The MONITOR

A Newsletter for National Park Service Air Quality Site Operators

Fall 1997

Volume 1 Number 2

NETWORK NEWS

New NPS ARD personnel

The NPS Air Resources Division has recently acquired two new personnel. Chris Shaver has been appointed the new NPS ARD Division Chief, and Jack McPartland is the new Contracting Officer's Technical Representative (COTR).

Chris re-joined the NPS in early August, after working several years for the Environmental Defense Fund. She now oversees the division, including its two branches of Research and Monitoring and Permit Review and Policy.

Jack accepted COTR responsibilities last spring. He oversees network administration and routine day-to-day operations, and coordinates the ambient air quality and visibility networks.

The rest of the NPS ARD staff

John Ray is the Program Manager with the NPS ARD. He has given up his contract management responsibilities to become more involved with data analysis and publishing. He is also involved with setting up the DISPRO program, coordinating regional ozone studies, and running the passive ozone monitoring program.

Dave Joseph performs data analysis and interpretation on air quality data. He is also responsible for getting the data out to the parks.

Miguel Flores is Special Assistant to the Division Chief and works with special projects such as the Binational Big Bend Regional Air Quality Study. The study plans to determine the effect of Mexican power plants upon U.S. air quality and track the origin of pollution.

NETWORK NEWS continued on page 2....

What's inside:

- Feature operator Scott Berenyi
- 2nd Quarter 1997 data collection summary
- 1994 annual data reports
- National Performance Audit Program
- John's puzzle page
- Semiannual maintenance schedule

Personnel changes at ARS

ARS recently said goodbye to Lauri Thorne, the programs' long-time technical assistant. Most of you have spoken with Lauri on the telephone as she filled supply requests, traced packages, placed orders, provided network clerical support, and performed countless other duties during the past 8 years. Lauri has relocated to Green Bay, Wisconsin, and ARS will miss the energy she provided and the storehouse of information we came to depend upon.

Lauri is replaced by Denise Yates, who you will recognize as the cheerful voice who routinely directed your telephone calls the past several years. Denise had already performed a number of network duties in a backup capacity, and is quickly becoming familiar with all our operations. Sandra Camren has taken over the front office and our new telephone system.

On the field support side, you will see less of Mitch Walker and more of Martin Valvur. Mitch has taken a position in ARS' compliance section and is spending most of his time as a computer jockey and reminiscing about "the good ol' days." And yes, he has been seen in a coat and tie on occasion. Martin (another Estonian) has been with ARS for 9 months supporting field operations for other projects, and brings with him a background of engineering and construction management skills.

You might be seeing Martin Valvur visit your site, have Denise Yates fill your supply needs, or have Sandy Camren direct you to a field technician when you telephone ARS.

SITE OPERATOR FOCUS

Scott Berenyi helps research air quality at Great Smoky Mountains National Park

Scott Berenyi began his career with the National Park Service after earning a degree in wildlife ecology at the University of Maine. He has been at Great Smoky Mountains National Park for four years, servicing and maintaining a wide range of air quality, meteorology, and visibility monitoring instrumentation. He also assists with air pollution biological effects monitoring in the park.

The air quality monitoring program at Great Smoky Mountains is one of the most extensive in the National Park Service. The park is the focus of numerous studies and research regarding air pollution and air pollution effects.

Six air quality monitoring sites are located in the park. Four of the sites are equipped with criteria pollutant instrumentation (ozone and meteorology [air temperature, relative humidity, wind speed and direction, solar radiation, and precipitation]). One of these sites is also equipped with an automatic camera, a nephelometer, and an aerosol sampler; another site has a UV-B monitor. A fifth monitoring site is designated as an Enhanced Gaseous Pollutant/Meteorological Monitoring Station and measures ozone, sulfur dioxide, nitrogen oxides, carbon monoxide, volatile organic compounds, and meteorology. The sixth site monitors air quality as part of the National Atmospheric Deposition Program.

Servicing these sites takes about 3 to 4 days out of each week of Scott's time. He travels from site to site, checking each piece of equipment, ensuring its operation, or taking corrective actions to ensure it is up and running again as soon as possible.

In addition, a number of universities and governmental agencies conduct studies on the effects of air pollution on natural resources. Researchers from around the nation come to Great Smokies to study the air, water, plants, and animal species in the park. Scott will be there to help out as needed.

Scott Berenyi has been an Environmental Technician at Great Smokies for four years.

