DEQ
OKLAHOMA
DEPARTMENT OF ENVIRONMENTAL QUALITY

Environmental Complaints and Local Services Division

Our **Environment.**
Our **Future.**

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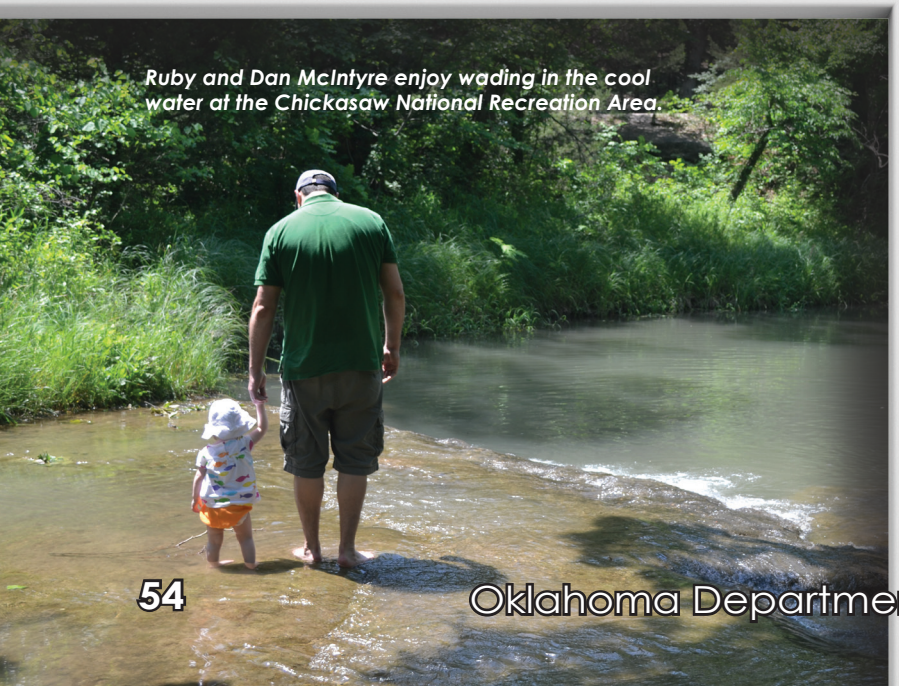
Our environment has a significant influence on our quality of life. It is a primary factor determining where we choose to build our homes, and the homes are built from material taken from the environment. Our food comes from things that live within our environment as does much of the material used to make our clothes. Our drinking water is often extracted directly from the environment. We owe our lives and our wealth to our environment.

What's more, our environment is also a gift to future generations. We should pass on to them an environment at least as healthy as it was when we received it. In a very real sense, the Oklahoma of tomorrow is dependent on the environmental decisions we make today.



Ruby and Dan McIntyre enjoy wading in the cool water at the Chickasaw National Recreation Area.

This responsibility to protect the future is a guiding principle of everything we do in the Environmental Complaints and Local Services Division (ECLS). Our staff specializes in local knowledge; our inspectors know and work with the citizens, small industry, and local governments in every part of the state, helping them to make the right decisions concerning our land, air and water. We respond to all environmental emergencies, day or night, and we provide guidance to those responsible for environmental damage to help them make things right again. We also investigate complaints and conduct inspections, requiring corrections to be made when necessary.

We also address how we can protect the environment of the future by changing what we are doing today. We have developed better on-site sewage treatment system designs by improving how soil is analyzed before a system is ever constructed. We monitor the performance of on-site systems, making recommendations on which best protect the environment. We also provide guidance and education about on-site sewage treatment to homeowners, helping them to protect their home, property and environment. All of this comes from our responsibility to protect the environment for future generations, a duty that every Oklahoman has a part in.

Everything we do, virtually every action we take, in some fashion impacts the environment. If we take action to protect the environment today, we are making an investment in the health and prosperity of tomorrow.

