

LAND PROTECTION DIVISION

LAND PROTECTION REPORT



The Challenge of Environmental Clean Up



January - December 2001



LAND PROTECTION REPORT

**January 2001 through December 2001
Volume 2, Number 1**

**Compiled and Edited by the
Land Protection Division
P.O. Box 1677
Oklahoma City, Oklahoma 73101
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**Please visit our web site
www.deq.state.ok.us**

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08/02. Printed on recycled paper

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Land Remediation Status Report

January 2001 through December 2001

Background

The Oklahoma Department of Environmental Quality is charged with the protecting the land, water and air of the State of Oklahoma. This includes the clean up of pollution from historical practices and the restoration of lands that have been impacted.

The 1976 Resource Conservation and Recovery Act (RCRA) was the nation's first comprehensive hazardous waste management law. It created a regulatory system that governed the treatment, storage, and disposal of hazardous waste. RCRA has been amended several times, most significantly by the Hazardous and Solid Waste Amendments (HSWA) of 1984. For the most part, HSWA addresses land disposal of hazardous waste and corrective action. As the RCRA program was implemented, it became apparent that it did not provide a mechanism to address historical hazardous waste sites.

The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), or Superfund, was enacted in 1980. It created a large-scale national program to identify and clean up sites contaminated from previous hazardous waste management practices. This effort is known as Superfund because CERCLA established a national trust fund to pay for clean up at sites whose owners were no longer available or financially solvent. CERCLA also established a mechanism to recover clean up costs from potentially responsible parties (PRPs). CERCLA was amended by the Superfund Amendments and Reauthorization Act (SARA) in 1986.

The Oklahoma Waste Tire Recycling Act (Act) was created in 1989 to clean up historical nuisance tire dumps and prevent further illegal dumping by providing an outlet for tire dealers

In 1995, the Legislature amended the Oklahoma Solid Waste Management Act and directed DEQ to work to use materials recovered from solid waste in projects to restore lands damaged by oil and mining activities creating the Land Restoration Program.

June 1996, the Oklahoma Brownfields Voluntary Redevelopment Act, was signed into law. The Brownfield Program fosters the voluntary redevelopment and reuse of brownfields by limiting liability of property owners, lenders, lessees, and successors from DEQ actions. Under an agreement with EPA, DEQ Brownfield certificates also provide some protection from EPA Superfund actions at participating sites. DEQ also operates an informal voluntary cleanup programs for those who do not want the protection provided by the Brownfield Program.

Oklahoma's Program

The Department of Environmental Quality (DEQ) conducts and oversees site assessment and remediation activities at many sites that fall under CERCLA/SARA, RCRA and Waste Tire Recycling Act. Twelve sites in Oklahoma are on EPA's National Priorities List (NPL), which ranks sites for clean up, based on the actual or potential risks posed to human health and the environment. One site was deleted from the NPL in March 2000. Additional sites in the DEQ Brownfields Program and informal voluntary cleanup program are being addressed through Consent Orders with one or more participants. The Consent Orders include reimbursement of DEQ's oversight costs for voluntary clean ups. The DEQ often provides management and technical assistance for remediation at Department of Defense/Corps of Engineers (DOD/COE) sites and EPA Superfund Removal Actions.

Tire Program Restoration Work

DEQ Contact Person: Jon Roberts, (405) 702-5184

Background

The Oklahoma Waste Tire Recycling Act (Act) was created in 1989 to clean up historical nuisance tire dumps and prevent further illegal dumping by providing an outlet for tire dealers. On average, Oklahoma generates about one waste tire per person per year. In 1998 this amounted to 3.2 million waste tires. Tire characteristics make them unsuitable for landfill operations where tires are prone to fires and vermin infestation. They do, however, lend themselves to recycling because there is a retrievable value in waste tires. Despite recycling options, illegal dumping continues.

Oklahoma waste tire dumps fall into two categories. The first category includes waste tire dumps that meet statutory requirements for placement on the Priority Clean up List (PCL). Under the Act, property owners that have approved PCL tire dumps receive free remediation from permitted waste tire processors or river erosion entities. In order to qualify for the PCL, a tire dump must not have existed when the owner took possession of the property. In addition, an affidavit must be signed stating the illegal tire dump was created without the consent of or benefit to the owner of the property. The second category of waste tire dumps are those that do not meet the statutory requirements for placement on the PCL. Tire dumps that fall under this category are remediated through enforcement actions.

Waste tire facilities meeting the requirements of the Act are eligible to receive compensation from the Waste Tire Recycling Indemnity Fund (Fund). The Fund consists of all monies received from the waste tire recycling fees and money received in the form of gifts, grants, reimbursements, and accumulated interest. For processing whole tires, waste tire facilities are eligible for reimbursement at the rate of \$53.48 per ton of processed tire material. Waste tire facilities are entitled to an additional \$37.43 per ton of processed tire material if they engage in the statewide collection of waste tires. In order to qualify for compensation, waste tire facilities must demonstrate that over the life of the facility at least 10% of the tires processed were collected from tire dumps on the PCL or Department approved community-wide clean up events.

River Erosion entities that have obtained a permit or other authorization from the United States Army Corps of Engineers or a local Conservation District and meet the requirements of the Act are also eligible to receive compensation from the Fund. In order to qualify for compensation, the legal entity must demonstrate that all of the tires processed were collected from tire dumps on the PCL or Department approved community-wide clean up events. Tires from these sites are reimbursable at a rate of \$2.25 per tire for tires with a rim diameter over 17 ½ inches and \$0.45 per tire for tires with a rim diameter of 17 ½ inches or less.

Sites cleaned up

In 2001, Remediation work at 51 PCL dump sites was under way. Remediation efforts resulted in removing 44,107 waste tires from PCL sites and the clean up of 17 PCL sites. 40 community-wide clean up events were held resulting in the removal of 51,634 waste tires.

Oil and Mining Land Restoration Program

DEQ Contact Person: Fenton Rood, (405) 702-5159

Background

Solid waste managers have long been intrigued with the recycling potential of organic materials such as yard waste and paper. These waste products comprise well over fifty percent of the material that is discarded every day. Organic materials can be diverted from disposal and processed into useful soil amendments.

Historically there has been little demand for such soil conditioners. In agriculture, this has been due to a focus on primary plant nutrients rather than soil structure. In conservation, this has been due to a focus on mechanical techniques for controlling erosion. In the emerging field of land restoration, this is due to a lack of understanding about the dynamics of healthy soil.

In 1995, the state legislature sought to unite these various technical disciplines through an amendment to the Oklahoma Solid Waste Management Act. New provisions directed DEQ to work with the Conservation Commission, the Corporation Commission, and the Oklahoma Energy Resources Board to use materials recovered from solid waste in projects to restore lands damaged by oil production and mining activities.

DEQ began this new activity by developing a partnership with the Okmulgee County Conservation District and the Oklahoma Energy Resources Board (OERB). OERB was already in the business of restoring lands damaged by historical oil and gas production. This collaboration in Okmulgee County led to a wonderful synergism. OERB coordinated the removal of old equipment, and the installation of any erosion control structures needed, while the Conservation District specialized in restoring the productivity of the damaged soil. The organic materials that were most easy to recover from solid waste for such projects were sewage sludge and wood chips. The results of applying these materials to damaged lands were incredibly encouraging, captivating everyone involved in the project.

