodical verification. **CL2** **is closed.**
CL3	Evidence	**Clarification**	DNV checked the file provided 'Commiphora

CL ID	Clarification request	Response by project proponents	DNV's assessment of response by project proponents
	According to the forest inventory spreadsheet /7/, the moisture content which is used to convert the green weight to dry weight is 50% for trees and 45% for shrubs. Clarification Clarification is sought on what is the source of the moisture content used.	As stated in the Rukinga PDD (CCB), Wildlife Works could not locate any literature concerning the dryland Acacia-Commiphora ecosystem in the Kasigau Corridor. As such, we performed a destructive harvest. In order to ensure a conservative value was being used, we opted to measure mean dry/wet ratio for the Commiphora campestris species, a softwood, and one of the softer species prevalent in the ecosystem. We calculated 15 individual trees' wet and dry weights to obtain a mean dry/wet ratio, and it was found to be 49.5%. We rounded to a value of **50.0%**. The supporting spreadsheet containing individual measurements, titled 'Commiphora campestris weights' has been made available to the verifier. For shrubs, we were unable to find the reference for the use of the constant 45% for dry/wet ratio. However, this value was validated during the Rukinga CCB Phase I validation, and from recollection of Mike Korchinsky, President and CEO of Wildlife Works, we chose a value that was conservatively less that the value used for trees (**50%**). The value used for shrubs can be verified by asking the auditor for the Phase I CCB validation.	campestris weights' /16/ which shows the raw data used in order to estimate the allometry and confirmed that it shows a value of 49.5%. Hence a value of 50% would be reasonable. **CL3 is closed.**
CL4	Evidence According to the registered VCS PD /2/ the leakage area is equal to 38 889 ha and alpha is -1.0804558 and beta is 0.0003792.	**Clarification:** The reason the parameters from Phase II were used for the leakage model was because an error was made. We had not remembered that during	DNV checked the leakage calculation spreadsheet /8/ and confirmed that it is correct. No leakage would be deducted in this monitoring period since the monitored

CL ID	Clarification request	Response by project proponents	DNV's assessment of response by project proponents
	However, according to the leakage calculation spreadsheet provided, the leakage area is 13 315 ha and the alpha is -0.8230546 and the beta is 0.0002991, which corresponds to Phase II. Clarification Clarification is sought on why leakage has been determined using parameters of Phase II and not the parameters of Phase I defined in the VCS PD.	the Phase II a CAR was issued that required the addition of a Landsat image for a more recent date, due to the recent start date of the Phase II project. Thus, the CDM for Phase I was in fact slightly different than that of Phase II. To fix this error, Wildlife Works will re-calculate leakage separately for Phase I and for Phase II, using the correct alpha, beta and leakage areas for each project. Evidence of these separate models has been made available to the auditors. **WWC Round 2 Response** The new Leakage model, applicable only to Phase I entitled 'Leakage_Model_Expanded_fixed_PhaseI.xls', has been sent to the validator as an attachment to the e-mail containing Wildlife Works' second round responses.	degradation would be 0.556756757 while the leakage model indicates 0.57787884. Hence no leakage deduction would be applied. **CL4 is closed.**
CL5	Requirement *"Projects shall prepare a non-permanence risk report in accordance with VCS document AFOLU Non-Permanence Risk Tool at both validation and verification." (*Paragraph 3.7.3 AFOLU Requirements v.3.2) Clarification The project proponent has not provided a risk assessment; therefore, for DNV it is not clear whether there has been a change in the risk rating.	Please find the responses to each individual point. 1) Please see the provided file 'Kasigau Project P&L.xlsx' for documentation that the project has reached the cash flow break-even point. 2) Please see the provided file 'Wildlife Works Kasigau Financial Statement_December 2011.pdf' for documentation that Wildlife Works has capital reserves equal to three years of	The project proponent provided a full **CL5 is closed.**

CL ID	Clarification request	Response by project proponents	DNV's assessment of response by project proponents
		project cash out. 3) Wildlife Works believes that it has already shown that the project meets 2.2.4 5) because of the legal conservation easements that cover the REDD project management activities and practices in the project area for the entire 30 year period of the project. Given that, Wildlife Works believes that the lessor requirement to meet 2.2.4 3) has been met through the project PD that has been submitted to the VCS and the CCB and subsequently made public to the communities in the project area and the public beyond through our offices and the Wildlife Works and VCS website. The PD details the project management practices and activities for within the project area and in surrounding communities and the estimated carbon credit generation from the project that will fund the activities. 4) Wildlife Works found the Community engagement criteria a) to be not applicable to the project since no communities are located within the project area boundary. Therefore, there are no households to be consulted. For criteria b) Wildlife Works has consulted and communicates with greater than 20 % of households living within 20 km of the project area through our office located in the area and the presence of our wildlife rangers, biodiversity teams and outreach	

CL ID	Clarification request	Response by project proponents	DNV's assessment of response by project proponents
		workers. Please see the provided file 'VCS Non-Permanence Risk Report Phase II V1.1.doc' for this requested documentation. The tool has been updated to include section 4.2.	

