

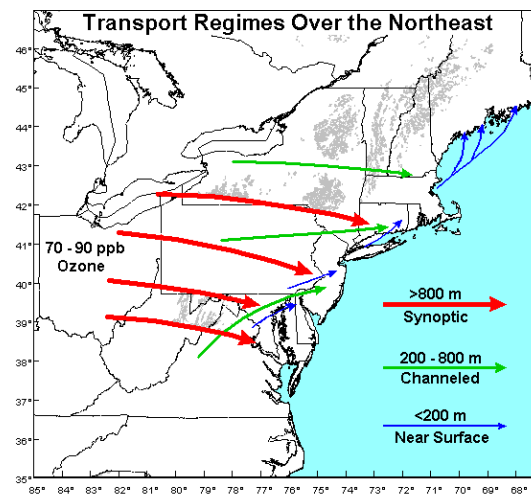
## Appendix IV-d. NARSTO-NE Contributions to AQ Management and Data Analysis

### 1. NARSTO-NE Contributions to OTAG Air Quality Analysis & Management

The 1995 NARSTO-Northeast field study and a number of subsequent data analysis interpretation and reporting activities made very timely contributions to the Ozone Transport Assessment Group (OTAG). OTAG was a partnership between the EPA, the Environmental Council of the States and various industry and environmental groups which assessed the long-range transport of ozone and ozone precursors. As a result of OTAG air quality analysis and modeling and activities, EPA issued a “NO<sub>x</sub> SIP” call rule (US EPA 1998) requiring 22 States and the District of Columbia to submit State implementation plans that address the regional transport of ground-level ozone through reductions in nitrogen oxides or “NO<sub>x</sub>

NARSTO-NE researchers were active contributors to the OTAG Air Quality Analysis Workgroup and made several important presentations to this group and the OTAG policy group on ozone transport and mixing phenomena and model performance (Blumenthal et al. 1997a, b; Lurmann et al., 1997).

One conceptual diagram (from Blumenthal, 2007a) illustrating the multiple, concurrent scales of transport winds typically observed during ozone events in the Northeast was especially effective, and frequently cited by many OTAG participants with otherwise disparate perspectives, and was also prominently featured in the Final Report of the OTAG Air Quality Analysis Workgroup (Guinnup and Collum, 1997).

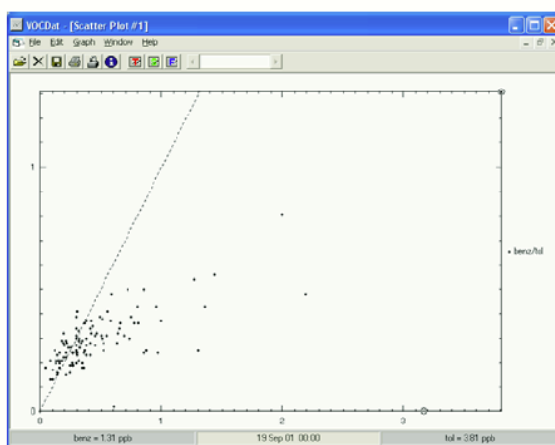
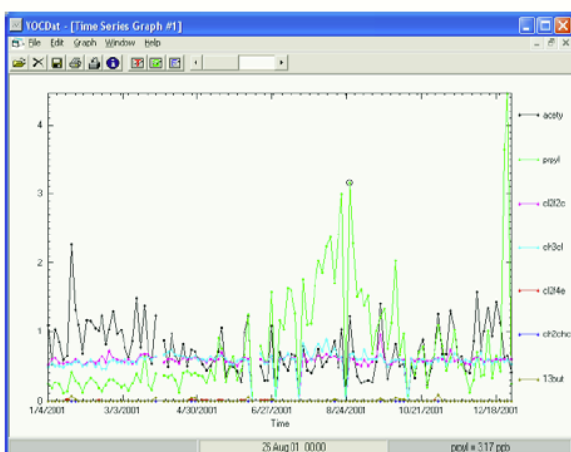
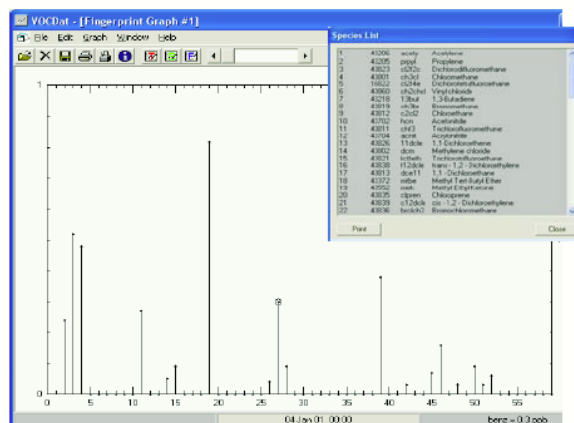
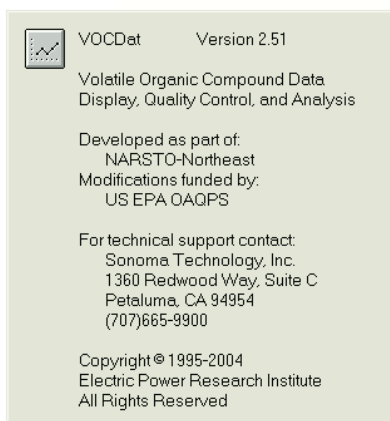