Educating Homeowners on the Importance of On-Site Sewage System Maintenance

When Oklahomans purchase or build a new home, among their primary concerns are often furniture arrangement, paint colors and what flowers to plant by the mailbox. They are often unaware of how their own actions can negatively impact the serenity of their new dwelling. It isn't until the lawn becomes squishy and a foul odor permeates the air that they begin to think about whether their septic system is working properly. ECLS has made it a priority to educate homeowners about the operation and maintenance of on-site sewage treatment systems. It is important that homeowners are knowledgeable about their on-site system because the treatment and dispersal of their household's waste water is taking place in their own backyard.

To new homeowners, the responsibility of an on-site sewage treatment system can be overwhelming, especially if they are accustomed to a city sewer. Rarely do homeowners consider what happens after they flush, but everything that is flushed down the toilet or drain ends up in the on-site system and must be treated.

Vance Pennington is providing homeowner education on aerobic system maintenance.

Maintaining an on-site system is an investment in a home and property, not to mention the family's health. It is the homeowner who is ultimately responsible for the operation and maintenance of the on-site system, and it is easy for many to forget what is occurring beneath the soil's surface around their home. This makes regular system inspection even more important.

ECLS has developed Web pages, maintenance manuals, and fact sheets to help homeowners stay informed. The Web pages highlight common problems and provide tips to help prolong the life of an on-site system. Homeowners can also sign up for ECLS's new electronic mailing list to receive monthly notifications and reminders. Example notifications include a special holiday message about not overloading the system and regular reminders to pump the septic tank. Local environmental specialists help spread the word by speaking with homeowners about routine maintenance and system function before their system is installed. Certified installers are being referred to the new ECLS Web pages and given free handouts so they can better serve their customers.

Compared to a city sewer system, an on-site sewage treatment system is small, but it can cause big problems for homeowners if it malfunctions. Educating homeowners about their on-site systems can help ensure that homeowners have a safe and healthy environment around their new home and that the environment is protected from improper sewage disposal.

Hard Times... Alternative Options... Changes in ECLS Enforcement

Oklahoma's small communities are facing difficult times with the downturn in the economy. With loan and grant dollars being significantly reduced along with increased competition for the available money, small communities are faced with difficult choices. How do they keep the wastewater system in compliance with regulations without significantly increasing cost to constituents? Changes in how DEQ approaches enforcement with these communities may provide needed assistance and ultimately save the community money.

Historically, critical issues identified through inspections required small communities to enter into Consent Orders with DEQ. The Consent Order outlined tasks to help the community comply with the regulations. Communities retained the services of an engineer to develop an engineering report, draft plans and specifications and assist with obtaining a construction loan to modify or construct a new treatment system. For many communities this was the only option available.

ECLS has implemented an enforcement approach that is helping Oklahoma's small communities meet current regulations and save money. ECLS's approach is simple: identify critical issues through inspections, meet with the community to determine how the system is managed, discuss management options/solutions and request that the community provide a written corrective management plan. Many wastewater issues can be corrected with better day-to-day system management and maintenance. Proper management and maintenance increases the life of the system, maximizes treatment efficiency and can save the community significant cost.

Grandfield, Oklahoma

The Town of Grandfield received a Notice of Violation (NOV) from DEQ for critical violations identified through routine inspections. The NOV listed the critical violations and requested that Grandfield submit a letter outlining steps to correct the violations. The plan submitted by Grandfield outlined changes to system management