Forward action requests from previous verification

FAR ID	Forward action request	Response by project proponents	DNV's assessment of response by project proponents
FAR1	Not Applicable	Not applicable.	Not applicable.

Forward action requests from this verification

FAR ID	Forward action request	Response by project proponents	DNV's assessment of response by project proponents
FAR1	Requirement "To ensure that carbon stocks are estimated in a way that is accurate, verifiable, transparent, and consistent across measurement periods, the project proponent must establish and document clear standard operating procedures and procedures for ensuring data quality" (c.f. Section 13.11 of	**Accepted** Wildlife Works agrees to establish an SOP for dealing with catastrophic events as discussed during the site visit. We will clearly outline the technical procedures that must occur if a major event occurs in the project area, including instructions for re-stratification, resampling and possible modification of project boundaries and	DNV checked the SOP "Disturbance Monitoring" /4/ provided by the project proponent and confirmed that it shows the procedures to follow in the case of significant disturbance. This is a complete procedure which would have to be followed by the project proponent.

FAR ID	Forward action request	Response by project proponents	DNV's assessment of response by project proponents
	VM0009 Version 1.0) Evidence and action request As part of the site visit DNV confirmed that, although a non-written procedure is in place for re-stratification of the project area, this is not written and it is not a standard procedure, which might represent a risk for future monitoring periods. The project proponent is requested to establish a Standard Operating Procedure (SOP) for the periodical revision of the stratification of the project area or the revision of the stratification after catastrophic events. This shall be in place at the next verification.	carbon accounting.	Therefore, this FAR can be closed as it is not necessary any forward action. **FAR1 is closed.**
FAR2	Requirement "To ensure that carbon stocks are estimated in a way that is accurate, verifiable, transparent, and consistent across measurement periods, the project proponent must establish and document clear standard operating procedures and procedures for ensuring data quality" (c.f. Section 13.11 of VM0009 Version 1.0) Evidence and action request As part of the site visit DNV confirmed that there is not a written procedure for determining the weight (in tonnes) of woody biomass consumed during each burning	**Accepted with Further information required** Wildlife Works does not fully understand this request, as we do not conduct *controlled burning* events and therefore would not be able to quantify such events. Please elaborate on this request, telling us exactly what is meant by "determining the weight (in tonnes) of woody biomass consumed during each burning event". As far as we know, there are no such events. Please clarify whether or not this CAR intended to address controlled burning events or *natural burning events*.	The applicable methodology requires two aspects as part of the project emissions: • A map of the boundaries of any significant forest fires in the project area during the monitoring period. • A table of events when woody biomass was burned during the monitoring period, showing the weight of woody biomass in tonnes and the date consumed. The first aspect would be covered by the SOPs requested as part of FAR1, while the second aspect would not be applicable to the

FAR ID	Forward action request	Response by project proponents	DNV's assessment of response by project proponents
	event which is required to estimate the emissions from burning. The project proponent is requested to establish a Standard Operating Procedure (SOP) for the reporting on events of controlled burning of woody biomass and the subsequent quantification of the weight of woody biomass consumed.		project since there is no controlled burning within the project area as DNV confirmed during the site visit /48/. Therefore, this FAR can be closed as it is not necessary any forward action. **FAR2 is closed.**
FAR3	Requirement "To ensure that carbon stocks are estimated in a way that is accurate, verifiable, transparent, and consistent across measurement periods, the project proponent must establish and document clear standard operating procedures and procedures for ensuring data quality" (c.f. Section 13.11 of VM0009 Version 1.0) Evidence and action request As part of the site visit DNV confirmed the following issues related to carbon stock monitoring which do not represent a material misstatement for this verification but that may represent a risk in the future: a) During re-measurement there were certain confusions on the procedure to measure multi-stem trees and that these were not in accordance with the SOP "Biomass Plot Sampling" /4/. For instance, in a number of	**Accepted** Wildlife Works agrees to update the Biomass SOP so as to ensure accurate field measurement in all cases. Specifically, for the measurement of multi-stemmed trees, we were issued a CAR (CAR3, Phase II VCS validation) that requested we re-write the Biomass SOP "to reflect actual procedures used". This was subsequently done… however it seems that the revision of the SOP possibly does not match the field measurement techniques in every possible circumstance. We will ensure that all field sampling teams' techniques and the Biomass SOP match perfectly and completely by the next verification period.	DNV requests to the Validation and Verification Body that conducts the next periodical verification to confirm the implementation of these SOPs. **FAR3 is open.**

