

AQRP Monthly Technical Report

PROJECT TITLE	Condensed Chemical Mechanisms for Ozone and Particulate Matter Incorporating the Latest in Isoprene Chemistry	PROJECT #	16-031
PROJECT PARTICIPANTS	William Vizquete Jason Surratt	DATE SUBMITTED	3/30/17
REPORTING PERIOD	From: 2/1/17 To: 2/28/17	REPORT #	4

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 15th of the month following the reporting period shown above.

Detailed Accomplishments by Task

Task 1 Updated SAPRC-07 and Aerosol Module for Isoprene Oxidation

Preliminary Analysis

We have obtained SAPRC16 chemical mechanism files and have begun QA of the data.

Data Collected

SAPRC16 chemical mechanism files

Identify Problems or Issues Encountered and Proposed Solutions or Adjustments

N/A

Goals and Anticipated Issues for the Succeeding Reporting Period

We will input the latest version of SAPRC16 into our modeling system.

Detailed Analysis of the Progress of the Task Order to Date

The progress on the task is on schedule.

Task 2 Chamber Experiments: Interplay of Particle-Phase Composition, Phase, and Viscosity on IEPOX Multiphase Chemistry

Preliminary Analysis

Begun setup of experimental coating experiments with Potential Aerosol Mass (PAM) Oxidation Flow Reactor (Aerodyne Research, Inc) and repair of instruments.

Data Collected

N/A

Identify Problems or Issues Encountered and Proposed Solutions or Adjustments

Both the CIMS and ACSM instruments need to be repaired before further chamber experiments can proceed.

Goals and Anticipated Issues for the Succeeding Reporting Period

We will be tweaking certain aspects of our experimental approach to better constrain the uptake kinetics in the chamber. We have yet to put this experimental design into execution so trials and errors are expected until repeatability is confirmed.

Detailed Analysis of the Progress of the Task Order to Date

Given that our measurement equipment was out of operation we were unable to make any progress. We feel, however, that instrument should be ready in March and our progress will remain on schedule.

Task 3 Implementation in a regulatory air quality model

Preliminary Analysis

Completed QA of CMAQ modeling system on UNC supercomputing cluster.

Data Collected

Sample output received from EPA was used as reference/benchmark.

Identify Problems or Issues Encountered and Proposed Solutions or Adjustments

N/A

Goals and Anticipated Issues for the Succeeding Reporting Period

Begin analysis of use of 0-D or box models to further analyze coating impacts on SOA production.

Detailed Analysis of the Progress of the Task Order to Date

We are on schedule.

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 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

Submitted to AQRP by

Principal Investigator

William Vizuete

Jason Surratt