

Tribal Air Monitoring Outlook

US EPA/R&IE/CIE



TAMS Center

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Polly Hennessey, Editor

The Gravimetric Laboratory

In the summer of 2002, the Radiation and Indoor Environments National Laboratory (R&IE), through its Center for Indoor Environments (CIE), began a weighing service which it offered to interested members of the Tribal community for their PM_{2.5} monitoring programs. The weighing services for the 47 mm filter used in PM_{2.5} sampling assists those tribes who are just beginning their monitoring programs. "Particulate matter is the term used for a mixture of solid particles and liquid droplets found in the air. PM_{2.5} refers to particulate matter that is 2.5 micrometers or smaller in size....The sources of PM_{2.5} include fuel combustion from automobiles, power plants, wood burning, industrial processes and diesel powered vehicles such as buses and trucks." When the program was in its initial phase, Jeff Lantz, CIE, was the lead in contracting for the refurbishment of the Radon Chamber in order to meet the environmental control needs that were required. Currently, Robert Mosley is the CIE Laboratory Manager for the Gravimetric Laboratory assisted by Carl Palumbo, Laboratory Analyst, who is also with CIE. Prior to opening its Gravimetric Laboratory for regular weighing services, a three to four month trial program was conducted. This trial period included two volunteer tribes: the Leech Lake Band of Ojibwe in Minnesota and the Salt River Pima-Maricopa Tribe in Arizona. These were the first two tribes to sign up for the Gravimetric Services. The program presently has seven participating tribes, which includes the original participants previously mentioned. The remaining five are: the Pueblo of Jemez in New Mexico; the Shoshone Bannock Tribe in Idaho; the La Posta Band of Mission Indians in California; the Northwestern Band of the Shoshone Nation in Idaho; and the Delaware Tribe in Oklahoma.



Filter Weighing Session

The Gravimetric Laboratory weighing services include filter handling, inspection, equilibration and weighing with data entry, validation, management and subsequent distribution to the participating tribes. The unexposed filters are received by the Laboratory where they are inspected, pre-weighed and shipped to the tribes. The gravimetric analysis system takes place in a climate-controlled environment. This weighing is done within a narrow range of temperature and humidity. The tribes conduct their sampling following a prescribed method, which includes a set number of samples obtained during a calculated timeframe. The tribes then return the exposed filters to the CIE Gravimetric Laboratory for

post-weighing. This initial service enables the tribes to avoid the costs of paying for expensive laboratory services while they are in the first stages of developing their PM_{2.5} programs. They, in turn, receive qualitative data required for generating reports. The tribes also receive assistance from the TAMS Center in implementing procedures for establishing quality assurance and quality control guidelines for their respective programs.

After the PM_{2.5} filters have been analyzed they are archived by the Gravimetric Laboratory. The filters are housed for at least two years in a quality controlled chamber at a temperature of 4° Celsius or until space is needed for current filters. The tribes receive the analyzed data which can be used at their discretion. The data can be sent to the EPA's national database of air emissions, the National Emissions Inventory (NEI). "This database contains information on stationary and mobile sources that emit criteria air pollutants and their precursors, as well as hazardous air pollutants (HAPs)." Some tribes use the data for locality studies or to establish an air quality management program.



Carl Palumbo, Gravimetric Laboratory Analyst, CIE, weighing a PM_{2.5} filter for participating tribes.

If you have any questions or would like further information about R&IE's Gravimetric Laboratory, please contact Robert Mosley at (702) 784-8266 or email at mosley.robert@epa.gov or Carl Palumbo at (702) 784-8267 or email palumbo.carl@epa.gov.



A typical Environmental Controller and Weighing Laboratory Chamber.



Petri slides being prepared for filter archiving.



Robert Mosley, Gravimetric Laboratory Manager, CIE/TAMS, and Carl Palumbo, Laboratory Analyst, CIE/TAMS, examining data records.

The Oneida Tribe of Wisconsin



The On yote a ka, Oneida Tribe of Indians of Wisconsin, are members of the Iroquois Confederacy, whose origins can be traced to central New York State. The tribe is a federally recognized Indian Nation with approximately 14,533 members.

