



Verification Report for CAR 639 – El Dorado Nitrogen LP Nitrous Oxide
Abatement Project
July 1, 2010 – October 15, 2010 Reporting Period

Prepared for:
LSB Industries

December 22, 2010

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1.0 Introduction

Ruby Canyon Engineering (RCE) was contracted by ClimeCo Corporation (ClimeCo) to perform the verification of the El Dorado Nitrogen LP (EDNLP) Nitrous Oxide Abatement Project (“Project”) for the reporting period July 1, 2010 through October 15, 2010 to the Climate Action Reserve. The Project involves GHG emission reductions from the destruction of nitrous oxide (N₂O) using a secondary abatement catalyst at a nitric acid plant located in Baytown, Texas.

1.1 Project Background & Site Description

The Project Activity consists of the installation of a secondary abatement catalyst at an existing nitric acid plant in Baytown, TX. As part of the Project, a secondary catalyst was placed in the Ammonia Oxidation Reactor (AOR), immediately downstream of the ammonia oxidation catalyst, catalytically reducing the N₂O that would have otherwise been vented to the atmosphere. The Project is located at EDNLP’s facility which is situated on a larger chemical production facility owned by Bayer’s Material Science, LLC. The nitric acid from the EDNLP’s facility is used on site by Bayer for the manufacture of methylene diphenyl diisocyanate and polycarbonate resins.

1.2 Responsible Parties

LSB Industries, Inc.
16 S. Pennsylvania Ave.
Oklahoma City, OK 73107

El Dorado Nitrogen LP
8490 West Bay Road
Baytown, TX 77520

ClimeCo America Corporation
100 Southeast Second Street, 36th Floor
Miami, FL 33131

1.3 Verification Team

The RCE verification team consisted of the following individuals who were selected based upon CAR verification experience and knowledge of U.S. EPA regulations and the N₂O (nitric acid plant) sector.

Lead Verifier: Michael Coté
Team Member: Nina Pinette
Team Member: Bonny Crews
Senior Reviewer: Greg Palmer

1.4 Objectives

The goal of the verification activities was to ensure that the claimed GHG emission reductions were complete, consistent, accurate, transparent and permanent and that the Project was in compliance with CAR project additionality, monitoring and reporting requirements. Furthermore, the verification activities ensure that the data provided to RCE is well documented and free of any material errors or omissions.

1.5 Scope

The scope of the verification consisted of the following independent and objective activities:

- Review the reporting period's Project Design Document
- Review the reporting period's Project Monitoring Plan
- Conduct a site visit
- Review the Project boundaries
- Review Project Eligibility
- Review the Project Data Acquisition & Quality Control Procedures
- Review the Project's baseline emission reductions
- Review the Project's emission reduction calculations
- Review of the Project documents and data against the Verification Criteria listed in Table 1.
- Issue requests for additional data, clarifications and corrective actions as necessary
- Issue a verification report, list of findings and opinion to LSB Industries and CAR

1.6 Verification Criteria

Table 1 Verification Criteria

Standard of Verification	• CAR Nitric Acid Production Project Protocol Version 1.0 (December 2, 2009) • CAR Verification Program Manual (June 17, 2009) • Errata and Clarification to Nitric Acid Production Project Protocol Version 1.0 (November 18, 2010) • CAR 639 Variance Determination 1 (June 15, 2010) • CAR 639 Variance Determination 2 (August 2, 2010) • CAR Program Manual (March 16, 2010)
Verification Process	ISO 14064-3 Specification with guidance for the validation and verification of greenhouse gas assertions
Level of Assurance	Reasonable assurance (95% materially correct)
Materiality	A +/-5 percent materiality threshold

2.0 Verification Activities Summary

This is the initial verification for the Project including both the baseline period of November 1, 2009 – June 27, 2010, with the CL_{cap} reached on May 22, 2010, and initial reporting period of July 1, 2010 – October 15, 2010. The verification began with ClimeCo selecting RCE as the verification body. ClimeCo chose to verify the Project in two phases – Phase 1 prior to the installation of the secondary catalyst for the baseline and historical emissions (including the installation and certification of the continuous emissions monitoring system (CEMS)), and Phase 2 for the portion of the project campaign that is included in the initial reporting period.

