

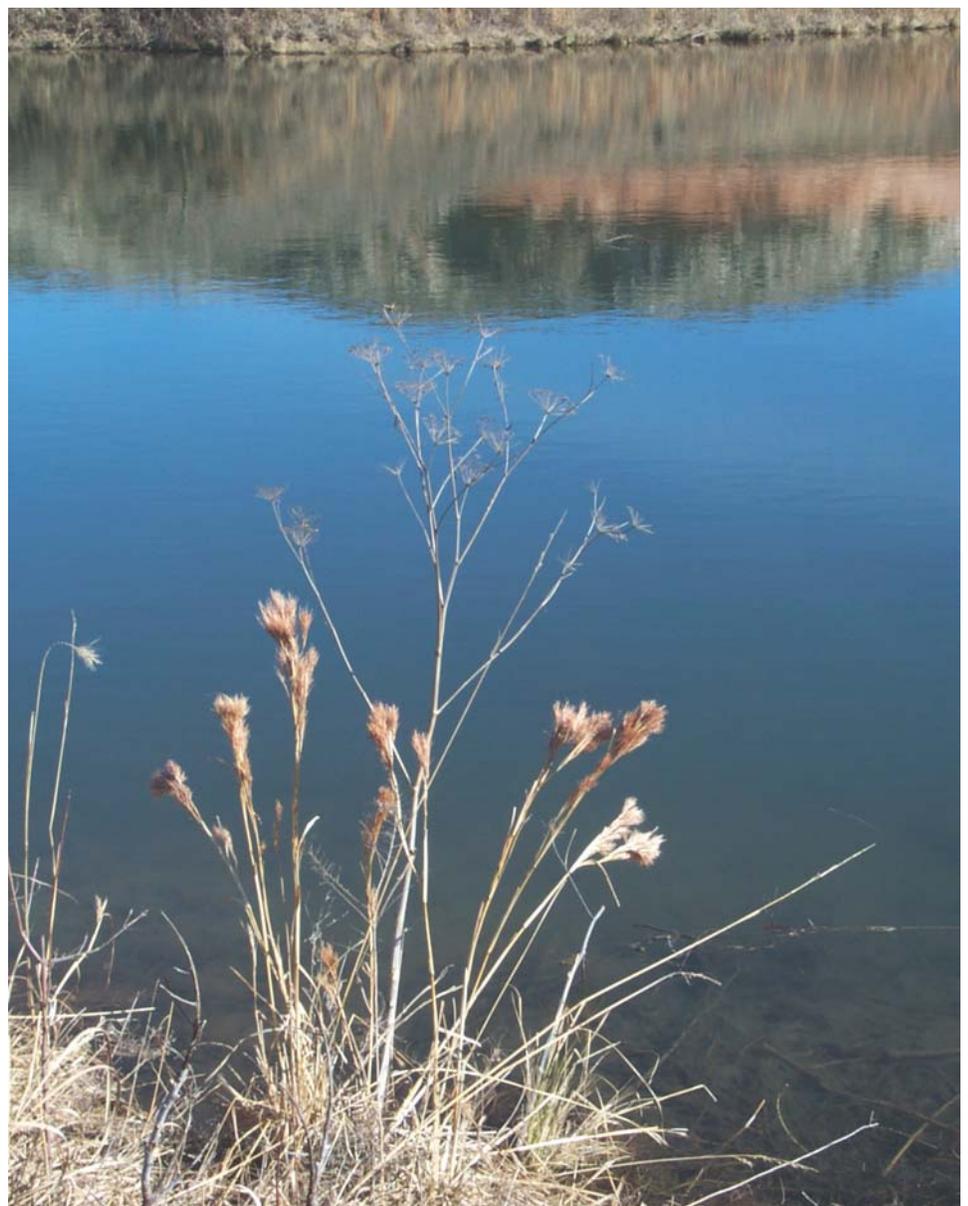
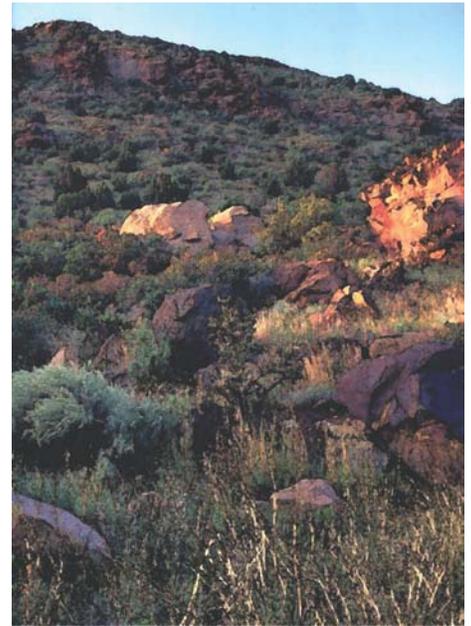
Land Protection at DEQ

DEQ, through its Land Protection Division, regulates the disposal of solid waste, non-hazardous industrial wastes, discarded tires, hazardous wastes, biomedical wastes, and certain radiation sources. DEQ also oversees environmental cleanups of contaminated land, assists with household and commercial recycling programs, and provides environmental education to the public. Protecting the land from improper waste disposal safeguards the surface water, ground water, and air from these pollutants. DEQ's effort to ensure that wastes are properly disposed strengthens the natural environment by protecting the state's ecosystems and thereby ensures Oklahoma's lands remain viable and productive for future generations.