DATA COLLECTION SUMMARY

Data collection statistics for the 2nd Quarter 1997 (April, May, and June) are:

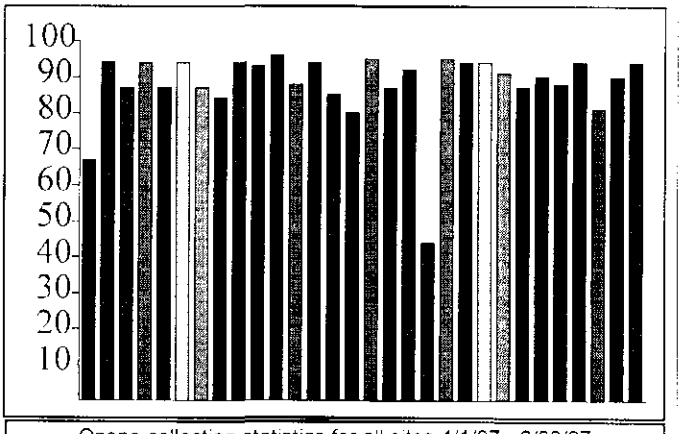
- Sites with final validation of ambient air quality parameter collection greater than 90% include:

Canyonlands	Great Smoky Mtns (Cove Mountain)	Pinnacles
Craters of the Moon	Joshua Tree	Sequoia Kings (Lower Kaweah)
Denali	Mammoth Cave	Shenandoah (Big Meadows)
Grand Canyon	Mount Rainier	Yellowstone
Great Basin	North Cascades	Yosemite (Turtleback Dome)
Great Smoky Mtns. (Cades Cove)	Olympic	

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

Chiricahua	Great Smoky Mtns. (Clingman's Dome)	Rocky Mountain
Death Valley	Great Smoky Mtns. (Look Rock)	Sequoia-Kings (Lookout Point)
Everglades	Lassen Volcano	Voyageurs
Glacier		

- The entire network achieved 88.0% final validation of ambient air quality parameters.



Ozone collection statistics for all sites 4/1/97 - 6/30/97.

NETWORK NEWS continued from page 1....

Annual reports almost ready

The long-awaited 1994 annual ambient air quality and meteorology data reports are scheduled to be in the mail later this month. Each of the 47 network sites and the regional coordinators will receive a copy. The 1995 and 1996 annual reports are expected to follow shortly thereafter.

The report cover design features an ambient air quality monitoring station nestled in a pristine valley with the sun rising on the horizon, signifying a new day is dawning. For each site, the reports include a brief description of the park and its features, a variety of data tables and plots, and an air quality glossary. Look for it on your doorstep soon!

EXAMPLE

Ozone Performance Audit (9701)

AIRS Site Code 2 3 0 0 9 0 1 0 1 (required)

Your Site ID ACADIA- McFARLAND Hill (optional)

Monitor Manufacture Monitor Labs

Last Zero and Span Date 9 / 10 / 97

Monitor Serial No. 524

Last Multipoint Calibration Date 9 / 1 / 97

Monitor Model No. 8810

Monitor's Approx. Age 6 (years)

Air Temperature near Monitor 24 °C

Site Barometric Pressure 749.1 mmHg

Audit Device No. 35516

Date of Audit 9 / 11 / 97

POTENTIOMETER SETTING	RESULTS IN PPB (volume/volume)	COMMENTS
ZERO	1	ALL Points
490	434	Very STABLE
415	198	
370	90	

National Performance Audit Program
AIRS Site Codes and Station Pressures

SITE	AIRS Site Code			Site Elevation In Feet	Standard Station Pressure (mmHg)
	State	Cnty	Site		
ACAD	23	009	0101	400	749.1
BIBE	48	043	0101	3450	669.8
CANY	49	037	0101	5950	610.1
CHIR	04	003	8001	5151	628.7
CRMO	16	023	0101	5900	611.2
DENA	06	027	0101	2100	704.0
DEVA	02	290	0003	410	748.8
EVER	12	025	0030	7	759.8
GLAC	30	029	8001	3172	676.8
GRCA	04	005	8001	6800	590.8
GRBA	32	033	0101	6760	591.7
GSCC	47	155	0102	1850	710.5
GSCD	47	009	0102	6630	594.6
GSCM	47	155	0101	4150	652.7
GSLR	47	009	0101	2600	691.2
HAVO	15	001	0005	3980	656.8
JOTR	06	071	9002	4080	654.4
LAVO	06	089	3003	5760	614.5
MACA	21	061	0500	774	739.0
MEVE	08	083	0101	7140	583.2
MORA	53	053	1010	1380	722.8
NOCA	53	057	0013	358	750.2
OLYM	53	009	0012	410	748.8
PINN	06	069	0003	1100	730.3
ROMO	08	069	0007	9000	543.1
SEAM	06	107	0005	1710	714.1
SELK	06	107	0006	6230	603.7
SELP	06	107	0008	4019	655.9
SHIBM	51	113	0003	3520	668.1
VOYA	27	137	0034	1400	722.3
YELL	56	039	1011	8157	561.0
YOCM	06	109	0004	4700	639.4
YOTD	06	043	0003	5265	626.0

