Water Quality

A NEW Decade: A NEW Environment
Environmental engineers and program specialists within WQD perform data assessments to determine the health of watersheds across the state. Permits are issued to facilities discharging storm water to help prevent Oklahoma streams and rivers from exceeding state water quality standards.
The Water Quality Division (WQD) strives to ensure Oklahomans have a safe source of drinking water, adequate treatment of discharged wastewater, financial resources for improving community water-sewer infrastructure and properly trained water management professionals. In addition, the division also works to provide science-based watershed protection, effective stormwater management controls and high-quality data to develop protective water quality standards for the state. WQD’s efforts in licensing, permitting, enforcement and technical assistance help protect the state’s waters and support its beneficial uses.

WQD is divided into five broad groups:

**Administration**
- Provides executive oversight of division responsibilities

**Compliance Tracking**
- Manages the collection and evaluation of sampling data required from drinking water and wastewater treatment facilities

**Permitting**
- Issues permits limiting the amount of pollution that can legally enter the state’s waterways from municipal and industrial wastewater facilities, watersheds and certain construction sites

**Enforcement**
- Conducts compliance assistance visits and inspections at public water supply and wastewater systems and issues enforcement actions to address facility violations

**Construction and Operation**
- Reviews construction plans for proposed public water and wastewater projects
- Manages a loan program to help fund public waterworks projects
- Provides training sessions and examinations of water, wastewater and laboratory operators for state certification

The following pages illustrate how the work of WQD staff safeguards one of the state’s most precious natural resources for this generation and the next.
New Funds Benefit Small Water Systems

A new phase of the Drinking Water State Revolving Fund provided grants to improve eight small drinking water systems during the first half of FY 2010.

After nearly $2 million in Environmental Protection Agency (EPA) funding was provided, the new Engineering Planning and Design Grant Program approved maximum grants of $125,000 for the Hulah Water District #20, town of Salina, the city of Shidler, the Sardis Lake Water Authority and the Pawnee, Grandfield, Locust Grove and Weleetka Public Works Authorities.

The program is designed to assist in complying with the requirements of the Safe Drinking Water Act. The process begins with a scoping report, which consists of a brief description of the water system, its deficiencies and a list of alternatives and costs. Next, an official engineering report must be submitted. Finally, the construction plans and specifications are outlined and reviewed for approval. All three phases must be completed within one year of the signed agreement.
Afton Drinks from CUPSS

Afton, located in far northeast Oklahoma, was the first community in the state to implement a recently released EPA program called CUPSS, which stands for Check Up Program for Small Systems.

The program for small drinking water and wastewater utilities consolidates asset management materials in an easy-to-use, clear and up-to-date fashion. CUPSS, which does not require an Internet connection, provides a record of the water system’s assets, a schedule of required tasks, an understanding of the water system’s financial situation and a tailored plan for implementation.

Released by EPA in 2008, CUPSS provides a simple, comprehensive approach based on EPA’s highly successful Simple Tools for Effective Performance guide series.

To date, Afton officials have completed entering the water system inventory. The operator is now using the CUPSS operation and maintenance task reminders on a daily, weekly, monthly and annual basis. The financial information entry for the water and wastewater systems will soon be completed.

To reach more communities that can benefit from this program, in 2010 DEQ contracted with Community Resource Group engineering consultants to assist in the implementation of CUPSS at additional water systems in Oklahoma.
Stories That Hold Water

The Water Quality Division resolved several persistent problems in FY 2010, including solving data reporting challenges and helping Oklahoma communities supply safe drinking water and effective wastewater treatment. The year brought more than a few success stories.

For example, a data management breakthrough now makes it possible for participating commercial laboratories to submit public water supply sampling information through the Internet. With thousands of sample results sent to DEQ monthly, this innovation has brought a significant improvement in efficiency and a reduction in errors and paperwork. DEQ compliance and enforcement staff can also process monitoring reviews in a more timely manner. The electronic reporting system is running smoothly and the labs' responses have been very positive.

The new program was launched in August 2009 and was a joint project of the WQD Public Water Supply Compliance Tracking Section and DEQ Customer Services Division. Since the program was established to be compliant with EPA's Cross-Media Electronic Reporting Regulation System rules, the labs can safely upload sample data with a secure digital signature on the DEQ Safe Drinking Water Information System Web site.