DEQ recognizes the relationship between man's need for a clean environment and his need for economic stability. To that end, DEQ is at the forefront of new environmental programs such as Voluntary Cleanup and Brownfields Redevelopment, Resource Conservation and Recovery

Act (RCRA) Brownfields, RCRA Ready for Reuse, Community Problem Solving, and Land Reclamation. These programs enhance the agency's priority to ensure that contaminated properties are cleaned up in a manner that allows the land to be beneficially reused. Cleaning up and reusing Oklahoma's former industrial sites protects our productive farmlands and beautiful, scenic wilderness areas from development. 🌱

Pictured on the right is Black Mesa bathed in sunlight.



Shown is a lone windmill near Olustee.

Pictured above is a view of some peaceful waters in Cheyenne County.

Today's Partnerships: Focusing on Tomorrow's Environment

DEQ recognizes that environmental issues can quickly overwhelm the resources of local governments. Environmental problems such as inadequate sewer and water systems, improperly disposed wastes (illegal dumps), and land ruined by mining and oil exploration activities can be pushed to the back burner as communities struggle with the day to day expenses of government. Ever increasing environmental regulations add to the local challenge. With limited resources, how can local communities acquire the necessary expertise to deal with environmental issues? The answer lies in two of DEQ's programs that are specifically designed to work with local communities to help solve their environmental problems: the Community Problem Solving Program and the Land Restoration Program.

The programs work by building partnerships among various local, state,



Above shows land damaged by oil exploration near Roane in Okmulgee County.



Here is what the Roane site looks like after reclamation.

and federal agencies, as well as private individuals and companies. To use a phrase from Hollywood, the programs “bring the *players* to the table.” The *players*, in turn, contribute their expertise, equipment, money, and labor to the projects. The Community Problem Solving Program assists communities with their most pressing environmental problems, which are usually aging and inadequate sewer and water systems. The Land Restoration Program recycles organic materials, such as wastewater sludge (biosolids), woodchips, and demolition waste (that would normally be sent to a landfill) to reclaim damaged lands such as former oilfield sites, strip mines, and eroded land.

DEQ, through these community-oriented programs, has solved an array of local environmental problems, reclaimed 291.75 acres of damaged lands, and saved Oklahoma communities a total of \$3,032,009 during Fiscal Year 2002. 

Today's Partnerships Focusing on Tomorrow's Environment			
Project Name	Project Date	Major Accomplishments	Money saved by the community
Bromide Community Problem Solving Project	1997-2001	water and waste water infrastructure improvements	\$1,025,974
Ft. Towson Community Problem Solving Project	1997-2002	new sewer system, automated billing software	\$1,955,00
Henryetta Community Problem Solving Project	1995-1997	Superfund clean-up, fixed water hammer problem	\$7,535,928
Tishomingo Community Problem Solving Project	1997-2002	solid waste convenience center, waste water improvements	\$384,00
Caddo County Land Reclamation Projects	2002	64 acres reclaimed(sludge)	\$420,000
Clinton Land Reclamation Project	2002	1.5 acres reclaimed(dilapidated structures)	\$35,000
Comanche County Land Reclamation Projects	2000	6 acres reclaimed(sludge)	\$65,000
Cotton County Land Reclamation Projects	2000-2001	73 acres reclaimed(sludge)	\$165,000
Ellis County Land Reclamation Projects	2000	8 acres reclaimed(sludge)	\$22,000
Fredrick Land Reclamation Project	1999	3 acres reclaimed(dilapidated structures)	\$190,000
Grady County Land Reclamation Projects	2000-2001	55 acres reclaimed(sludge)	\$103,000
Hughes County Land Reclamation Projects	2002	1.5 acres reclaimed(sludge)	\$5,512
McClain County Land Reclamation Projects	2001	22 acres reclaimed(sludge)	\$53,000
Okfuskee County Land Reclamation Projects	1999	85 acres reclaimed(sludge)	\$27,649
Okmulgee County Land Reclamation Projects	1997-2002	440 acres reclaimed(sludge)	\$381,737
Osage County Land Reclamation Projects	2000-2001	120 acres reclaimed(sludge)	\$110,871
Ottawa County Land Reclamation Project	2002	0.75 acres reclaimed(dilapidated structures)	\$8,500
Pushmataha County Land Reclamation Projects	2002	22 acres reclaimed(sludge)	\$90,000
Sequoyah County Land Reclamation Projects	1998	10 acres reclaimed(sludge)	\$6,454
Stephens County Land Reclamation Projects	2000	48 acres reclaimed(sludge)	\$133,000
Tillman County Land Reclamation Projects	2001	52 acres reclaimed(sludge)	\$185,000
Grand Total		1,043.25 acres reclaimed & many community infrastructure improvements	\$12,416,626

Cleaning Up Oklahoma's Land

National Zinc Site, Bartlesville

Incidence of Childhood Blood-Lead Levels Drastically Reduced

The National Zinc Site (the Site) in Bartlesville, is a Superfund Deferral Site, which means that EPA deferred oversight of the cleanup to the DEQ in lieu of putting the site on the National Priorities List. The Site encompasses a three-mile radius around the Zinc Corporation of America (ZCA) smelter facility. The Site consists of the land that was impacted by the smelter. These areas can be identified by the concentrations of lead, cadmium, and/or arsenic in the soil and water that are above levels considered to be safe for human health and the environment. At the beginning of the project, approximately 13 percent of Bartlesville children living on or near the site had elevated blood-lead levels. A high blood-lead level is a major health concern because it can cause neurological problems and learning disabilities, among other effects.