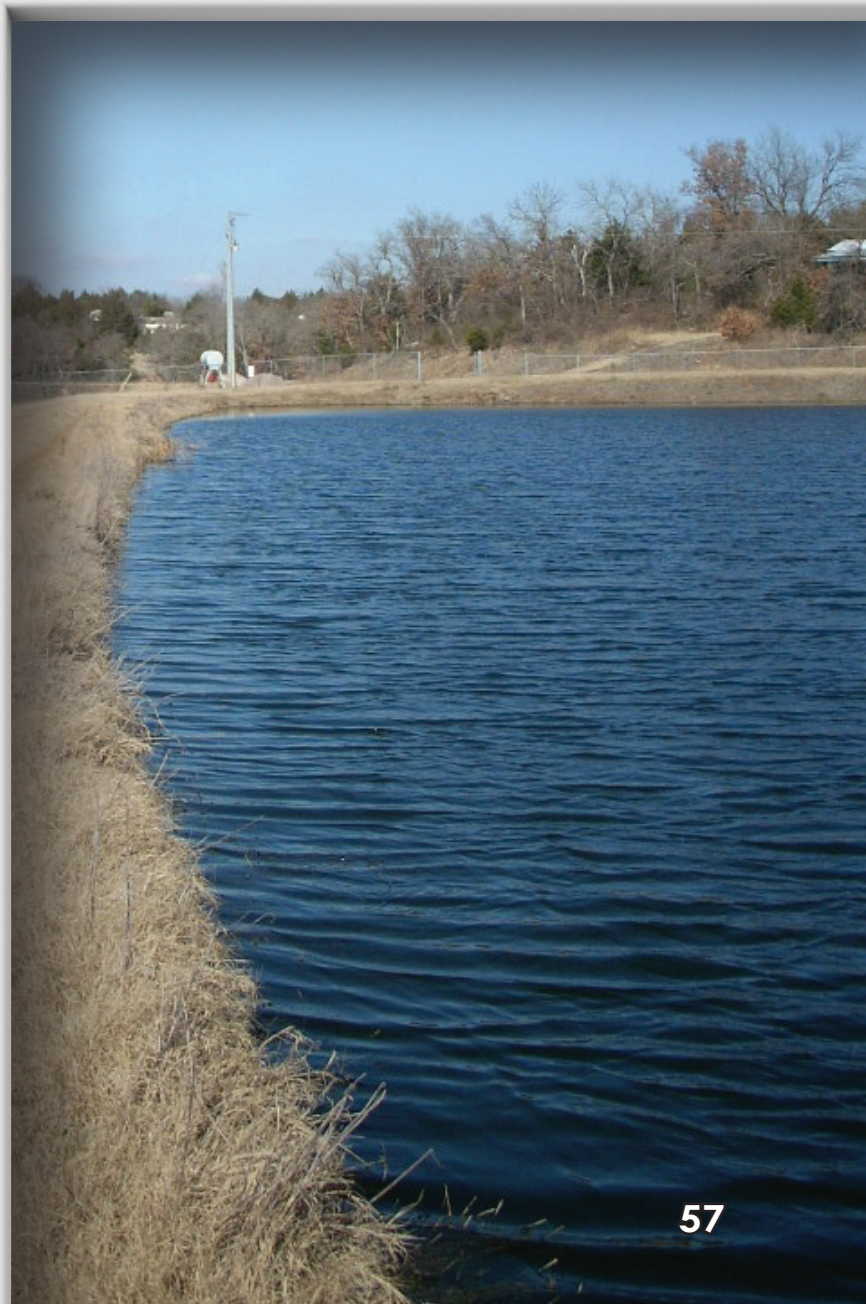
ECLS's enforcement approach helps Oklahoma's small communities meet current regulations and save money.

and oversight that would correct deficiencies and provided a timeline for implementation. ECLS requested additional clarification to the plan prior to acceptance. ECLS field staff continue to work with the system to provide operation options and provide technical assistance. Through better management, Grandfield has eliminated the identified violations without excessive expense.

Five Lakes Property Owners Association

The Five Lakes sewage lagoon system was full due to recent rains, and the community was having multiple maintenance issues with the collection and treatment system. ECLS staff met with the system operator and board members to evaluate the system and discuss corrective options. A corrective plan was implemented, and within one year, the community had corrected all the problems. During that year, the community identified and repaired several areas in the collection system, repaired flow control valves at the lagoons and began operating the land application site to ensure adequate storage in the treatment system. Today, the system functions efficiently.

