



The MONITOR

A Newsletter for National Park Service
Air Quality Station Operators

Fall 1999

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NETWORK NEWS

New on-site computer closer to reality

Coming soon to a monitoring station near you is the new on-site computer system called DataView. The system will work in concert with the recently installed ESC 8816 datalogger to assist station operators with weekly checks and to provide new tools for viewing data on-site. The graphic-intensive, Windows-style system will include:

- Digital checklists and forms for documenting station visits.
- Point-and-click access to standard operating procedures.
- A digital logbook.
- A digital strip chart with one-minute resolution for O₃, O₃ calibrator, and SO₂ data.
- Hourly "stackplots" of all parameters.
- Data and calibration summary tables.
- Data and system status alarms.
- Supporting tools such as unit conversion tables, contacts directory, and servicing schedules.

Additional modules can be added in the future to meet defined needs.

Station operators will complete checklists, forms, logbook entries, and other "paperwork" on the computer, which will be automatically downloaded every night by the IMC. The digital paperwork will increase the efficiency of the station operators, shorten the data validation turnaround time, help resolve problems more quickly, and eliminate the need to send volumes of paperwork to the IMC. ARS technicians and station operators can also call the DataView system to look at the most recent data and operational status indicators. The system is being developed by ARS with extensive input from the NPS ARD and comments from station operators.

Field tests are just beginning on the DataView prototype. Deployment of the systems is expected to begin in January in conjunction with semiannual service visits. We hope you will welcome DataView and find that it will streamline your Tuesdays!

NPS launches new BRAVO Web site

The National Park Service has updated its Web site to include data and information collected during the Big Bend Regional Aerosol and Visibility Observational Study (BRAVO). Researchers are studying the causes and extent of decreased visibility at Big Bend National Park, Texas, between July 1 and October 31, 1999.

Researchers are operating continuous gaseous monitors, aerosol samplers, tracer samplers, optical systems, cameras, meteorological sensors, and other instrumentation. Data plots, photographs, descriptions, and much more information are provided on the BRAVO Web site, located on the Internet at <http://www2.nature.nps.gov/ard/bravo>.

Team changes in the IMC

Up until now you may be familiar with speaking to Christy Higgason, air quality data technician, on the telephone or receiving correspondence from her. She has recently shifted to the air quality data analyst's position, which was vacated in October by Cheryl Dandel, who left ARS and the IMC team.

You'll now be getting acquainted with newcomer Kelly Bloome (pronounced Bloom). Kelly, the new air quality data technician, will begin learning the ropes of receiving your data packets, retrieving data daily, and beginning the preliminary data validation process. If you have any questions or problems with your data packet, give Kelly a call and get acquainted.

What's inside:

- ◆ Operator Patte Danisiewicz
- ◆ Data collection summary
- ◆ Getting to know your datalogger
- ◆ Do forest fires affect ozone readings?
- ◆ News from the field
- ◆ Network sites stand up to disasters

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SITE OPERATOR FOCUS

Part-time operator Patte Danisiewicz gives full-time effort at Olympic National Park

When Patte Danisiewicz moved to Port Angeles, Washington, two years ago, things were looking her way. "The Park was looking for a part-time station operator and I was looking for some part-time work," says Patte, "so it really worked out well." Patte, a Biological Science Technician at Olympic National Park, maintains and services the air quality station. "All I do is air quality," says Patte, "its my sole responsibility." Before moving to Washington she had been a station operator at Saguaro National Park, Arizona, for 4 years.

The air quality station at Olympic houses continuous ozone and sulfur dioxide monitors; air temperature, relative humidity, wind speed and direction, precipitation, and solar radiation sensors; and an NDDN dry deposition sampling system. Shortly after Patte took on the station operator's duties, the Port Angeles site received a new shelter. "The old shelter was in very poor condition, and it had a problem with ants," says Patte, "the new shelter has a lot of shelving, and is conducive to keeping things organized in there."