DEQ investigated the Site and selected a cleanup strategy. Cleanup of the Site included the removal and disposal of contaminated soils from affected residential and



Shown is equipment used in removing contaminated soil from a Bartlesville alleyway.

commercial yards, followed by restoration of those yards. The contaminated sediments along No-Name Creek were also removed and disposed. A program to monitor the blood-lead levels of community children was established. The cleanup of residential and commercial/industrial properties occurred from 1993 to 1999. A total of 1,460 separate areas of contamination were remediated. Since 1998, 203 children have been tested for elevated blood-lead levels. The DEQ is happy to an-

nounce that none of these children had elevated levels of lead in their blood. In order to ensure that the remediated properties are not misused in the future, the DEQ and the City of Bartlesville agreed to structure and enforce strict institutional controls. On March 4, 2002, the City of Bartlesville passed an ordinance adopting Institutional Controls for the National Zinc Site.

One of the last properties to be cleaned up was a small parcel of railroad land

located next to Frontier Park, one block from the Boys and Girls Club's main office. In a cooperative effort, the property was cleaned up and redeveloped into a soccer field for the children. The railroad donated the property to the Boys and Girls Club, the city provided 10,000 cubic yards of clean capping soil and irrigation water, and the responsible party provided the equipment, manpower, and sod to build the field. The Boys and Girls Club will provide for the future maintenance of the soccer field. 🌱

ORC Surpasses Cleanup Goal

Oklahoma Refining Company (ORC) Superfund Site, Cyril

The APCO refinery in Cyril operated from 1920 to 1978. The Oklahoma Refining Company (ORC) purchased the refinery in 1978 and operated it until 1984 when ORC filed for bankruptcy. During the bankruptcy proceedings, the pit and pond portion of the refinery was formally abandoned, and this portion of the refinery was placed on the Superfund National Priorities List in 1988. The DEQ functions as the lead agency for oversight of the cleanup.

Cleanup of wastes and soils began in July 1997 and was completed in November 2001. The project was expected to take five years to complete but was finished six months early. Organic wastes were successfully biotreated in two landfills that were constructed onsite and other wastes were stabilized and neutralized. In total, 182,000 cubic yards of refinery wastes were treated and disposed of on site. Approximately 21,000 cubic yards of asphaltic waste were removed and sent off site for disposal. The DEQ will perform ongoing maintenance of the landfills and is now focusing on ground water at the site. 🌱



Oklahoma Refining Superfund Site, before...