Another of DEQ's most significant services is to help the regulated community obtain the education and training to comply with federal requirements.
In December 2009, the EPA Ground Water Rule (GWR) for drinking water systems went into effect. This new federal mandate aims to increase protection from disease-causing microorganisms, partly because ground water well sources may be susceptible to fecal bacterial contamination. The GWR calls for increased preventive sampling and diligent system maintenance requirements. During summer 2009, EPA staff in Dallas travelled to Oklahoma to conduct a series of GWR training classes for water system operators. Although EPA is currently responsible for administering the GWR in Oklahoma, DEQ district representatives and engineers from the Public Water Supply Enforcement Section assisted with the classes. In all, 10 classes were held. Nearly 500 professional water system operators, laboratory technicians and consulting engineers attended the day-long courses.

WQD employees also seek solutions to challenges posed by public water supplies, no matter the size of the system. Windmill Hill Estates in Ottawa County was a small, outdated community water system that was plagued with low water pressure and sporadic outages. The system had no standby water source or certified operator. In October 2004, the system was placed under a DEQ enforcement order to bring the system back into proper operation. However, the financial and logistical issues were daunting.

After researching limited options, DEQ officials agreed that residents of Windmill Hill Estates could individually connect to Ottawa County Rural Water District #6, which had distribution lines only four miles away. Funding for the project was obtained through the Oklahoma Water Resources Board Rural Economic Action Plan grant program and the Department of Commerce Community Development Block Grant program.

In April 2009, crews began laying water lines to homes in Windmill Hill Estates. After construction was complete, the housing addition’s old well was plugged. The homeowners now have a reliable, safe and efficient source of drinking water.
Another problematic drinking water system that frequently left its customers without water was the Independent Water Corporation (IWC). The tiny community ground water system in northwest Oklahoma City was made up of 22 service connections and one aging well.

At the same time these outages were occurring, the city of Oklahoma City was negotiating a separate Consent Order, which is a legally binding agreement that outlines steps to take to return to compliance. The city proposed a unique Supplemental Environmental Project to DEQ as one of the settlement provisions. The city offered to connect homes on the IWC system to the Oklahoma City water supply at no cost to the residents. Homeowners would be provided with a free meter connection and enrolled on a regular monthly billing cycle.

The project included laying new distribution lines and setting meters. Currently, 9 homes have been connected to Oklahoma City water, with 11 more to follow. Two residents chose not to have a connection to the city supply, and therefore, IWC will be reclassified as a minor system.

DEQ staff also assisted Guymon officials in moving toward compliance with the federal Clean Water Act. Guymon recently completed construction on a new three-million gallons-per-day wastewater treatment plant. At one point, however, the plans were in jeopardy because the initial design was estimated to cost $25 million. However, after working with DEQ staff, the city cut construction costs by building in stages. This decision changed the price tag of the new facility to a more manageable $16 million. The city then secured a low-interest construction loan from the Clean Water State Revolving Fund through the Oklahoma Water Resources Board. In addition, Guymon officials established a long-term schedule to bring the city into compliance with DEQ regulations.
DEQ Expert Lectures in Shanghai

Andrew Fang, Water Quality Division professional engineer, talked about water quality modeling when he participated in a seminar at the Shanghai Academy of Environmental Sciences (SAES) in August 2009.

As an invited expert to the seminar in China, Fang presented an introduction to the watershed and lake models commonly used in Oklahoma and throughout the United States. Fang, who holds a doctorate in water resource science from the University of Minnesota, talked about applying models when calculating the maximum quantity of a pollutant that can be discharged into a water body without violating a water quality standard, known as a Total Maximum Daily Load (TMDL).

A detailed discussion on the TMDL program followed Fang’s presentation. Staff members of the host agency were particularly interested in the implementation of the TMDL program.

The SAES is the research arm of the Shanghai Environmental Protection Bureau, which develops and enforces environmental regulations for pollution prevention and control in Shanghai, the largest metropolis in China. With a population of 20 million, Shanghai sits on the Yangtze River Delta with a complex hydrology of river networks, lakes and estuaries.

“The SAES group believed TMDL was the program that best integrated science with regulation while driving the development of better water quality models. However, the lack of data infrastructure is the main obstacle for SAES to adopt many of the U.S. water quality models to their local watersheds,” Fang said.

Further cooperation between Fang and the SAES modeling group was also discussed, leaving the door open for future collaboration of the two agencies.
Water Quality Pioneer Retires

In his office filled with awards for improving Oklahoma’s water quality, Jon L. Craig retired as director of the Water Quality Division (WQD) in December 2009. In all, he served as a state employee for 44 years. “It would be difficult to identify anyone who has had a greater positive impact on the water resources of Oklahoma than Jon,” said Steve Thompson, DEQ executive director.