Prior to starting the verification activities, RCE developed a verification plan that was followed throughout the verification. The verification plan consisted of the following activities:

- Completion of a Project COI/NOVA form by RCE to identify any potential with the Project or Project developer. The COI/NOVA form was submitted to CAR's online website along with a mitigation plan which was approved by CAR on May 18, 2010.
- A teleconference verification kick-off meeting was held on May 26, 2010. During the kick-off meeting RCE reviewed the verification objectives and process, the verification schedule, and requested the verification background documents.

- RCE received the background verification documents for Phase 1 (the historical and baseline emissions) by email on June 2, 2010 from ClimeCo.
- RCE performed a strategic review and risk assessment of the received data and support documents in order to understand the scope and areas of potential risk in the GHG emissions reductions.
- A risk-based site visit sampling plan and desktop sampling plan were developed for Phase 1 based upon the strategic review and risk assessment. The sampling plans revolved around the installation/certification/QA/QC of the CEMS equipment as well as handling and manipulating data as prescribed in the Nitric Acid Production Project Protocol. The verification plan, sampling plan and desktop sampling plan are used throughout the verification and were revised as needed based upon additional risk assessments.
- The Phase 1 site visit was conducted on June 9-10, 2010. During the site visit RCE performed key personnel interviews, inspected the Project CEMS equipment, and observed the onsite GHG management systems, and data gathering, monitoring and handling practices. RCE also verified a sample of the GHG assertion summary (for the baseline campaign) against the raw data output from the CEMS equipment.
- A risk-based desktop review of the submitted verification documents was performed. The desktop review included an assessment of the GHG calculation methods and inputs, source data completeness, GHG management and monitoring systems, evidence of regulatory compliance and record retention practices.
- A List of Findings document that includes requests for additional data, clarifications & corrective actions was submitted to ClimeCo several times during the Phase 1 verification process. Many of the findings were addressed in two variance approvals and CAR's issuance of the Errata and Clarification to Nitric Acid Production Project Protocol.
- RCE received the background verification documents for Phase 2 (the project emissions and emission reductions) by email on October 12, 2010 from ClimeCo.
- A risk-based site visit sampling plan and desktop sampling plan were developed for Phase 2 based upon the strategic review and risk assessment. The sampling plans revolved around the QA/QC of the CEMS equipment, a new data acquisition and handling system, and data handling and manipulation as prescribed in the Nitric Acid Production Project Protocol.
- The Phase 2 site visit was conducted on October 18-19, 2010. During the site visit RCE performed key personnel interviews, inspected the Project CEMS and data acquisition and handling system (DAHS) equipment and observed the onsite GHG management systems, and data gathering, monitoring and handling practices. RCE also verified a sample of the GHG assertion summary (for the project campaign) against the raw data output from the CEMS equipment.
- A risk-based desktop review of the verification documents submitted from ClimeCo on October 13, 2010 was performed. Although the reporting period had not quite ended, RCE's review included an assessment of the GHG calculation methods and inputs, source data completeness, GHG management and monitoring systems, evidence of regulatory compliance and record retention practices.
- Following the site visit, RCE issued ClimeCo a List of Findings document that included requests for additional data, clarifications and corrective actions on October 22, 2010 as part of the Phase 2 verification process. ClimeCo responded to the List of Findings on November 1, 2010. As of November 9, 2010, all outstanding items had been resolved.
- A senior review of the verification sampling, report and opinion was conducted.
- A final Verification Report, Verification Opinion and List of Findings were developed.
- An exit meeting was held with the client on November 17, 2010.

3.0 Verification Findings

3.1 Assessment of the GHG Reduction Project Operations

The Project currently destroys N₂O from a nitric acid plant (NAP) via a secondary abatement catalyst located within the AOR, immediately downstream of the ammonia oxidation catalyst and the absorption tower. The N₂O emissions per unit of nitric acid production were measured during the historical and baseline campaigns using only a primary catalyst in the ammonia oxidation process. The monitoring procedure was repeated in the project campaign after the secondary abatement catalyst was installed in late June 2010. The flue gas flow rates and N₂O concentrations are monitored continuously using a CEMS.

RCE verified the installation and certification, calibration, and accuracy testing of the project monitoring equipment and verified the data management systems in place at the EDNLP facility. RCE verified the installation of secondary abatement catalyst through a site inspection and company records. RCE also reviewed company records of NAP operation, maintenance and downtime, and verified that the CEMS monitoring reports that LSB provided to ClimeCo were used as the raw data for the GHG assertion. RCE determined that the methodology defined in the Monitoring Plan Version 3.1 was correctly applied and is in accordance with Section 6.4 of the N₂O protocol.

