CAR# 1459-Indigo U.S. Project No. 1
Climate Action Reserve
Reserve Soil Enrichment Protocol
Verification Report (v2)

1 February 2023

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Indigo Carbon PBC
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Project Number: 21047.01

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1 EXECUTIVE SUMMARY

Aster Global Environmental Solutions, Inc., (Aster Global) was contracted by Indigo Carbon PBC, (Client and Project Developer, hereafter referred to as "Indigo" or "Project Developer") to perform the Climate Action Reserve (Reserve) annual (RP2) project verification of *CAR1459 – Indigo U.S. Project No .1* (Project). Our verification process closely followed the Reserve's Soil Enrichment Protocol (SEP), Version 1.1; Climate Action Reserve Verification Program Manual: and ISO14064-3:2006.

Specifically, the project verification included the review of the requirements outlined in the Reserve's Soil Enrichment Protocol Version 1.1. The assessment included the following items: greenhouse gas (GHG) project and baseline scenarios; physical infrastructure, activities, technologies and processes of the GHG project; GHG assessment boundary (sources, sinks and/or reservoirs); types of GHGs; and time periods covered. The geographic verification scope was defined by the project boundary, the carbon reservoir types, management and agricultural activities, soil/geochemical models, farmer records, and contract periods.

After reviewing all project information, procedures, calculations, and supporting documentation, and after conducting the site visit(s), Aster Global confirms CAR1459 – Indigo U.S. Project No. 1 is accurate and consistent with all aforementioned Reserve criteria and requirements. Aster Global confirms all verification activities, including objectives, scope and criteria, level of assurance, and project documentation adherence to the Reserve's Soil Enrichment Project Protocol V1.1, as documented in this report are complete. Aster Global concludes without any qualifications or limiting conditions that the CAR1459 – Indigo U.S. Project No. 1 Project Monitoring Plan, dated 18 November 2022, and Monitoring Report 2, dated 14 December 2022, meet the requirements of the Reserve.

The GHG assertion provided by Indigo and verified by Aster Global, has resulted in the GHG emission reductions or removals of 111,389 tCO_2 equivalents by the project during the reporting period (08 May 2018 – 31 December 2021).

2 INTRODUCTION

This verification report is prepared in accordance with the outlined requirements of the Climate Action Reserve (Reserve) Soil Enrichment Protocol (SEP) V1.1, Climate Action Reserve Offset Program Manual, and Climate Action Reserve Verification Program Manual. Aster Global Environmental Solutions, Inc. (Aster Global) presents project verification findings of *Indigo U.S. Project No. 1*.

The project verification was conducted as part of the Reserve's program requirements for greenhouse gas (GHG) offset projects. Aster Global is accredited by the ANSI National Accreditation Board (ANAB) under ISO14065:2013 for greenhouse gas validation and verification bodies, including ISO 14064-3:2006, ISO 14065:2013, and validation/verification of assertions at the project level for Land Use and Forestry (Group 3). Aster Global is approved to verify for the Reserve.

2.1 Project Developer

Project Developer:	Technical Consultant:
Indigo Carbon PBC 500 Rutherford Ave. Boston, Massachusetts 02129 Contact: Max DuBuisson Mdubuisson@indigoag.com	N/A

2.2 Verification Team Contact Information, Including Roles and Responsibilities

Name	Role	Email	Phone Number
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2.3 Project Description

Aster Global was contracted by Indigo to conduct the Reserve's annual (RP2) project verification of *Indigo U.S. Project No 1.,* which falls under the Climate Action Reserve Soil Enrichment Protocol (SEP) v1.1 (31 May 2022).

As described in the Monitoring Plan (MP) the primary goal of *Indigo U.S. Project No 1.* is "to promote a range of agricultural management practice changes targeted at increasing soil organic carbon (SOC) storage and reducing net emissions of CO_2, CH_4, and N_2O from grower operations throughout the continental United States." Agricultural management practice changes implemented during this reporting period fell into three practice categories; crop planting and harvesting, tillage and residue management, and nitrogen application with specific practice changes described in greater detail below:

- Crop Planting and Harvesting
  - New cover crop adoption
  - Adding a legume species to existing cover crop
  - Longer duration of cover crops through delayed termination
  - Longer duration of cover crops through earlier planting
  - New crops in rotation

- Tillage and Residue Management
  - Tillage reduction through number of passes
  - Tillage reduction through delayed tilling
  - Tillage change to a lower disturbance class instrument

- Nitrogen Application
  - Nitrogen reduction
  - Change in synthetic nitrogen product with form of N
  - Substitute synthetic N with organic amendments

The project was initiated on 30 March 2018, when a practice change in the field with the earliest start date began. As per the SEP, submitting a project to the Reserve represents and initiation of a commitment to employ practices that will maintain or grow net carbon stocks for the duration of the required commitment period [100 years following the issuance of any Climate Reserve Tonnes (CRTs)].

Indigo U.S. Project No. 1 is an aggregated project and includes multiple growers with multiple enrolled fields. The project includes 427 growers and a total of 5,083 fields across the U.S. (Arkansas, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Minnesota, Mississippi, Missouri, Nebraska, North Carolina, North Dakota, Ohio, Oklahoma, South Dakota, Tennessee, Texas, and Wisconsin) encompassing 423,740 total acres. Aster Global confirmed the location of fields in the identified locations through review of project geospatial files, satellite imagery, and spot-checking locations while on the site visit.

3 VERIFICATION DETAILS

3.1 Verification Objective

The verification objective included an assessment of compliance with the selected Climate Action Reserve Protocol (SEP, v1.1) and the items outlined in the scope section contributing to the likelihood that implementation of the planned GHG project will result in the GHG emission removal enhancements as stated by the Project Developer (ISO 14064-3:2006).

3.2 Verification Scope

The scope of a verification generally included the GHG project and baseline scenarios; physical infrastructure, activities, technologies and processes of the GHG project; GHG sources, sinks and/or reservoirs; types of GHGs; and time periods covered. The geographic verification scope is defined by the project boundary, which includes aggregated parcels (farms), the carbon reservoir types, management and agricultural activities, soil/geochemical models, farmer records, and contract periods. The scope should define the primary and secondary effects of the GHG assessment boundary by indicating the carbon stock and emission categories as being required or optional per the protocol. The scope of the project is defined as follows for the GHG project:

Baseline Scenario	Continuation of existing management practices at the field level
Activities/Technologies/ Processes	Switch to management activities covered under the Soil Enrichment Protocol
Sources/Sinks/Reservoirs	SSR1 – Soil Organic Carbon SSR2 – Soil Methanogenesis SSR3 – Fertilizer Use SSR4 – Use of Nitrogen Fixing Species SSR5 – Manure Deposition SSR6 – Enteric Fermentation SSR7 – Fossil Fuel Use SSR8 – Biomass Burning
GHG Type	CO_2, CH_4, N_2O
Time Period (start date, crediting period, verification/reporting period)	Project State Date: 30 March 2018 First Reporting Period: 30 March 2018 to 31 December 2020 **Second Reporting Period: 08 May 2018 to 31 December 2021**

	Crediting Period: 10 years (renewable up to two times)
Project Boundary	427 Field Managers 423,740 acres of 5,083 fields located throughout the United States (Arkansas, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Minnesota, Mississippi, Missouri, Nebraska, North Carolina, North Dakota, Ohio, Oklahoma, South Dakota, Tennessee, Texas, and Wisconsin) A list of included farms and fields was provided prior to development of this verification and sampling plan and updated during the verification process.

3.3 Verification Criteria:

The criteria will follow the guidance documents provided by the Reserve located at https://www.climateactionreserve.org/how/program/program-manual/. These documents include the:

a. Climate Action Reserve Soil Enrichment Protocol, Version 1.1, May 2022
b. Climate Action Reserve Verification Program Manual, February 2021
c. Climate Action Reserve Offset Program Manual, March 2021
d. SEP Additionality Tool v1.0a
e. SEP Parameters v1.0a
f. Requirements and Guidance for Model Calibration, Validation, Uncertainty, and Verification for Soil Enrichment Projects v1.1a (April 2022)
g. CAR Written Guidance (listed in IndigoCarbon_US-1_2021_0067_v1)

3.4 Verification Level of Assurance

The level of assurance was used to determine the depth of detail that the Verification team placed in the Verification and Sampling Plan to determine if there are any errors, omissions, or misrepresentations (ISO 14064-3:2006). Aster Global assessed the Verification scope to provide *reasonable assurance* as defined by Reserve to meet the project level requirements of the Soil Enrichment Protocol.

