

Appendix A
ATAST Operations Narrative
Evans Road Fire Response

Date: Wednesday June 11, 2008

Site: WaRO (NC DENR Washington Regional Ofc. – Washington, NC)

Air Monitoring Activities:

- Set up and operated an AreaRAE monitor to measure CO and VOC concentrations. Sampling began at 18:23.
- Set up a 12 hr (Omni) PM10 filter sample. Sampling started at 21:00.

Site: BFD (Belhaven Volunteer Fire Department – Belhaven, NC)

Air Monitoring Activities:

- Set up and operated an AreaRAE monitor to measure CO and VOC concentrations. Sampling began at 21:30.
- Set up a 12 hr (Omni) PM10 filter sample. Sampling started at 22:03.

Date: Thursday June 12, 2008

Site: WaRO (NC DENR Washington Regional Ofc. – Washington, NC)

Air Monitoring Activities:

- Set up and operated one EBAM real time PM monitor and met station to monitor PM10 concentrations. Monitoring began at 18:00.
- EPA Ken Rhame arrived AM and conducted LUMEX mercury monitoring at various location around fire area from 14:00 until 18:00.
- Set up and operated a TEKTRAN Mercury monitor. Monitoring began at 11:00 and continued until Friday 6/13/08 17:27.
- Downloaded CO and VOC data from AreaRAE monitor at the following times: 13:02, 15:49, and 18:18.
- Collected the 12 hr (Omni) PM10 filter sample (from Wednesday evening) at 9:00. Set up and started the next 12 hr PM10 sample at 10:00 and collected sample at 22:00. Set up and started a 24 hr PM2.5 sample at 22:17.

Site: BFD (Belhaven Volunteer Fire Department – Belhaven, NC)

Air Monitoring Activities:

- Set up and operated one EBAM real time PM monitor and met station to monitor PM10 concentrations. Monitoring began at 11:15.
- Downloaded CO and VOC data from AreaRAE monitor at 11:45.
- Collected the 12 hr (Omni) PM10 filter sample (from Wednesday evening) at 10:03. . Set up and started the next 12 hr PM10 sample at 14:40

Site: COL (Columbia Volunteer Fire Department – Columbia, NC)

Air Monitoring Activities:

- Set up and operated one EBAM real time PM monitor and met station to monitor PM10 concentrations at 13:10.
- Set up and operated and AreaRAE monitor to measure CO and VOC concentrations. Monitoring began at 14:44. Data downloaded at 18:18.
- Set up a 12 hr PM10 filter sample. Sampling began at 18:00.

Date: Friday June 13, 2008

Site: WaRO (NC DENR Washington Regional Ofc. – Washington, NC)

Air Monitoring Activities:

- Set up and operated one EBAM real time PM monitor and met station to monitor PM10 concentrations.
- Set up and operated an AreaRAE monitor to measure CO and VOC concentrations.
- Collected a 24 hr PM2.5 filter sample at 22:17. Started the next sample at 23:15.
- Set up and operated a TEKTRAN Mercury monitor. Compared TEKTRAN mercury concentration measurements to results from the LUMEX mercury monitor operated by Ken Rhame, US EPA; measured mercury concentrations were very close. Based on low mercury levels measured (well below the level of concern, or LOC), mercury monitoring was halted.

Site: BFD (Belhaven Volunteer Fire Department – Belhaven, NC)

Air Monitoring Activities:

- Operated one EBAM real time PM monitor and met station to monitor PM concentrations. Switched from PM10 to PM2.5 at around 12:00. Noted elevated PM levels from ~ 04:00 to 13:00.
- Operated an AreaRAE monitor to measure CO and VOC concentrations. Noted elevated CO levels from ~ 04:30 to 12:30.
- Collected a 12 hr PM10 filter sample that completed at 02:40. Started a 24hr PM2.5 filter sample at 12:00.

Site: COL (Tyrrell Co. Fire Department – Columbia, NC)

Air Monitoring Activities:

- Operated one EBAM real time PM monitor and met station to monitor PM concentrations. Switched from PM10 to PM2.5 at around 14:00.