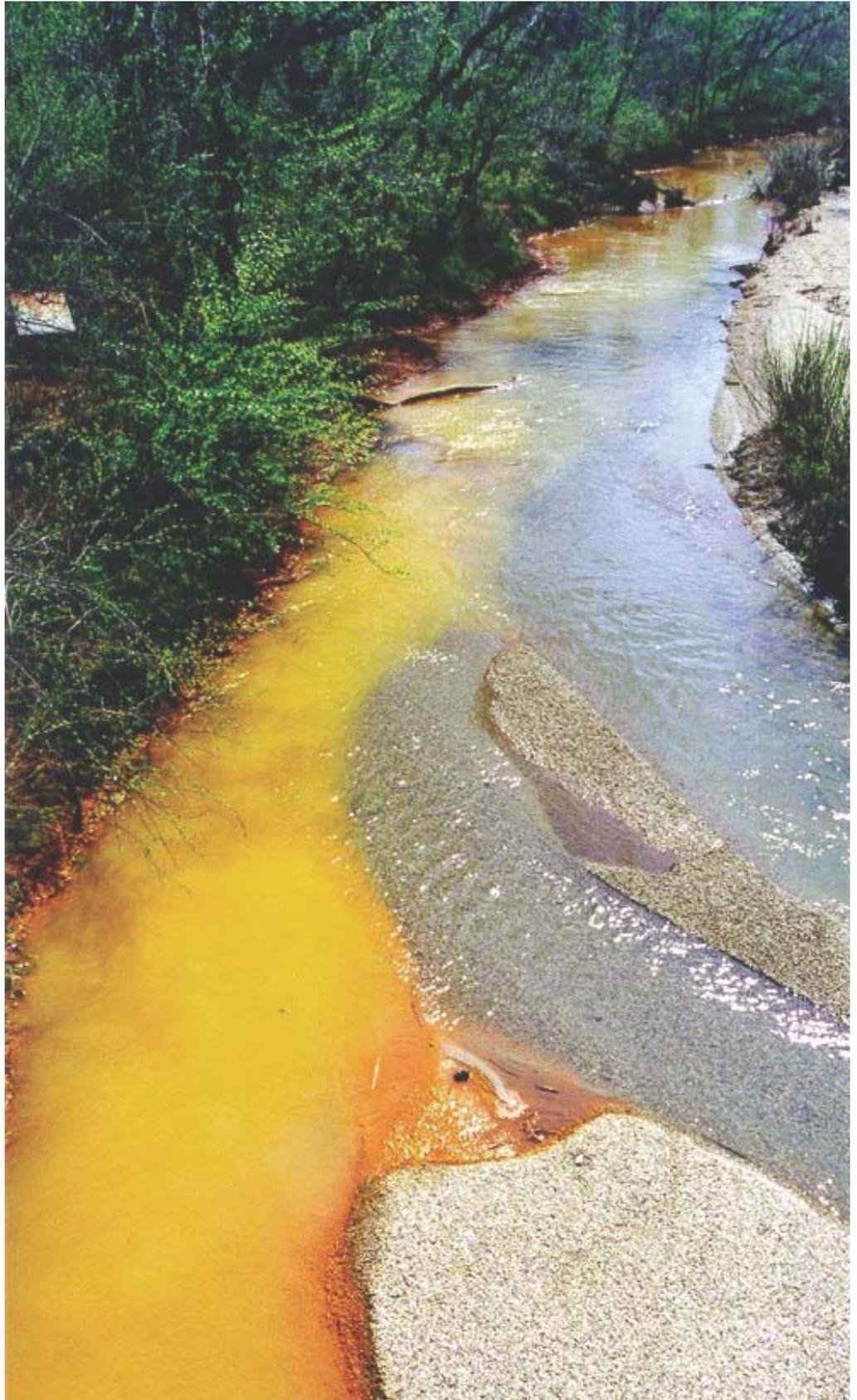


... and after.

The Trials and Tribulations of Tar Creek

The environmental problems at the Tar Creek Superfund Site in Ottawa County are vast and lie outside the scope of any one agency's authority. These problems resulted from historical underground lead and zinc mining during the early 1900s. The mines were "played out" by the 1960s. The mines closed and the pumps that kept the groundwater at bay were turned off. By 1979, the mines had filled with acid mine water and had begun to discharge the acidic water into the surface water. The appearance of the acid mine water started the environmental investigation of the area. During the 1980's, cleanup activities focused on the surface water and ground water impacts.

In 1994, an Indian Health Service Report showed that 34 percent of the Native American children in the area had elevated levels of lead in their blood. This revelation shifted the major focus of the project from the water to the huge stockpiles of mine tailings (chat) and contaminated surface soils in the area. EPA and DEQ began cleanup of lead contaminated soils at schools, day care centers, and residences within the towns of



Above is a stream affected by acid mine water flow into an unaffected Stream.

Picher, Cardin, Commerce, Quapaw, and North Miami. As of June 2002, 1,637 residential yards have been cleaned up and 457 are scheduled for remediation in the near future.

Due to the numerous environmental issues and the rising costs associated with Tar Creek, Governor Frank Keating created a Task Force to examine the problems in the area. The Task Force considered the environmental and health

Continued on next page



Photos on this page show a basketball goal that sits in the shadow of a chat pile and an aerial view of chat piles.



concerns in the area as well as the ongoing problems of subsidence, flooding, and open, abandoned mine shafts. In its final report, the Task Force proposed a holistic concept plan, which included an option for a Natural Resource Corridor. The Corridor is controversial because it would require the relocation of residents near the Town of Picher. The relocation issue was the focus of a Nightline (ABC) broadcast in the spring of 2002. In January 2002, the President's Council on Environmental Quality (CEQ) formed a team of technical experts to examine the project. The team represented several areas of expertise including passive wetlands treatment, treatment of acid mine discharge, water quality, subsidence, human health, ecological health, and flooding. The CEQ team met with the state's technical team and toured the site. The CEQ team visited the site in January of



This photo shows one of the huge mine caverns that still underlie Tar Creek.



2002, and to date, the team has not released a report of its findings.

Studies show that the blood-lead levels of area children are declining, but the percentage of children with el-

evated levels of blood lead are still above the national average of 2 percent. The decline is attributed to the removal of lead-contaminated soils from schoolyards, playgrounds and residential properties; an aggressive program to abate lead-based paint in

the area; and an extensive health education program.

On May 24, 2002, the Oklahoma Legislature provided state matching funds of \$4,000,000, which allows the remediation of the remaining 457 residential yards and the contaminated schoolyards in Miami

and Picher to proceed. DEQ will continue to investigate the mountains of chat in the area as well as its potential reuses for the chat. DEQ will also continue its investigation of the