3.5 Verification Materiality Threshold:

Materiality is a concept that errors, omissions and misrepresentations could affect the GHG reduction assertion and influence the intended users (ISO 14064-3:2006). Based on Reserve's verification manual, verification bodies must form a view on the materiality of all identified issues, errors, or uncertainties. Aster Global classified each issue as material (significant) or immaterial (insignificant). All GHG emission removals submitted to the Reserve must be free from material misstatements or discrepancies.

Quantitative materiality threshold as defined by the Reserve:

- Projects registering 25,000 CRTs or less (expressed in terms of CO_2e) annually shall achieve greater than +95% accuracy level (less than 5% error) relative to the verification body's calculated emission reductions
- Projects registering greater than 25,000 CRTs but less than or equal to 100,000 CRTs (expressed in terms of CO_2e) annually shall achieve greater than +97% accuracy level (less than 3% error) relative to the verification body's calculated emission reductions
- Projects registering more than 100,000 CRTs (expressed in terms of CO_2e) annually shall achieve greater than +99% accuracy level (less than 1% error) relative to the verification body's calculated emission reductions.

As the verified CRTs are greater than 25,000 but less than 100,000 annually, the materiality threshold for this project was 3%.

Qualitative materiality threshold as defined by Reserve:
"Any non-conformance related to a prescriptive requirement outlined the protocol would be considered material and must be corrected in order for the project to receive a positive Verification Statement. A prescriptive requirement relates to any specific guidance or requirement mandated by the protocol itself that does not allow for deviation, or for verifier professional judgment."

Please note additional guidance can be obtained in the Verification Program Manual (update based on new 2021 version).

4 VERIFICATION PROCESS

Our verification process closely followed the Climate Action Reserve Program Manual, Climate Action Reserve Verification Program Manual, Climate Action Reserve Soil Enrichment Protocol, ISO 14064-3 and ISO 14065, and Aster Global's Management System and Management System Manual.

4.1 Desktop Assessment

Desktop Review Items:
The desktop review included a review of:

- Emission sources, sinks and reservoirs, pertinent to activities taking place on the field
- GHG management systems and estimation methodologies
- Verifying emissions reduction estimates
    - Confirm 3rd party model expert's approval and procedures
    - Confirm reasonableness of data
    - Calculation checks
- More specifically, all pertinent items included in Tables 8.1, 8.2 and 8.3 of the Protocol.

Aster Global received and reviewed the submittals to the Reserve to assess conformance with the requirements of the Reserve's SEP V1.1. Key factors that impacted the reported emissions

reductions were identified, and a Verification and Sampling Plan was created to focus on the critical elements presenting potential risk for errors in reported data. These elements included:

- Appropriate and adequate documentation of project type.
- Implementation of appropriate and adequate eligibility criteria, by reviewing documentation and field conditions relevant to additionality, voluntary implementation attestation, project start date, crediting period, minimum time commitment, implementation agreement, contracts, project location, and regulatory compliance.
- Completeness and accuracy of the *Indigo U.S. Project No. 1*. Monitoring Plan and Monitoring Report 2.
- Implementation of appropriate and adequate approach/tools for additionality (legal requirements test and performance test) by reviewing documentation and field conditions which reflect the most-likely without-project scenario, as it deviates from the with-project scenario.
- Implementation of appropriate and adequate approach to project boundary/project area definitions, by reviewing documentation of project boundaries and ownership status, and field conditions relative to clearly delineated ownership extents and control over management activities within the project area.
- Implementation of appropriate and adequate approach to GHG assessment boundary for SEP projects [i.e., define all sources, sinks and reservoirs that must be accounted for in quantifying project's reductions and removals (Table 4.1 of the SEP V1.1)].
- Implementation of appropriate and adequate approach to the quantification methodology.
- Appropriate and adequate approach for quantifying and modeling net GHG reductions and removals (baseline/actual onsite carbon, project's primary and secondary effects, total GHG reductions/removals) confirmed through documentation, re-calculations/sampling, and field condition assessment.
- Appropriate and adequate monitoring of onsite carbon, by confirming the application of approved/acceptable monitoring practices in the field, and the appropriate handling and analysis of field data once collected.
- Appropriate and adequate approach to data and parameters (SEP Table 6.4), by reviewing data handling practices, and reviewing documentation at each step of the data analysis procedure.
- Implementation and adherence to project-level principles by reviewing documentation and discussing the application of project-level principles with core staff.

Field Manager Selection:

Field managers were selected for desktop verification at random, as described in section 8.4.1 of the SEP, using a random number generator. The number of field managers selected is the square root of the total number of managers for a total of 21 managers selected for desktop verification.

The field managers selected for desktop review are listed below:

Farmer ID Number	Review Type	State
U7R5XxJ7g	desktop	Ohio
ryRgX5XfV	desktop	Kansas
YHo_w43cL	desktop	Illinois

Sp3ufw-xH	desktop	Illinois
DribypD1d	desktop	Iowa
qDpmjW1Nu	desktop	Illinois
VdFY6KbuA	desktop	Indiana
SXZgwOTFQ	desktop	Indiana
xqyXMJ7F0	desktop	Missouri
ywmPXvvE7	desktop	Missouri
weoDHK5gT	desktop	Missouri
QwMTrZZyL	desktop	Missouri
4_7xaTVYR	desktop	Illinois
22iCfd4hj	desktop	Iowa
rkgMgMY8KQ	desktop	Kansas
3GxkrX6Jd	desktop	Iowa
Uycd6yN9h	desktop	Iowa
L0P7_UQRU	desktop	Missouri
a0JONHjIR	desktop	Iowa
0lk-rfVmX	desktop	Illinois
AMsElDNXz	desktop	Minnesota

Please see Appendix A for a listing of all documents Aster Global received and reviewed during project verification.

4.2 Site Visit

Prior to the field visit, the verification team conducted a desk review of project documents, which included the Monitoring Plan/Report, the Reserve listing/submittal documents, and supporting project documentation/reports. Aster Global found the documentation submitted by Indigo to be adequate to proceed with the site visit.

Following the initial desk review, Aster Global conducted an on-site assessment of the project area from August 31 – September 2, 2022 and again from September 12 – 15, 2022. The site visits were used to review project records with a representative of Indigo, discuss the calculation of carbon pools and sinks, and visit random portions of the ownership for reconnaissance to ground-truth the assertions of the Monitoring Plan/Report and submitted data.

Farmers were selected for site visits via a risk-based approach. Farm fields were ranked by emissions reductions and those farms with the greatest reductions were chosen for a site visit. The number of field managers selected was ½ the square root of the number of field managers in the project, based on the formula provided in section 8.4, for a total of 11 field managers. The selected field managers were not selected for a site visit in the previous verification, noting that field manager 8st4I4AJDm was selected for desktop review in the previous verification. The selection of field manager 8st4I4AJDm was random in the previous verification. For this verification, this field manager was selected using a risk-based approach, following guidance from Section 8.4.1 of the SEP.

Farmer ID Number	State	Review Type
HyHeLdpIE	site visit	Iowa
2FyNhTcsw	Site visit	Indiana
KjwdubYCo	Site visit	Wisconsin
42QSfTw8g	Site visit	Ohio
SkgZAooIZX	Site visit	Missouri
rylJQqULEX	Site visit	Kansas
4fpErKOUi	Site visit	South Carolina
S1Oh1RnQE	Site visit	Tennessee
SjO0ieRT5	Site visit	Missouri
8st4I4AJDm	Site Visit	Ohio
qgyDfn7yM	Site Visit	Illinois

Field Visit Activities:
The following items were reviewed during onsite visits:

- Visit several soil sample plots to observe and photograph a shallow profile
- Confirmation of project activities
- Interviews with field managers
- Review of farm records/record keeping system

Additionally, project boundaries were visited in several areas of the *Indigo U.S. Project No. 1* project area to compare to the Global Positioning System (GPS) files and maps provided. All areas visited conformed to the provided data.