3.2 GHG Project Boundary (sources, sinks and/or reservoirs)

According to the CAR Nitric Acid Production Project Protocol 1.0 N₂O is the only GHG included from the baseline and Project activities for secondary abatement projects.

Table 2 lists the sources of GHG emissions reviewed during the verification of the Project.

Table 2 Project GHG Sources, Sinks and Reservoirs

Activity	GHG Sources, Sinks & Reservoirs
Baseline	N₂O vented to the atmosphere.
Project	N₂O vented to the atmosphere

3.3 Project Eligibility Criteria

The CAR Nitric Acid Production Project Protocol 1.0 specifies four eligibility rules that GHG Project developers must meet in order to register reductions with the Reserve. Below is a summary of the CAR eligibility rules and the Project's compliance to each requirement.

- Eligibility Rule I: Location:
The Project is a U.S. based project located in Baytown, TX, USA, and therefore meets this eligibility requirement.
- Eligibility Rule II: Project Start Date:
RCE reviewed documentation that showed the plant operations completed a campaign on June 26, 2010, and that the secondary abatement catalyst was installed along with the replacing of the primary catalyst gauze. Records showed the commencement of nitric acid production on July 1, 2010. The project start date was verified to be July 1, 2010.

- Eligibility III: Additionality
 - Legal Requirement Test

Data from the Project's CEMS shows how the Project continues to meet or exceed the legal requirement test for N₂O emissions. In addition, EDNLP provided evidence that they receive regular updates regarding U.S. EPA and State of Texas rules regarding possible GHG emission standards. RCE also verified that the project developer accurately completed the Attestation of Voluntary Implementation form and uploaded it to the Reserve.
 - Performance Standard

RCE verified that the Project satisfies the Performance Standard by installing a new secondary N₂O abatement catalyst. RCE reviewed evidence of the purchase and installation of the catalyst during the site visit.
- Eligibility IV: Regulatory Compliance
 - RCE verified that the project was in material compliance with all applicable laws during project creation and throughout the reporting period. RCE reviewed U.S. EPA air permit compliance certifications dated March 2009 and April 2010. Only minor deviations (NO_x leaks) were reported during that time. RCE inspected EDNLP's "Environmental Log" used by the Process Manager to record all environmental events (reportable and non-reportable). Only a non-reportable event was logged during the reporting period. RCE verified that no compliance issues were reported at the Texas Commission on Environmental Quality (TCEQ) via their website. Finally, RCE verified that the Attestation of Regulatory Compliance was correctly completed and uploaded to the Reserve.

3.4 Ownership of GHG reductions

RCE reviewed evidence that EDNLP is a wholly owned subsidiary of the project developer, LSB Industries, Inc. and is the owner and operator of the project. RCE also reviewed a confirmation of assignment letter on December 16, 2010 signed by both EDNLP and LSB Industries, Inc. confirming that EDNLP has assigned LSB Industries Inc. to the emission reduction rights for the project. RCE verified that the Attestation of Title was correctly completed and uploaded to the Reserve.

3.5 Assessment of Approved Variances

The Reserve approved two variances for this reporting period that pertained to CEMS calibration, testing, and QA/QC requirements.

Variance Approval 1 – June 15, 2010. The first variance allowed LSB Industries to rely on results of the April 2010 linearity test to demonstrate CEMS compliance with 40 CFR Part 75 for the beginning of the baseline campaign (November 2009) through April 2010. After April 2010, quarterly linearity tests are required.

Variance Approval 2 – August 2, 2010. The second variance exempted LSB Industries from certain aspects of the initial CEMS installation and certification and ongoing CEMS QA/QC requirements that have not been adhered to during the first reporting period (6/25/2010 – 2/28/2011). In lieu of the 7-day calibration error test on the flow meter required at initial certification of the CEMS, LSB Industries must provide sufficient evidence to the verifier to confirm that the flow meter was calibrated properly in-situ prior to operation.

Further, the Reserve accepts that the relative accuracy of the flow meter appears to have been stable throughout the first reporting period, as confirmed by the results of the September 2009 and May 2010 relative accuracy test audit (RATA). Therefore, the Reserve waives the requirement for daily calibration error tests and subsequent daily adjustments, data validation, quality assurance and data recording requirements, provided LSB Industries provides sufficient evidence to the verifier to confirm relative accuracy of the flow meter throughout the reporting period. Finally, the Reserve agrees to waive the requirements for the daily flow interference check.

