



Project Data Report

US Nitric Acid Production Protocol v2.2

CAR1027 Rentech NAP 2

Reporting Dates:

10/11/2023 – 09/25/2024

Project Site

Rentech Energy Midwest Corporation-Nitric Acid Plant 2

Prepared for:

TÜV SÜD America Inc.

750 Main St. Suite 200 Grand Junction CO 81501

Account Holder	East Dubuque Nitrogen Fertilizers, LLC
Project ID and Name	CAR1027 – Rentech NAP 2
Cooperative/Aggregate ID (if applicable)	N/A
Current Reporting Period Dates	10/11/2023 – 09/25/2024
Protocol Version	Nitric Acid Production V2.2
Claimed CRTs by Vintage	2023 RP11 – 20,940 Credits 2024 RP11 – 98,330 Credits
Date Submitted	7/3/2025

Prepared by:

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July, 2025



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Foreword

The contents of this report have been prepared for review by the verification body listed on the cover page in compliance with the Climate Action Reserve (The Reserve) project documentation requirements detailed in section 3.3.10 of the Reserve Program Manual v9.2. for verification purposes. Information in this report is not to be shared with any outside party until after the conclusion of the verification process, at which point this document will be made publicly available by The Reserve. Any questions should be directed to the ClimeCo representative designated on the cover page.

Project Description

East Dubuque Nitrogen Fertilizers, LLC (EDNF) produces nitrogen fertilizers for commercial sales. The purpose of this project is to reduce nitrous oxide (N₂O) emissions from the EDNF No. 2 Nitric Acid Plant (NAP) in East Dubuque, Illinois. The project involves installing a new catalyst—one not previously in place at NAP No. 2—in the tail gas stream exiting the absorption tower. The “secondary catalyst” is installed downstream of the ammonia oxidation reactor, in this case, a BASF secondary catalyst was placed directly beneath the primary Platinum/Rhodium catalyst within the Ammonia Oxidation Reactor at NAP 2. This setup targets the reduction of N₂O emissions that would otherwise be released into the atmosphere.

Project Developer and Participants

Current Project Participants include the Offset Project Operator, ClimeCo LLC (ClimeCo) and the Project Facility Owner/Operator, East Dubuque Nitrogen Fertilizers, LLC (EDNF).

EDNF is the exclusive owner of the project and the sole party with the right to make management and operational decisions. EDNF serves as the owner and operator of the secondary abatement catalyst system, personal property, equipment, fixtures and appurtenances comprising the Project.

Technical Consultant(s): ClimeCo, LLC.

Other Parties with Material Interest (entity name and role): CVR Energy, parent company to EDNF

Entity Signing Attestation of Title: East Dubuque Nitrogen Fertilizers, LLC

Additional Information:

Project Anomalies

The RATA report provided by EDNF indicates that the flow monitor failed the Part 75 Relative Accuracy Test Audit (RATA) conducted on 12/1/2023. In accordance with regulatory requirements, substituted data for flow rate was used from 12/1/2023 at 18:00 (the time of the failed RATA) until 1/2/2024 at 14:00, when a subsequent RATA was performed and passed, which validated the monitoring system.

Additionally, a variance was submitted to, and approved by, the Climate Action Reserve (CAR) to address consistently low-pressure readings observed during the reporting period. These low readings were due to a decrease in production, resulting in more than 50% of the data falling outside the previously established Allowable Operating Conditions (AOC).

To resolve this, CAR reviewed the existing AOC limits, which were originally based on operating manuals. As a result, CAR approved two changes:



- A 10% reduction in the lower pressure bound.
- The removal of a 2.5% conservative factor that had been applied to all three AOCs.

These adjustments ensure that the AOC limits more accurately reflect current plant operations. The new AOCs are as follows:

- Oxidation Temperature: 1200 to 1550°F
- Oxidation Pressure: 27 to 49 psi
- Maximum Ammonia to Air Ratio: 12%

Protocol Eligibility Requirements

Eligibility Rules for CAR1027 are found in section 3.1 through 3.5 in the US Nitric Acid Production Protocol v2.2. Project compliance with the requirements is summarized in the table below.