### 2. NARSTO-Northeast Contributions to Data Screening & Analysis: VOCDat Software

While the NARSTO-NE field study was limited in time to the summer of 1995, one of its important lasting contributions was the development and distribution of the VOCDat Software. VOCDat is a data visualization, quality assurance and analysis tool developed by Sonoma  
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Technologies, Inc. with initial funding support from EPRI. During NARSTO-NE, it was distributed to northeastern states operating PAMS (Photochemical Assessment Monitoring Stations – measuring continuous volatile organic compounds). The software allowed the States to import the raw VOC data from PAMS auto-GC monitors, visually browse the complex data, conduct QA screening and analysis, and then export the processed data to the EPA AQS (Air Quality System) data system – from which it could be accessed by NARSTO-NE researchers and other interested analysts.

In more recent years, periodic updates to VOCDat have been supported by US EPA OAQPS, and the software is now used to help process and analyze data from the EPA particulate matter network, the National Air Toxics Trends Sites (NATTS) as well as continuing data from the PAMS network. There are currently about 400 registered VOCDat users, distributed throughout the US and in other countries. The latest version (release 2.64 and supporting documentation) is available from Sonoma Technologies (VOCDat 2.64).



References

Blumenthal, D. L., F. W. Lurmann, N. Kumar, T. S. Dye, S. E. Ray, and M. E. Korc, R. Londergan, G. Moore (1997a) Transport and mixing phenomena related to ozone exceedances in the Northeast US (Analysis of NARSTO-Northeast Data) , Working Draft # 1 STI-996133-1710-WD1, February 1997.

<http://capita.wustl.edu/OTAG/Reports/Otagrept/Otagrept.html>

Blumenthal, D. L., F. W. Lurmann, N. Kumar, T. S. Dye, S. E. Ray, M. E. Korc, R. Londergan, G. Moore (1997b) Assessment of transport and mixing and OTAG model performance for Northeast US ozone episodes: summary of results, STI-996133-1710/1716-S, Prepared for submission to the: Ozone Transport Assessment Group, Air Quality Analysis Workgroup, March 1997. <http://capita.wustl.edu/OTAG/Reports/Otagrept/otagsum3.html> .

Guinnup, D. and B. Collum (1997) Telling the OTAG Ozone Story with Data, Final Report, Vol. I: Executive Summary, OTAG Air Quality Analysis Workgroup, June 2, 1997  
[http://capita.wustl.edu/OTAG/Reports/AQAFinVol\\_I/HTML/v1\\_exsum7.html](http://capita.wustl.edu/OTAG/Reports/AQAFinVol_I/HTML/v1_exsum7.html)

Lurmann, F. W., N. Kumar, R. Londergan, G. Moore (1997) Evaluation of the UAMV model performance in the northeast region for OTAG episodes, working draft # 2.1, STI-996133-1716-WD2.1, March 14, 1997

<http://capita.wustl.edu/OTAG/Reports/Sonoma/Report2.1.html>.

US EPA (1998) Finding of Significant Contribution and Rulemakings for Certain States in the Ozone Transport Assessment Group Region <http://www.epa.gov/ttn/naaqs/ozone/rto/sip/>

VOCDat (Version 2.64) Software and Users Guide, Sonoma Technologies Inc.,  
<http://vocdat.sonomatech.com/> .