

# AQRP Monthly Technical Report

<b>PROJECT TITLE</b>	Quantification and Characterization of Ozone Formation in Central San Antonio	<b>PROJECT #</b>	20-028
<b>PROJECT PARTICIPANTS</b>	Ezra Wood, Alexa Rhoads, Andrew Lindsay, Kyle Banecker	<b>DATE SUBMITTED</b>	2/10/2021
<b>REPORTING PERIOD</b>	<b>From:</b> 1/1/2021 <b>To:</b> 1/31/2021	<b>REPORT #</b>	5

A Financial Status Report (FSR) and Invoice will be submitted separately from each of the Project Participants reflecting charges for this Reporting Period. I understand that the FSR and Invoice are due to the AQRP by the 15<sup>th</sup> of the month following the reporting period shown above.

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## Detailed Accomplishments by Task for reporting period

The goal of Task #1 is to prepare for the field deployment to San Antonio which is currently scheduled for the first two weeks of May 2021. The main activities conducted during the reporting period as part of this task were continued training of graduate student Alexa Rhoads to use the ECHAMP peroxy radical sensor and initial testing of the instrument with the reaction chambers held at reduced pressure. Preliminary data suggest that at ~0.5 atm, the amplification factor (and instrument sensitivity) was comparable to that at 1 atm under dry conditions, but that the amplification factor did not decrease with increasing relative humidity as it does at 1 atm, roughly in agreement with predictions. We have begun the preliminary characterization of the optimum settings (flow rates for ethane and nitric oxide) for use at reduced pressure.

No work has been done on Task #2 (Field Deployment), Task #3 (Data Quality Assurance), or Task #4 (Data Analysis). Limited work has been done for Task #5 (Project Reporting and Presentation) including this report.

## Preliminary Analysis

No preliminary analysis has been conducted with the exception for the preliminary analysis of laboratory data as described above.

## Data Collected

No field data have been collected but as described above we have collected laboratory data.

## Identify Any Problems or Issues Encountered and Proposed Solutions or Adjustments

There were no formal problems encountered during the reporting period but we have moved our lab within the same building. Several days of work have been spent setting things up in the new lab during which we did not focus on instrument preparation.

### **Goals and Anticipated Issues for the Succeeding Reporting Period**

Alex Rhoads will continue her training to use the ECHAMP peroxy radical sensor and the required analytical software tools. We will continue to characterize the performance of the ECHAMP sensor at reduce pressure.

### **Detailed Analysis of the Progress of the Task Order to Date**

Tasks 1 and 5 are in progress. Tasks 2, 3, and 4 have not started.

**Do you have any publications related to this project currently under development? If so, please provide a working title, and the journals you plan to submit to.**

Yes       No

**Do you have any publications related to this project currently under review by a journal? If so, what is the working title and the journal name? Have you sent a copy of the article to your AQRP Project Manager and your TCEQ Liaison?**

Yes       No

**Do you have any bibliographic publications (ie: publications that cite the project) related to this project that have been published? If so, please list the reference information. List all items for the lifetime of the project.**

Yes       No

**Do you have any presentations related to this project currently under development? If so, please provide working title, and the conference you plan to present it (this does not include presentations for the AQRP Workshop).**

Yes       No

**Do you have any presentations related to this project that have been published? If so, please list reference information. List all items for the lifetime of the project.**

Yes       No

**Have any personnel changes occurred that were not listed in the original proposal? If so, please include a detailed description of the personnel change(s) below.**

Yes       No

**Are any delays expected in the progress of the research? If so, please include a detailed description of the potential delay below.**

Yes       No

There are no delays beyond the relocation of our laboratory as mentioned earlier. This will lead to dividends in the near-future as in our new laboratory we will not have the stringent occupancy requirements that we had in the old lab.

**Describe any possible concerns/issues (technical or non-technical) that AQRP should be made aware of.**

**Are you anticipating using all the available funds allocated to this project by the end date? If not, why and approximately what is the amount to be returned?**

Yes       No

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Submitted to AQRP by  
Ezra Wood,  
Principal Investigator