Progress

FY 2001 accomplishments included:

Acres in planning	405
Acres treated	351
Acres in follow-up	589

This work was performed by the Okmulgee County Conservation District, Osage County Conservation District, and the Association of South Central Oklahoma Governments.

What's Next?

Projects are being planned in the following communities:

Clayton	Rolf
Dill City	Tyrone
Chattanooga	Picher
Manitou	Muldrow

Oklahoma City & County

Chemical Products Development Corporation

RCRA Risk-Based Corrective Action Site

Oklahoma City

Status: Operation and Maintenance

DEQ Contact Person: Sam Ukpaka, (405) 702-5148

Background

The Chemical Products Development Corporation (CPDC) is located in Oklahoma City. The buildings and property are owned by the City and held in trust by the Oklahoma City Airport Trust. CPDC was ordered to vacate the site by the Airport Trust after failing to comply with an Environmental Compliance Schedule issued by the Oklahoma Water Resources Board (OWRB). CPDC declared bankruptcy leaving the Airport Trust the responsibility to comply with the OWRB Environmental Compliance Schedule and restore the site for use. CPDC was a formulator and manufacturer of industrial glues, paints and asphaltic coatings. The process consisted primarily of storing raw materials, mixing various materials and chemicals to specifications, placing products into containers, labeling and shipping. CPDC may have used solvents for various operations that resulted in spillage clean up. In November 1990, samples of sediments of a surface impoundment located at the facility revealed hazardous contaminants. A site investigation was initiated to determine the extent of the contamination. Excavation of the contaminated soils associated with the surface impoundment was completed and a ground water monitoring program was initiated in May 1994. The monitoring program is to determine the effect of the clean up efforts on the underlying ground water.

Progress

Semiannual ground water monitoring continued at five wells located at the facility.

What's Next?

Semiannual ground water monitoring will continue through 2002. If levels detected remain consistent, annual monitoring will be performed for the remainder of the ground water monitoring program.

Double Eagle Refinery

NPL Site

Oklahoma City

Status of Source Control Operable Unit: Remedial Action

Status of Ground Water Operable Unit: Remedial Action

DEQ Contact Persons:

Source Control Operable Unit - Dennis Datin, (405) 702-5125

Ground Water Operable Unit - Kathleen Buckley, (405) 702-5121

Site History

This 12-acre facility collected, stored, and re-refined used oils and distributed the recycled oil from 1929 through 1980. This site is adjacent to the Fourth Street Refinery NPL Site. Approximately 500,000 to 600,000 gallons of used motor oil were recycled per month into lubricating oil. The facility re-refined the used motor oil by treating it with bleaching clays and sulfuric acid that settled the solids and clarified the product. This was followed by primary refining processes for the oil (distillation cracking, etc.).

Process tanks were steam heated causing, through gravity separation, the oil to rise to the top of the vessel where it was skimmed. This process generated approximately 80,000 gallons of oily sludge per month, some of which was stored on site. An ESI conducted by EPA in 1987-1988 established that the site should be added to the NPL. The Double Eagle Refinery was placed on the NPL in March 1989.

Source Control Operable Unit (SCOU)

Background

The RI/FS for the on site wastes, also known as the Source Control Operable Unit, was completed in 1992. The primary contaminants of concern are lead, and oily sludge containing benzene and chlorinated hydrocarbons. The remedy selected in the October 1993 ROD for the waste sources was on site treatment of waste to a nonhazardous state and then off site disposal at a commercial facility. The Remedial Design for excavation, treatment and off site disposal of the waste sources began in October 1993 and was completed in April 1997. The EPA contracted for the remedial action in early 1998.

Progress

The final RA report is complete. Formal procedures to delete this operable unit are ongoing.

What's Next?

The operable unit will be deleted from the NPL by the EPA.

Ground Water Operable Unit (GWOU)

Background

Ground water contamination from the site was determined to be complex during the Source Control Operable Unit RI. Therefore, a separate Ground Water Operable Unit was established and a RI/FS was completed in July 1993. The Remedial Action proposed in 1996 by the EPA included installing additional monitor wells and establishing a ground water monitoring program. The plan includes a five-year review to determine if the remedy is operating as designed and continues to be protective of human health and the environment.

The Phase II RA was completed with the installation of eight new wells. A total of thirteen wells are utilized in the monitoring program: seven upper Garber-Wellington bedrock wells and six deeper (150') Garber-Wellington wells. Because the Double Eagle and Fourth Street sites are adjacent, the GWOU quarterly monitoring of the 13 wells satisfies the requirements for both sites. Wells not used in the five-year program were plugged. In December 1996, the DEQ began sampling the monitor wells to establish a baseline concentration for each contaminant of concern (COC). Samples were analyzed for VOCs, Target Analyte List metals, sulfate, Total Dissolved Solids, and cyanide.

Progress

Quarterly sampling of the groundwater continued until April 2000. From baseline values detected during the quarterly sampling, action levels were established for each COC in accordance with the ROD. Semiannual sampling began with the September 2000 sampling event. Concentrations measured during future sampling events will be compared to the action levels established to determine what, if any, additional action is necessary.

What's Next?

Semiannual groundwater monitoring will continue for three years.

Fourth Street Refinery

NPL Site

Oklahoma City

Status of Source Control Operable Unit: Deletion Pending

Status of Ground Water Operable Unit: Remedial Action

DEQ Contact Persons:

Source Control Operable Unit - Dennis Datin, (405) 702-5125

Ground Water Operable Unit - Kathleen Buckley, (405) 702-5121

Site History

This facility collected, stored, and re-refined used oils and distributed the recycled product from the early part of 1940 to the late 1960s or early 1970s. This site is adjacent to the Double Eagle Refinery NPL Site.

The recycling process consisted of steam heating waste oil in a tank. Sulfuric acid and bleaching clay were added to the waste oil to clarify and separate the desired oil product from the heavy tars. The resulting tank bottoms and sludge were disposed of on site. The waste consisted mostly of tar material mixed with clay. Primary contaminants of concern include organic chemicals, metals, and asbestos.

A PA was completed in April 1984. EPA conducted an ESI in 1987-1988. The site was added to the NPL in March 1989.

Source Control Operable Unit

Background

The RI/FS identified the primary contaminants as lead and oily sludge. The remedy was on site waste treatment to a nonhazardous state followed by off site disposal at a commercial facility. The remedy began in March 1995, with neutralization and stabilization of acidic sludge. Treated waste was removed to an off site landfill and the excavated areas filled with clean dirt. The RA was completed in April 1996. No further action on the waste source is necessary.

Progress

The final RA report is complete. Formal procedures to delete this operable unit are ongoing.

What's Next?

The operable unit is to be deleted from the NPL by the EPA.