Not all issues can be corrected by maintenance or changes in operation. However, ECLS is committed to working with communities to look for simple, minimal-cost corrective measures before moving forward with traditional enforcement options. Early and frequent communication with facilities has proven invaluable to achieving success and identifying areas where communities can save money.



Homeowners that want to go "green" can install a soil-based treatment system.

That **Stinks!**

In the last three years, malfunctioning septic systems have made up 30 percent of the total number of complaints received by DEQ, which makes them the most common citizen complaint. Sewage on top of the ground, rotten egg odors, pets running through sewage and then into the home, or worse, sewage backing up into the house are all indications of a malfunctioning septic system. ECLS investigations into these complaints have determined that other than a straight pipe discharge, most malfunctions are due to seasonal flooding of the lateral lines by ground water or the presence of a rock or clay layer inhibiting the flow and treatment of wastewater.

Often, the failed systems were designed using a soil percolation test. This method, which had been used for decades, measured how fast a given soil could absorb water. However, the percolation test missed several important factors. The systems' failures often were caused by high ground water, impermeable soil, or clay content, all of which could have been identified by the soil profile method.

Septic system malfunctions are not only a drain on homeowners' finances but can also have a costly impact on the environment. In one year, a rural home can generate 100,000 gallons of wastewater. A rural subdivision of 30 homes in one year generates 3,000,000 gallons of wastewater. The impact on the environment can be significant if household wastewater is not properly treated.

Today, homeowners have several options available for treating household wastewater, from simple soil-based systems to mechanical treatment systems.

Homeowners who want to go "green" can install a soil-based treatment system. Soil is the natural method of treating wastewater. It has the ability to hold significant amounts of water and contains microbes that utilize the nutrients in the wastewater as food thereby cleaning the wastewater as it moves through the soil. Soil-based systems have little to no annual operating costs, typically lower initial installation cost, minimal cost in producing system components, a service life of well over 20 years, and rely solely on the soil to treat the wastewater.

A properly functioning soil-based septic system is dependent on several factors. Does the soil at the site allow water to move through it? Is there sufficient depth of soil to treat the wastewater? Is there sufficient separation from the bottom of the proposed system to a clay layer, rock or shallow ground water? Are other factors present at the site that may affect how the system will function or hinder the treatment of the wastewater?