3.6 Assessment of Information System Controls

RCE verified that the Project monitoring used direct measurements from a CEMS for both gas flow rates and N₂O concentration. The Project uses a Kurz thermal resistance mass flow meter (model 155-A) to measure gas flows and a Temet Gasmeter Fourier transform infrared analyzer (Model FXS-02445) to measure N₂O concentration. RCE inspected the locations of the sample probes within the stack.

The baseline campaign used a CALMET™ MS Windows-based DAHS coupled with a Koyo D4-450 PLC. The automated software received signals and analogs from analyzers in the stack, and information was recorded, stored, and backed up on EDNLP computer servers located at the facility.

The Project proponent upgraded the DAHS prior to the project campaign. The CALCMET™ MS Windows based analyzer control system is now coupled with an Analog to Digital Module (ADM) computer is used for CEMS data generation. The recordkeeping and reporting of the data are processed by the Vivicom Continuous Environmental Monitoring System (VCEMS) computer which monitors the CEMS system status. A Modbus Interface (MBIF) is used for data feeds from the distributive control system and fed to the VCEMS program. RCE verified that the VCEMS software is then used to generate reports in the required formats and provides those reports to plant management and the company server used to back-up the plant data.

RCE verified that each weekday the status of the CEMS is checked by the Process Manager via the VCEMS display, and any necessary corrective action is taken as appropriate and documented in the Process Manager's "Environmental Log".

3.7 CEMS Installation and Certification

The Nitric Acid Production Project Protocol Version 1.0 states that the project developers follow the CEMS installation and certification requirements:

- 40 CFR Part 60, Sec. 60.13
- 40 CFR Part 60, Appendix B, Performance Specification 2
- 40 CFR Part 75, Appendix A, Sec. 6

As is the case with most NAPs located in the U.S., the EDNLP CEMS was installed several years prior to the project start date. The Kurz flow meter was installed in 1999 and the Temet N₂O analyzer was installed in 2003 for NO_x compliance reasons. At the time, the CEMS installation met the requirements of 40 CRF Part 60, Appendix F.

During the Phase 1 site-visit, RCE interviewed Larry Fitzwater, VP of Operations of LSB Chemical Company, Jerry Davis, Plant Manager of EDNLP, and David Gledhill, Project Manager of ClimeCo. It was discovered during the Phase 1 verification activities that a variance request and clarifications to the N₂O Protocol would be necessary to address many of the CEMS installation and certification issues. As a result, RCE verified the CEMS installation and certification against the CAR N₂O Protocol, Variance Approval 2, and the CAR N₂O Errata and Clarification.

7-day Calibration Error Test:

ClimeCo submitted to RCE on June 24, 2010, the calibration drift summary for September 15-21, 2009. This was before the baseline sampling period began. The drift never exceeded 5 percent and is in compliance with 40 CFR Part 75.

Linearity Check:

The project was granted a variance from CAR on June 15, 2010 that allows the April 2010 Linearity Check to take the place of the Check required for the initial certification. The analyzer met the linearity check requirement of <5.0% error.

RATA and bias tests:

On June 24, 2010 ClimeCo provided the results of the RATA that was conducted on September 22, 2009. The analyzer failed to meet the bias test requirement; however, the bias adjustment factor (BAF) has been applied correctly to the N₂O concentration in the stack gas (NC_{SG}).

Cycle Time Test:

On July 9, 2010 ClimeCo provided the document EDN Cylinder Gas Audit and a memo to demonstrate that the analyzer meets the 40 CFR Part 60.13 (e) 2 requirement that the CEMS complete a minimum of one cycle of operation for each 15 minute period.

3.8 Ongoing CEMS QA/QC Program

RCE verified that the ongoing CEMS QA/QC requirements were met during the baseline and reporting periods. It was discovered during the Phase 1 verification activities that a variance request and clarifications to the N₂O Protocol would be necessary to address many of the CEMS instrument QA/QC issues. As a result, RCE verified the Project QA/QC requirements against the CAR N₂O Protocol, Variance Approval 1 & 2, and the CAR N₂O Errata and Clarification.