LAB TALK
National Performance Audit Program

The NPS participates in the National Performance Audit Program (NPAP). What is that, you ask? It is a program to provide performance audits of ozone and SO_2 analyzers within the network. Many of you have seen the large gray shipping case that arrives unannounced and poorly addressed. If you haven't seen it yet, your time is coming.

The NPAP is an EPA program designed to provide a level of quality assurance to air quality data. An ozone generator (or SO_2 standard) is shipped to each participating station. The equipment is assembled by the routine station operator, and unknown levels of pollutant concentrations are introduced into the station analyzer. The operator records the analyzer response on supplied forms and ships the whole thing back to where it came from.

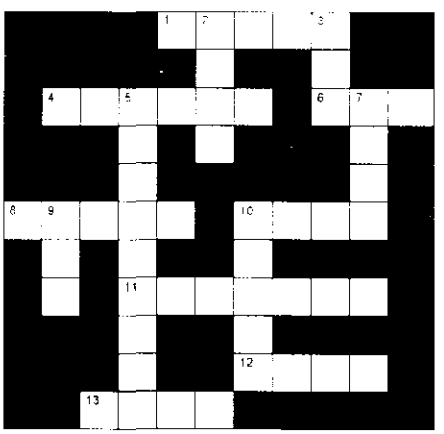
Sound easy? It is, but errors in equipment setup or recording analyzer response do happen, resulting in unfavorable audit results. Since you, the operator, don't know the concentration of gas you are introducing to your analyzer, you don't know what response to expect, and are unaware of procedural errors. The input concentrations are known only by the audit contractor (Mantech Environmental) who will calculate and distribute the results. Even when an obvious recording error is discovered, Mantech does not correct the data after they are released, emphasizing the importance of careful operation and recording.

For your convenience, the insert in this newsletter is an example of a completed audit data sheet. On the back side is a table of AIRS site codes and barometric pressure for each site. Be sure to state the correct code and pressure for your site on the data sheet. Also keep in mind the following while participating in the audit:

- Allow adequate time to perform the audit: don't try to rush through it. Perform the audit before doing any station checks, filter changes, or other maintenance.
- Adequate instructions are provided to assemble the audit components. Follow the diagrams and make sure the fittings are tight.
- Allow the audit equipment to adequately warm up. The instructions require at least 20 minutes.

Lab Talk continued on page 4....

JOHN'S PUZZLE PAGE

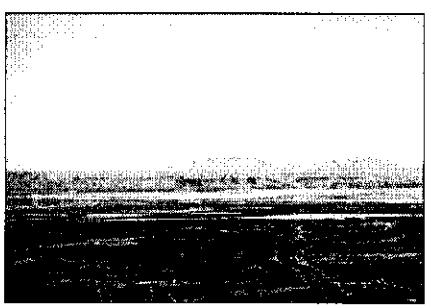


Across

1. A colorless, reactive gas
4. "V" of VWD
6. Denali time zone (abbrv.)
8. Independent evaluation
10. Acid _____
11. Reduce, reuse, _____
12. Beloved datalogger
13. Backbone of NPS monitoring network, _____ employee

Down

2. A Utah park
3. Government agency
5. Analyzer adjustment
7. Upscale response
9. Harmful radiation
10. Point _____ National Seashore



Name this park:_____

Puzzle Page Questions

- In 1985 "Gertie" the oldest dinosaur bones found in the U.S. were discovered in what park?
- The 1963 settlement of a 99 year-old boundary dispute between the U.S. and Mexico developed into what national memorial?
- There are numerous lakes in national park sites. What park contains the deepest lake?
- What is the difference between a national park and a national monument?
- Alcatraz Island, part of Golden Gate National Recreation Area, was once a federal penitentiary. What was its role previous to that?