- Operated an AreaRAE monitor to measure CO and VOC concentrations.
- Collected a 12 hr PM10 filter sample that completed at 06:00. Started a 24hr PM2.5 filter sample at 14:06.

Site: PLY (Fire Station 2 – Plymouth, NC)

Air Monitoring Activities:

- Set up and operated one EBAM real time PM monitor and met station to monitor PM2.5 concentrations. Monitoring started around 20:00.
- Set up and operated an AreaRAE monitor to measure CO and VOC concentrations. Monitoring started at 20:14.

Date: Saturday June 14, 2008

Site: WaRO (NC DENR Washington Regional Ofc. – Washington, NC)

Air Monitoring Activities:

- Operated one EBAM real time PM monitor and met station to monitor PM10 concentrations. A subsequent audit of the instrument on 6/15/08 revealed that none of the PM2.5 measurements for the day were valid due to a pump failure.
- Continued operation an AreaRAE monitor to measure CO and VOC concentrations.
- Collected a 24 hr, 6 min PM2.5 Omni filter sample at 23:21. Started the next sample at 23:25.

Site: BFD (Belhaven Volunteer Fire Department – Belhaven, NC)

Air Monitoring Activities:

- Operated one EBAM real time PM monitor and met station to monitor PM2.5 concentrations. Switched from PM10 to PM2.5 at around 12:00. No elevated PM2.5 levels observed.
- Operated an AreaRAE monitor to measure CO and VOC concentrations. No elevated CO levels observed. CO and VOC monitoring at this site was stopped at 19:51.
- Collected a 24 hr PM2.5 filter sample that completed at 12:00. Started a 24hr PM2.5 filter sample at 12:30.

Site: COL (Tyrrell Co. Fire Department – Columbia, NC)

Air Monitoring Activities:

- Operated one EBAM real time PM monitor and met station to monitor PM concentrations. Several elevated 1 hr PM2.5 concentration values were recorded.
- Operated an AreaRAE monitor to measure CO and VOC concentrations. CO levels increased significantly around 14:00. Data collection inadvertently stopped at 14:40 (data logging apparently not restarted after data download).
- Collected a 24 hr PM2.5 filter sample that completed at 14:06. Started a next 24hr PM2.5 filter sample at 14:30.

Site: PLY (Fire Station 2 – Plymouth, NC)

Air Monitoring Activities:

- Operated one EBAM real time PM monitor and met station to monitor PM2.5 concentrations.
- Operated an AreaRAE monitor to measure CO and VOC concentrations.

Site: FFLD (NC DFR District 13 Headquarters – Fairfield, NC)

Air Monitoring Activities:

- Set up and operated one EBAM real time PM monitor and met station to monitor PM2.5 concentrations. Monitoring started between 09:00 and 10:00.
- Set up and operated an AreaRAE monitor to measure CO and VOC concentrations. Monitoring started around 17:49.

Date: Sunday June 15, 2008

Site: WaRO (NC DENR Washington Regional Ofc. – Washington, NC)

Air Monitoring Activities:

- Operated one EBAM real time PM monitor and met station to monitor PM2.5 concentrations. An audit of the instrument revealed a failing pump. The EBAM unit was replaced with a backup unit. The replacement unit was audited and put into operation at around 15:00.
- Operated an AreaRAE monitor to measure CO and VOC concentrations. No elevated CO levels observed. Stopped AreaRAE operation for this site at 23:48.
- Collected a 24 hr, 14 min PM2.5 Omni filter sample at 23:39. Started the next sample at 23:45.

Site: BFD (Belhaven Volunteer Fire Department – Belhaven, NC)

Air Monitoring Activities:

- Operated one EBAM real time PM monitor and met station to monitor PM2.5 concentrations. No elevated PM2.5 levels observed.
- Collected a 24 hr PM2.5 filter sample that completed at 12:30. Started a 24hr PM2.5 filter sample at 16:34.

