Dear CASTNET Site Operator:

This message is your **CASTNET: Eye on Air Quality** newsbrief for Spring 2011
(best viewed in HTML format in your e-mail reader)

NETWORK NEWS

Discontinuation of selected meteorological parameters

Last summer, EPA technical representatives made the tough decision to end meteorological measurements at most EPA-sponsored CASTNET sites. These measurements had always been part of the typical CASTNET site configuration and were used primarily as input for the Multi-layer Model (MLM), which provides the network with estimates of deposition velocity (i.e., the rate of deposition for measured pollutants). However, recent studies have determined that the deposition velocities produced by the MLM do not vary much from year to year for a given site, and the idea was put forward that aggregates of historical deposition velocity estimates could be calculated and used to produce dry deposition values in future years.

In August 2009, EPA hosted a CASTNET workshop for interested scientists, the results and recommendations of which are discussed in another article in this newsbrief. A key recommendation from the workshop was that, if necessary due to a funding shortfall, meteorological measurements should be eliminated in order to preserve filter pack measurements at as many sites as possible and to free up funding for incorporation of other types of monitoring (e.g., ammonia measurements). By ending meteorological measurements, EPA is accomplishing both of these goals. The number of sites in the network has remained relatively constant, and EPA is supporting the new NADP Ammonia Monitoring Network (AMoN) including the installation of AMoN sites at more than 30 EPA-sponsored CASTNET sites.

Meteorological measurements continue at several EPA-sponsored sites where other networks like NADP's Atmospheric Mercury Network (AMNet) are collocated or where the site is relatively new and has not collected enough data to calculate averages of historical deposition velocities.

The NPS has also discontinued the monitoring of wetness and delta temperature measurements at most NPS-operated CASTNET stations. Those parameters were added to existing NPS stations when they began the CASTNET filter pack sampling, but with the end of meteorological monitoring at EPA-sponsored sites, these measurements are no longer required. ARS stopped collecting and validating those parameters as of January 2011. The instrumentation will be removed in future twice-annual maintenance visits. The wind, temperature, solar radiation, relative humidity, and precipitation measurements will continue at this time.

CASTNET summit

In early February, representatives from EPA, NPS, MACTEC, and ARS met in Gainesville, Florida to discuss the current state of CASTNET, future direction, and standardization of procedures between MACTEC and ARS. The topics included an update on recommendations from the 2009 CASTNET workshop, the procedure for using historical deposition velocity data to replace missing data, and a review of the results of the first three sampling periods of the Ammonia CASTNET Chemical Speciation Network (CSN) Study. In-depth discussions were also conducted comparing the details of ozone field procedures and data validation protocols and actions to standardize procedures for EPA and NPS-sponsored sites. Specifically, all sites will use the same validation criteria for automated ozone calibration results (zero, span, precision checks) and shelter temperature measurements. The meeting was considered a success, and the overall conclusion was that CASTNET continues to be a valuable and important ambient air

monitoring network with a promising future. Key to that future will be the change at EPA-sponsored sites from research-oriented ozone measurements to regulatory ozone measurements.

CASTNET workshop summary

A CASTNET workshop was held in August 2009 to discuss the current status of the network and how to optimize the measurements to meet the ongoing assessment needs of the government and scientific research community. More than 70 stakeholders attended the workshop to provide input to EPA's Clean Air Markets Division (CAMD) and NPS on new measurement capabilities, modeling evaluation requirements, and anticipated policy needs. A summary of the recommendations and each of the presentations that were given at the workshop can be found on the CASTNET Web site (http://java.epa.gov/castnet/documents.do).

OPERATOR TIPS & TRICKS

AMoN: Sampling handling tips

AMoN, the passive ammonia monitoring network, was accepted as an NADP sub-network in October 2010. The EPA and NPS are in the process of collocating several AMoN sites with current CASTNET sites. The passive samplers are deployed every other Tuesday for 2-week sampling periods. During each visit to the AMoN site, the operator will remove the deployed sampler from the bucket and clip a new sampler in, never touching the blue section of the sampler. The 'used' samplers are packaged and shipped back to the NADP Central Analytical Laboratory for analysis. If samplers need to be stored for several days in the glass shipping jars, they should be stored in a cool location. The site operator should note if any agricultural activity near the site location has changed, such as the application of fertilizer to an adjacent field, the movement of livestock, etc. on the sample field form. It is important for the site operator to remember to always wear clean gloves when handling the samplers and to not breathe on the sampler, as we exhale a small amount of ammonia. Additional information about the network, including SOPs, data access, and a deployment schedule is posted to the AMoN Web site (http://nadp.isws.illinois.edu/nh3net/).