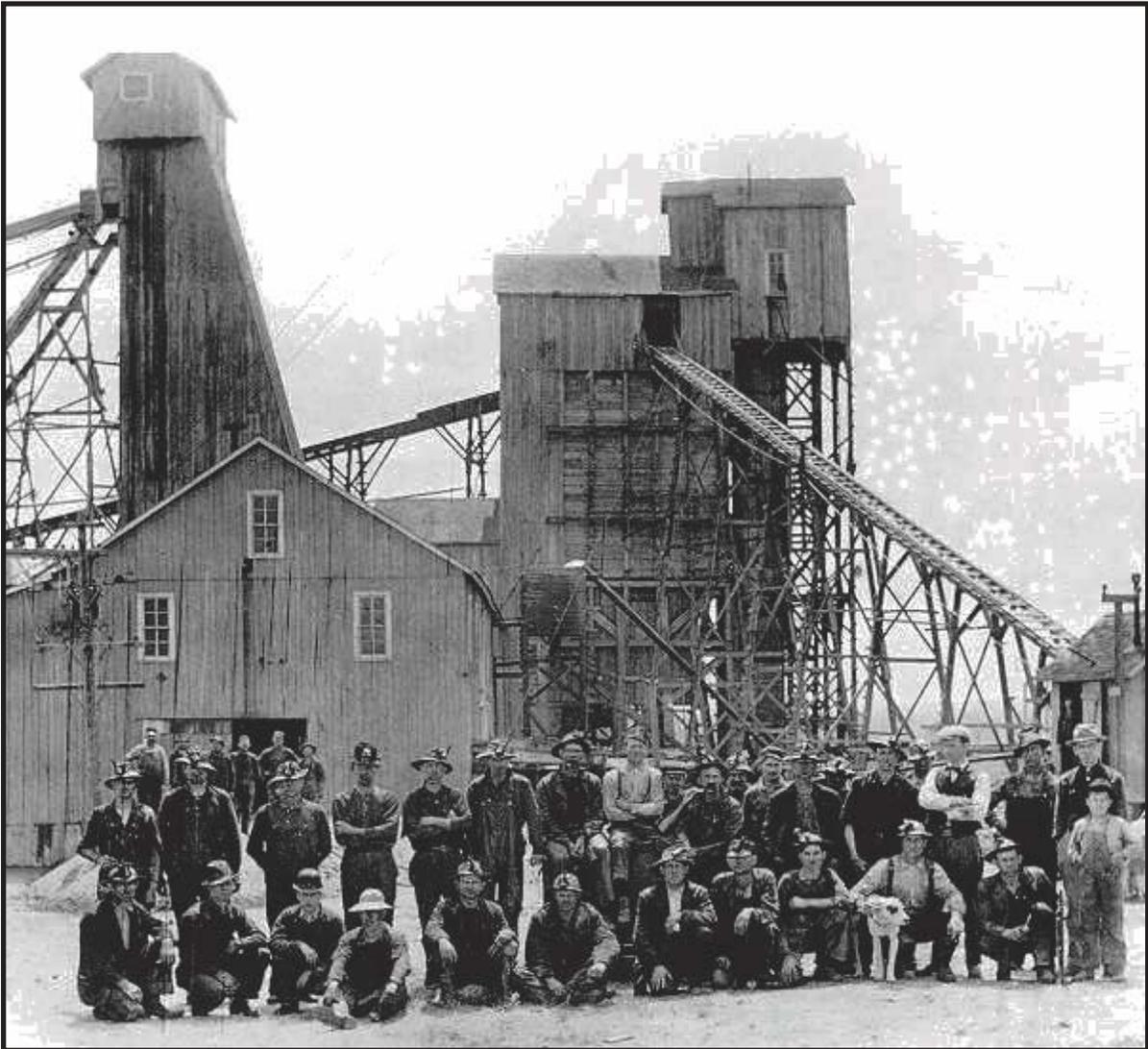
water issues in the area. In May 2002, DEQ's research regarding this Superfund Mega-Site was presented at a National EPA conference on Hard Rock Mining. 🇺🇸



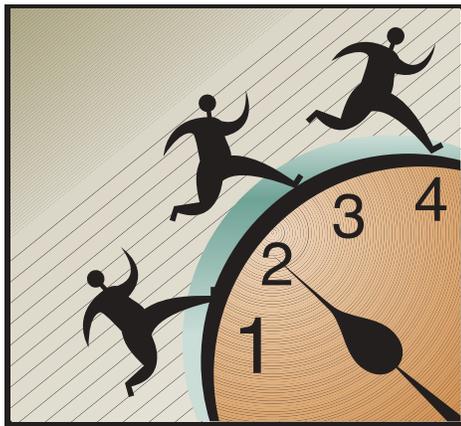
This photo shows remediation of an affected residential yard.



Left, an off-road vehicle climbs a chat pile.



Pictured are some Tar Creek miners.



When Time is of the Essence, Emergency Response Reacts

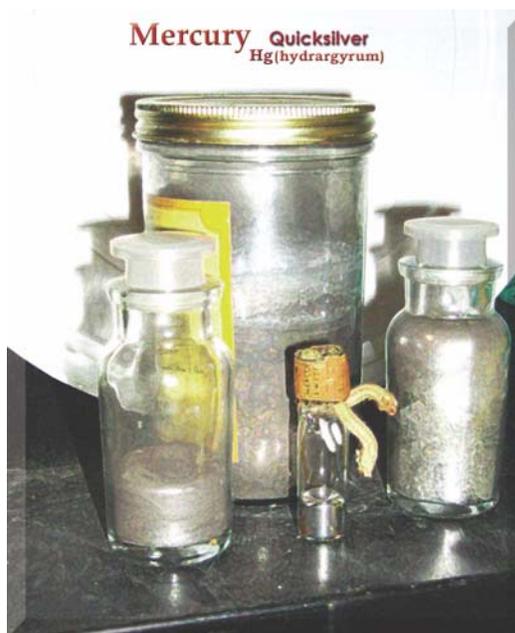
Superfund Removal and Emergency Response

Environmental emergencies come in many sizes, from large petrochemical refinery fires and freight train derailments to overturned trucks and residential mercury spills. These examples have one thing in common, the incidents create a public health threat and an immediate response is necessary. Local fire department hazardous material (HazMat) teams handle the majority of emergencies; however, when the environmental emergency is very large and complex or the chemicals involved are difficult to cleanup, Superfund Emergency Response mobilizes. This mobilization directs the resources of the federal and state governments toward solving the immediate emergency. If long-term environmental cleanup is necessary, the site may be placed on the Superfund National Priorities List.