During the Phase 2 site visit RCE interviewed Larry Fitzwater, VP of Operations of LSB Chemical Company; Mike Barber, Process Manager of EDNLP; Jim Winch, Data Specialist for ClimeCo and Bill Flederbach, VP of ClimeCo.

3.8.1 Daily Requirements

Section 6.2.1 of the N₂O Protocol states that the CEMS frequency-of-testing follow the requirements of 40 CRF Part 75, Appendix B. However, Variance Approval 2 waived the requirements for daily calibration error tests and adjustments, data validation, quality assurance, and data recording for the flow meter. The approval was subject to the Project developer providing sufficient evidence to RCE to confirm relative accuracy of the flow meter throughout the reporting period. Calibration error tests were conducted as part of the RATA

Tests in September 2009 and May 2010, and the span drift never exceeded 6 percent of the span value, thus meeting the requirement of 40 CFR Part 75.

Variance 2 also waived the requirements for the daily flow interference check for the project's first reporting period, as long as the project is under compliance during future reporting periods. Additionally, clarification 12, effective November 18, 2010, of the Errata and Clarifications to the Nitric Acid Production Project Protocol, Version 1.0, states that the daily flow interference check on the flow meter is not required under the protocol.

During the Phase 2 site visit, Mike Barber demonstrated the capabilities of the new DAHS and how daily checks were being made for calibration error and adjustments, data validation, quality assurance, and data recording for the N₂O analyzer and Kurz flow meter. The DAHS also records Project permitted operating conditions (POCs). RCE received copies of the calibration check reports from LSB Industries.

3.8.2 Quarterly Requirements

RCE verified that the following quarterly assessments were performed according to the Protocol.

Leak Check:

On June 24, 2010, ClimeCo reported that the leak check procedures in Section 6.2.1 of the N₂O Protocol do not apply to the Kurz flow meter because it is a thermal mass flow type meter. The subsequent CAR N₂O Errata and Clarification states that leak checks are required for *differential pressure* flow meters only. Because the EDNLP Project utilizes a *thermal mass* flow meter, this quarterly assessment is not required.

Flow-to-Load or Heat Rate Evaluations:

It was discussed during the Phase 1 site visit that because the NAP at the EDNLP facility is not classified as an electrical energy producing facility and is neither load-based nor establishes load ranges for missing data purposes, the flow-to-load or heat rate evaluations do not apply to the project. The CAR N₂O Errata and Clarification states that units not producing electrical output (in megawatts) or thermal output (in klb of steam per hour) are exempted from the flow-to-load ratio test requirements. The EDNLP Project meets this exemption and is therefore not required to perform this quarterly assessment.

Data Validation

RCE verified that the linearity check and RATA were conducted according to 40 CFR Part 75 Appendix B requirements.

Linearity Checks

Variance Approval 1 granted the EDNLP Project an exception that allows the project to rely on results of the April 2010 linearity test to demonstrate compliance with 40 CFR Part 75 for the beginning of the baseline campaign through April 2010. In Part 75, the linearity check has replaced the cylinder gas audit from Part 60 Appendix F. CAR N₂O Errata and Clarification states gas cylinder audits are no longer required under the N₂O Protocol. ClimeCo provided copies of quarterly linearity checks for June and September 2010 meeting the N₂O Protocol requirement.

3.8.3 Annual and Semi-Annual Assessments

RCE verified that the results of the May 2010 RATA test showed the relative accuracy to be less than 7.5%, and therefore only *annual* RATA tests are required. Since the requirement has been met for 2010, no additional RATA test results were needed for the reporting period.

The bias adjustment factor from the May 2010 RATA (4.1%) was applied throughout the reporting period. During the Phase 2 site visit, Mike Barber provided evidence from the DAHS reports that the BAF was being applied correctly. For the baseline period, the BAF was applied in the post-processing of the data in the GHG assertion spreadsheets/databases.

3.8.4 Calibration Procedures

RCE verified that calibration procedures were followed (or exempted) during the required daily, quarterly, and annual assessments of the flow meter and N₂O analyzer described previously.

3.8.5 Missing Data Substitution

During the Phase 2 site visit, RCE discovered that missing data substitution methods were applied to 10 hours of the project campaign data. RCE verified that the DAHS correctly applied the missing data procedures defined in 40 CFR Part 75, Sec 75.33 and the applied value is consistent with those 10 hours included in the GHG assertion.