4.3 Quantitative Review

Aster Global conducted an intensive review of all input data, parameters, formulas, connections, conversions, statistics and resulting uncertainties and output data to ensure consistency with the Reserve's SEP V1.1. Please refer to Section 5.2 (*Quantifying Net GHG Reductions and Removals*) for specific information about the quantitative review.

4.4 Meetings/Interviews

During the course of the project verification, Aster Global and Indigo held multiple meetings. All other correspondence occurred via email. The details of the meetings are briefly described in the table below:

Date	Attendees	Topics Discussed
12 August 2022	Max DuBuisson (Indigo), McKenzie Walker (Indigo), Pallaoor (PV) Sundareshwar (Indigo), Sarah Nick (Indigo), Richard Scharf (AG), Matt Campbell (AG), Molly Shick (AG)	Overall Verification Opening Meeting - Agenda Items: review of Verification and Sampling Plan to ensure complete understanding of all aspects; review of any questions regarding Verification and Sampling Plan, and discussion of any revisions required; review of travel logistics associated with site visits;

		timeframes for project completion, including significant deadlines; and general feedback on process.
31 August 2022	Farmer 1, McKenzie Walker (Indigo), Sarah Nick (Indigo), PV Sundareshwar (Indigo), Todd Weitekamp (Indigo – remote), Monica Campen (Indigo), Richard Scharf (AG)	Farmer Interview 1 - Discussion of practice change - Discussion of record-keeping - Description of farm operation
01 September 2022	Farmer 2, McKenzie Walker (Indigo), Sarah Nick (Indigo), PV Sundareshwar (Indigo), Todd Weitekamp (Indigo – remote), Richard Scharf (AG)	Farmer Interview 2 - Discussion of practice change - Discussion of record-keeping - Description of farm operation
01 September 2022	Farmer 3, McKenzie Walker (Indigo), Sarah Nick (Indigo), PV Sundareshwar (Indigo), Todd Weitekamp (Indigo – remote), Cory Sharret (Indigo), Richard Scharf (AG)	Farmer Interview 3 - Discussion of practice change - Discussion of record-keeping - Description of farm operation
02 September 2022	Farmer 4, McKenzie Walker (Indigo), Sarah Nick (Indigo), PV Sundareshwar (Indigo), Todd Weitekamp (Indigo – remote), Mike Thompson (Indigo), Richard Scharf (AG), Molly Shick (AG)	Farmer Interview 4 - Discussion of practice change - Discussion of record-keeping - Description of farm operation
02 September 2022	Farmer 5, McKenzie Walker (Indigo), Sarah Nick (Indigo), PV Sundareshwar (Indigo), Todd Weitekamp (Indigo – remote), Mike Thompson (Indigo), Richard Scharf (AG), Molly Shick (AG)	Farmer Interview 5 - Discussion of practice change - Discussion of record-keeping - Description of farm operation
12 September 2022	Farmer 6 McKenzie Walker (Indigo), Molly Shick (AG)	Farmer Interview 6 - Discussion of practice change - Discussion of record keeping - Description of farm operation
12 September 2022	Farmer 7, Sarah Nick (Indigo), Richard Scharf (AG)	Farmer Interview 7 - Discussion of practice change - Discussion of record keeping - Description of farm operation

13 September 2022	Farmer 8, McKenzie Walker (Indigo), Todd Weitekamp (Indigo), Molly Shick (AG)	Farmer Interview 8 - Discussion of practice change - Discussion of record keeping - Description of farm operation
14 September 2022	Farmer 9, Sarah Nick, (Indigo) Todd Weitekamp (Indigo), Richard Scharf (AG)	Farmer Interview 9 - Discussion of practice change - Discussion of record keeping - Description of farm operation
15 September 2022	Farmer 10, Sarah Nick (Indigo), Todd Weitekamp (Indigo), Richard Scharf (AG)	Farmer Interview 10 - Discussion of practice change - Discussion of record keeping - Description of farm operation
15 September 2022	Farmer 11, Sarah Nick (Indigo), Todd Weitekamp (Indigo), Richard Scharf (AG)	Farmer Interview 11 - Discussion of practice change - Discussion of record keeping - Description of farm operation
21 September 2022	McKenzie Walker (Indigo), Sarah Nick (Indigo), Charlie Brummitt (Indigo), Samuel Peters (Indigo), Jess Ditmars (Indigo), Richard Scharf (AG), Matt Campbell (AG), Molly Shick (AG), Sandesh Shrestha (AG)	Quantification Walkthrough - to discuss and have client demonstrate the quantification utilized during this reporting period, focusing primarily on items that changed from the previous reporting period.
22 September 2022	McKenzie Walker (Indigo), Sarah Nick (Indigo), Dan Ochs (Indigo) Vivian Dien (Indigo), Richard Scharf (AG), Matt Campbell (AG), Molly Shick (AG), Sandesh Shrestha (AG)	Verification Grower Journey Walkthrough - to discuss and have client demonstrate the field enrollment, boundary creation and review process, and management data collection processes.
22 September 2022	McKenzie Walker (Indigo), Sarah Nicks (Indigo), Sam (Shay) Horvath (Indigo), Stacy Voccia (Indigo), Richard Scharf (AG), Matt Campbell (AG), Molly Shick (AG), Sandesh Shrestha (AG)	Data Pipeline Walkthrough - to discuss and have client demonstrate the Quality Assurance/Quality Control (QA/QC) of data handling.
01 November 2022	Attendees: McKenzie Walker (Indigo), Sarah Nick (Indigo), Richard Scharf (AG), Matt Campbell (AG), Molly Shick (AG)	Round 1 Findings Clarification Meeting
22 December 2022	Attendees: Max DuBuisson (Indigo), Sarah Nicks (Indigo),	Overall Closing Meeting - Review of draft verification report and findings lists - Next steps and project upload - Request feedback on process

4.5 Verification Milestones

The following table documents the main verification activities that occurred during the project verification process:

Project/Verification Activity	Date
Aster Global Internal Conflict of Interest (COI) process completed and approved (no issues). Indigo Notification.	06 July 2022
Reserve approval of NOVA/COI	06 July 2022
Opening meeting with Indigo	12 August 2022
Receipt of Signed Verification and Sampling Plan from Indigo	29 August 2022
First Field Verification Visit	31 August – 02 September, 12 – 15 September 2022
Submission of Round 1 NCRs to Indigo	28 October 2022
Project Developer provided Aster Global with responses and updated materials	18 November 2022
Aster Global completed Round 2 review of Project Developer responses	02 December 2022
Project Developer provided Aster Global with responses and updated materials	09 December 2022
Aster Global completed Round 3 review of Project Developer responses	13 December 2022
Project Developer provided Aster Global with responses and updated materials	14 December 2022
Aster Global completed Round 4 review of Project Developer responses and closes all remaining findings.	14 December 2022
Draft report and project information sent to Senior Independent Reviewer	16 December 2022
Draft verification report submitted to Indigo for review	22 December 2022
Closing Meeting with Indigo	22 December 2022
Aster Global uploaded final report and files to Reserve website	22 December 2022
Reserve Review	January 2023
Aster Global uploaded final report (v2) to Reserve website	01 February 2023

5 CLIMATE ACTION RESERVE SOIL ENRICHMENT PROTCOL (SEP) VERIFICATION REQUIREMENTS

5.1 Project Eligibility and CRT Issuance

5.1.1 Soil Enrichment Project Criteria

The Indigo U.S. Project No. 1 meets the criteria for a soil enrichment project identified in the SEP. The project utilized Indigo's Carbon by Indigo user interface (UI) platform, a web platform utilized for on-going communication and reporting with enrolled farmers, to ensure that all fields included in the project were cropland or grassland at the project start date, and that the implementation of project activities will not involve a decrease in woody perennials in each identified field. Field boundaries are stated to be clearly delineated and were determined to be continuous through the Project Developer's boundary review. The verification team substantiated the identified criteria were met during the verification site visit of selected fields and through a GIS review of selected field boundaries provided by Indigo.