Ground Water Operable Unit

Background

Ground water contamination from the site was determined to be complex during the Source Control Operable Unit RI. Therefore, a separate ground water operable unit RI/FS was completed in July 1993. The remedy proposed in 1996 included installing additional monitor wells and establishing a ground water monitoring program. The plan includes a five-year review to determine if the remedy is operating as designed and continues to be protective of human health and the environment.

The Phase II RA was completed with the installation of eight new wells. A total of thirteen wells are utilized in the monitoring program: seven upper Garber-Wellington bedrock wells and six deeper Garber-Wellington wells (depths of 150 each). Because the Double Eagle and Fourth Street sites are adjacent, the GWOU quarterly monitoring of the 13 wells satisfies the requirements for both sites. Wells not used in the five-year program were plugged. In December 1996, the DEQ began sampling the wells to establish a baseline concentration for each contaminant of concern (COC). Samples were analyzed for Volatile Organic Compounds, TAL metals, sulfate, TDS, and cyanide.

Progress

Quarterly sampling of the groundwater continued until April 2000. From the baseline values detected during the quarterly sampling, action levels were established for each COC in accordance with the ROD. Semiannual sampling began with the September 2000 sampling event. Concentrations measured during future sampling events will be compared to the action levels established to determine what, if any, additional action is necessary.

What's Next?

Semiannual groundwater monitoring will continue for three years.

Lucent Technologies, Inc.

RCRA Generator Clean Up Site

Oklahoma City

Status: Interim Corrective Measure

DEQ Contact Person: Cindy Hailes, (405) 702-5114

Background

The Lucent facility is a manufacturing plant and assembly facility engaged in a variety of operations necessary for the production of central office telephone switching equipment and computers. It began operation in 1960 as the Western Electric Company. It was later known as AT&T Global Network Systems, Inc., and in 1996 was spun off from AT&T to become Lucent Technologies, Inc. The major contamination was caused by leaking underground storage tanks that held perchloroethylene and trichloroethylene. Degradation products of these chemicals have migrated off site, and in 1995, Interim Correction Measures consisting of a pump and treat system were installed to control further migration of the contaminant plume.

Progress

A major project to upgrade the pump and treat system is underway. The system had been clogged with organic growth and Lucent corrected design defects. Lucent submitted and had approved their Notice of Intent to enter into the Corrective Action Strategy with EPA Region 6 and DEQ for further site remediation. The scoping meeting between Lucent, EPA Region 6 and the DEQ was held the last quarter of 2001. Lucent is currently preparing a Corrective Measures work plan to address the long-term remediation of the site.

What's Next?

Lucent will submitted the first draft of the CAS Remediation Workplan which evaluates the site on both an overall basis and in nine individual sections.

Madewell & Madewell, Inc.

RCRA Generator Clean Up Site

Jones, Oklahoma County

Status: Closure

DEQ Contact Person: Sam Ukpaka (405) 702-5148

Background

Madewell & Madewell has engaged in lead-acid battery reclamation operations since 1953. Operations consist of the reclamation of lead by disassembling spent lead-acid batteries. The battery reclamation process typically generates reclaimable lead and plastic battery casing materials as products, and acidic wastewater as a waste. The facility has a closed on site landfill (battery casing waste pile) permitted under RCRA Post-Closure.

Madewell performed a facility-wide soils investigation to characterize soil lead contamination in July 1995, and reported the findings to the DEQ in a final report in September 1995. The report identified all contaminated soils that exceeded action level of 400 mg/kg of lead. The report recommended consolidation of contaminated soils and covering with an asphalt cap.

In August 1996, a facility fire destroyed portions of the process area leaving a pile of burnt battery casings as an environmental concern. Madewell constructed a new building and the burnt casings were processed and sent off site for recycling. A risk-based remediation goal of 1,000 mg/kg was set for the lead contaminated soils at the facility. The DEQ designated a portion of the facility as a Corrective Action Management Unit (CAMU). Madewell excavated, transported, and consolidated the lead contaminated soils into one area and covered it with an asphalt cap. Confirmatory sampling and analysis verified all contaminated soils were excavated. The action was performed per the Closure Plan submitted in November 1996, and the permit was subsequently modified to incorporate the CAMU and the associated ground water monitoring wells.

Progress

The DEQ approved the closure at industrial risk-based levels for the site

What's Next?

Monitoring of ground water will continue.

Mosley Road Superfund Site

NPL Site

Oklahoma City

Status: Remedial Action

DEQ Contact Person: Dennis Datin, (405) 702-5125

Background

The 72-acre site is a closed municipal landfill located near Midwest City. From February through August 1976, the state authorized the landfill to accept industrial hazardous waste. During this 6-month period, the landfill accepted approximately 1.7 million gallons of mostly liquid industrial hazardous waste. In 1987, the landfill reached its permitted capacity and was closed. The preliminary site investigations justified placing the landfill on the NPL in June, 1988. Waste Management of Oklahoma (WMO) conducted the RI/FS under EPA and DEQ oversight. The North Canadian River Preservation Association received an EPA Technical Assistance Grant (TAG) in October 1993. The grant will be used by the Association to hire an independent technical advisor to advise the local community and to interpret technical data related to remedial activities. The remedy for the site requires that the landfill cap be improved, a gas collection system be installed, and extensive ground water monitoring be implemented.

If contaminated ground water migrates from the site, then additional actions, such as pumping and treating the ground water, may be required.

Two years of ground water monitoring have been completed. This data will be used to determine the effectiveness of natural attenuation. Ground water will be monitored for at least 30 years after the final cover is placed.

Progress

WMO in placing construction and demolition waste as part of the cap. This process will continue for several more years. WMO has proposed expanding the East Oak Landfill to incorporate part of the Superfund Site. The permit modification is under DEQ review.

What's Next?

The DEQ and EPA are discussing the technical aspects of the permit modification for the expansion of the East Oak Landfill and Mosley Road landfill. The placement of construction and demolition waste will continue for several more years.

Parawax Reclaimer Site

NPL Removal Action

Oklahoma City

Status: Complete

DEQ Contact Person: Rita R. Kottke, Ph.D. (405) 702-5127

Background

The Parawax Reclaimer Site is the location of a former facility that reclaimed crude oil exploration and production wastes and produced various oil and wax products. It operated from 1942 until 1993. It also reclaimed polychlorinated biphenyls (PCBs) oils. Tanks containing oil and salt water and drums of chemicals were left on site when operations ceased. The site is located 1200 feet immediately up gradient from the North Canadian River.

Progress

The EPA, DEQ, Oklahoma Corporation Commission, U.S. Coast Guard, Army Corps of Engineers, City of Oklahoma City, Oklahoma Department of Commerce, Oklahoma Native American Cultural and Educational Authority, and U.S. Fish & Wildlife cooperated to ensure a successful cleanup of the site, to protect the river ecosystem as well as the area drinking water resource. Funding from the Oil Pollution Trust Fund the Superfund, was used to cleaned up the site. All tanks and structures were demolished, wastes and contaminated water and soils were removed and properly disposed. Much of the waste oil was recycled. Since development is expected along the river corridor, the cleanup was completed to allow the site to be redeveloped in the future. A project completion ceremony was held in early October.

