

AQRP Monthly Technical Report

PROJECT TITLE	Quantifying Ozone Production from Light Alkenes Using Novel Measurements of Hydroxynitrate Reaction Products in Houston	PROJECT #	14-026
PROJECT PARTICIPANTS	Dr. Tom Ryerson (NOAA) Dr. Greg Yarwood (ENVIRON) Dr. David Parrish	DATE SUBMITTED	11/10/2014
REPORTING PERIOD	From: October 1, 2014 To: October 31, 2014	REPORT #	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 15th of the month following the reporting period shown above.

Detailed Accomplishments by Task

- The SEAC⁴RS data archive, including the hydroxynitrate data, is still incomplete, so little progress has been made on Task 1. The data are expected to be posted online by Caltech by November 15, 2014.
- The species whose measurements are expected to become available have been reviewed, and a preliminary plan for completion of Tasks 1 and 2 has been formulated. We expect that this plan will evolve once the data review process for Task 1 can be started.
- Based on the requirements for the SCICHEM plume modeling in Task 3, it has been determined that Task 3 must focus on the 18 September 2013 flight. SEAC⁴RS had a wide variety of flight objectives, and only this one flight was designed to specifically target the Houston pollution evolution. For effective modeling-measurement comparison, the modeled flight must have multiple transects of the same plume in order to investigate the time evolution. Only this one flight is suitable.

Preliminary Analysis

Data Collected

Identify Problems or Issues Encountered and Proposed Solutions or Adjustments

Goals and Anticipated Issues for the Succeeding Reporting Period

- As soon as the SEAC⁴RS data archive is complete, Tasks 1 and 2 will be immediately started.

- The first priority of Tasks 1 and 2 will be to provide ENVIRON with the meteorological and chemical information needed to initiate the modeling in Task 3.
- Development of the chemistry scheme for the HRVOC oxidation that will under-pin both the data analysis and the modeling. This scheme will be defined for each HRVOC by tabulating rate constants and relevant branching ratios.

Detailed Analysis of the Progress of the Task Order to Date

Submitted to AQRP by: Greg Yarwood

Principal Investigator: Tom Ryerson