DEQ assists EPA in responding to emergencies within the state and provides technical assistance and state matching funds at Superfund Removal Sites. The following are examples of emergency responses that occurred in Oklahoma this year.

Mercury Responses

In 2001 and 2002, DEQ, EPA, Oklahoma State Department of Health (OSDH), and Poison Control responded to several mercury poisoning cases in the state. The poisonings resulted from mercury being spilled inside a home, which caused family members to become ill. Mercury absorbs into porous materials like carpet, drywall, and wood, where it continues to vaporize into the air. The mercury can also be tracked outside of the home into vehicles, schools, other homes, etc. The vapors are heavier than air and stay near the floor, therefore vacuuming the floor spreads the metal vapors throughout the house. Children playing on the floor are usually exposed at higher concentrations than adults and become much sicker. During the cleanup of these homes, EPA and DEQ conducted educational outreach to increase the public's awareness of the dangers of mercury. The agencies also collected and recycled over 100 pounds of mercury from residents who were eager to get the chemical out of their homes.



Many Oklahomans, realizing the dangers of the metal, turned in the mercury they had stored in their homes. DEQ and EPA collected the mercury and sent it to a recycling facility.



Metallic mercury absorbs into porous household goods such as clothing, drapes, furniture, into electronic equipment like televisions and computers, and into building materials, such as wood, drywall, and carpet. If these materials become highly contaminated, they must be removed and disposed. In general, home insurance policies do not cover these expenses.

Parawax Reclaimer Site

On November 16, 2001, a ceremony was held to mark the completion of the cleanup at the Parawax Reclaimer Site in Oklahoma City. Wastes at the site included petroleum hydrocarbons and polychlorinated biphenyls (PCBs). The Oklahoma Corporation Commission and EPA's investigations showed that oily waste from the site had migrated to the North Canadian River. Since the site was contaminated with both oil and PCBs, the site was cleaned up with funds from both the Oil Pollution Act and Superfund. The property will be part of the Native American Cultural and Educational Center area



A tribal color guard from the Riverside Indian School stands vigilant over the Ceremony.



Dignitaries plant a tree during the Parawax Completion Ceremony to symbolize the healing of the land.

redevelopment. Dignitaries at the ceremony included Lt. Governor Mary Fallin, Oklahoma City Mayor Kirk

Humphreys, EPA Regional Administrator Gregg Cooke, and DEQ Executive Director Mark Coleman. As shown in the

adjoining photos, the ceremony had a tribal theme with a tribal color guard and drum circle. *more on next page*



The tribal drum circle from Riverside Indian School provided uplifting music for the ceremony.

Meeker Senior Center

On July 2001, Meeker city officials notified DEQ that they had received a complaint that the water at the Meeker Senior Citizens Center smelled and tasted like hydrocarbons. DEQ tested the water and found detectable levels of hydrocarbons at the Center and at two other locations in the public water system just upstream and

downstream of the Center. The Senior Center was disconnected from the City Water System and an investigation for a source of the contamination was launched. DEQ asked EPA to conduct a Removal Assessment of the subsurface beneath the Senior Center. The assessment showed no contamination. The Senior Center permanently disconnected the taps where the contamination

was found and reconnected to the City Water System. This action resolved the problem, but it is still unknown where the contamination originated.

OKC Solvent Plume

In January 2002, the Oklahoma Corporation Commission (OCC) reported that during a cleanup of an underground storage tank, it discovered tetrachlo-

roethylene in a residential water well in west Oklahoma City. DEQ sampled other domestic wells in the area and found that several were impacted. DEQ arranged for the EPA to provide bottled water to the affected homes until the residents could get connected to the city water distribution system. DEQ continues to investigate the source of the plume and the extent of contamination. 🌱

Brownfields Program Spurs Economic Development

Voluntary Cleanup and Brownfields Program

The Voluntary Cleanup and Brownfields Redevelopment Program (VCP) continues to grow. There are 250 sites on the VCP tracking list, and 142 of these sites have been completed and closed. During FY 2002, the Oklahoma Brownfield Cleanup Revolving Loan Fund implementing rules were passed and went into effect on June 13, 2002. The Oklahoma Legislature amended the Quality Jobs Program Act to clarify the eligibility of sites that have undergone environmental cleanups. Now, companies that locate their principal business on a portion of a ten acre or larger site, which has undergone an environmental cleanup, are eligible for incentive payments under the Act. At the federal level, Congress passed the Small Business Liability Relief and Brownfield Revitalization Act, and the

President budgeted \$200,000,000 for the new program. Oklahoma, due to its existing Brownfield Memorandum of Agreement with EPA, automatically qualifies for additional federal assistance.