Parawax
Before
Remediation



Riverside Scoool Color
Guard at the completion
ceremony

Safety-Kleen Systems Inc. Service Center

RCRA Generator Clean Up Site

Oklahoma City

Status: Preliminary Investigations

DEQ Contact Person: Hillary Young, (405) 702-5106

Background

Safety-Kleen Systems Inc. (S-K) operated a branch service center from 1976 to 1986. In 1990, S-K commenced closure initial closure activities, including cleaning and removal of the USTs and return/fill station and cleaning of the DSA. The product UST was also cleaned and removed in 1990. S-K certified closure of the DSA in August, 1994. DEQ accepted closure certification for the DSA in 1995.

Soil remediation efforts began in 1993 to remediate residual soil impacts from the USTs and return/fill station. A Soil Vapor Extraction System (SVES) was installed and operated between 1994 and 1998. Risk-based soil remediation goals for the site and operation and monitoring of the SVES continued until the monitoring results indicated that the soil remediation goals were met and operation of the SVES was discontinued.

Ground water monitoring between 1993 and 1998 showed no concentrations above risk-based limits. These limits were based on a risk assessment for TPH as mineral spirits, benzene, chlorobenzene, 1, 3- and 1,4-dichlorobenzene. Two additional monitoring events were conducted in 1999 to assess the current groundwater quality for further justification for risk-based clean closure of the site. The detected concentrations of residual contamination in on-site and off-site wells continue to decrease. None were above USEPA MCLs for drinking water or the ACLS established through the site-specific risk assessment. S-K certification of closure was granted by DEQ in July, 2000.

What's Next?

The site is closed. No further action is anticipated. This will be the last report for this site.

Samson Resources/Global Compression

RCRA Generator Clean Up Site

Yukon, Canadian County

Status: Remediation

DEQ Contact Person: Bob Welch, (405) 702-5112

Background

The facility was originally constructed by National Oil Well, Inc., and was used by various owners as a fabrication shop resulting in TCE contamination of the soils and ground water. Global Compression discovered VOC (primarily TCE) contamination beneath the facility during a due diligence environmental investigation. Samson (a former owner) has assumed responsibility for the investigation and clean up. Monitoring off site to the north and east to further define the contaminant plume began in 1998.

Progress

A consent decree is under negotiation for clean up of off site contamination.

What's Next?

Off site monitoring wells will be installed and monitored as part of the clean up.

Seagate Technology, Inc.

RCRA Generator Clean Up Site

Oklahoma City, Canadian County

Status: Monitoring

DEQ Contact Person: Askari Zaidi (405) 702-5145

Background

Seagate acquired this property from Control Data Corporation/Magnetic Peripherals in 1989. Petroleum hydrocarbon contamination was detected in 1994 while digging a trench. Seagate worked with Oklahoma Corporation Commission and closed their underground storage tanks. Soil and ground water investigations were carried out in 1996. Soil contamination is limited to the site but the ground water contamination has moved off site. This site has been monitored since 1996. Seagate prepared a remediation work plan which involved conducting a risk assessment. The risk based remediation plan was approved in March 1999.

Progress

The facility continued to monitor the site according to the approved plan.

What's Next?

Seagate will continue to monitor the site and will submit a report in early 2002.

Tenth Street Salvage Yard

NPL Site

Oklahoma City

Status: Operation and Maintenance

DEQ Contact Person: Dennis Datin, (405) 702-5125

Background

This 3.5-acre site is a former automotive salvage yard and landfill where polychlorinated biphenyls (PCBs) were released resulting in the NPL listing in 1986. The RI, completed in April 1989, showed that contaminants were limited solely to PCBs in soils. The original 1990 ROD for chemical dechlorination of PCBs in soil greater than 25 ppm. Information developed during design showed the selected remedy was not feasible. EPA stopped work and in December, 1993, released a new ROD for the site. The new remedy called for installation of a permanent cap and continued groundwater monitoring. The cap was completed in December 1995. The site was fenced, the cap was seeded and monitor wells were installed. The remedy was completed in January 1997.

Progress

O&M of the site is conducted by the DEQ. O&M includes routine inspection of the site, periodic mowing and repairing any damage to the cap, monitoring the groundwater once a year, and preparing a report for EPA every five years. The first report was submitted to EPA. The site was Deleted from the NPL in November 2000.

What's Next?

O&M will continue at the site. Remedy reviews will be conducted every five years to confirm the remedy is effective.

Tinker Air Force Base

NPL Site

Oklahoma City, Del City, Midwest City

Status: Building 3001 Operable Unit: Remedial Action

Soldier Creek Surface Water & Sediments Operable Unit: Remedial Action

Soldier Creek/IWTP Ground Water Operable Unit: RI/FS

DEQ Contact Person: Hal Cantwell, (405) 702-5139

Site History

This site is primarily an aircraft maintenance and rebuilding facility with a long history of industrial use and ground water contamination. Initial investigations, in 1984, revealed that organic solvents and chromium from the facility had contaminated portions of the Garber-Wellington aquifer. The site was proposed to the NPL in 1987, and was then divided into three major operable units: Building 3001, Soldier Creek Surface Water and Sediments, and Soldier Creek/Industrial Waste Treatment Plant Ground Water.

Building 3001 Operable Unit

Background

Following the completion of the RI/FS for Building 3001, EPA signed the first US Air Force ROD on August 16, 1990. It addresses the ground water beneath Building 3001, Pit Q-51, and the North Tank Area. In 1992, the Air Force designed and implemented the selected remedy by first removing contaminated water from Pit Q-51, steam-cleaning, and subsequently, closing the pit. The pumping and treatment of contaminated ground water stipulated in the ROD began in late 1993.

Progress

The pumping and treatment of contaminated ground water continues.

What's Next?

Implementation of the remedy will continue. TAFB will propose an amendment to the ROD to evaluate the effectiveness of the remedy.

Soldier Creek Surface Water & Sediments Operable Unit

Background

The RI/FS and Risk Assessment were completed for the Soldier Creek operable unit, and the ROD was signed in September 1993. The Risk Assessment established that the water and sediments levels are below concern for human health risk; however, the RA requires periodic monitoring of water in the creek and its sediments. The Long Term Monitoring of Soldier Creek began in 1993. It was sampled quarterly until 1998 and then semiannually through 2001. The Tinker AFB Restoration Advisory Board, now the Community Advisory Board (CAB), was established and community members selected to serve on the Board. The CAB is designed to act as a focal point for information exchange between Tinker and the public.

Progress

Sampling in accordance with the RA continues.

What's Next?

The monitoring and analysis components of the ROD will continue according to the defined schedule.

Soldier Creek/IWTP Ground Water Operable Unit

Background

A new operable unit addressing the metals and organic chemicals contaminated ground water beneath the north-east quadrant of the Base, including ground water associated with Soldier Creek, was created in 1993. The RI/FS on this operable unit began in May 1994. The stream flow survey was completed in April 1996. The Final RI and Risk Assessment were commented on by DEQ. The Draft FS was reviewed by the DEQ and comments provided to TAFB.

