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Texas Commission on Environmental Quality
New Technology Research & Development (NTRD) Program
Monthly Project Status Report

Contract Number: ***582-5-65591-0003***

Grantee: ***The University of Texas at Austin***

Date Submitted: ***June 15, 2006***

Report for the **Monthly** period:

Starting Date ***May 1, 2006*** Ending Date ***May 31, 2006***

Section I. Accomplishments

Summary of progress during reporting period:

Activity during the reporting period included air quality monitoring at sites along the Texas-Louisiana border **(Task 1)**.

As noted in the previous progress reports, five measurement (5) sites for this project have been deployed. In the reporting period all of these sites collected data and provided it to the TCEQ's data management system. Data from all of the sites are available online. The sites became operational on the following dates:

Wamba NTRD C645 (near Texarkana) became operational 7/20/05
Newton NTRD C639 became operational 7/22/05
Clarksville NTRD C648 became operational 7/26/05
San Augustine Airport NTRD C646 became operational 7/27/05
Smith Point, an existing site, had ozone measurements become operational on 8/3/05

Data analysis **(Task 2)** involved continued interpolations of ground monitoring data for selected episodes from the summer, 2005 monitoring period. In addition, ozone flux calculations continued for days that resulted in high ozone concentrations in the Dallas-Fort Worth region.

The main finding from this task to date has been a difference in night-time ozone concentrations between rural sites in regions with extensive oil and gas production and pipeline operations and sites in regions with no oil and gas operations. This difference is not replicated by photochemical models that are being used to design ozone reduction strategies for the Dallas-Fort Worth area. The low overnight ozone concentrations, at rural sites with oil and gas operations, not replicated in the model, suggests that NOx emissions from oil and gas operations may be underestimated, as noted in previous reports, or may be due to reactions of ozone with biogenic hydrocarbons, or may be due to low level mixing phenomena.

Previous analyses indicated that photochemical modeling with added nitrogen oxides from oil and gas operations predicts reduced night-time ozone concentrations, but predicted ozone

concentrations are still higher than those observed at the monitors. Modeling analyses performed during the current period are investigating the effects of night-time vertical mixing, and the potential for reactions of ozone with hydrocarbons released by vegetation (biogenic hydrocarbons) to cause night-time ozone depletion.

Section II: Problems/Solutions

Problem(s) Identified *(Please report anticipated or unanticipated problem(s) encountered and its effect on the progress of the project)*	None
Proposed Solution(s) *(Please report any possible solution(s) to the problem(s) that were considered/encountered)*	
Action(s) Conducted and Results *(Please describe the action(s) taken to resolve the problem(s) and its effect)*	

Section III. **Goals and Issues for Succeeding Period**:
During the next reporting period, the project goals are:

- Continue data collection
- Continue data analysis activities, specifically focusing on modeling the sensitivity of night-time ozone concentrations to changes in night-time meteorology.

David Allen

Authorized Project Representative's Signature Date *6/15/06*

NOTE: *Please attach any additional information that you feel should be a part of your report or that may be required to meet the deliverable requirements for tasks completed during this reporting period.*