3.9 Assessment of GHG Emissions Reductions Calculations

The emission reduction calculations assessment included a review of the Historical, Baseline, and Project assumptions, data inputs, data management, and accuracy of calculations. During Phase 1 of the verification activities, RCE assessed the information generated from the Historical and Baseline campaigns. RCE first evaluated the completeness and validity of the original data and how the data is transferred from EDNLP's CEMS information control systems to ClimeCo's GHG calculation database.

The N₂O Protocol requires a variety of data manipulations to the Historical, Baseline, and Project data as part of the quantification of GHG emission reductions. For the Historical and Baseline emissions calculations, ClimeCo chose to conduct the data management in an MS Access database file using various queries of the raw data. For the reporting period, ClimeCo provided cross-checks to the MS Access outputs by using an MS Excel spreadsheet for the final GHG assertion. RCE reviewed the queries/formulas and data outputs for compliance with the N₂O Protocol.

Originally, RCE and ClimeCo did not agree on the interpretations of certain data management requirements in Section 5 of the N₂O Protocol; these were resolved by Clarifications #3 and #4 of the CAR N₂O Errata and Clarification. Following these clarifications, RCE recalculated the GHG emissions and reductions in MS Excel, and compared the results to Project calculations to determine if the GHG emissions were materially correct.

Both the Kurz flow meter and Temet N₂O analyzer are used for other environmental compliance reasons and air emissions calculations. Because of this, the flow meter data is adjusted and recorded to 1 atm and 25°C, and the N₂O analyzer data is adjusted and recorded to 1 atm and 20°C. RCE verified that all data is re-adjusted and normalized to 0°C in the calculation database/spreadsheet.

Historical Campaigns

ClimeCo provided data from five previous campaigns dating from April 28, 2006 to February 17, 2009. RCE assessed the raw data and statistical adjustments from the Historical campaigns that were used to calculate two variables: $\text{HNO}_{3\text{MAX}}$ and CL_{CAP} . RCE verified the values of each parameter from the historical data based on Clarification 1 of the CAR N_2O Errata and Clarification.

- $\text{HNO}_{3\text{MAX}} = 49.19$ metric tons HNO_3/hr
- $\text{CL}_{\text{CAP}} = 210,633$ metric tons HNO_3 .

In addition, Historical data is used to establish the POCs. RCE verified the following POCs that were determined from the Historical campaigns:

- Oxidation Temperature (minimum and maximum)
- Oxidation Pressure (minimum and maximum)
- Ammonia-to-Air Ratio (maximum only)

Baseline Campaign

ClimeCo provided data from the Baseline campaign conducted immediately prior to the installation of the secondary catalyst from November 3, 2009 to June 27, 2010. However, the Baseline campaign exceeded the CL_{CAP} at 9:00am on May 22, 2010. As a result, ClimeCo used only data prior to that point to determine the Baseline calculation parameters. RCE verified that the raw data from the Baseline campaign was correctly adjusted in accordance with the N_2O Protocol and used to determine the Baseline Emission Factor. RCE verified the assumptions and variables used for Equations 5.2 and 5.3 in the N_2O Protocol. The results are as follows:

- $\text{NC}_{\text{SG BC}} = 2,136 \text{ mgN}_2\text{O}/\text{m}^3$
- $\text{V}_{\text{SG BC}} = 165,227 \text{ m}^3/\text{hr}$
- $\text{HNO}_{3\text{BC}} = 186,595$ metric tons HNO_3

During the Phase 1 site visit, RCE compared the hourly data from the EDNLP CEMS data (for selected days) to the hourly gas flow volumes and N_2O concentrations recorded in ClimeCo's calculation database/spreadsheet. No material errors in the raw data or data transfers to the calculation database/spreadsheet were identified.

RCE verified that the EDNLP's Baseline campaign operated inside the established POCs approximately 91% of the time, thus exceeding the 50% requirement in the N_2O Protocol.

Project Campaign

ClimeCo provided data from the Project campaign immediately following the installation of the secondary catalyst. The Project campaign is expected to continue through February 2011, however the reporting period and the data provided by ClimeCo is from July 1, 2010 to October 15, 2010.