Progress

The Draft Final FS has been reviewed by the DEQ and comments submitted to TAFB. A draft Base-Wide Ground Water study has been reviewed and comments prepared. The DEQ met with TAFB and the EPA to discuss and negotiate settlement of issues related to the ground water model and the RI/FS and ROD.

What's Next?

Work on the Final FS report and beginning work on the Final Proposed Plan will continue. The DEQ will meet with TAFB and the EPA to complete the FS, Proposed Plan and ROD and determine a completion schedule.

Tinker Air Force Base

RCRA Closure

Status: Phase II of RCRA Facility Investigation

DEQ Contact Person: Robert Replogle, (405) 702-5147

Background

TAFB has completed most of the requirements of a Phase II RCRA Facility Investigation (Phase II RFI). The soils portion is complete, while the ground water portion is on-going. Several Solid Waste Management Units (SWMUs) identified during the RCRA Facility Assessment were remediated and removed. These SWMUs included USTs, waste storage areas, old dumpsites, fire training areas, and former maintenance facilities. All of the Base landfills were closed and covered with interim or final caps meeting regulatory requirements. A complex ground water recovery system in the southwest quadrant of the Base impedes contaminated ground water from migrating off site.

Progress

The discovery of off-site contamination in November 2000 initiated a plan to provide residents of a neighborhood to the southwest of Tinker AFB connections to public water. An extensive investigation of the ground water is on-going. An interceptor trench is under construction at an off-base location near 59th and Douglas to prohibit possible migration of contaminated ground water from migrating to neighboring ground water wells. Several more SWMUs have been remediated or removed. Tinker AFB will renew its existing RCRA permit next year. A new RCRA Permitted Storage Facility has been built near SE 59th and Air Depot Boulevard to store containers of various wastes.

What's Next?

A project to provide city water to the Tinker View area residents is scheduled to be completed in the first quarter of 2002.

Unit Parts, Inc.

RCRA Generator Clean Up Site

Oklahoma City

Status: Remediation Investigation

DEQ Contact Person: Bob Welch, (405) 702-5112

Background

Waste solvents generated during the re-manufacturing process were temporarily stored in two underground storage tanks (USTs) located in the southwest portion of the facility. These USTs were installed by Borg Warner Corp., and used by them until 1976 when the facility was sold to Unit Parts. Unit Parts removed the tanks in 1984. In 1985 Unit Parts installed a ground water pump and treat system with air stripping unit to remediate the ground water contamination. Seven additional USTs were removed by Unit Parts in 1988. In addition, ground water contamination from a parts cleaning vat was discovered on the east side of the facility.

Further investigation revealed that the remediation system was not operating effectively and it was discontinued. A bench scale study of a potential remediation alternative was performed.

Progress

A hydrogeological investigation is on-going and a work plan for interim corrective measures has been approved by DEQ under the consent order.

What's Next?

A pilot test will be performed on site to evaluate remediation alternatives.

Xerox Corporation

RCRA Generator Clean Up Site

Oklahoma City

Status: Ground Water Remediation

DEQ Contact Person: Bob Welch, (405) 702-5112

Background

Ground water contamination consisting of toluene and methylene chloride was discovered in 1984. The contamination was from leaking pipes. A closure permit was issued in January 1992. The corrective action consists of a collection trench to completely contain the contaminant plume. The ground water is pumped to an air stripper to remove the contaminant and then discharged to the city sewer. New monitoring wells were drilled in preparation for installing an enhanced recovery system to speed the remediation at the site

Progress

The vapor extraction system is now operating and is successfully removing contamination.

What's Next?

Remediation of ground water contamination will continue.

Tulsa, City & County

Air Force Plant #3 (AFP#3)

RCRA Closed Facility/Corrective Measures Implementation

Tulsa

Status: Closure

DEQ Contact Person: Robert Replogle, (405) 702-5147

Background

AFP3 is owned by the United States Air Force. It was closed in 1994 when the McDonnell Douglas Corporation abandoned the facility and moved its airplane manufacturing operations to St. Louis, Missouri. The facility has remained more or less unoccupied since that time; however, the USAF has continued to fulfill its RCRA remedial activities. Interim Corrective Measures (ICM) were required by EPA in 1994-95 when contaminated ground water was found to have migrated beyond the northeastern perimeter of the facility. The ICM consisted of the installation of an interceptor trench that was designed to prohibit further ground water migration. A sump system collected the retrieved ground water for treatment in an air stripper. The RFI was completed and final Corrective Measures implemented. Nine of eleven identified SWMUs at the site were designated within the RCRA Information System (RCRIS) as requiring No Further Action. The interceptor trench has recovered and treated over eight million gallons of water. Listed hazardous waste, inside two closed surface impoundments, has been delisted by the EPA, and removed. The surface impoundments have been clean-closed. The existing HSWA permit was modified to remove nine SWMUs and two Areas of Concern (AOC) from RCRA authority, and impose a minimum five-year ground water monitoring program for the remaining two SWMUs and one AOC. The USAF retains responsibility for RCRA issues, but transferred title of the property to the City of Tulsa during the summer of 1999.

Progress

In December, 2001, a Class 3 RCRA permit modification application was submitted for early termination of the RCRA post-closure care permit.

What's Next?

DEQ will review the application for early termination of the post-closure care permit to determine if it can be approved.

Land Protection Division
staff sampling the
Arkansas River



American Airlines – Maintenance & Engineering Center

Generator Clean Up Site Tulsa

Status: Operation and Maintenance

DEQ Contact Person: Hillary Young, (405) 702-5106

Background

American Airlines Maintenance & Engineering Center (M&E Center) is located on the northeastern edge of the City of Tulsa on 270 acres leased from the Tulsa Airport Authority. American Airlines has provided aircraft maintenance at this facility since the 1940s. The M&E Center is bounded on all sides by Airport property. The Oklahoma Air National Guard and vacant property bounds the property to the north and a Boeing facility adjoins the property to the south. As a result of its activities at the M&E Center, American has generated a variety of solid and hazardous wastes.

With the enactment of RCRA, American sought to permit the former Industrial Waste Treatment Plant (IWTP), then classified as an Interim Status RCRA treatment unit. In 1990, American converted its operations to generator status under RCRA, ceased operations at the former IWTP, and began operation of a new wastewater treatment plant. American proposed a closure, approved by DEQ in 1997, addressing all the components of the former IWTP including the evaporation ponds.

American completed a site specific fate and transport analysis of contamination associated with the former IWTP and evaporation ponds. This verified that there was no risk to human health or the environment posed by the removal of free product and grossly contaminated soil discovered during excavation or demolition of the former IWTP. American Airlines currently conducts semiannual monitoring of three on-site wells and two off-site wells.

Progress

The former IWTP and its components were certified remedied in November 2000.

What's Next?

American Airlines continues semiannual monitoring.

