

AQRP Monthly Technical Report

PROJECT TITLE	Spatial and temporal resolution of primary and secondary particulate matter in Houston during DISCOVER-AQ	PROJECT #	14-029
PROJECT PARTICIPANTS	Rebecca J. Sheesley Sascha Usenko	DATE SUBMITTED	1/8/2015
REPORTING PERIOD	From: December 1, 2014 To: December 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

In December 2014,

- American Geophysical Union (AGU) posters were finalized and printed.
- PIs and students associated with the project attended AGU in San Francisco.
- PIs and students presented research as well as attended other presentations associated with DISCOVER-AQ and related fields of interest.
 - Poster titled “A Pressurized Liquid Extraction Technique for the Analysis of Pesticides, PCBs, PBDEs, OPEs, PAHs, Alkanes, Hopanes, and Steranes from Atmospheric Particulate Matter”.
 - Poster titled “Spatial trends in surface-based carbonaceous aerosol, including organic, water-soluble and elemental carbon, during DISCOVER-AQ in Houston, TX”
 - Spoke with Jim Crawford (PI for DISCOVER-AQ) about trends in water soluble carbon during DISCOVER-AQ.
 - Spoke with EPA colleagues (also did filter-based analysis during DISCOVER-AQ) on trends in water-soluble carbon during DISCOVER-AQ
- Submitted a manuscript for internal review to AQRP
 - The manuscript titled “Pressurized Liquid Extraction Technique for the Analysis of Pesticides, PCBs, PBDEs, OPEs, PAHs, Alkanes, Hopanes, and Steranes in Atmospheric Particulate Matter”.
 - Manuscript was subsequently submitted for publication to the *Journal of Chromatograph A*.
- Submitted aliquots of particulate matter filter samples to DRI for inorganic ion analysis.

Preliminary data:

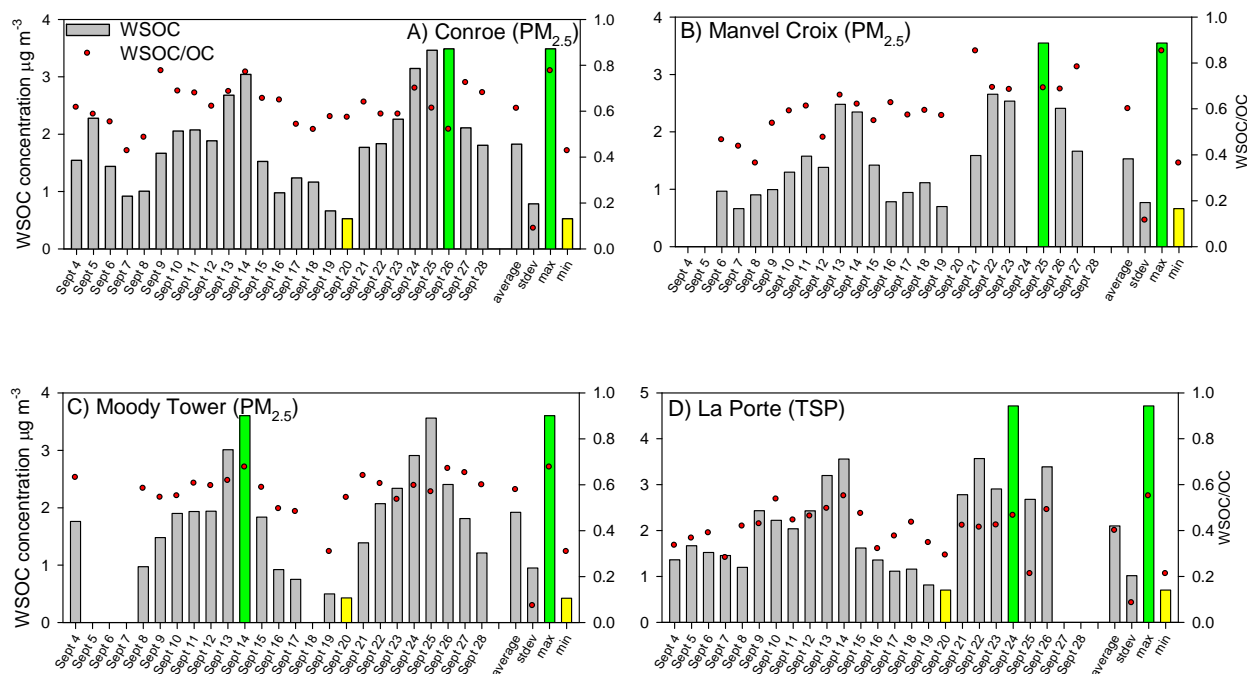


Figure 1 Preliminary water-soluble organic carbon (WSOC) ambient concentrations for all four Houston DISCOVER-AQ filter sampling sites.

Identify Problems or Issues Encountered and Proposed Solutions or Adjustments

NA

Goals and Anticipated Issues for the Succeeding Reporting Period

We are also preparing a manuscript that will describe the bulk characterization of black carbon, organic carbon and water soluble carbon. These will be submitted to AQRP for pre-approval prior to submission.

Identify samples for organic tracer analysis. We will then utilize the newly developed analytical method to measure organic tracers on PM filters collected during select time periods of DISCOVER-AQ.

Detailed Analysis of the Progress of the Task Order to Date

- Shared WSOC data for Conroe.
- Completed WSOC analysis for Conroe, Moody Tower, Manvel Croix and La Porte.
- Purchased and prepared standards for organic tracer analysis
- Began preliminary sample analysis for organic tracers and contaminants at Moody Tower and Manvel Croix.
- Validated method for organic tracers and contaminants using NIST SRMs 1649b and 2585.
- Preparation of posters for AGU

- Demonstrated organic tracer method using multiple days of Moody Tower and Manvel Croix particulate matter samples
- Method development to improve carbon capture efficiency on Sunset for radiocarbon sample preparation
- Submitted filter aliquots to DRI for inorganic ion analysis.
- Presented two posters on DISCOVER-AQ results (new organic tracer method and bulk carbon characterization) at the annual meeting for the American Geophysicists Union (Dec 2014).
- The manuscript titled “Pressurized Liquid Extraction Technique for the Analysis of Pesticides, PCBs, PBDEs, OPEs, PAHs, Alkanes, Hopanes, and Steranes in Atmospheric Particulate Matter” was submitted for publication to the *Journal of Chromatograph A*.
- Began manuscript preparation of carbon characterization across the four Houston sites during DISCOVER-AQ

Submitted to AQRP by: Rebecca J. Sheesley
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