

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	2/9/2015
REPORTING PERIOD	From: January 1, 2015 To: January 31, 2015	REPORT #	8

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 (review alkene hydroxynitrate measurements) has been completed.
- Task 2 (analyze the alkene hydroxynitrate data in the context of other measurements) has been largely completed for the DC-8 flight of primary interest (18 Sept 2013).
- The kinetics scheme for the HRVOC chemistry, which under-pins both the data analysis (Tasks 1 and 2) and the modeling (Task 3), has been finalized.
- The above work was discussed with all ENVIRON collaborators at a meeting in Novato on 22 January 2015.
- The meteorological and chemical information needed to initiate the modeling, which comprises Task 3, has been completed for the DC-8 flight of primary interest (18 Sept 2013).

Preliminary Analysis

Data Collected

Identify Problems or Issues Encountered and Proposed Solutions or Adjustments

Goals and Anticipated Issues for the Succeeding Reporting Period

- Complete Task 2 for the DC-8 flight of primary interest (18 Sept 2013) by examining correlations with a few additional species (primarily the peroxides).
- Identify additional SEAC⁴RS flights that fortuitously intercepted ship channel plumes for analysis as outlined in Task 2.

- Initiate trajectory analysis to clearly identify transport paths of plumes analyzed.
- Begin organizing data analysis manuscript to be submitted for peer-reviewed publication.
- Move forward with Task 3: Begin SCICHEM modeling for the DC-8 flight of primary interest (18 Sept 2013) using CB6r2 mechanism with and without HRVOC chemistry

Detailed Analysis of the Progress of the Task Order to Date

Submitted to AQRP by: Greg Yarwood

Principal Investigator: Tom Ryerson