AQRP Monthly Technical Report

PROJECT TITLE	Sources of Organic Particulate Matter in Houston: Evidence from DISCOVER-AQ data Modeling and Experiments	**PROJECT #**	14-024
PROJECT PARTICIPANTS	Lea Hildebrandt Ruiz and Ying Xu (The University of Texas at Austin) Greg Yarwood Bonyoung Koo (ENVIRON) Gookyoung Heo (University of California, Riverside)	**DATE SUBMITTED**	1/8/2015
REPORTING PERIOD	**From:** December 1, 2014 **To:** December 31, 2014	**REPORT #**	7

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 2. Environmental Chamber Experiments and Box Modeling

The first trial experiment was conducted during which four IVOCs were injected into the chamber. This trial experiment confirmed that the heated injector is working as expected and that we are able to inject the IVOCs into the chamber. Tenax tubes were collected 30 minutes and 3 hours after injection. These data can be used to evaluate losses of IVOCs to the chamber walls. The results indicate that the sampling method (flow rate and sampling time) is proper to monitor the concentration change of these chemicals in the chamber.
The thermodenuder has been set up, and the UT Austin team is now in the process of automating the valve switching and temperature control.

Task 4. Photochemical Modeling

ENVIRON performed the Weather Research and Forecast (WRF) simulation for the DISCOVER-AQ campaign period using the modeling configurations determined based on sensitivity analysis. The WRF model outputs were then processed to generate meteorological input data for CAMx. The biogenic and fire emissions inputs were also generated for the CAMx simulation using the WRF meteorological data.

Identify Problems or Issues Encountered and Proposed Solutions or Adjustments

Task 2. Environmental Chamber Experiments and Box Modeling

The quality of the calibration curves for two of the IVOCs needs to be improved due to the unstable responses in the GC/MS system at low concentrations. A better method will be developed to improve the calibration of the two compounds.

Goals and Anticipated Issues for the Succeeding Reporting Period

Task 2. Environmental Chamber Experiments and Box Modeling

The focus over the next month will be to conduct 2-3 experiments every week in order to evaluate the SOA yields of the IVOCs of interest. The loss rate of the IVOCs to the chamber walls will also be evaluated.

Detailed Analysis of the Progress of the Task Order to Date

Progress to date has been appropriate. There have been delays, but overall we do not anticipate problems completing all project tasks by the end of the project period (June 30, 2015). We have now started to conduct the environmental chamber experiments and intend to finish conducting and analyzing the experiments by the end of March, 2015.

Submitted to AQRP by: Lea Hildebrandt Ruiz

Principal Investigator: Lea Hildebrandt Ruiz