Site: COL (Tyrrell Co. Fire Department – Columbia, NC)

Air Monitoring Activities:

- Operated one EBAM real time PM monitor and met station to monitor PM concentrations. Several elevated 1 hr PM2.5 concentration values were recorded.
- Operated an AreaRAE monitor to measure CO and VOC concentrations. CO levels increased significantly around 14:00. Data collection inadvertently stopped at 14:40 (data logging apparently not restarted after data download).
- Collected a 24 hr PM2.5 filter sample that completed at 14:06. Started a next 24hr PM2.5 filter sample at 14:30.

Site: FFLD (NC DFR District 13 Headquarters – Fairfield, NC)

Air Monitoring Activities:

- Continued operation of one EBAM real time PM monitor and met station to monitor PM2.5 concentrations.

Date: Monday June 16, 2008

Site: WaRO (NC DENR Washington Regional Ofc. – Washington, NC)

Air Monitoring Activities:

- Continued operation of an EBAM real time PM monitor and met station to monitor PM2.5 concentrations.
- Collected the final PM2.5 filter sample at 22:30. Total sampling time for sample was 22 hr, 45 min. Packed up PM filter sampling equipment.

Site: MTO (Dare Co. Visitors Center – Manteo, NC)

Air Monitoring Activities:

- Set up and operated one EBAM real time PM monitor and met station to monitor PM2.5 concentrations. Monitoring started between 16:00 and 18:00.

Date: Tuesday June 17, 2008

Site: WaRO (NC DENR Washington Regional Ofc. – Washington, NC)

Air Monitoring Activities:

- Continued operation of an EBAM real time PM monitor and met station to monitor PM2.5 concentrations.

Date: Wednesday June 18, 2008

Site: WaRO (NC DENR Washington Regional Ofc. – Washington, NC)

Air Monitoring Activities:

- Continued operation of an EBAM real time PM monitor and met station to monitor PM2.5 concentrations.

Date: Thursday June 19, 2008

Site: WaRO (NC DENR Washington Regional Ofc. – Washington, NC)

Air Monitoring Activities:

- Continued operation of an EBAM real time PM monitor and met station to monitor PM2.5 concentrations. Moved the EBAM from in front of the WaRO offices to a nearby fire station. Sampling was interrupted between 16:00 and 18:00, and back on line at 19:00.

All Sites: WaRO, BFD, COL, FFLD, PLY, MTO

Air Monitoring Activities:

- DAQ Toxics Protection Branch staff packed up the MAML and other vehicles and returned to Raleigh. A network of six EBAM real-time smoke monitoring instruments remained in operation.

Dates: Friday June 20 through Monday August 4, 2008

All Sites: WaRO, BFD, COL, FFLD, PLY, MTO

Air Monitoring Activities:

- A network of six EBAM real-time smoke monitoring instruments operated from 6/20/2008 to 8/4/2008. Data from the BFD, COL, PLY, and MTO sites were uploaded via satellite telemetry to the Interagency Real Time Smoke Monitoring website (<http://www.airsis.com/usfs/>), which is operated jointly by the US Forest Service, the Bureau of Land Management, and the US Fish & Wildlife Service. NC DAQ personnel then downloaded the data for these sites from the website. Bob Bishop from the DAQ WaRO office downloaded data daily from the EBAMs at the WaRO and PLY sites. Bob also maintained and audited the EBAM systems at all six sites and decommissioned the sites. Audit and decommissioning dates and activities are detailed below.

Date: July 16, 2008

Site: WaRO (NC DENR Washington Regional Ofc. – Washington, NC)

Audit – EBAM Particulate Matter Monitoring System: Bob Bishop performed an audit of the WaRO EBAM system according to Met One (the EBAM manufacturer) and USFS guidelines, and also cleaned the PM10 and PM2.5 cyclones. All audit parameters were within specifications

Date: July 16, 2008

Site: PLY (Fire Station 2 – Plymouth, NC)

Audit – EBAM Particulate Matter Monitoring System: Bob Bishop performed an audit of the PLY EBAM system according to Met One (the EBAM manufacturer) and USFS guidelines, and also cleaned the PM10 and PM2.5 cyclones. All audited temperature, pressure, and flow rate parameters were within specifications; however, the instrument self test indicated a failure of the pressure sensor on the low-pressure side of the filter tape. This sensor is used to determine when the filter tape needs to be advanced due to excessive particulate matter loading. Since no high PM2.5 readings were noted during this time, it is unlikely that failure of this sensor affected the accuracy of any the PM2.5 concentration readings. However, the EBAM unit was replaced on the following day (see below).