Oklahoma Steel Castings Brownfield Site

In 1999, Lionheart Industries donated the former Oklahoma Steel Castings facility to the Tulsa Industrial Authority (TIA). The TIA began the process of demolition of outdated buildings and assessing the environmental state of the property. Little contamination was discovered on the site, and what elevated levels of contaminants existed did not pose a



Shown above is one of the buildings at the Oklahoma Steel casting Brownfields site that will be revitalized by the new owner.

risk to the redevelopment of the property. The TIA applied to the DEQ's Brownfield Program for a Brownfield Certificate of No Action Necessary to clear up the environmental liability issues that were expected to arise during any property transfer. During the

Brownfield Process, TIA was approached by a Tulsa company that needed to expand its operation. The owners of the company were intrigued both by the brownfield concept of keeping industrial lands industrial and the historical area in which the site is located. The site was sold

to the interested company prior to the completion of the Brownfield process. The new owner, Brainerd Chemical, plans to rejuvenate the remaining historical brick buildings on the property, build complementary buildings, and operate its warehouse and distribution center at the site. 🏠



Above is an Oklahoma Steel Castings site building prior to demolition.



Brainerd Chemical holds a ground breaking ceremony celebrating the acquisition of the property.



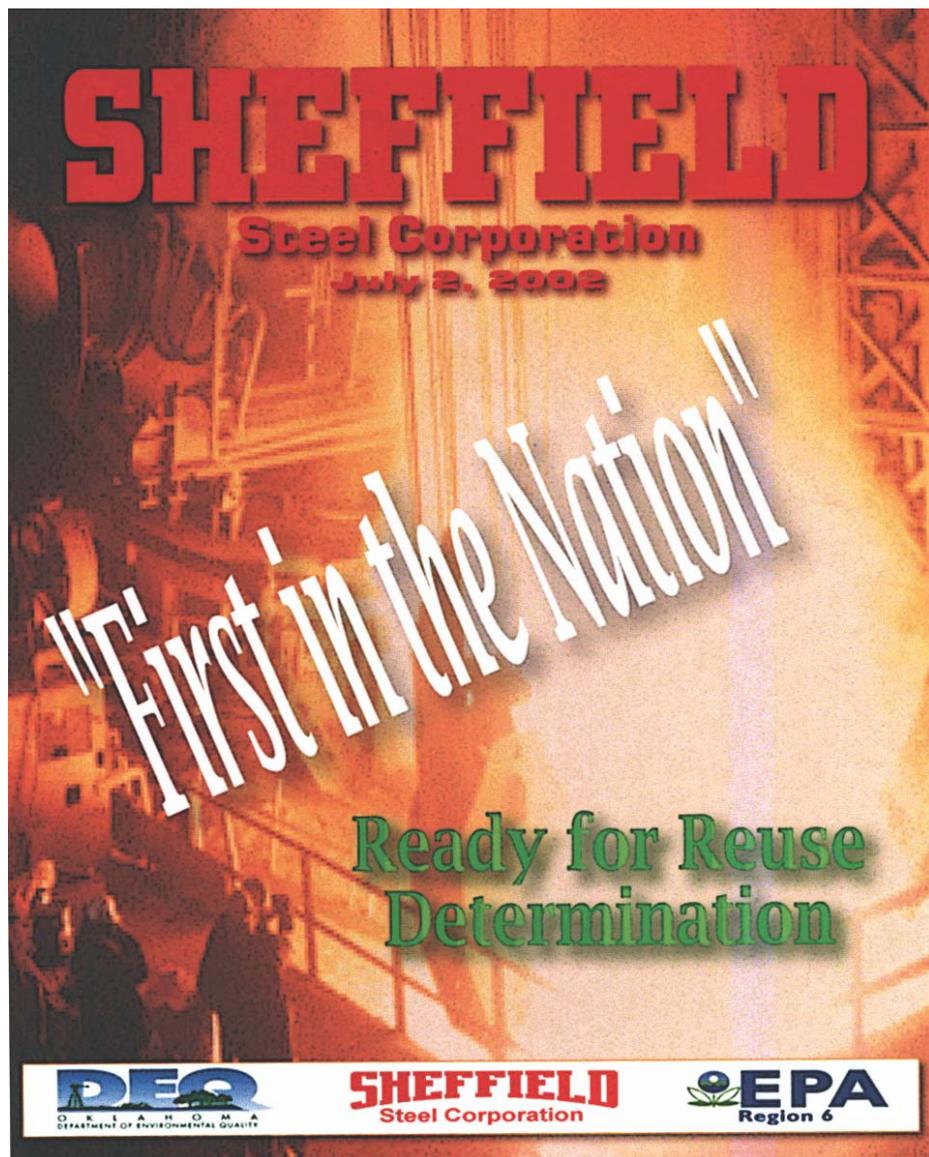
Scott Thompson, Land Protection Division Director, spoke at the Brainerd Chemical ground breaking ceremony.