No.	Rule	Requirement	Data
a	Location	U.S. and its tribal lands and territories	The project is located in East Dubuque, Illinois.
b	Project Start Date	No more than 12 months prior to project submission	Project was listed on 05/14/2014 and the project reporting start date was 12/28/2013,
c	Project Crediting Period	Emission reductions may only be reported during the crediting period; the crediting period may be renewed one time	First Crediting Period: 12/28/2013 to 12/27/2023 Second (Current) Crediting Period: 12/28/2023 to 12/27/2033
d	Additionality	Meet performance standards, exceed regulatory requirements	There are currently no regulatory requirements for the abatement of N ₂ O resultant from the nitric acid production process. The technology installed within the scope of the project meets and exceeds industry standard practices. Performance Standard Test: Secondary N ₂ O Abatement catalyst, including catalytic decomposition or NSCR Legal Standard Test: We have confirmed that there are currently no laws requiring the abatement of N ₂ O at the plant. In addition, EDNF monitors any change in regulations that may affect eligibility. TÜV SÜD reviewed EDNF's renewed Title V Permit which expires on December 20, 2026. ClimeCo has accurately completed the Attestation



			of Voluntary Implementation form and uploaded it to the Reserve.
e	Regulatory Compliance	Compliance with all applicable laws	A survey of all regulatory violations incurred by the Site within the reporting period dates has been conducted as part of verification activity and submitted for the verifier's review. There are no regulatory violations for this reporting period that have been caused by project activity.

GHG Assessment Boundary

SSR	Source Description	Gas	Baseline (B) or Project (P)
1 – Nitric Acid Production	Nitric acid process unit (burner inlet to stack)	N ₂ O from reaction byproduct	B, P

Quantifying GHG Emission Reductions Methodologies

This section discusses the quantification methodologies used in generating the Emission Reduction (ER) Assertions for CAR1027 RP11. The quantification of ERs has been performed in accordance with section 5 of the Nitric Acid Production Protocol v2.2.

Baseline emissions for a secondary catalyst abatement project are determined by assuming N₂O emissions would occur at the plant's historical emission factor in the absence of any abatement. Because the gas stream cannot be sampled between the primary and secondary catalysts, a baseline emission factor must be determined prior to installation of the secondary catalyst in order to estimate baseline emissions. Emissions are then calculated using the equations and methodologies outlined in the Protocol.

The historical maximum annual average output of nitric acid (HNO₃,MAX), scaled for the length of each campaign, were used to determine the baseline emissions. To determine HNO₃,MAX, five consecutive years of historic data were used to calculate five values, each representing average HNO₃ production levels during a one year period at the process unit where the project is located. Average HNO₃ production was calculated by averaging daily HNO₃ production data over a 12 month period, excluding days when the nitric acid plant was not operating.

Project emissions for a secondary catalyst abatement project are determined by directly measuring the N₂O emissions downstream of the secondary catalyst. Since emissions measured at this point reflect the actual amount of N₂O released after abatement, they provide the basis for quantifying emission reductions. Project emissions are then calculated using the equations and methodologies specified in the Protocol, with appropriate adjustments for data quality, calibration, and monitoring completeness.



Quantifying Baseline Emissions

Allowable Operating Conditions:

Oxidation temperature range: 648.9 – 843.3 Degrees C

Oxidation pressure range: 1.86 – 3.38 Bar

Maximum ammonia-to-air ratio input into the AOR: 12%

☒ Option (a): The best available historical data for the operating range of temperature and pressure, and maximum ammonia-to-air ratio from the previous five campaigns.