5.1.2 Project Area and Aggregated Project Requirements

Section 2.2.2 of the SEP sets out various criteria to define the project area. The Project provided relevant shape files and associated records confirming the Project meets the criteria. The verification team reviewed these records and concluded the project area requirements were met. Further, the verification team reviewed sample fields during the field visit and found no discrepancies with the reported records.

Additionally, the Project demonstrated it meets the Reserve criteria for fields entering an aggregated project and also for transferring fields between projects, though no fields were transferred to or from the Project during this reporting period. The verification team confirmed the Project utilized an acceptable method for fields joining the aggregated project since the first reporting period, and CRTs were appropriately accounted for a given field for the duration of the eligible crediting period.

The Project has ensured that all fields receiving transfers will satisfy all eligibility requirements of the newest protocol version in use amongst all fields prior to transfer. Future monitoring and record keeping will ensure this process has been met.

5.1.3 Project Ownership

Indigo Carbon, PBC signed the Reserve's Attestation of Title form, thereby affirming that they have an exclusive ownership claim to the GHG reductions and removals achieved by *Indigo U.S. Project No. 1.* Aster Global confirmed the Attestation of Title was signed on 27 July 2022. In addition, Aster Global reviewed/confirmed the contracts between Indigo (Project Owner) and participating growers explicitly convey title to the GHG reduction rights related to relevant fields.

5.1.4 Non-GHG Impacts

The Project has committed to monitoring yield reductions leading to leakage over the Project lifetime to ensure it does not cause undermine progress on the environment offsite. The verification team is reasonably assured the Project's monitoring efforts will capture and address any potential leakage-related impacts.

The project activities, including reduced tillage, reduced nitrogen applications, use of cover crops and other regenerative agricultural practices, are far more likely to benefit the local and regional environments through reduced water pollution, particulate matter in the air, reduced flooding, sediment and an improvement in soil health.

5.1.5 Project Start Date

The Project start date is 30 March 2018, which is the earliest start date for any field in the Project. Start dates are usually the day after the harvest of the previous cash crop and would fall in autumn for most fields. This field (NCAGfgOrCd8) had a prolonged fallow period of 9 months, so the start date marks the day planting operations began. The Project start date was confirmed at the initial verification. While this field was not included in this Reporting Period, the verification team confirmed the field has the earliest start date using records compiled by the Project Developer.

5.1.6 Monitoring Report

The Project has completed and submitted a Monitoring Report in line with Reserve requirements. Refer to Section 5.3 of this report below for additional information and further confirmation of how the Monitoring Plan has been implemented, as documented in the Project's Monitoring Report.

5.1.7 Project Crediting Period

The Project Start Date is 30 March 2018 and the end date for this Reporting Period is 31 December 2021. As such, all fields are still within the 10-year crediting period and there is currently no need for approval from the Reserve for renewals.

5.1.8 Additionality

Performance Standard Test

The project has demonstrated it meets the performance standard test by showing each field has adopted, at the field's start date, one or more changes in pre-existing agricultural management practices reasonably expected to increase SOC storage and/or reduce CO_2, CH_4, and/or N_2O emissions from agricultural activities.

Project activities on fields of selected growers were checked against the most current additionality tool (v1.0a). On all fields, a project activity considered additional in the county in which it is located is being implemented.

The only project activities that were not included on the additionality tool included nitrogen application reductions or the substitution of organic fertilizers for synthetics. On farms chosen for site visits and desktop audits, nitrogen fertilizer reductions were paired with other approved project activities, including reduced tillage and cover crop introductions.

Legal Requirement Test:

Indigo signed the Attestation of Voluntary Implementation (27 July 2022), which affirmed *Indigo U.S. Project No. 1* was established and implemented voluntarily and continues to operate as such. Further, the verification team reviewed a relevant list of laws and confirms no laws exist that mandate the project activity. The Project requires each grower to sign an internal attestation that requires the grower to notify the project developer if any activity becomes legally required. This mechanism will ensure the project passes the legal requirement test at all times.

The verification team confirmed a schedule of activities for data collection in the baseline scenario has been provided by the Project Developer and will be collected in accordance with the Reserve's guidance from Section 6.1 of the SEP.

5.1.9 Requirements for Permanence

This requirement states that GHGs must be permanently reduced or removed from the atmosphere to be credited as carbon offsets. For Soil Enrichment Projects, this requirement is met by ensuring

that the carbon associated with credited GHG reductions and removals remains stored for at least 100 years.

As the Project is not implementing Tonne-Year Accounting, the Project Owner ensures the permanence of GHG reductions and removals from the Project through several mechanisms:

1. The Project Owner understands and has agreed to monitor for potential reversals in soil organic carbon, submit regular monitoring reports, and submit to regular third-party verification of those reports along with periodic verification site visits (as detailed in Sections 6 through 8 of the SEP) for the duration of the project life.

2. The Project Owner has **NOT YET** signed a Project Implementation Agreement (PIA) with the Reserve (as described in Section 3.5 of the SEP), which obligates Project Owners to retire CRTs to compensate for reversals of GHG reductions and removals. The Project Owner has received written guidance from the Reserve that the PIA does not need to be signed until this verification report has been submitted. The verification team will ensure the PIA is appropriately signed prior to registration of credits.

3. The Project Owner understands that a percentage (14.5%) of their issued CRTs will be reserved for a Buffer Pool to provide insurance against reversals of GHG reductions and removals due to unavoidable causes.

4. In addition to the official mechanisms described above, the Project Owner has attested to employing additional mechanisms to ensure permanence and will seek approval from the Reserve for the employment of all future mechanisms.

5.1.10 Regulatory Compliance

Indigo signed the Attestation of Regulatory Compliance (27 July 2022), thereby affirming the project's compliance status throughout the project reporting period. The MP states that the Project Owner will disclose in writing to the verifiers any and all instances of legal violations. During this reporting period, the verification team was not informed of any legal violations.

During the site reconnaissance and desk review verification activities, Aster Global sought to confirm that the Project is in compliance with all laws related to the scope of the Soil Enrichment project under the Reserve's SEP.

The Project Owner ensures the regulatory compliance of all participating growers through review of grower entered data. Additionally, growers must sign a contract for participation in the project which includes an attestation that growers must be in compliance with all applicable federal, state and local laws.

The verifiers' review of agriculturally related environmental laws, using the EPA's website for federal laws and Cornell Law School Legal Information Institute's website for state laws and regulations indicate that no law or regulation, requiring or outlawing a conservation practice, could be found. States in which a site visit or desktop review field was located were reviewed, including

Arkansas, Illinois, Indiana, Iowa, Kansas, Missouri, Ohio, South Carolina, Tennessee and Wisconsin. Laws pertaining to agricultural practices include federal regulations regarding waste disposal and welfare standards for animal operations and aquaculture, handling and use of pesticides, biosolids application, hazardous substances and toxic emissions. State regulations tend to concentrate on safety and health concerns of workers and farm animals, including regulating the use of pesticides and minimal standards for transportation and animal welfare. Some states require landowners to employ wind erosion control measures so eroded soil materials do not become a nuisance or health hazard.

No regulations requiring or barring farm management activities that would be expected to increase SOC accumulation or reduce GHG emissions were found.

5.2 Quantification of Net GHG Reductions and Removals

5.2.1 GHG Assessment Area

The verification team reviewed Table 4.1 of the MP and determined all SSRs identified in the SEP are appropriately accounted for. Table 4.1 of the MP provides appropriate justifications for inclusion/exclusion of the identified SSRs in the project boundary for this reporting period.

As no livestock grazing occurred during this verification period, two SSRs (manure and urine deposition and enteric fermentation) were excluded from the GHG Assessment Boundary.