“Jon has played a crucial role in national and state water policy, in state and local implementation of water laws, in finding solutions to intractable water and wastewater problems faced by cities and towns throughout the state and in responses to emergency situations. DEQ is forever indebted to Jon for his efforts and leadership in safeguarding the environment for all Oklahomans,” Thompson said.

As the WQD director, Craig oversaw all water programs, including those delegated to the state by EPA. These included the federal Safe Drinking Water Act, the Clean Water Act and the Drinking Water State Revolving Fund loan program. Craig also managed state-directed water programs, such as operator certification, water quality planning, technical engineering assistance and public water and wastewater system construction plans design review.

A native Oklahoman, Craig received a bachelor’s degree in biology and chemistry from East Central University in Ada and a master’s in environmental science from the University of Oklahoma. Craig’s career included stints as a classroom science teacher, a biology instructor at Redlands Community College and an industry laboratory technician. For almost 40 years, he worked for DEQ, and its predecessor agency, the Environmental Health Services of the Oklahoma State Department of Health.

Craig served on the governing boards and as an officer for the Ground Water Protection Council, the Association of State and Interstate Water Pollution Control Administrators, the Association of State Drinking Water Administrators, the National Water Quality Monitoring Council and the American Water Works Association.
Drinking Water Icon Retires

Mike Harrell, long-time Oklahoma public water supply manager, retired in November 2009 from the Water Quality Division (WQD) after 36 years of service. Harrell began his public health career in 1973 at the Oklahoma State Department of Health (OSDH) and a year later, became responsible for the state’s public water supply enforcement program. Harrell implemented the first state primacy program approved by EPA under the Safe Drinking Water Act of 1977, in which OSDH was granted permission to oversee the enforcement of federal drinking water laws in Oklahoma. He moved to DEQ as the public water supply program manager when the agency was created by the state Legislature in 1993. In 2007, Harrell added supervision of wastewater compliance monitoring to his responsibilities.

Harrell is a registered professional engineer, environmental specialist and holds a Class A water operator’s license. At the time of his retirement, Harrell was the engineering manager of the administration and compliance tracking group in WQD, overseeing the three staff sections that handled administrative and compliance tracking responsibilities of the public water supply and wastewater treatment programs for the state.

Throughout his career, Harrell has been at the forefront of working with EPA to continue development and implementation of federal data collection and management systems for drinking water contaminant testing. His efforts helped lead to the federal Safe Drinking Water Information System computer program and the recent EPA Drinking Water Watch Web site to inform the public of the sampling results and compliance status of local water supplies. Harrell was also active in professional organizations and served on the board of directors of the Association of State Drinking Water Administrators and as the vice chair of the southwest section of the American Water Works Association.

Prior to his work in the environmental field, Harrell taught science and coached in Oklahoma public schools for five and a half years. He is a 1968 engineering graduate of the University of Oklahoma and makes his home in Tecumseh, where he is active in his church and community.
Division Begins New Leadership Era

Shellie Chard-McClary, whose DEQ career began in the Water Quality Division (WQD), returned there as the new director in January 2010. Her duties now include managing all aspects of drinking water and wastewater programs.

A 1992 graduate of the University of Oklahoma with a bachelor’s degree in chemical engineering and biotechnology, Chard-McClary’s career began as an industrial permit writer at the Oklahoma Water Resources Board Water Pollution Control Division. She soon transferred to the newly formed DEQ. During the 1990s, Chard-McClary worked in WQD permitting, remediation, compliance, enforcement, training and administrative rules. From 2001 to 2005, she also served as an environmental programs manager, overseeing aspects of all water programs. In 2005, Chard-McClary joined the executive director’s office as the assistant director for policy and planning. Her duties expanded to include state and national policy and the review of DEQ management practices. Additionally, she undertook the first workload evaluation of the entire agency.

The following three and a half years, Chard-McClary served as the assistant director and, later, as the division director of Administrative Services. In these roles, she oversaw DEQ personnel, budget, information technology, records, building operations and security. Additional responsibilities included various state and national policy and legislative activities and membership in national organizations, including the Environmental Council of States and the Environmental Financial Advisory Board.

In addition, Chard-McClary currently serves on the Water Environment Federation Governmental Affairs Committee and Collection System Committee, along with various EPA regional and national workgroups. She is past president of the Oklahoma Water Environment Association, as well as past chairman of its Collection System Committee. Also, she is Oklahoma’s representative to the Association of State and Interstate Water Pollution Control Administrators, the Association of State Drinking Water Administrators and the American Water Works Association.