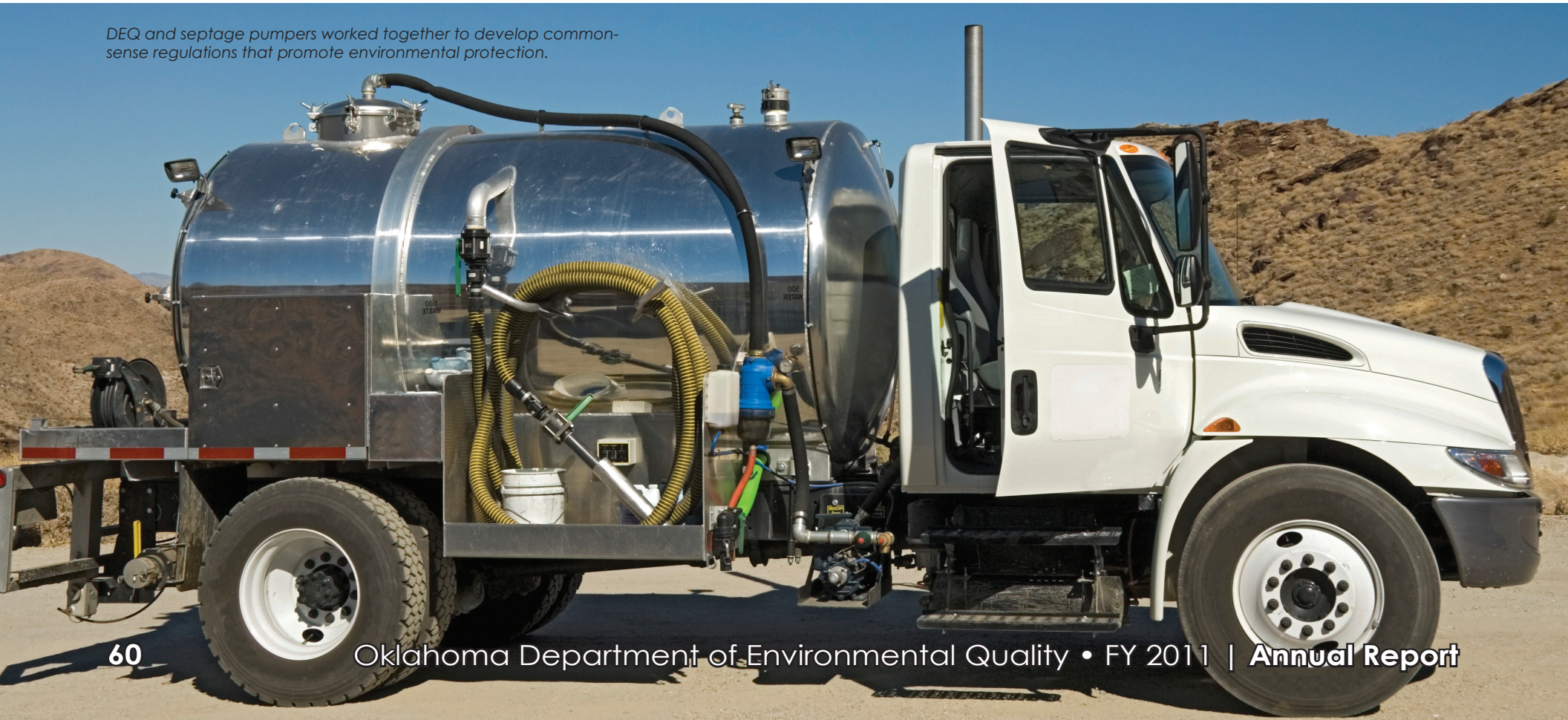
The soil test is the first step in determining if a "green" soil-based septic system can be installed. The soil profile description provides all of the information required to determine if a "green" soil-based system would properly treat the wastewater and protect the environment. Soil profile descriptions determine the type of soil at the site, presence or absence of ground water, and determine if a rock or clay layer is present that could affect how well the wastewater will be treated. Only individuals who have been trained and certified by DEQ may perform soil profile descriptions for the installation of septic systems.

Vance Pennington discusses options available for treating household wastewater with a homeowner.

Septage Pumper and Transporter Program

Protecting the environment and providing customer service are important priorities at DEQ. When ECLS began developing changes to the Septage Pumpers and Transporters rules, these priorities were kept in mind.

In 2009, ECLS began looking at needed changes to the Septage Pumper rules for implementation in 2010. Instead of drafting regulations to present to the regulated community, ECLS wanted to solicit input prior to drafting regulations. To achieve this goal, ECLS outlined major points targeted for change and set up two meetings with licensed septage pumpers. These meetings allowed DEQ to look at the regulations from the septage pumpers' perspective and analyze the impact the proposed changes would have on the regulated community. It was apparent during the meetings that the septage pumpers were concerned about proper disposal and treatment of septage and that DEQ take a reasonable, common-sense approach to drafting regulations.



DEQ and septage pumpers worked together to develop common-sense regulations that promote environmental protection.

Three areas of concern to DEQ and septage pumpers were the development of rules that would allow for the storage of septage during periods of inclement weather, the creation of a permit that would allow septage pumpers to construct septage treatment facilities, and the reduction of the site restrictions for obtaining a permit to land apply septage. The septage pumpers also provided valuable input on the requirements for the development of a septage pumper training program.

Based on the input of septage pumpers and transporters, ECLS developed proposed regulations that outlined the requirements for obtaining authorization to construct septage storage facilities and obtaining a permit to construct a septage treatment facility. Additionally, the requirements for land applying septage were modified to streamline the permitting requirements while continuing to protect the environment.