Date: July 17, 2008

Site: PLY (Fire Station 2 – Plymouth, NC)

Audit – EBAM Particulate Matter Monitoring System: Bob Bishop replaced the EBAM PLY unit with an identical spare and performed an audit of the system according to Met One (the EBAM manufacturer) and USFS guidelines. All audited temperature, pressure, and flow rate parameters were within specifications.

Date: July 17, 2008

Site: COL (Tyrrell Co. Fire Department – Columbia, NC)

Audit – EBAM Particulate Matter Monitoring System: Bob Bishop performed an audit of the COL EBAM system according to Met One (the EBAM manufacturer) and USFS guidelines, and also cleaned the PM10 and PM2.5 cyclones. All audit parameters were within specifications

Date: July 17, 2008

Site: MTO (Dare Co. Visitors Center – Manteo, NC)

Audit – EBAM Particulate Matter Monitoring System: Bob Bishop performed an audit of the MTO EBAM system according to Met One (the EBAM manufacturer) and USFS guidelines, and also cleaned the PM10 and PM2.5 cyclones. All audit parameters were within specifications

Date: July 18, 2008

Site: BFD (Belhaven Volunteer Fire Department – Belhaven, NC)

Audit – EBAM Particulate Matter Monitoring System: Bob Bishop performed an audit of the BFD EBAM system according to Met One (the EBAM manufacturer) and USFS guidelines. All audit parameters were within specifications

Date: July 18, 2008

Site: FFLD (NC DFR District 13 Headquarters – Fairfield, NC)

Audit – EBAM Particulate Matter Monitoring System: Bob Bishop performed an audit of the BFD EBAM system according to Met One (the EBAM manufacturer) and USFS guidelines, and also cleaned the PM10 and PM2.5 cyclones. All audit parameters were within specifications

Date: July 28, 2008

Site: PLY (Fire Station 2 – Plymouth, NC)

Final System Audit and Decommissioning – EBAM Particulate Matter Monitoring System: Bob Bishop performed a final audit of the PLY EBAM system according to Met One (the EBAM manufacturer) and USFS guidelines, and then decommissioned the site.

Site: MTO (Dare Co. Visitors Center – Manteo, NC)

Final System Audit and Decommissioning – EBAM Particulate Matter Monitoring

System: Bob Bishop performed a final audit of the MTO EBAM system according to Met One (the EBAM manufacturer) and USFS guidelines, and then decommissioned the site.

Date: July 28, 2008

Site: BFD (Belhaven Volunteer Fire Department – Belhaven, NC)

Final System Audit and Decommissioning – EBAM Particulate Matter Monitoring

System: Bob Bishop performed a final audit of the BFD EBAM system according to Met One (the EBAM manufacturer) and USFS guidelines, and then decommissioned the site.

Date: August 1, 2008

Site: WaRO (NC DENR Washington Regional Ofc. – Washington, NC)

Final System Audit and Decommissioning – EBAM Particulate Matter Monitoring

System: Bob Bishop performed a final audit of the WaRO EBAM system according to Met One (the EBAM manufacturer) and USFS guidelines, and then decommissioned the site.

Site: FFLD (NC DFR District 13 Headquarters – Fairfield, NC)

Final System Audit and Decommissioning – EBAM Particulate Matter Monitoring

System: Bob Bishop performed a final audit of the FFLD EBAM system according to Met One (the EBAM manufacturer) and USFS guidelines, and then decommissioned the site.

Date: August 4, 2008

Site: COL (Tyrrell Co. Fire Department – Columbia, NC)

Final System Audit and Decommissioning – EBAM Particulate Matter Monitoring

System: Bob Bishop performed a final audit of the FFLD EBAM system according to Met One (the EBAM manufacturer) and USFS guidelines, and then decommissioned the site.