Collinsville Smelter

Voluntary Clean Up

Collinsville, Tulsa County

Status: Preparation of Proposed Plan

DEQ Contact Person: Amy Johnson, (405) 702-5127

Background

This 220-acre site, of which 40 acres may have been used for smelter activities, is about one-half mile south of Collinsville. Formerly, the area was used for strip mining and smelting activities. The Bartlesville Zinc Company owned and operated the primary zinc smelter from 1910 to 1918. Another former zinc smelter located approximately one-half mile southwest of the Collinsville Smelter is also being investigated by the DEQ and the EPA (See Tulsa Fuel and Manufacturing Superfund Site). Wastes of concern include used distillation vessels and smelter slag. Contaminants of concern include lead, cadmium, arsenic, and zinc. The primary smelting technique used during that time proved to be inefficient and left large amounts of residue and waste. Processes occurring at the smelter included distilling zinc metal from ore and recovering silver metal from slag.

In 1987, the site was involved in the reclamation of a nearby coal strip mine, and the remaining structures were demolished. In 1993, the DEQ began investigating the site for potential impacts to human health and the environment. During the 1995 Site Inspection on and off site samples indicated elevated levels of heavy metals at several sample locations warranting further investigation.

The site is in a rural area used for residential and agricultural purposes. Children reside within 200 feet of this site and appear to have access to the property. Phelps Dodge Corporation, the surviving corporation and PRP for the site, is cooperating with the DEQ in investigation and cleanup of the site.

Progress

DEQ and Phelps Dodge conducted ongoing discussions pertaining to the clean up expectations at the site. The investigation of the neighboring Tulsa Fuel and Manufacturing NPL may affect the Collinsville Smelter site since it would be difficult to determine from which smelter the contamination originated. The Remedial Investigation and Feasibility Study was submitted by Phelps Dodge in August 2001.

What's Next?

Phelps Dodge is investigating institutional controls to ensure that the remedy is protected. DEQ will complete the review and approval of RI/FS and prepare draft proposed plan. The draft proposed plan will be placed in the local information repository (City Hall) and public comment will be sought.

Compass Industries Landfill

NPL Site

Tulsa County

Status: Operation and Maintenance

DEQ Contact Person: Hal Cantwell, (405) 702-5139

Background

The landfill is in an abandoned limestone quarry near the Arkansas River in west Tulsa County. The landfill area covers 40-50 acres and is about 14 feet deep. Used as a municipal solid waste landfill from 1964 until the late 1970s, it also received industrial and hazardous waste such as waste jet fuel, solvents, caustics, bleaches, benzene, polychlorinated biphenyls (PCBs) and pesticides. Site studies were conducted from 1984 through 1987 and concluded that a threat to human health and the environment did exist from the fires that were burning at the time. In 1987, the ROD chose to cap approximately 46 acres of the landfill.

Sun Refining & Marketing, Texaco, and Standard Royalties Liquidating Trust, the PRPs, hired a contractor and complied with an EPA Administrative Order to construct the cap. The remedy consisted of constructing a composite cap over the landfill and was completed in August 1991. The O&M phase to monitor the cap and ground water began in September 1991.

Progress

O&M of the remedy continues by the PRPs.

What's Next?

O&M will continue.

The site will be deleted from the National Priority List.

Remedy reviews will be conducted every five years to confirm the remedy is effective.



Looking over the Compass Industries Site cap after cutting the tallgrass cover.

Crosby Group Inc. - McKissick Products Division

RCRA Risk-Based Corrective Action Site

Tulsa

Status: Operation and Maintenance

DEQ Contact Person: Sam Ukpaka, (405) 702-5148

Background

Crosby Group Inc.-McKissick Products Division (C/M) manufactures facility metal products for the oil and construction industries including stamping, cutting steel stock, machining, galvanizing, painting and product assembly. Waste materials generated consist of scrap metals, paint residue, waste coolant oils, spent acid and caustic solutions from the galvanizing process. A 1990 Environmental Site Assessment identified tetrachloroethane, trichloroethene and trichloroethane and degradation products in the ground water. Source of the contamination is attributed to dumping of degreasing solvents on the ground prior to 1986. A 1996, a Risk-Based Corrective Action submitted to DEQ for approval was nullified based on new information. Further site characterization to find all sources of ground water contamination was requested.

Progress

Evaluation of investigation and remediation options for the cleanup at the site continued.

What's Next?

Ground water monitoring will continue.

Federated Metals

Voluntary Clean Up

Sand Springs, Tulsa County

Status: Remedial Action

DEQ Contact Person: Ray Roberts, (405) 702-5136

Background

The site in Sand Springs encompasses approximately 30 acres. The facility was a primary lead and zinc smelter prior to 1930 and as a secondary zinc smelter from 1930 until operations ceased. In 1989, the waste associated with the secondary smelter was remediated in accordance with a RCRA closure plan. Closure included construction of a non-RCRA fill cap for the slag storage area. The cap is composed of crushed limestone overlain by 2.5 inches of asphalt and concrete. The closure plan additionally provided for an on-going ground water monitoring program, which included installation of four monitor wells. Most of the structures were demolished and removed from the site. The wastes from the primary smelting operation remained on site. These wastes were not addressed in the closure, as they did not fall under RCRA regulations.

Federated Metals Corp. entered into a Consent Agreement and Final Order with the DEQ in October 1994. It stipulates the necessary investigations and plans to design and implement site remediation with the DEQ providing oversight.

Preliminary investigations revealed heavy metals in soil that exceeded remedial goals for the plant site and numerous nearby residences. A public meeting was held in January 1997 to present the proposed plan. The chosen remedy included excavation, consolidation, and capping of the waste.

Progress

The residential properties have been remediated. Action was taken at approximately ninety residential properties. An interim report detailing the residential remedial action was submitted to the DEQ. All on-site materials exceeding action levels have been placed in the on-site repository and then covered and partially capped. Construction of building pads is progressing. The site is planned for redevelopment into retail zoned properties. The site received the US EPA Region 6 Regional Administrator Partnership for Environmental Excellence Award in October 1998 for partnership with others toward the remediation and redevelopment of the site.

What's Next?

Federated Metals is expected to cap the disposal cell with asphalt and proceed with construction of building pads in accordance with the approved Remedial Design Work Plan and the Record of Decision for the site.

Norris/O'Bannon Electroplating

RCRA Generator Clean Up Site

Tulsa

Status: Remediation Complete,

DEQ Contact Person: Bob Welch, (405) 702-5112

Background

The facility was a pump manufacturing plant. A leaking floor drain allowed chromium plating fluids to saturate the sand fill beneath the building. Surrounding the fill is a shale formation with low hydraulic conductivity limiting the contamination to the fill beneath the building. The drain was removed and the contaminated fill was excavated to DEQ clean up levels. A pump and treat system was installed to remediate the water in the remaining fill. This remediation is complete and the facility is currently in compliance monitoring. The treatment termination was approved in February 1999.

Progress

Monitoring wells have all been plugged.

What's Next?

The remediation is complete

Ozark Mahoning Company, Phosphogypsum Stack

Voluntary Clean Up

Tulsa

Status: Complete

DEQ Contact Person: Hal Cantwell, (405) 702-5139

Background

This site, on the south bank of the Arkansas River in west Tulsa, was a phosphoric acid manufacturing facility from 1957 until 1968. The manufacturing process created a by-product, phosphogypsum, which was stored in a 6-acre stack located between the plant and the Arkansas River. Through the years, the river changed its course and was eroding into the side phosphogypsum stack. The DEQ determined that the stack is a nonhazardous waste, yet posed a potential threat. The Ozark Mahoning Company, the owner of the site, committed to investigate and remediate the phosphogypsum stack and some demolition debris piles.