FAR ID	Forward action request	Response by project proponents	DNV's assessment of response by project proponents
	cases (i.e. when the pith forking was at ground level) the diameter was measured at 10 cm instead of 1.3 m; in other cases (i.e. Tree is forking, with the pith forking between 0.3 and 1.3 m) diameter was measured 10 cm above point where pith forks instead of 1 m as specified in the SOP.; b) *Erythrina abyssinica's* diameters were measured over the bark thorns. This species is not common so this would not lead to a material error; The project proponent shall update the SOP in order to address these issues. This shall be in place before the next periodical verification.		
FAR4	Requirement "*The project proponent shall ensure that all documents and records are kept in a secure and retrievable manner for at least two years after the end of the project crediting period"* (paragraph 3.18.1 of VCS Version 3.3). Evidence and action request As part of the site visit DNV confirmed that the provisions for data archiving (i.e. naming of files and folder organization) were not adequate which would represent a risk in future monitoring periods. The project proponent shall have in place a SOP for the adequate archiving of all documents, records	**Accepted** Although in the opinion of Wildlife Works, this FAR seems to be subject to the opinion of each individual auditor, we will work to shore up our organization of electronic files and establish "better" naming conventions, both for filenames and folders by the next verification event. As no specific detail has been offered in conjunction with this FAR, Wildlife Works assumes that we will be tasked with the responsibility of developing such a system. If the auditor has any further advice or information regarding this FAR, we request that it be disseminated to us as soon as possible.	DNV requests to the Validation and Verification Body that conducts the next periodical verification to confirm the implementation of these SOPs. **FAR4 is open.**

FAR ID	Forward action request	Response by project proponents	DNV's assessment of response by project proponents
	and files, including provisions for the naming of the files related to each monitoring period.		
FAR5	Evidence The project proponent has proposed as part of the second verification to change the area of the leakage area in order to make it equal to the forested area of the project boundary. Requirement The proposed deviation would be a deviation related to quantification procedures which is not accepted under the VCS standard version 3 (c.f. section 3.5.1); yet, it could be a misstatement or imprecision of the methodology. Action request Considering that as part of this verification no leakage will be deducted (this change will not be material for the present verification) and that the analysis of the acceptability of this deviation should require further analysis and dialogue, DNV has opened this FAR requesting to project proponent and VVB to discuss the acceptability of this issue as part of the next periodical verification.	**Not applicable.**	DNV requests to the Validation and Verification Body that conducts the next periodical verification to discuss the acceptability of this deviation from the methodology. **FAR5 is open.**

APPENDIX E

CURRICULA VITAE OF THE VERIFICATION TEAM MEMBERS

Andrés Espejo holds a 6 year Bachelor/Master Degree in Forestry Engineering by the Polytechnic University of Madrid (Spain), having an overall experience of 6 years. Prior to joining DNV Andrés held 5 years experience in biomass generation, forest management, and generation with other renewables, covering the management of forestry operations, procurement of timber and biomass, management of forest states, pre-feasibility studies for renewable generation projects, etc.
He has experience of around one year in validation and verification of numerous CDM projects.
His qualification, industrial experience and experience in CDM demonstrate his sufficient sectoral competence in Energy Generation from renewable energy sources (Technical Area 1.2) and Forestry (Sectoral Scope 14).

Pablo Reed holds a Bachelor of Science in Forest and Ecological Engineering as well as a minor in Latin American Studies from the University of Washington in Seattle. He has also recently completed a Masters of Environmental Management at the Yale School of Forestry & Environmental Studies. Prior to his arrival at Yale in 2009, he spent the preceding six years of his life working with conservation and development projects in various countries in Latin America. He served as country director for a joint USAID/Idaho State University community conservation project in the Alta Verapaz region of Guatemala, where he experienced great success in securing land titles for displaced indigenous communities using participatory indigenous mapping and creating community based management plans. He also spent time in Panama working as a GIS and environmental consultant and ultimately ended up working for the Peace Corps in Ecuador. In this last job he served as program manager for the posts' natural resource conservation project, training, placing, and managing an average of 30 to 35 volunteers per year. At Yale, his program of studies centered on social and political ecology as well as natural resource management policy. His research and subsequent thesis centered on exploring the feasibility of emerging REDD (Reducing Emissions from Deforestation and Degradation) policy frameworks as they pertain to the inclusion of communal Indigenous territories and lands (Ecuador, summer 2010). Pablo has most recently joined DNV in their San Francisco office, serving as a consultant to lead forestry sector work within the offices' climate change and environmental services division.

Edwin Aalders has nearly 20 years of experience as an assessor in Environmental Auditing and accreditation and started his career in SGS in 1992 were he quickly became involved in the development of new environmental certification & control services. In 2004 he became the Director of the International Emission Trading Association (IETA) which he held till 2009. In addition to his role as Director in IETA, between November 2007 and October 2008, he held the role of Acting CEO for the Verified Carbon Standard Association (VCSa). In 2009 Mr Aalders became a Partner with IDEAcarbon before joining DNV as Approver / Responsible Service Line - CDM at the Climate Change and Sustainable Development Department in 2011. Throughout his career he lived and worked throughout the developing and developed countries and been involved in developing new environmental markets. Mr Aalders is an elected member of roster of experts for the Methodology Expert of the CDM & JI, in sits on the AFOLU Steering Committee of the Verified Carbon Standard Association (VCSA) and Advisory Board of the Pacific Carbon Trust.