Completing the Site Status Report Form (SSRF)

The information documented on the Site Status Report Form (SSRF) during a site visit includes the site name and number, critical filter pack sampling information (e.g., filter pack identification number, dates, and duration of sampling and flow rate), instrument performance checks for ozone monitoring and filter pack flow systems, precipitation and condensation conditions during filter pack installation, and the status of the leaves on the plants surrounding the site. The SSRF also serves as a chain-of-custody form verifying receipt of the filter pack by the site operator at the sampling site as well receipt of the filter pack by the laboratory technician upon return of the filter pack to the analytical laboratory. It is, therefore, very important that the SSRF is filled out completely, accurately, and legibly. Important considerations are:

1. Legible signature: Important for chain-of-custody and, if necessary, troubleshooting related to the site visit.
2. Filter pack information: Accurate and legible documentation of on and off dates and times are crucial in determining the volume of the filter pack during the week of sampling. Without correct volume calculation, the atmospheric concentrations and associated deposition estimates will be incorrect.
3. System check results: Ozone monitoring and flow system check results play a vital role in early identification of problems and their subsequent resolution.
4. Leaves information: This pertains mostly to deciduous trees, but can be applied to evergreen conifers if that is the only species present at the site. In addition, evaluate the condition of any grasses or bushes. This information is used in the deposition model. In general, use your judgment and local knowledge of the site's plant types to make a qualitative determination of the summary status of the leaf out cycle for that given week. If you feel that additional comments are required, you can make brief notes in the comments section of the SSRF.
5. Atmospheric conditions at installation: Please circle the type of precipitation or condensation that may be present during the filter pack installation -- if any. Not circling anything indicates that no precipitation or condensation were present.

6. Return shipment information: This information is important for tracking and troubleshooting problems. Please sign legibly or print your name.
7. Notes: Please add any notes that you think might be helpful, especially if there is a lag of more than an hour between filter pack removal and subsequent installation.

Please review the SSRF, at least once, for completeness, accuracy, and legibility before placing it in the filter pack shipping tube. Thank you for your continued diligence and dedication to CASTNET!

OUTSTANDING SITES

National Park Service (NPS) sites that achieved 95%-100% validated ozone data for September 2010 through February 2011 and U.S. Environmental Protection Agency (EPA) sites that achieved 95%-100% validated ozone data for February 2010 through July 2010:

ABT147	CTH110	LRL117	ROMO-LP
ALC188	CVL151	LYK123	SAL133
ALH157	DCP114	MCK131	SAN189
ANA115	DENA-HQ	MCK231	SEKI-AM
ARE128	DEVA-PV	MEVE-RM	SEKI-LK
ASH135	ESP127	MKG113	SHEN-BM
BFT142	GLAC-WG	MORA-TW	SND152
BIBE-KB	GRSM-CM	OXF122	STK138
BWR139	GRSM-LR	PAL190	UVL124
CAD150	HOX148	PAR107	VIN140
CANY-IS	HWF187	PED108	VPI120
CHIR-ES	JOTR-BR	PEFO-SE	WSP144
CNT169	JOTR-PW	PND165	YELL-WT
COLM-MY	KEF112	PRK134	YOSE-TD
CON186	KNZ184	PSU106	ZION-DW
COW137	LAVO-ML	QAK172	

Please contact us with topics and tips of what you want us to explore next time in your CASTNET: Eye on Air Quality newsbrief.

For monitoring site assistance, please contact:
NPS CASTNET sites: contact Air Resource Specialists Telephone: 1-800-344-5423 (Mountain Time)
EPA CASTNET sites: contact MACTEC Telephone: 1-888-224-5663 ext. 2602 or ext. 6620 (Eastern Time)

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