One of DEQ's goals is to offer customer friendly programs that protect the environment. The regulations that went into effect in July 2010 demonstrate how DEQ and septage pumpers cooperatively worked together to develop common-sense regulations that promote environmental protection.

A new section in the regulations allows for the storage of septage.

Local Environmental Specialists **Provide Assistance for Minor Water Systems**

There are 347 public water supplies in the state of Oklahoma that serve 25 people or fewer. These systems, referred to as Minor Water Supplies (MWS), impact their suppliers and consumers in a way that is far from minor. MWS serve small mobile home parks, campgrounds, motels, apartments, small businesses and similar places where drinking water is supplied. Recognizing the potential for these systems to affect the lives of Oklahomans and travelers through the state, ECLS is heading up an effort to assist these small systems in complying with the construction and operational rules of the agency. ECLS's goal is to assure that the water is safe, protected from sources of contamination and monitored regularly.

ECLS is completing a major effort to sample all existing minor water systems for coliform bacteria and nitrates.

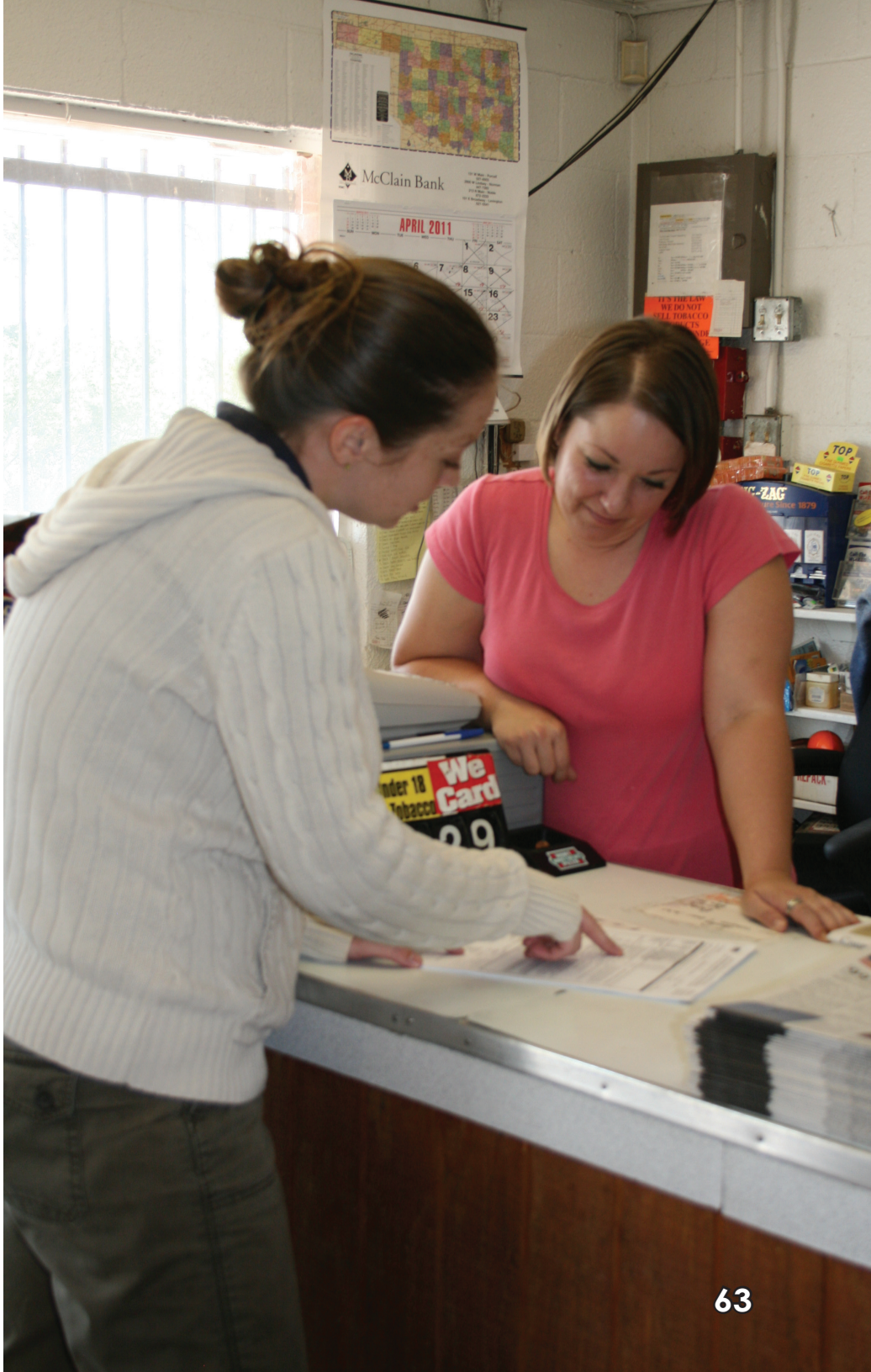
A little more than two years ago, the Public Water Supply (PWS) rules were rewritten to create a chapter that applied only to MWS. This rule simplified the permitting process and outlined new operational standards. In order to determine how many existing systems should be permitted under the new rules, ECLS is completing a major effort to sample all existing MWS for coliform bacteria and nitrates. Local environmental specialists all over the state have been at the forefront of this effort. Additionally, they surveyed the area within 300 feet of each public water well for sources of potential contamination and inspected the construction of the wells.