On July 27-30, 2004, the American Indian Air Quality Training Program (AIAQTP) under the sponsorship of the Institute for Tribal Environmental Professionals (ITEP), located at Northern Arizona University (NAU) held the second in a series of courses targeting the fundamentals of indoor air pollution and the health effects of the various pollutants. The course took place in Green Bay, Wisconsin, on the Oneida Reservation. The Lead Instructor was Farshid Farsi, Interim co-Director, Tribal Air Monitoring Center (TAMS), Las Vegas, Nevada, other members of the training team were Jim Woods, of the Makah Nation, Washington State; Jeff Mears, Jan Falck and Shane John of the Oneida Nation, Green Bay, Wisconsin. Topics included in the course were: common indoor air pollutant sources found in homes; health effects of indoor air pollutants; various indoor air assessment documents and tools; cost-effective Mitigation techniques; and monitoring and/or measuring devices for selected indoor air pollutants. The three-day course consisted of lectures and hands-on practical training. A unique feature of the course was the use of a residential home, the DeCaster House, as a fundamental training tool where, "Diagnostic instruments were used to measure the concentration of carbon dioxide, carbon monoxide, temperature and relative humidity." The results of these data were presented to the class on the final day of training.

A similar course on Tribal Residential Indoor Air Quality is scheduled for October 19-22, 2004, location to be announced. If you have any questions concerning these courses, please contact Farshid Farsi at (702) 784-8263, or email Farshid.Farsi@nau.edu or Lee Anderson, (702) 8264, or email Lee.Anderson@nau.edu.



Participants from across the United States who attended the April 27-30, 2004, Tribal Residential Indoor Air Quality Training Course, held in Green Bay, Wisconsin.



Farshid Farsi, Interim TAMS co-Director and Lead Instructor for the Residential Indoor Air Quality Course, walking in front of the DeCaster House on the Oneida Reservation.



Administrator Leavitt Visits Las Vegas

"It is our responsibility...to use the convening power of the United States and the Environmental Protection Agency to improve human health and protect the earth."

On May 24, 2004, EPA Administrator Mike Leavitt visited the Radiation and Indoor Environments National Laboratory (R&IE) and the Tribal Air Monitoring Center (TAMS) in Las Vegas, Nevada. Administrator Leavitt was sworn in as the tenth Administrator of the Environmental Protection Agency (EPA) on November 6, 2003. Before coming to EPA, he served as Utah's fourteenth governor. "As a pioneer of collaborative environmental management, ...he co-authored with former Governor John Kitzhaber, D-Oregon, a balanced environmental philosophy known as Enlibra. Enlibra, derived from Latin roots, means 'moving toward balance' and emphasizes collaboration over confrontation." As a commitment to environmental public service he has "pursued three goals: to leave things better than he found them; to plant seeds for the next generation; and to give it all he has."



George Dilbeck, EPA TAMS co-Director; Administrator Mike Leavitt; and Farshid Farsi, ITEP Interim TAMS co-Director

While visiting R&IE, Administrator Leavitt was given an extensive briefing and tour of the TAMS Air Monitoring Platform located in front of the EPA Executive Center. Farshid Farsi and George Dilbeck, TAMS' co-Directors, briefed Mr. Leavitt on the various instruments used in the AIAQTP training courses at the TAMS Learning Center. After the briefing, an All-Hands session was held where he discussed his "environmental philosophies and visions" concerning national and global issues. The meeting was then open to questions from the audience.



Administrator Mike Leavitt; Farshid Farsi, ITEP Interim TAMS co-Director; Jed Harrison, Director, R&IE Laboratory; and George Dilbeck, EPA TAMS co-Director.

Because Mr. Leavitt has a background in environmental air efforts, he was particularly impressed with the TAMS air monitoring training program and the "vast array of training equipment" used. "The tribal tour was the only operational unit that he requested to see during his visit....A letter of thanks was sent by Farshid Farsi and George Dilbeck to the Administrator on May 26, 2004."





The TAMS TEAM



*Bob Mosley, CIE/TAMS, Laboratory Manager,
Gravimetric Laboratory,*

Bob Mosley, a native of Texas, has lived in Las Vegas, Nevada, since December 1972. He has been with the Environmental Protection Agency for thirty-two years. Bob received his Bachelor of Science Degree in Biology from Prairie View A&M College (now University). Prairie View is a land-grant university authorized under the Morrill Land Grant College Acts of 1862 and 1890 and is one of our “historically Black colleges and universities.” It is a part of the Texas A&M University System, with the main campus located northwest of Houston, Texas.