The DEQ and Ozark Mahoning signed a CAFO in 1994 for the assessment and remediation of the phosphogypsum stack and demolition debris piles. The investigation was completed in late 1997 and the selected remedy was for stack relocation on site with asbestos disposal off site.

Progress

The RAP was implemented to move the Phosphogypsum, demolish the fertilizer building and clean up the debris areas. All work at the site was completed and a Brownfields Certificate of Completion was issued in February 2001.

What's Next?

No further action is anticipated. This will be the last report for this site.

The left picture is the Ozark-Mahoning stack before clean up, showing it being eroded by the Arkansas River with the skyline of Tulsa in the background.



The right picture is of the same view after the stack was removed and the riverbank restored.

Ozark-Mahoning Company (Elf Atochem North America, Inc.) Waste Water Plant

RCRA Generator Clean Up Site

Tulsa

Status: Investigation and Design

DEQ Contact Person: Robert Replogle, (405) 702-5147

Background

Ozark Chemical Company built a plant at the Tulsa site in 1925 to produce sulfuric acid. In 1943, the United States Government built two more sulfuric acid production facilities at the site to support the war effort. Ozark operated the sulfuric acid facilities for the government. In 1947, Ozark Chemical Company changed its name to Ozark Mahoning Company and bought the two government plants. Ozark dismantled the original sulfuric acid plant but left the building in place and in 1948 converted it to a superphosphate fertilizer production plant. In 1955, Ozark built a wet-process phosphoric acid plant and a granular ammonium phosphate fertilizer plant. The phosphoric acid facility ceased operation in 1968. Ozark sold the sulfuric acid plant in 1980. Ozark built another facility on 21st Street for the production of fluoride products. In 1974, Ozark was acquired by the Pennwalt Corporation. In 1989, Pennwalt was in turn acquired by and changed its name to Elf Atochem. Through both of these acquisitions, Ozark remained a distinct corporate entity operating as a wholly-owned subsidiary of Elf Atochem.

The primary products of the plant are sodium monofluorophosphate, sodium fluoride and stannous fluoride which are used in toothpaste and other dentifrices. Limited quantities of these materials are also sold for use in a range of specialty applications. The plant produces a limited number of miscellaneous fluoride. The fluoride plant also produces a very broad range of specialty fluoride chemicals in small batches on demand. Ozark has also produced metal finishing and aviation chemicals since 1980 (including desmutters, etchants, lubricants, cleaners, descalers, etc.). In 1996, Ozark self-reported to the USEPA and the DEQ, a number of environmental compliance issues. Soil, ground water, and surface water at the site were investigated. Phase I and Phase II Assessments were completed and submitted to the DEQ for review.

Progress

The DEQ has recently completed evaluation of the Phase II Wastewater Treatment Plant Assessment Final Report. Chemicals of concern include; antimony, arsenic, beryllium, cadmium, chromium, fluoride, nickel, and selenium, and pH. Ground water issues related to the treatment plant and phosphogypsum stack were consolidated for the entire site.

What's Next?

Corrective measures to remediate soil contamination are planned. A risk assessment will be developed by Ozark to determine the risk presented by contaminated ground water.

Sand Springs Petrochemical Complex

Class: NPL Site

Sand Springs, Tulsa County

Status: Operation and Maintenance

DEQ Contact Person: Dennis Datin, (405) 702-5125

Background

The 225-acre Sand Springs Petrochemical Complex is a former petroleum refinery and solvent recycling facility that operated between 1900 and the early 1970s. Waste attributed to the refinery include several buried pits of petroleum wastes and three large pits of acid sludge wastes. The waste solvent and used oil recycling operation contaminated several acres with chlorinated solvents. Several large tanks, buried drums, contaminated surface soils, and two small lagoons containing chlorinated solvents remained on the property. The contaminated surface soils and chlorinated solvents posed a threat to human health and the environment.

In 1987, the State conducted the RI/FS. Atlantic Richfield Company (ARCO) was identified as one of the PRPs and entered into a consent agreement with the EPA and the DEQ to remediate the site. Under the consent agreement, ARCO agreed to fund 100% of the remediation costs for the site. ARCO assumed the lead on the site after the ROD.

Following design work the RA began in October 1992. Lagoon wastes were excavated and incinerated at an off site facility. The buried wastes and surface wastes were removed. The site was graded, leveled and seeded to encourage vegetative growth.

The design for the refinery waste portion of the site was completed in January 1994, and the RA immediately followed. The remedy included excavation, treatment and on site disposal of waste. The landfill construction began in February 1994 with the construction of three of the eight landfill cells. Each cell has a composite liner and a leachate collection system. Treatment and placement of waste in the landfill was completed in 1995. The final site inspection occurred in August 1995, and was conducted by representatives from ARCO, EPA, Tulsa District Corps of Engineers, and the DEQ.

Progress

The site was deleted from the NPL on March 17, 2000.

What's Next?

The PRP will continue O&M of the remedy, which includes ground water monitoring.

Sun Company, Inc. [Sunoco, Inc. (R&M)]

Generator Clean Up Site

Tulsa

Status: Closure

DEQ Contact Person: Don Hensch, (405) 702-5110

Background

Located in the flood plain of the Arkansas River, the refinery has been operating since 1913. It covers over 800 acres, operates 24 hours a day, and employs approximately 700 people. The refinery is an integrated complex with a crude oil capacity of 90,000 barrels per day. Crude oil is refined by distillation, catalytic cracking, reforming, extracting, and dewaxing to produce LPGs, gasoline, petrochemicals, burner fuels, lube oils, waxes, asphalt, and petroleum coke.

The bulk of hazardous waste generated at the refinery is associated with the wastewater treatment process. The refinery also generates leaded gasoline tank bottoms. Some solvent wastes are generated in the maintenance and electrical shops.

The original Hazardous Waste Operations Permit issued to Sun in 1988 was for the refinery on site land treatment and disposal of the “K” listed wastes. These wastes were applied to the land treatment units (LTUs) located in the southwestern and western portions of the facility. Additionally, some nonhazardous wastes were applied to the units. Sun continued to apply hazardous waste to the LTUs until 1994. Sun notified the Department in August 1998 that closure activities for the LTUs would begin upon expiration of the Hazardous Waste Operations Permit (October 1998). Sun subsequently submitted an application to the Department for a Post-Closure Permit in November 1998 regarding the LTUs. The LTUs were certified closed in the summer of 2000. Sun has an extensive hydrocarbon plume below the facility.

Progress

Additional ground water investigation data has been submitted by Sun to DEQ and is under review.

What’s Next?

The DEQ is currently in the process of reviewing the status the Sun RFI and will address RFI issues in conjunction with the development of the Post-Closure Permit.