Both published literature and three expert testimonials provided by the project developer support the conclusion that CH_4 emissions from project soils are de minimis. The three subject area experts are Dr. Ankur Desai of the University of Wisconsin Department of Atmospheric and Oceanic Sciences, Dr. Jonathan Sanderman of The Woodwell Climate Research Center and Eric Toensmeier of Perennial Solutions. These experts stated CH_4 emissions from upland soils are negligible, at worst, and upland soils are known to serve as sinks, not sources of CH_4.

The verifiers found no wetland soils were mapped in the fields chosen for review. In addition, several papers supporting these experts regarding CH_4 emissions, or the lack of them, from upland soils were provided, which are listed in the document *IndigoCarbon_US-1_2021_0010_v1 (July 29th, 2022) – De minimis assessments.pdf*). The article by Junjun Wu, et al., describes upland soils as sinks for methane. The article by K.A. Smith, et al, states that only soils with a very high water table were sources of methane, and all other soils were sinks. The verifiers therefore agree that project soils are not a source of methane.

The verification team was provided documentation suggesting that non-reversible CO_2 emissions from fossil fuel are to be considered *de minimis* during this reporting period (*IndigoCarbon_US-1_2021_0010_v1 (July 29th, 2022) – De minimis assessments.pdf*). As stated in Section 5.4.3 of the SEP, where projects can show that CO_2 emissions are *de minimis* (i.e., less than 5% of total baseline emissions for that reporting period), an alternative approach for estimation may be proposed. The Project Developer requested clarification from the Reserve regarding this requirement, suggesting the basis for determination of *de minimis* be interpreted as the absolute value of emission reductions from fossil fuels is less than 5% of total emissions reductions. The Reserve agreed that this interpretation is appropriate.

The verification team reviewed the approach for determining that fossil fuel use for this reporting period was less than 5% of the entire project level emissions across all other sources. The verification team reviewed the literature on which the increase of fossil fuel use estimates for each identified practice change is based and determined that they are conservative and appropriate. Using the method described in the referenced document, the verification team independently quantified the total emissions from fuel use across the grower population and determined that it is less than 5% of total emission reductions from all sources.

Based on the guidance provided by the Reserve and the review and confirmation of the alternative approach, the verification team determined that the alternative approach for quantifying non-reversible emissions reductions is appropriate. See Section 5.2.8 of this report for more information on the inclusion of fossil fuel emissions in overall project quantification.

Aboveground/belowground biomass, dead wood, litter, and wood products were appropriately excluded from the GHG Assessment Boundary, as allowed by the SEP. As such, the final SSRs included in the GHG Assessment Boundary for this reporting period include soil organic carbon, fertilizer use, use of nitrogen fixing species, fossil fuel use, and biomass burning.

5.2.2 Aggregation of Baseline Emissions

The verification team confirmed, through examination of selected fields, that the baseline scenarios for each field in the project have been appropriately defined in accordance with section 3.4.1.3 of the SEP, with pre-project activities used as the baseline for each field and each field having a baseline period of 3-5 years. The verification team substantiated that the modeling of the baseline was conducted appropriately in line with Section 3.4.1.4 of the SEP and that baseline emissions were appropriately modeled/re-modeled for each reporting period.

5.2.3 Quantification Approach

The verification team reviewed the quantification approach for GHG and GHG sources relevant to the project during this reporting period. The Project Developer quantified SOC emissions for both the baseline and project scenarios appropriately through soil sampling (see Section 5.2.10) and the use of the DayCent-CR biogeochemical model (see Section 5.2.11). The verification team substantiated that the SOC measurements used in calculation of project emission reductions are less than 5 years old and, thus, valid. The Project Developer appropriately utilized SEP default equations and emission factors for calculations of non-reversible emissions reductions in both the baseline and project scenarios. Emissions from fossil fuel use were determined to be appropriately accounted for in overall project emissions calculations (see Sections 5.2.1, 5.2.8 of this report) As noted in Section 5.2.1 of this report, manure deposition and enteric fermentation were determined to be not applicable based on project activities implemented during this verification and soil methanogenesis was determined to be *de minimis*. As such, no verification activities were conducted on the GHG sources pertaining to this SSR.

The Project Developer utilized Python scripts in calculation of several aspects pertaining to overall project emissions reductions including SOC (reversible emission reductions), default equations

(non-reversible emission reductions), leakage, and uncertainty. The verification team was provided "inputs" to these scripts and the resultant "outputs" of running the script. While the code utilized by the Project Developer was not provided to the verification team in full, several quantification walkthroughs were held in which the Project Developer explained the coded processes of calculating each of the identified aspects and the relevant aggregation processes. With additional clarification and supplemental documentation from the Project Developer, the verification team independently calculated and confirmed reversible and non-reversible emission reductions, leakage and uncertainty were quantified in line with the SEP. More details regarding quantification of these aspects are included in their respective sections of this report.

Quantification was based on the initial SOC measurements made in 2020 and 2021, as well as additional measurements from this reporting period. The monitoring plan calls for updated SOC measurements at least once every five years. All fields entering the Project during this verification period were randomized (and thus eligible to be sampled) and a subset were elected for sampling.

SEP equations were used to quantify the results of reversible and non-reversible emission reductions, leakage, and uncertainty calculations into total emissions reductions (111,389 tCO_2 equivalents).

5.2.4 Uncertainty Deduction

The Project Developer calculated the uncertainty deduction using equations from Appendix D of SEP v1.1. Utilizing Equation 5.1, relevant equations from Appendix D, and relevant data provided, the verification team independently calculated and confirmed the uncertainty deduction (18.23%) was appropriately calculated and applied in calculation of emissions reductions.

5.2.5 Reversible Emissions Reductions

As noted in Section 5.2.3 of this report, the verification team was not provided with the entire code utilized in the Project Developer's quantification of reversible emission reductions. However, the quantification walkthroughs held by the Project Developer provided the necessary context for the verification team to utilize the documentation and data provided to confirm reversible emissions were appropriately quantified. The verification team independently calculated and confirmed the average change in carbon stocks in the SOC pool for both the baseline and project scenarios for all strata. The verification team confirmed that Equation 5.3 of the SEP was appropriately quantified utilizing the results of the SOC modeling and the appropriate uncertainty deduction (see Section 5.2.4 of this report).

As the Project is applying tonne-tonne accounting, the Project Developer appropriately utilize Equation 5.2a of the SEP in calculation of reversible emission reductions. The verification team independently calculated and confirmed that reversible emissions reductions were appropriately quantified for this reporting period (128,882 tCO_2 equivalents).

5.2.6 Buffer Pool Contribution

Table 5.9 of the SEP includes information on calculating the project's cumulative risk of reversals during the reporting period ($Risk_{rev,rp}$). The verification team substantiated that the project owner

is a private entity and that the project area is geographically dispersed. As such, the project utilizes the appropriate $Risk_{rev,rp}$ value (0.145) in its calculation of total contributions to the buffer pool for the reporting period. The verification team substantiated that the total reversible emission reductions were appropriately quantified in Section 5.2.5 of this report, and utilizing the substantiated $Risk_{rev,rp}$ value, the verification team confirmed that the buffer pool contribution for this reporting period (18,678 tCO_2 equivalents) was appropriately quantified and reported.

5.2.7 Reversals

As described in Section 5.2.5 of this Report, the verification team substantiated that Equation 5.3 of the SEP was appropriately quantified. The verification team confirmed that the solution of the application of Equation 5.3 was positive, indicating that no reversals occurred during this reporting period. As no reversals were detected, application of Equation 5.5 for quantifying reversal amount was not warranted.

5.2.8 Non-Reversible Emissions Reductions

As noted in Section 5.2.7 of this report, no reversals occurred during the reporting period. As noted in Section 5.2.1 of this report, manure and urine deposition and enteric fermentation were not included as SSRs as project activities did not include livestock grazing. As such, the calculation of Average Grazing Days and application of Equations 5.11 and 5.13 of the SEP were not applicable during this reporting period.

The Project Developer opted to utilize default equations identified in the SEP in quantification of non-reversible emission reductions for fertilizer use, use of nitrogen fixing species, and biomass burning. As noted in Section 5.2.3 of this report, the verification team was not provided with the entire code utilized in the Project Developer's quantification of non-reversible emission reductions. However, the quantification walkthroughs held by the Project Developer, along with supplemental documentation provided the necessary context for the verification team to utilize the documentation and data provided to confirm reversible emissions were appropriately quantified.