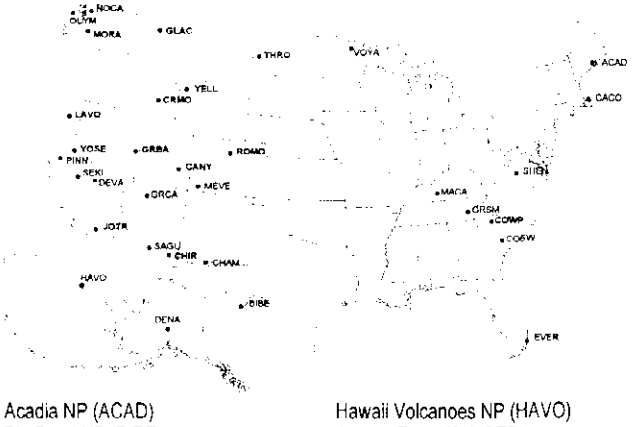
Get the answers when you phone in your multipoint results!

Lab Talk continued from page 3....

- If possible, use the normal ¼ inch sample tubing by removing from the glass manifold and connect directly to the audit device. Do not activate any station calibrator events.
- Allow all points to fully stabilize. This should take no more than 10 minutes.
- Be sure to record the analyzer value from the datalogger, **not from the analyzer display**. Values must be recorded on the audit sheet in **PPB** -- not PPM.
- The analyzer response for the first zero point should be to .000. If the response is greater than .003 ppm from zero, recheck and tighten all plumbing fittings.
- Call ARS (1-800-344-5423) or the NPAP question line (1-800-359-5552) if you have any difficulty or questions about the procedures of documentation.
- Complete the audit promptly and send the equipment on as soon as possible.

Your cooperation in carefully following these procedures will ensure proper audits and result in valuable quality assurance for the network!

NPS Ambient Air Quality Monitoring Network



Acadia NP (ACAD)
Big Bend NP (BIBE)
Canyonlands NP (CANY)
Cape Cod NS (CACO)
Chamizal NM (CHAM)
Chiricahua NM (CHIR)
Congaree Swamp NM (COSW)
Cowpens NB (COWP)
Craters of the Moon NM (CRMO)
Death Valley NP (DEVA)
Denali NP (DENA)
Everglades NP (EVER)
Glacier NP (GLAC)
Grand Canyon NP (GRCA)
Great Basin NP (GRBA)
Great Smoky Mountains NP (GRSM)
Hawaii Volcanoes NP (HAVO)
Joshua Tree NP (JOTR)
Lassen Volcanic NP (LAVO)
Mammoth Cave NP (MACA)
Mesa Verde NP (MEVE)
Mount Rainier NP (MORA)
North Cascades NP (NOCA)
Olympic NP (OLYM)
Pinnacles NM (PINN)
Rocky Mountains NP (ROMO)
Saguaro NM (SAGU)
Sequoia-Kings Canyon NP (SEKI)
Shenandoah NP (SHEN)
Theodore Roosevelt NP (THRO)
Voyageurs NP (VOYA)
Yellowstone NP (YELL)
Yosemite NP (YOSE)

The MONITOR

The MONITOR is published quarterly (March, June, September, December) by Air Resource Specialists, Inc. under Contract CX-1270-96-007, for ambient air quality site operators in the National Park Service monitoring network.

For more information or address corrections relating to this newsletter, or for assistance in correcting operational site problems, please contact:

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printed on recycled paper

NEWS FROM THE FIELD

Semiannual maintenance schedule

Most of you see an ARS field specialist visit your station every six months or so. Although we intend to keep that schedule, shelter replacements, Brewer instrument preparations, NDDN equipment installations, and instrument upgrades at several stations have taken priority over routine semiannual maintenance visits. These reconfigurations and upgrade tasks are likely to continue through December this year, and routine maintenance visits should resume on a scheduled basis in January 1998. Semiannual maintenance visits may only be made to stations that are having significant technical problems, stations that are not accessible during the winter months, or stations that are shutting down or starting up. Just because you haven't heard plans of a semiannual visit don't feel we're not thinking about you. Please call us should you have concerns.

Since the previous issue of **The MONITOR**, air quality monitoring stations were reconfigured at Chiricahua, Glacier, and Grand Canyon. New shelters were installed at the Mammoth Cave and Olympic stations, and Brewer instrument installations were completed at Canyonlands and Glacier. In the coming months, ARS plans to replace the Denali shelter, consolidate and reinstall the Acadia air quality equipment at a common site in a new location, establish a new monitoring station at Virgin Islands National Park, expand and upgrade the monitoring equipment at Everglades, and assist with Brewer instrument installations at six park service monitoring stations.