Local environmental specialists are also assisting applicants for new MWS permits. Although the simplified process allows the system owners to complete the application themselves, technical assistance is often provided by one of the local environmental specialists. Many local environmental specialists have provided technical assistance with system plans, sampling and

construction, which resulted in savings for the applicant and a safe, sustainable source of water for the public.

A great example of this cooperative effort comes from Local Environmental Specialist Anamari Holcomb in the Purcell DEQ Office. A small, family-operated country convenience store planned to open in the area. The owner was often out of town on other business leaving his family to prepare the store for business. Holcomb provided the family with assistance in collecting water samples and completing the required application forms for permitting the new MWS. With the use of her GPS unit, Holcomb completed a site plan showing the location of the well and distances to all potential sources of contamination. Through her assistance, the family was able to obtain authorization to construct the water system and open the store.

The ECLS process of reviewing existing MWS and working closely with owners to permit new systems assures Oklahomans that their drinking water is safe. The work of DEQ's local environmental specialists is an investment in the lives of their communities. Their hands-on approach to regulation and assistance is the key to the success of the agency's effort to assure safe drinking water for all Oklahomans regardless of the size of the public water system.



Anamari Holcomb explains minor water reporting requirements to a new convenience store owner.

ECLS Dedicated to Public Safety at **All Hours**

One of the ECLS division's primary tasks is responding to environmental emergencies that constitute a threat to public health and safety and the environment. Environmental specialists know they are on-call for emergency response 24 hours a day, 7 days a week.

Recently, Environmental Specialist Spencer Cave was awakened at 1:20 a.m. on a Friday by a call from DEQ's Complaints Hotline. The emergency call involved a train derailment in Noble County. During the derailment, two tanker cars carrying liquid fertilizer had been damaged and spilled an estimated 52,000 gallons of product onto the ground near a creek. To complicate the matter further, the derailment had occurred inside the city limits of Perry, which potentially placed many lives and property at risk.

Cave contacted the railroad company's emergency response center for more information. After surveying the area, Cave noted that the spill had not reached any water sources and that the spilled fertilizer was not regulated by DEQ.