The verification team was provided with the raw data for events pertaining to non-reversible emissions reductions events for all fields and the associated "outputs" of the Project Developer's running of the script. As the verification team was unable to access the project's code, the Project Developer provided the verification team with detailed documentation that demonstrated the aggregation of emission reductions from fertilizer use and nitrogen fixing species from the field level to the stratum level. Using relevant SEP equations, and documentation and data provided, the verification team independently calculated and confirmed stratum level emission reductions from fertilizer use and nitrogen fixing species. Additionally, the verification team independently calculated and confirmed that emissions from biomass burning were appropriately quantified using the relevant SEP equations.

As described in Section 5.2.1 of this report, the verification team substantiated that an alternative approach for estimating emissions from fossil fuel was acceptable and that the quantification approach was conservative and conducted appropriately. While fossil fuels were determined to be *de minimis* (i.e., less than 5% of the entire project emissions), the Project Developer appropriately

accounted for the calculated emissions utilizing the referenced approach. The verification team substantiated the stratum level emissions from fossil fuel use.

Utilizing the described verification activities, the verification team substantiated that the non-reversible emissions reductions for included SSRs (fertilizer use, use of nitrogen fixing species, fossil fuel use, and biomass burning) were appropriately quantified using SEP Equation 5.6 for this reporting period (-17,433 tCO_2 equivalents).

5.2.9 Leakage

While livestock grazing did not occur in the project area during this reporting period, leakage with respect to livestock was assessed by the Project Developer in Section 5.1.1 of the MP, in the instance that grazing activities are included in future reporting periods. The verification team reviewed the methods proposed to be used should grazing activities occur in future reporting periods and determined them to be appropriate and in line with the SEP.

Leakage from yield reduction of cash crops is assessed in Section 5.2.2 of the MP. According to the MP, farmers report the Actual Production History (APH) for each major crop category. Yield ratios are calculated using the reported APHs and the regional APH values for the identified crops. If this yield ratio declines by more than 5 percentage points, as compared to the average yield ratio for that crop during the historical baseline period, then a leakage deduction will be applied.

The verification team reviewed reported APHs from several fields and determined them to be appropriate. The verification team spot checked several regional APHs used in the quantification of yield ratios and determined they were appropriately sourced and reported. The quantification approach for leakage was explained to the verification team during a quantification walkthrough call with the Project Developer. The verification team utilized the raw data files provided by the Project Developer and Equations 5.30 - 5.33 of the SEP to independently calculate and confirm the leakage deduction (0%) to be applied in calculation of emissions reductions.

5.2.10 Soil Sampling

The soil sampling SOPs were reviewed by the verification team and found to be in line with the requirements found in table 6.2 of the SEP and common standards of soil science. One of the Project Developer's soil sampling contractors demonstrated the soil sampling SOP for bulk density and organic carbon content for the soil scientist on the verification team. The technician demonstrated the sampling procedures without a flaw and was knowledgeable about storage and shipping requirements.

Stratification was based on the time the samples were collected. While stratification was performed in an unusual manner, the list of soil properties and other parameters suggested for use in stratifying the project area are not required.

Samples were handled as directed in table 6.2, according to project SOPs. The method of analysis for carbon content was dry combustion. Laboratories used participate in NAPTP and its voluntary performance assessment program.

5.2.11 Biogeochemical Modeling

The biogeochemical model (DayCent-CR version 1.0) used in the first reporting period had been previously validated and approved for crediting of SOC. For this reporting period, several changes were made to version 1.0 of the model, resulting in version 1.0.2. DayCent-CR version 1.0.2 was calibrated and validated by Indigo Ag, which is also the Project Developer. The previous version of the model (version 1.0) had been validated by Soil Metrics LLC, which has since been obtained by Indigo. Key changes between version 1.0 and version 1.0.2 of the DayCent-CR model are summarized below:

- Pooled measurement uncertainty calculations were changed to address an ambiguity that arose in the second validation but not in the first validation report.
- The variance structure fitted during calibration now accounts for the way simulation errors build on each other with time.
- Eight new sites were added to the validation dataset.
- Three of the new validation sites were initially excluded from the previous report but were included in this report due to identification of additional data from other publications.
- Six appendices detailing changes from the Model Requirements were removed as they are no longer needed when using version 1.1a of the Model Requirements.
- The restriction of valid model predictions to SOC changes smaller than 5000 g C m^{-2} has been removed as uncertainty across the full range of observed dSOC was adequate in the current validation report.

The calibration and validation of the model were substantiated to have been properly conducted through review and approval of the model validation report by CAR, approved 3rd party expert reviewer Dr. Michael Dietze of Boston University, and the sensitivity analysis, provided separately in supporting document 0072. The analysis of the relative influence of parameters on model results is reasonable.

The verification team substantiated that the report met review and approval requirements in accordance with the rules given in the SEP Model Requirements and Guidance v1.1a, demonstrating the model was successfully calibrated and thus meets the minimum model requirements. 3rd party reviewers who approved the final version of the model validation report provided to the verification team were approved by the Reserve to possesses the necessary qualifications to assess model calibration and validation rules given in the SEP Model Requirements and Guidance v1.1a.

5.3 Monitoring and Reporting Requirements

The verification team reviewed the Project Monitoring Plan (dated 18 November 2022) and determined it is sufficiently rigorous to support the requirements of the SEP and proper operation of the project.

The Project Developer uses remote sensing and analysis, self-reporting applications for growers and local/regional staff in monitoring operations. Properly trained soil technicians sample new instances and will be available for resampling operations.

Local and regional staff were interviewed during the site visits and their interactions and conversations with growers were observed. They were knowledgeable and had the skills needed to ensure proper data collection.

Data was reviewed for reasonableness along with QA/QC procedures used to flag unusual or unlikely data point outliers. The data and procedures used for QA/QC were reasonable and appear to able to catch errors.

The project reporting period, specifically the project start date, aligns with the cultivation cycle of the field that establishes the start date.

Records from selected growers were supplied to the verifiers by request. These were found to be complete and are retained by the project developer.

No animal operations are currently part of the project.

6 VERIFICATION FINDINGS

The List of Findings has been compiled and is available under separate cover. The List of Findings is a confidential document between Aster Global (verifiers) and Indigo (Project Developer/Project Owner) and is not publicly available.

After review of all project information, procedures, calculations, supporting documentation and site visit, Aster Global confirms that the *Indigo U.S. Project No. 1* Project Monitoring Plan, dated 18 November 2022 and Monitoring Report 2, dated 14 December 2022 are accurate and consistent with all aforementioned Reserve criteria and requirements. Aster Global confirms all verification activities, including objectives, scope and criteria, level of assurance, and project documentation to be complete and in adherence to the Reserve's Soil Enrichment Protocol v1.1 as documented in this report. Aster Global concludes without any qualifications or limiting conditions that the *Indigo U.S. Project No 1.* meets the requirements of the Reserve.

The GHG assertion provided by Indigo and verified by Aster Global has resulted in the GHG emission reduction or removal of 111,389 equivalents by the project during the verification period/reporting period (08 May 2018 – 31 December 2021).

7 VERIFICATION STATEMENT

This verification statement confirms that Aster Global, Inc., has evaluated the *Indigo U.S. Project No. 1,* its Monitoring Plan, dated 18 November 2022, and Monitoring Report 2, dated 14 December 2022 developed by Indigo, according to the criteria outlined by the Climate Action Reserve, and that this verification statement is consistent with ISO 14064-3:2006 and ISO 14065:2013. The dates of the period evaluated for this verification are (08 May 2018 – 31 December 2021).