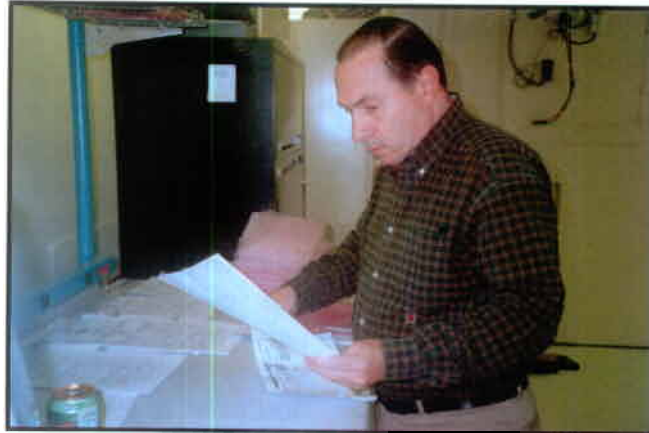
Bob began his Las Vegas tenure at EPA in the Research Division and participated in a number of radiation studies that were conducted over a span of several years. During these years, the Research Division operated a farm at the Nevada Test Site and maintained its own dairy herd of cows. The dairy farm was originally “established in 1965 to carry out studies to determine the uptake mechanism in the forage to cow-to-milk transfer of various elements”, specifically radionuclide uptake in assorted animal species. Bob was also active with the Laboratory’s Off-Site Monitoring Program, which operated under an agreement with the Department of Energy (formerly the Atomic Energy Commission). In that capacity, he served as a field monitor for many of the underground nuclear tests conducted at the Nevada Test Site. This was the beginning of his involvement in the current Emergency Response Program; that involvement remains in place today.

After ten to twelve years in the Research Division, Bob was reassigned to the Noble Gas Laboratory, where he remained for several years. He continued his field monitoring duties for the underground nuclear tests and as part of this group participated in EPA’s response to the Three Mile Island incident of 1979. Bob states, “That has been my most memorable experience here at the Lab.” After the Noble Gas analysis ended, Bob was assigned to the Wet Lab, where he conducted Strontium analyses. He remained at the Wet Lab until joining the TAMS Center in late 1999. TAMS was a new program and Bob was onboard at the beginning along with Greg Budd, Doug Evans and Jeff Lantz, all with EPA. Of the original group, Bob is the only one still with the TAMS Center where he manages the Gravimetric Laboratory.





The TAMS TEAM



*Carl Palumbo, EPA, CIE/TAMS, Laboratory Analyst,
Radiation and Indoor Environments
Gravimetric Laboratory.*

Carl Palumbo has been with EPA since 1989. Carl graduated from Bradley University, Peoria, Illinois, with a Bachelor of Science Degree in Biology. He joined the Laboratory's Nuclear Radiation Division (NRD) as a field monitor and served in that capacity until 1991. As a field monitor, he collected air samples on a weekly basis from areas in rural Nevada surrounding the Nevada Test Site (NTS). These samples produced data from "atmospheric monitoring networks designed to detect environmental radiation from NTS and non-NTS activities." In 1991, Carl was reassigned to the Division's Long Term Hydrological Monitoring Program (LTHMP). This program conducted "routine monitoring of specific wells on the NTS and wells, springs and surface waters in the offsite area surrounding the NTS." The LTHMP currently conducts sampling in locations where nuclear weapons tests have been conducted, including Nevada, Colorado, New Mexico, Mississippi and Alaska.

From 1992 to 2000, Carl began working in the Thermoluminescent Dosimetry (TLD) Program. TLD badges were issued to those individuals in each of EPA's ten regions who worked with or around radiation sources, e.g., Cesium 137. His work involved determining the radiation dose absorbed by an individual's body by reading the TLDs, which were placed in a Panasonic Reader and evaluated not only for the type of radiation received but also the quantity absorbed.

At the present time, Carl is assigned to the Center for Indoor Environments, where he works with the Tribal Air Monitoring staff providing monitoring assistance through the Gravimetric Laboratory.

Tams Center Air Quality Training Course Schedule The Learning Center, Las Vegas, Nevada

TEOM Technical Training II—August 26-27, 2004
Air Quality Computations (COMP) — October 4-8, 2004
Air Pollution Technology (TECH) — October 25-29, 2004
Meteorological Monitoring (MET) — December 14-16, 2004
Quality Assurance Project Plans (QAPP) — February 1-4, 2005
Dataloggers — February 23-25, 2005
Air Quality Computations (COMP) — March 7-11, 2005
Air Pollution Technology (TECH) — April 4-8, 2005
Gaseous Pollutant Monitoring — May 24-27, 2005



TAMS Learning Center Activities Air Toxics Course, June 8-10, 2004



LeAnn Skrzynski, Environmental Program Director, Kaibab Band of Paiute Indians, Fredonia, AZ; Juliette Jeanne, Environmental Specialist, Reno-Sparks Indian Colony, Reno, NV; Michael Rutledge, Air Quality Technician, Miami Tribe, Miami, OK; Jason Walker, Air Quality Specialist, Northwestern Band of the Shoshoni Nation, Pocatello, ID.

Kelly Rimer, Instructor, U.S. EPA, OAQPS, Research Triangle Park, NC; Dena J. Austin, Environmental Specialist, Fallon Paiute-Shoshone Tribe, Fallon, NV; Kimberley Merryman, GIS Specialist, Choctaw Nation, Hugo, OK.

Air Pollution Distance Learning Network



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