DEQ Promotes Innovative Program

RCRA Ready for Reuse Pilot

In June 2002, the Oklahoma DEQ and the EPA Region 6 office launched a new environmental initiative by making a determination that the Sheffield Steel Corporation facility in Sand Springs is "Ready for Reuse." For the first time, the federal hazardous waste program is providing certification that a facility has successfully completed a Corrective Action cleanup and that environmental conditions at the site are protective for its current use and anticipated future use as an industrial operation. A Ready for Reuse certification recognizes that contamination at a property has been characterized and cleaned up to a point that is safe for redevelopment or revitalization. It provides a potential buyer with documentation about the environmental conditions at an active facility so that an informed purchase or development decision can be made.

The concept of Ready for Reuse is being piloted by EPA Region 6 as part of EPA's Land Revitalization Initiative. This



The poster above announces that Sheffield Steel in Sand Springs is the first company in the nation to receive a RCRA Ready for Reuse Certificate.

initiative makes land revitalization and reuse an integral and unifying element of all EPA cleanup programs in order to foster

economic development and turn previously contaminated property to uses that meet community needs. ♻️



Steel production shown above at Sheffield Steel Corporation.



Here is another photo of steel production at Sheffield Steel Corporation.

Environmental Crime Investigation Team (ECIT)

DEQ's Environmental Crime Investigation Team (ECIT) was assembled in 1995 to investigate criminal violations of Oklahoma's environmental statutes and to assist other agencies in environmental crime investigations. Currently, ECIT investigates a wide variety of allegations statewide, ranging from open burning to hazardous waste crimes. In 2002, after a three-year investigation by ECIT, a Crescent man was indicted by the state Multi-County Grand Jury. In Oklahoma County District Court, the man pled guilty to sixteen felony counts of making false or fictitious claims against the Waste Tire Indemnity Fund.

The man owned and operated a company that used waste tires to construct tire "mattresses" on eroding riverbanks. These tire mattresses, when installed properly, prevent further erosion

from taking place. Companies that recycle waste tires in this manner are eligible for reimbursement from the Waste Tire Indemnity Fund for tires they clean up from illegal dumps and reuse in the erosion control projects. All tires used in this manner are required to

be counted and manifested. A DEQ ECIT investigation revealed that this company was not counting the tires; instead, it was filling in manifests with fictitious numbers and falsifying the driver's signatures. This occurred on 16 separate

claims, covering ten different river projects. In addition, the company left several river projects incomplete, thereby creating new tire dumps that had to be cleaned up with money from the Waste Tire Indemnity Fund. The Court

sentenced the man to 60 days in the Oklahoma County Jail, a 32-year suspended prison sentence, and ordered him to pay back approximately \$110,000 to the Waste Tire Indemnity Fund. This figure represents the amount that investigators were able to prove was fraudulently collected from the fund.

Since 1995, ECIT cases have resulted in the conviction of 31 people on felony violations and 12 people on misdemeanor violations, resulting in the imposition of prison terms totaling more than 89 years and probation terms totaling more than 71 years. In addition, defendants were ordered to pay more than \$158,000 in criminal fines and more than \$1.4 million in restitution. ♻️



This picture shows a tire dump at Fire Lake Golf Course in Shawnee.



Pictured above is another tire dump at Fire Lake Golf Course in Shawnee.

DEQ Recycles

One of DEQ's objectives is to encourage Oklahomans to recycle their waste. Not only does DEQ "talk the talk," it "walks the walk." DEQ Recycles is an internal recycling program that is in its eleventh year of operation. The recycling efforts are run by volunteers from each division. When recycling efforts first started, only about 4,500 pounds of white office paper and green-

bar computer paper were recycled annually.

Through the years, the program has grown and expanded. Currently, DEQ is capturing most of its waste paper, plastic, clear glass, cardboard, toner cartridges and aluminum cans. To date, DEQ has recycled over 90 tons of materials. Last year the program recycled 23,266 pounds of waste paper, 3,640 pounds of plastic containers,

4,750 pounds of glass, 3,590 pounds of corrugated cardboard, 173 toner cartridges, 713 telephone directories, and an estimated 2,200 pounds of aluminum cans. ♻️



Above: DEQ recycling volunteers Jerry Sanger, from the Office of Legal Counsel, and Dr. Mary Jane Calvey from Land Protection participating in the DEQ Recycles programs.

Left: Mignon Callaway, Administrative Services, recycles used office paper.

Solid Waste Rules Rewritten

DEQ, the regulated community, consultants, and the general public participated in a project to thoroughly review and rewrite DEQ solid waste rules. The process began over two years ago at the request of the Solid Waste Management Advisory Council. In February of 2000, a questionnaire was sent to all those regulated by the DEQ, as well as various consultants and members of the public, asking for volunteers to participate in this process. Approximately 60 people expressed interest in participating and became part of what was known as the "rules development group."

Between May 2000 and December 2001, the group held 16 meetings. A set of draft rules was informally presented to the Council in February of 2002. Because there were several areas of disagreement remaining between the DEQ and other members of the group, the Council requested that the rules development group hold one more meeting to attempt to re-

solve those disagreements. The additional meeting was held on March 8th. As a result of that meeting, there are only three areas remaining on which the DEQ and other members of the group are unable to reach consensus.

On March 15, 2002, the Notice of Rulemaking for OAC 252:515 was published in the Oklahoma Register. Despite the three areas still open for discussion, substantial improvements have been made and the new rules should provide substantial cost savings to the regulated community while ensuring environmental protection. ♻️