Aster Global Environmental Solutions confirms all verification activities, including objectives, scope and criteria, level of assurance, monitoring plan, monitoring report, and project implementation of the Monitoring Plan to be complete and in adherence to the Climate Action Reserve Soil Enrichment Protocol, Version 1.1, May 31, 2022, as documented in this verification report for the project entitled *Indigo U.S. Project No. 1* dated December 22, 2022. Aster Global concludes without any qualifications or limiting conditions that the *Indigo U.S. Project No. 1* project is without material discrepancy; the verification activities provide a reasonable level of assurance; the project meets the requirements of Climate Action Reserve. The project produces 111,389 total gross CRTs before the 14.5% buffer withholding applied to the total reversible emissions reductions generated (128,822). Total cumulative CRTs for the reporting period 08 May 2018 to 31 December 2021 are 92,711 as 18,678 CRTs will be contributed to the buffer pool.

Vintage	Gross Quantity of Emission Reductions Generated	Quantity of Reversible Emissions Reductions Generated	Quantity of Current Offset Credit Vintage to Buffer Pool[1]	Quantity of Offset Credits to Be Deposited to Account[2]
2018	4,435	5,258	762	3,673
2019	21,158	25,305	3,669	17,489
2020	38,414	44,996	6,524	31,890
2021	47,382	53,263	7,723	39,659

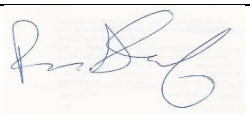
8 VERIFICATION RESULTS / CONCLUSION

Aster Global confirms all verification activities including objectives, scope and criteria, level of assurance and the PDD to be complete and in adherence to the Climate Action Reserve Verification Program Manual (Feb. 3, 2021), as documented in this report. Aster Global concludes without any qualifications or limiting conditions the *Indigo U.S. Project No. 1* Project Monitoring Plan, dated 18 November 2022 and Monitoring Report 2, dated 14 December 2022 meet the requirements of the Climate Action Reserve Soil Enrichment Protocol, Version 1.1.

Report Submitted to:	Indigo Carbon PBC Climate Action Reserve

[1] Contributions to the buffer pool calculated by applying the 14.5% buffer withholding to the reversible emissions reductions generated for each vintage.

[2] Quantity of offset credits to be deposited to account calculated by subtracting the buffer pool contributions from the gross quantity of emission reductions generated for each vintage.

Report Submitted by: Aster Global Lead Verifier Name and Signature:	 Richard Scharf Lead Verifier
Senior Internal Reviewer Name and Signature:	 Shawn McMahon Senior Internal Reviewer
Aster Global Regional Technical Manager Name and Signature:	 Janice McMahon President
Date:	01 February 2023 (v2)

RS/MC/JPM/21047.01_RP2_CAR1459_Indigo_AG_CAR SEP Ver Report_Finalv2_20230201.docx
CAR SP :PF 02/01/2023f

APPENDIX A – Documents Received/Reviewed

During the project verification, Aster Global received and reviewed the following documents provided by Indigo Ag and the Reserve.

Name:	Date Received:	Comments
Verification Data Submission.zip	7/29/2022	27,552 folders, 63,537 files. Full file available upon request.
CAR1459_Monitoring_Plan_v2.0 (July 29th, 2022).pdf	7/29/2022	
CAR1459_Monitoring_Report_v2.0 (July 29th, 2022).pdf	7/29/2022	
IndigoCarbon_US-1_2021_0001_v1 (July 29th, 2022) - Soil Carbon (30 cm) Sampling.pdf	7/29/2022	
IndigoCarbon_US-1_2021_0002_v1 (July 29th, 2022) - Bulk Density (30 cm) Sampling.pdf	7/29/2022	
IndigoCarbon_US-1_2021_0003_v1 (July 29th, 2022) - pH and Texture Composite (30 cm) Sampling.pdf	7/29/2022	
IndigoCarbon_US-1_2021_0004_v1 (July 29th, 2022) - Field Mapping and Navigation.pdf	7/29/2022	
IndigoCarbon_US-1_2021_0005_v1 (July 29th, 2022) - Field equipment sanitation procedures.pdf	7/29/2022	
IndigoCarbon_US-1_2021_0006_v1 (July 29th, 2022) - Sample Shipment.pdf	7/29/2022	
IndigoCarbon_US-1_2021_0007_v1 (July 29th, 2022) - Soil Sampling Team Qualifications.pdf	7/29/2022	
IndigoCarbon_US-1_2021_0009_v1 (July 29th, 2022) - Grower Contracts.pdf	7/29/2022	
IndigoCarbon_US-1_2021_0009a_v1 (July 29th, 2022).pdf	7/29/2022	
IndigoCarbon_US-1_2021_0009b_v1 (July 29th, 2022).pdf	7/29/2022	
IndigoCarbon_US-1_2021_0009c_v1 (July 29th, 2022).pdf	7/29/2022	
IndigoCarbon_US-1_2021_0009d_v1 (July 29th, 2022).pdf	7/29/2022	
IndigoCarbon_US-1_2021_0009e_v1 (July 29th, 2022).pdf	7/29/2022	
IndigoCarbon_US-1_2021_0009f_v1 (July 29th, 2022).pdf	7/29/2022	
IndigoCarbon_US-1_2021_0009g_v1 (July 29th, 2022).pdf	7/29/2022	
IndigoCarbon_US-1_2021_0009h_v1 (July 29th, 2022).pdf	7/29/2022	
IndigoCarbon_US-1_2021_0010_v1 (July 29th, 2022) – De minimis assessments.pdf	7/29/2022	
IndigoCarbon_US-1_2021_0012_v1 (July 29, 2022) - Attestation of voluntary implementation.pdf	7/29/2022	
IndigoCarbon_US-1_2021_0013_v1 (July 29, 2022) - Attestation Regulatory Compliance.pdf	7/29/2022	
IndigoCarbon_US-1_2021_0015_v1 (July 29th, 2022) - Lab soil analysis procedures.pdf	7/29/2022	

IndigoCarbon_US-1_2021_0016_v1 (July 29th, 2022) - Cultivation cycle and crop growing seasons definition.pdf	7/29/2022
IndigoCarbon_US-1_2021_0018_v1 (July 29th, 2022) - Additional management practice assessment.pdf	7/29/2022
IndigoCarbon_US-1_2021_0024a_v1 (July 29th, 2022) - How additional management practices were defined.pdf	7/29/2022
IndigoCarbon_US-1_2021_0024b_v1 (July 29th, 2022) - Additional practices literature and model review_.xlsx	7/29/2022
IndigoCarbon_US-1_2021_0026a_v1 (July 29th, 2022) - Constructing the common practice assessment Negative List for Additionality.pdf	7/29/2022
IndigoCarbon_US-1_2021_0026b_v1 (July 29th, 2022) - County-level tillage rotation assessment report.pdf	7/29/2022
IndigoCarbon_US-1_2021_0026c_v1 (July 29th, 2022) - Negative List.xlsx	7/29/2022
IndigoCarbon_US-1_2021_0027_v1 (July 29, 2022) - Attestation of Title form.pdf	7/29/2022
IndigoCarbon_US-1_2021_0028_v1 (July 29th, 2022) – Project Submittal form.pdf	7/29/2022
IndigoCarbon_US-1_2021_0029_v1 (July 29th, 2022) - Grower Survey Questions.xlsx	7/29/2022
IndigoCarbon_US-1_2021_0030_v1 (July 29th, 2022) - Model input mapping.pdf	7/29/2022
IndigoCarbon_US-1_2021_0031_v1 (July 29th, 2022) - Gapfilling Procedures.pdf	7/29/2022
IndigoCarbon_US-1_2021_0032_v1 (July 29th, 2022) - Grower Data QAQC.pdf	7/29/2022
IndigoCarbon_US-1_2021_0034_v1 (July 29th, 2022) - Boundary review workflow and SOP.pdf	7/29/2022
IndigoCarbon_US-1_2021_0048_v1 (July 29th, 2022) - Logic used to construct baseline threads.pdf	7/29/2022
IndigoCarbon_US-1_2021_0049_v1 (July 29th, 2022) Model Provider Documentation (1).pdf	7/29/2022
IndigoCarbon_US-1_2021_0050_v1 (July 29th, 2022) - Monitoring for permanence proposal.pdf	7/29/2022
IndigoCarbon_US-1_2021_0054_v1 (July 29th, 2022) - Imputation of bulk density, soil pH, and texture measurements.pdf	7/29/2022
IndigoCarbon_US-1_2021_0055_v1 (July 29th, 2022) - Remote Sensing Model Documentation.pdf	7/29/2022
IndigoCarbon_US-1_2021_0059_v1 (July 29th, 2022) - CAR SDG Reporting Tool.xlsx	7/29/2022
IndigoCarbon_US-1_2021_0060_v1 (July 29th, 2022) - Process to screen soil sampling datasets.pdf	7/29/2022