RCE verified that the raw data from the Project campaign was correctly adjusted in accordance with the N_2O Protocol and used to determine the Campaign-Specific Project Emissions. RCE verified the assumptions and variables used for Equations 5.4 and 5.5 in the N_2O Protocol. The results are as follows:

- $\text{NC}_{\text{SG}} = 467 \text{ mgN}_2\text{O}/\text{m}^3$
- $\text{V}_{\text{SG}} = 145,802 \text{ m}^3/\text{hr}$

- $\text{HNO}_{3\text{P}} = 108,725$ metric tons HNO_3

Following the Phase 2 site visit, ClimeCo provided EDNLP's raw data for the entire month of September 2010. RCE compared the hourly data from the EDNLP CEMS data to the hourly gas flow volumes and N_2O concentrations recorded in ClimeCo's calculation database/spreadsheet. No material errors in the raw data or data transfers to the calculation database/spreadsheet were identified.

RCE verified that the EDNLP's Project campaign operated inside the established POCs approximately 99% of the time, thus exceeding the 50% requirement in the N_2O Protocol.

RCE verified the assumptions and variables used for the emission reduction calculations shown in Equation 5.1 in the N_2O Protocol. The results are as follows:

- $\text{EF}_{\text{BL}} = 0.00746223 \text{ tN}_2\text{O/t NHO}_3$
- $\text{EF}_{\text{P}} = 0.00157886 \text{ tN}_2\text{O/t NHO}_3$
- $\text{HNO}_{3\text{ER}} = 108,725$ metric tons HNO_3

While the Emissions Reductions found in section 4.0 were verified and found to be correct, the EFs and factors above are summary data only, with significant figures rounded for summary purposes in this report.

RCE determined that the emission reduction calculations followed the CAR Nitric Acid Production Project Protocol Version 1.0 and found no material misstatements in the Project GHG reductions calculations and results.

4.0 Verification Results

LSB Industries provided sufficient evidence and adequate documentation of their emission estimates, data collection procedures, monitoring and quality control procedures. The verification process focused on verifying the historical emissions, baseline campaign emissions, and sub-campaign project emissions estimates. The source data used by ClimeCo to quantify the emission reductions are in accordance with the CAR Nitric Acid Production Protocol 1.0. The following is a summary of the verification results.

The Project proponents reported emission reductions of 198,297 metric tons of CO_2 equivalents as per the information provided in the Calculation Summary spreadsheet dated October 28, 2010. During the Phase 1 verification activities, RCE requested corrective actions to the raw data or calculations performed by the Project proponent. However, many of the issues were ultimately resolved when CAR issued the Errata and Clarification to Nitric Acid Production Project Protocol Version 1.0 on August 19, 2010. The Project proponent also received two Variance Approvals. Following the issuance of those documents, no material misstatements were identified that necessitated corrective actions to the raw data or calculations performed by the Project proponent during the reporting period.

The emission reductions verified are as follows:

Table 3 Emission Reductions Verified for July 1, 2010 – October 15, 2010

Emissions Verified	CO_2e (metric tons)
Baseline Emissions	251,512
Project Emissions	53,215
Total Emission Reductions	198,297

4.1 Findings Overview

During the verification process, RCE made requests for Clarifications, Corrective Actions and supplemental documentation to complete the verification. According to RCE's verification procedures all Corrective Actions must be addressed by LSB Industries before a positive verification opinion will be submitted. The details of these requests are documented in the RCE Phase 1 List of Findings 1.0, 1.1, 1.2, & 1.3 and Phase 2 List of Findings RP1-1.0. All Lists of Findings are attached separately and not included in this report.

5.0 Verification Opinion

RCE conducted a risk-based analysis of the El Dorado Nitrogen LP Nitrous Oxide Abatement Project GHG assertion where RCE performed a strategic review of the Project data and evidence. Based upon the processes and procedures and the evidence collected, RCE concludes with a reasonable level of assurance that the Project emission reductions resulting from the destruction of N₂O during the reporting period July 1, 2010 through October 15, 2010 can be considered:

- In conformance with the CAR Nitric Acid Production Protocol 1.0 and ISO 14064-3 standards,
- Without material discrepancy, and
- Verified to the reasonable level of assurance of 95 percent.

The verified Emission Reduction CRTs are listed in the **Table 4**.

Table 4 Emission Reductions Verified for July 1, 2010 through October 15, 2010

Emissions Verified	CO ₂ e (metric tons)
Emission Reductions	198,297

Lead Verifier Signature



Michael Cote

Senior Reviewer Signature



Greg Palmer