The National Park Service air quality monitoring network has few part-time station operators. Patte works 16 hours a week checking the monitoring instruments and generating reports associated with data collection. In the summer, she works as much as 20 hours per week servicing a second, seasonal station at Hurricane Ridge. "The park conducts passive ozone studies at Hurricane Ridge in the summer," says Patte, "but this year construction was going on in the area so we couldn't monitor."



Shelley Hall, former primary station operator, and Patte Danisiewicz, current station operator, take a camera break while servicing the air quality station.

Olympic National Park and the Pacific Northwest are known for being the wettest areas of the country. Patte records hundreds of inches of precipitation per year on her precipitation sensor. Before moving to Olympic, she lived in the driest part of the country, near Tucson, Arizona, an area that receives only about 11 inches of precipitation per year.

Patte's husband, Mike, is a Backcountry Ranger at Olympic National Park. Their son Ryan, 7, also spends time within the park's boundaries. Patte and her family enjoy the variety of adventurous activities available in the park such as hiking its trails and spotting wildlife. Her B.A. degree in anthropology and archeology gives her personal interest in the things she sees while hiking.

Shelley Hall, Air Quality Coordinator at Olympic, is also the backup station operator. She was the primary operator before Patte came along, and left the position to pursue a graduate degree in wildlife management. "Her current position lets her focus more on wildlife studies," says Patte. Both Patte's and Shelley's efforts make monitoring at Olympic as best as it can be.



DATA COLLECTION SUMMARY

Data collection statistics for January through June 1999 are:

- Sites with final validation of ambient air quality parameter collection greater than 90% include:

Big Bend	Chiricahua	Craters of the Moon
Denali	Death Valley	Glacier
Great Basin	Grand Canyon	Great Smoky Mtns. (Cades Cove)
Great Smoky Mtns. (Clingmans Dome)	Great Smoky Mtns. (Cove Mountain)	Great Smoky Mtns. (Look Rock)
Hawaii Volcanoes	Joshua Tree	Mammoth Cave
Mesa Verde	Mount Rainier	North Cascades
Olympic	Pinnacles	Theodore Roosevelt
Virgin Islands	Voyageurs	Yellowstone
	Yosemite	

- Sites with final validation of ambient air quality parameter collection greater than 80% include:

Everglades	Lassen Volcanic	Rocky Mountain
	Sequoia-Kings Canyon (Lookout Point)	

- The entire network achieved 90.6% final validation of ambient air quality parameters.

LAB TALK

Getting to know your datalogger

Most of you have had 6 months or more of using the ESC 8816 dataloggers. The feedback has been mostly positive, and everyone agrees they are an improvement over the SumX and Odessa units that operated over the past 15 years.

Reliability has been good. Most of you probably navigate with the cursor and the “Enter” keys, but do you use the many shortcuts keys that are available? Some common ones you should be aware of are:

Action - Display Data	
<u>Menu</u>	<u>Shortcut</u>
D Real-Time Display Menu	F5 DISP UNITS
R Display Readings w/units	
Action - Display Flags	
<u>Menu</u>	<u>Shortcut</u>
D Real-Time Display Menu	F6 DISP FLAGS
F Display Readings w/flags	
Action - Disable/Mark Channel Offline	
<u>Menu</u>	<u>Shortcut</u>
C Configuration Menu	F9 CHL CONFIG
D Configure (Data) Channels	
M Disable/Mark Channel Offline*	
Action - Start a Calibration Event	
<u>Menu</u>	<u>Shortcut</u>
C Configuration Menu	F10 CAL CONFIG
C Configure Calibrations	
S Start a Calibration Program	

*Note: Mark multiple channels Offline all at once by marking with the spacebar and cursor keys, then [Enter] to initiate action.

In addition, it may be helpful to display the “Last Base Average” of the rainfall channel to note the number of tips during the previous minute. The standard operating procedures (SOPs) require station operators to record the value of 10 rainfall bucket tips. This may be difficult, depending upon the proximity of the rain gauge to the datalogger. To display this value on your datalogger:

Action	Menu
Display Last Base Average	D Real-Time Display Menu B Display Last Base Avg

Does your datalogger ever appear “hung” or react very slow? Try a “warm restart.” To do this, simultaneously press the blue, orange, and left arrow/delete keys on the panel keyboard and the datalogger will restart all tasks and free up any unused memory. This procedure is more effective than just a “power off and on.”