IndigoCarbon_US-1_2021_0062_v1 (July 29th, 2022) - Addressing incomplete soil sample data.pdf	7/29/2022	
IndigoCarbon_US-1_2021_0063_v1 (July 29th, 2022) - Details on addressing incomplete data.pdf	7/29/2022	
IndigoCarbon_US-1_2021_0065_v1 (July 29th, 2022) – Model output post-processing.pdf	7/29/2022	
IndigoCarbon_US-1_2021_0066_v1 (July 29th, 2022) – Project Data Flow.pdf	7/29/2022	
IndigoCarbon_US-1_2021_0067_v1 (July 29th, 2022) - CAR Written Guidance.xlsx	7/29/2022	
IndigoCarbon_US-1_2021_0068_v1 (July 29th, 2022) - Details on the pre-strata.pdf	7/29/2022	
IndigoCarbon_US-1_2021_0069_v1 (July 29th, 2022) - Data sources for data review.pdf	7/29/2022	
IndigoCarbon_US-1_2021_0070_v1 (July 29th, 2022) - Running the Model.pdf	7/29/2022	
IndigoCarbon_US-1_2021_0071_v1 (July 29th, 2022) - APH Method for Leakage Calculation.pdf	7/29/2022	
IndigoCarbon_US-1_2021_0072_v1 (July 29th, 2022) - Model Sensitivity.pdf	7/29/2022	
IndigoCarbon_US-1_2021_0073_v1 (July 29th, 2022) - Model preparation.pdf	7/29/2022	
IndigoCarbon_US-1_2021_0074_v1 (July 29th, 2022) – Default Equation input mapping.pdf	7/29/2022	
IndigoCarbon_US-1_2021_0075_v1 (July 29th, 2022) - Model Output Screening QC and Gap-filling Assessment.pdf	7/29/2022	
credits_by_field.csv	8/10/2022	
desktop selected growers.zip	9/26/2022	2,034 folders, 2,035 files. Full file available upon request.
Request from AG re_ practice change names_v2.pdf	9/26/2022	
walkthrough follow-up materials.zip	9/27/2022	
fossil_fuel_de_minimis_supporting_data (CAR1459_RP2).csv	9/27/2022	
21047.01_Indigo AG Project 1 SEP RP2_Round_1_Indigo Response.xlsx	11/21/2022	
[redacted] AD-1026.pdf	11/21/2022	
[redacted] AD-1026.pdf	11/21/2022	
[redacted] AD-1026.pdf	11/21/2022	
[redacted] AD-1026.pdf	11/21/2022	
fertilizer_nitrous_oxide_emissions.pdf	11/21/2022	
IndigoCarbon_US-1_2021_0067_v2 - CAR Written Guidance.pdf	11/21/2022	
rp2_round1_finding3_addl_start_and_issuance_history_by_field_v3.csv	11/21/2022	

PO 3883.pdf	11/21/2022
PO3884.pdf	11/21/2022
RP2 lab result supporting info.csv	11/21/2022
RP2_CAR_clarifications_approval.pdf	11/21/2022
selected_landowner_info.xlsx	11/21/2022
IndigoCarbon_US-1_2021_0073_v2 - Model preparation (November 18th, 2022).pdf	11/21/2022
Lab sampling data lookup.pdf	11/21/2022
leakage_walkthrough.pdf	11/21/2022
CAR1459_Monitoring_Plan_v2.1 (November 18th, 2022).pdf	11/21/2022
IndigoCarbon_US-1_2021_0046_FINAL - Soil Metrics Type 1 Validation Report (November 18th, 2022).pdf	11/21/2022
CAR1459_Monitoring_Report_v2.1 (November 18th, 2022).pdf	11/21/2022
IndigoCarbon_US-1_2021_0010_v2 – De minimis assessments (November 18th, 2022).pdf	11/21/2022
IndigoCarbon_US-1_2021_0075_v2 - Model Output Screening QC and Gap-filling Assessment (November 18th, 2022).pdf	11/21/2022
Approval from CAR - Program stacking definitions.pdf	11/21/2022
Evidence to CAR - Program stacking definitions.pdf	11/21/2022
IndigoCarbon_US-1_2021_0074_v2 – Default Equation input mapping (November 18th, 2022).pdf	11/21/2022
0lk-rfVmX 2021-04-02 Carbon contract - [redacted] - Master.pdf	11/21/2022
a0JONHjIR.pdf	11/21/2022
incorporation_of_crop_residues_nitrous_oxide_emissions.pdf	11/21/2022
QwMTrZZyL 2021-03-30 Carbon contract - [redacted] - Master.pdf	11/21/2022
SXZgwOTFQ.pdf	11/21/2022
Yho_w43cL 2021-08-19 Carbon contract - [redacted] - Master.pdf	11/21/2022
22iCfd4hj 2021-01-29 Carbon contract - [redacted] - Master.pdf	11/21/2022
DribypD1d.pdf	11/21/2022
qDpmjW1Nu.pdf	11/21/2022
Sp3ufw-xH.pdf	11/21/2022
ywmPXvvE7 2021-03-26 Carbon contract - [redacted] - Master.pdf	11/21/2022
AMsElDNXz 2020-11-29 Carbon contract - [redacted] - Master.pdf	11/21/2022
rkgMgMY8KQ [redacted] Carbon Contract 7-1-19_Completed.pdf	11/21/2022
ryRgX5XfV.pdf	11/21/2022
3GxkrX6Jd.pdf	11/21/2022
4_7xaTVYR 2021-01-28 Carbon contract - [redacted] - Master.pdf	11/21/2022
Uycd6yN9h.pdf	11/21/2022
weoDHK5gT 2020-08-01 Carbon contract - [redacted] - Master.pdf	11/21/2022
L0P7_UQRU 2021-04-29 Carbon contract - [redacted] - Master.pdf	11/21/2022
VdFY6KbuA.pdf	11/21/2022
S1Oh1RnQE.pdf	11/21/2022
U7R5XxJ7g.pdf	11/21/2022

xqyXMJ7F0.pdf	11/21/2022	
SjO0ieRT5.pdf	11/21/2022	
rylJQqULEX.pdf	11/21/2022	
HyHeLdpIE.pdf	11/21/2022	
SkgZAooIZX.pdf	11/21/2022	
2FyNhTcsw.pdf	11/21/2022	
4fpErKOUi.pdf	11/21/2022	
8st4I4AJDm.pdf	11/21/2022	
KjwdubYCo 2021-08-07 Carbon contract [redacted] - Master.pdf	11/21/2022	
qgyDfn7yM.pdf	11/21/2022	
42QSfTw8g.pdf	11/21/2022	
CAR1459_RP2.zip	11/21/2022	27,552 folders, 63,525 files. Full file available upon request.
IndigoCarbon_US-1_2021_0067_v2 - CAR Written Guidance (November 18th, 2022).xlsx	11/21/2022	
hel_supporting_qaqc_data.xlsx	11/21/2022	
Accessing grower AD-1026 forms.docx	11/21/2022	
21047.01_Indigo AG Project 1 SEP RP2_Round_2items_Indigo Response.xlsx	12/9/2022	
aph_inputs_for_fields_of_interest_round2.csv	12/9/2022	
aph_walkthrough_round2.pdf	12/9/2022	
CAR Approval for Second Model Val Report.pdf	12/9/2022	
21047.01_Indigo AG Project 1 SEP RP2_Round_3 Findings_IndigoResponse.xlsx	12/14/2022	
CAR1459_Monitoring_Report_v2.2 (December 14th, 2022).pdf	12/14/2022	
results_by_year_before_rounding.numbers	12/14/2022	
FW SEP Clarifications for 1459_RP1 Verification.msg	2/1/2023	