Vintage: 2023	Vintage: 2024
HNO ₃ ,MAX, scaled: 7,78g tHNO ₃	HNO ₃ ,MAX, scaled: 36,577 tHNO ₃
Baseline Emission Factor: 0.01215 tN ₂ O/tHNO ₃	Baseline Emission Factor: 0.01215 tN ₂ O/tHNO ₃
Baseline Emissions: 23,027 tCO ₂ e	Baseline Emissions: 108,130 tCO ₂ e

Quantifying Project Emissions

Vintage: 2023	Vintage: 2024
Total N ₂ O emissions in the campaign: 7.88 tN ₂ O	Total N ₂ O emissions in the campaign: 36.98 tN ₂ O
Project Emissions: 2,087 tCO ₂ e	Project Emissions: 9,800 tCO ₂ e

Final CRT Summary

Vintage: 2023	Vintage: 2024
Baseline Emissions: 23,027 tCO ₂ e	Baseline Emissions: 108,130 tCO ₂ e
Project Emissions: 2,087 tCO ₂ e	Project Emissions: 9,800 tCO ₂ e
Total GHG Emission Reductions/Removals: 20,940 tCO ₂ e	Total GHG Emission Reductions/Removals: 98,330 tCO ₂ e

Environmental and Social Impacts

The Project's Environmental and Social Impacts are discussed in detail in the Environmental and Social Safeguards Assessment Form submitted to the Registry pursuant to CAR Program Manual Requirement 3.3.10.3.



Variance Request

Date of Variance Request: May 22, 2025

Protocol Section and Rule/Requirement: Nitric Acid Production Protocol V2.2-1 Section 5.1.4

"If the NAP operates outside of the established range for AOC for more than 50% of the duration of the campaign, the N₂O emissions data are considered invalid and no emission reductions can be claimed by the project for that campaign. To further ensure that operating conditions during the project are representative of AOC, the Reserve requires the mean values for oxidation temperature, oxidation pressure, and ammonia to-air ratio are within the corresponding ranges defined for the AOC. If the mean values for any of these parameters fall outside of the allowable ranges (or above the maximum for the ammonia-to-air ratio), no emission reductions can be claimed by the project for that campaign."

Description of how the project did not meet the above requirements:

Per project variance request dated March 20 2015, the AOC for this project were based on a design document from the original installation in France. After the equipment was relocated to the U.S. and started operations, the oxidation pressure has been consistently on the low end of this design range. This doesn't allow the plant flexibility to adjust operations to meet lower than normal production rates without going outside of AOC. This exact situation happened during this RP and led to more than 50% of the data being outside of AOC.

Date Reserve Issued Determination: July 2, 2025

Variance Conditions:

East Dubuque Nitrogen Fertilizers, LLC has requested to allow for a 10% lower pressure bound and remove the 2.5% conservative factor applied to all AOCs. The Reserve grants this variance pursuant to the following conditions:

- The verifier confirms that the project remains below the HNO₃_{max} value;

This variance is expressly limited to Rentech Nitrogen as specified above for the project's lifespan. East Dubuque Nitrogen Fertilizers must comply with all other requirements of the protocol. Further, this variance does not set precedent for future reporting periods, projects, or Reserve decisions.

Project Documentation

Vintage: 2023	Vintage: 2024
Project Diagram	EDNF CAR1027 NAP2 PFD.pdf
Attestation of Title	Attestation_Title_NAP2_RP11.pdf
Attestation of Voluntary Implementation	Attestation_Voluntary_Implementation_NAP2_RP11.pdf
Attestation of Regulatory Compliance	Attestation_Regulatory_Compliance_NAP2_RP11.pdf
Monitoring Plan	EDNF NAP2 CAR1027 Monitoring Plan_v1.6.pdf



Project Contributions to the U.N. Sustainable Development Goals Report Tool (if applicable)	2025-SDG-REPORTING-TOOL-CAR1027.pdf
Project Data Report (this document)	U.S.-Nitric-Acid-Production-Project-Data-Report-RP11.docx
Variance Request (if applicable)	Request-Project-Variance-CAR1027 May 2025