Any active calibrations and digital event programs will be aborted during this process. Of course, call ARS should these conditions become frequent.

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Do forest fires affect ozone readings?

At some network sites over the past several years, ozone readings may have been affected by nearby forest fires. The relationship is unclear, however, and we need each operator’s help to further investigate this issue. Fires may affect ozone readings in several ways. Hydrocarbon emissions from fires may photochemically react with sunlight to produce increased ozone, fire emissions could contain an artifact that is mistakenly identified by analyzers as ozone, or other interference effects could be occurring.

If you observe smoke impacts of any kind near your monitoring site, either from local fires or due to long-range transport, please note the time and severity of your observations and send an e-mail to the IMC (bdeemer@air-resource.com), attach a note

to your site documentation, or call the IMC. Any information you can provide will be useful, the more detailed the better.

Without your observations it is almost impossible to determine when fire emissions may be influencing a monitoring site. Your observations will help to better define if ozone levels are affected by fire.



A visibility monitoring camera system documented this smoke plume on film in Canyonlands National Park. Other monitoring must exist to determine the fire emissions.

NEWS FROM THE FIELD



Network gets new and improved stations

Since the last issue of *The Monitor* was distributed, several sites have received improvements or replacement shelters. Two new monitoring stations at Hawaii Volcanoes National Park were installed in September. An ozone, meteorological, and NDDN monitoring station was installed near Thurston Lava Tube at the park, and a meteorological station was installed near the Brewer instrument at the USGS Hawaiian Volcano Observatory laboratory.

The Ash Mountain station at Sequoia-Kings Canyon National Park was also relocated in September, and ozone monitoring was resurrected there. An additional seasonal station was added at the Wolverton area in the park. This monitoring is being done in cooperation of the United States Forest Service, Riverside Fire Lab.

Planned for November 1999 is a replacement shelter at Everglades National Park, thanks to Shane Spitzer of Shenandoah National Park, who found a "good used shelter."

A replacement shelter for Big Bend National Park will be installed in January 2000, to house the routine equipment plus a suite of sulfur and aerosol monitoring equipment.

Network sites stand up to disasters

Natural disasters have tried the stamina of air quality stations this year. Several network stations received more than their fair share of bad weather, including:

- *Everglades National Park:* Florida was hit by what seemed a never-ending line of hurricanes and tropical storms this summer and fall. The air quality station in the Everglades felt some of this impact, but neither rain nor wind upset operation of the monitoring instruments. On October 15th, as a hurricane made its way up the Florida coast, winds only peaked at 25mph in the Everglades, but rainfall measured 8.1 inches for the day.
- *Grand Canyon National Park:* Northern Arizona dubbed their summer storm "Monsoon '99". Heavy rains fell beginning in early July and lasted through September. The storms caused park trails to wash out and damaged the TransCanyon Pipeline, the sole water source for the park. Even so, the storms didn't interfere with air quality station operations, or checks by operator Carl Bowman.
- *Joshua Tree National Park:* In Late May, Joshua Tree was hit by the largest fire in the park's history, consuming over 14,000 acres. If that wasn't enough, an earthquake measuring 7.0 on the Richter Scale occurred during the early morning hours of October 16th. Although felt widely in and around the park, the quake, nor the fire, interfered with monitoring operations.

The MONITOR

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 Air Resource Specialists, Inc.

1901 Sharp Point Drive Suite E
Fort Collins, CO 80525
Telephone: 970/484-7941
Toll Free: 1-800/344-5423
Fax: 970/484-3423
E-mail: info@air-resource.com

Newsletter production consultant:
John D. Ray - Program Manager, NPS ARD
Telephone: 303/969-2820

Editor:
Gloria S. Mercer - Air Resource Specialists, Inc.
Telephone extension: 221



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