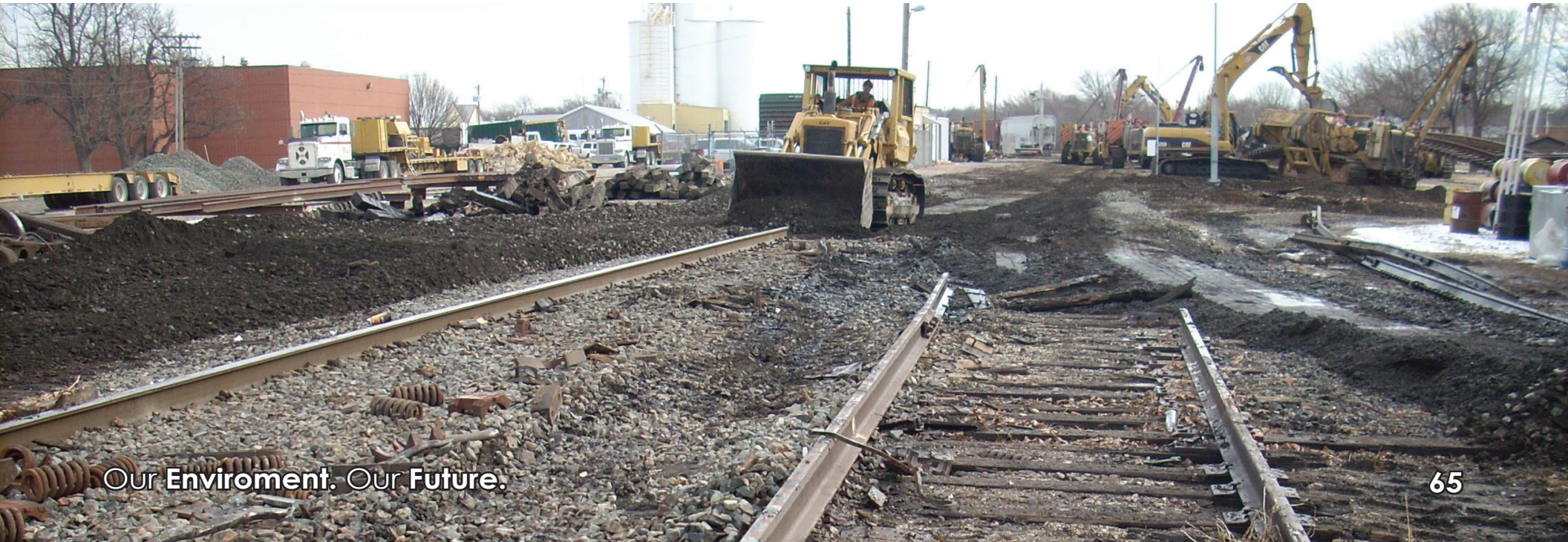
Cave spoke with the City of Perry's city manager, public works director, and water and sewer superintendent to determine if the city's water or wastewater systems might be impacted. The public water supply mainline lay directly underneath the spill area. Due to the nature of the product spilled and the composition of the water pipe, there was concern that the fertilizer could, if it came in contact with the water line, damage the pipe and contaminate Perry's drinking water supply. Cave and Environmental Specialist Nicholas Huber collected soil samples above

A train derailment caused the release of liquid fertilizer within the city limits of Perry, Oklahoma.

the mainline to determine how fast the product was migrating and to analyze the concentration of the material. Results indicated that the material was not migrating quickly and would be very unlikely to contaminate the water supply. As a precaution, Cave took water samples from high use areas for analysis by the State Environmental Laboratory to screen for any evidence of contamination.

Another potential threat to the public water supply was the possible presence of private ground water wells that might be illegally cross-connected to the public water supply distribution system. A cross-connection in this case would be the existence of a water source that has not been properly treated and disinfected mixing with the treated water of the public water supply inside the distribution system. If the spilled product migrated to ground water and contaminated it, any well that might be cross-connected could become a route for the system to be contaminated. Cave and the City of Perry's Parks and Recreation Department teamed up and conducted door-to-door sweeps of the surrounding area looking for private water wells and cross-connections. Several wells were found, but none were cross-connected to the system or even being used for human consumption.

This incident showcases the ECLS commitment to environmental protection and proves that, despite the boundaries of jurisdiction, ECLS will do everything possible to ensure the safety of the public and the environment.



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