Tulsa Fuel and Manufacturing (aka Acme Brick Strip Mines)

NPL Site

Collinsville, Tulsa County

Status: RI/FS scoping & preplanning

DEQ Contact Person: George Thomas (405) 702-5156

Background

The 50-acre former zinc smelter operated from 1914 until 1925. Tulsa Fuel and Manufacturing was incorporated in Kansas and was a subsidiary of New Jersey Zinc. The smelter utilized horizontal retort furnaces for distilling zinc from ore. This inefficient method of smelting left behind large volumes of wastes containing high levels of lead, arsenic, cadmium, and zinc. There are ponds on site where local citizens fish as well as wetlands. Sample data indicates that waste from the site contaminates the ponds and wetlands.

The site is located in a rural area of Collinsville and is surrounded by agricultural lands and residential areas. The site is bordered by an abandoned coal strip mine on the south, agricultural land to the north and west, and an active Burlington Northern and Santa Fe rail line paralleled by old highway 169 to the east. The Collinsville Smelter Site, another former zinc smelter, lies to the east of the Tulsa Fuel and Manufacturing site, and is being voluntarily cleaned up by the PRP under Consent Agreement with DEQ. The two smelters share the same surface water and air migration pathways. EPA conducted a Removal Assessment to determine the extent of on site contamination

Progress

The Tulsa Fuel and Manufacturing Site was added to the NPL on January 19, 1999. The Agency for Toxic Substances and Disease Registry conducted a health assessment of the site. Free blood-lead testing is available at the County Health Department. The DEQ assumed the lead in conducting the RI/FS at the site. Currently, the Community Relations Plan is being reviewed by the EPA. A Scope of Work and Request for Qualifications to procure the RI/FS contractor will be submitted to the Department of Central Services in the near future.

What’s Next?

The U.S. Fish and Wildlife Service will screen the site to determine whether a Natural Resource Damage Assessment should be conducted. Following selection a contractor the RI/FS work will begin.

Northwest Region

Cimarron, Beaver, Texas, Harper, Woods, Alfalfa, Grant, Kay, Ellis, Woodward, Major, Garfield, Noble, Roger Mills, Custer, Dewey, Blaine, Kingfisher, Logan, Payne, Beckham, Washita, Pawnee, Creek and Greer Counties.

Blackwell Zinc

Voluntary Clean Up

Blackwell, Kay County

Status: Soil Remediation Unit: Remedial Action

Ecological Remediation Unit: Remedial Action

Ground Water Remediation Unit: Proposed Plan

DEQ Contact Persons: George Thomas, (405) 702-5126,

Background

The former Blackwell Zinc Company, approximately 1 mile west of the City of Blackwell, was a horizontal-retort zinc and cadmium smelter that operated from 1916 to 1972. When the smelter facility was closed in 1974, the site was cleared of all residual piles and debris and was then leveled. Ownership of the property was subsequently transferred to the Blackwell Industrial Authority. A site investigation that began in 1991 showed lead, cadmium, and arsenic soil contaminants while cadmium is the primary ground water contaminant.

The DEQ, Phelps Dodge, and the Blackwell Industrial Authority are parties to a Consent Order (CO) to investigate metals contamination associated with the old smelter. The DEQ is coordinating with EPA on the progress of the investigation and remediation of the site. The DEQ and EPA signed a Memorandum of Understanding designating the site as a pilot project for State deferral. This means that the DEQ will continue to direct activities at the site, and EPA will not propose the site to the NPL.

The site was divided into three remediation units: soil, ecological, and ground water. The Soil Remediation Unit focused on human health issues and addressed areas used for residential, commercial/industrial, and agricultural purposes. The ROD for the Soil Remediation Unit was finalized in April 1996. The RD was completed in May 1997. Soil remediation was completed in April 1996

The Ecological Remediation Unit investigated impacts to the flora/fauna and will include portions of the site that contain streams, riparian areas, or other undeveloped properties that serve as wildlife habitat or may be of ecological significance. A section of a stream that flows through Legion Park, containing elevated concentrations of metals, was excavated in November 1996. The remedial clean up levels are the same as those in the Soil Remediation Unit with an additional clean up goal for zinc.

The Ground Water Remediation Unit will focus on the cadmium contaminated ground water plume that has migrated from the site. The Proposed Plan for the Ground water Remediation Unit was opened for comment in August 1998, and the ROD was issued in mid-1999.

Progress

The ground water FS was completed.

What's Next?

Phelps Dodge is conducting a Pilot Study to determine which remedy will be implemented for the Ground water Remediation Unit.

Clean Clothes Rental

RCRA Generator Clean Up Site

Enid, Garfield County

Status: Risk-Based Closure

DEQ Contact Person: Hillary Young, (405) 702-5106

Background

Clean Clothes Rental (CCR) is a former commercial laundry and dry-cleaning operation, whose primary business was uniform cleaning. The 3.7-acre site operated from 1983 to 1994. Tetrachloroethylene solvent was used in the dry-cleaning process. An environmental investigation indicated elevated levels of tetrachloroethylene in the ground water. The plume has traveled off-site along the sewer line. CCR conducted ground water monitoring at the site from 1993 to 2000. Ground water monitoring indicated that the contamination levels were stable or decreasing. The DEQ selected risk based closure and natural attenuation as the remedy because the source of ground water contamination was no longer present, the impacted ground water was not used for drinking or any other purpose, and there was no economically practicable method of ground water remediation that would be expected to significantly impact the extent of contamination.

Progress

Risk-based closure is complete.

What's Next?

No further action is planned. This will be the last report for this site.

Clinton-Sherman Industrial Airpark (CSIA)

DOD-COE Formally Used Defense Site

Burns Flat, Washita County

Status: Remedial Investigation

DEQ Contact Person: Dennis Datin, (405) 702-5125

Background

This site, near Burns Flat, is the former location of the Clinton-Sherman Air Base. The site is currently an industrial park, vo-tech school, and residential area. Investigations at this site have occurred in phases. Phase I was conducted in March and April 1992 and the second in December 1992 and January 1993. A third investigation was performed in November and December 1994, and June 1995. The primary contaminants are organic compounds including trichloroethylene (TCE) and petroleum fuels, which have contaminated the ground water. The DEQ identified elevated levels of TCE in two of the wells serving the public water supply system on the old air base. These two wells were subsequently taken out of service. The Corps of Engineers removed approximately nineteen underground storage tanks, four above ground storage tanks, and about a mile of pipeline. They also installed six public water supply wells for the industrial airpark along with a water treatment plant for nitrates/nitrites.

Progress

The remedy of long-term monitoring and removal of contaminated soil was selected in March 2001.

What's Next?

The remedial design will be prepared and the remedy will implemented.

Conoco, Ponca City Refinery

RCRA Generator Clean Up Site

Ponca City, Kay County

Status: Operation and Maintenance

DEQ Contact Person: J. David Lawson, (405) 702-5104

Background

The Conoco Ponca City Refinery, located along the southern edge of Ponca City, includes a petroleum refinery, a corporate research and development operation, bulk petroleum storage operations, and a management services organization. This site has been actively used for petroleum refining since the early 1900s. As a result of past practices, the site has an underground plume of petroleum product and contaminated ground water. RCRA facility investigations (RFIs) identified several Solid Waste Management Units (SWMUs) subject to cleanup.

Progress

Conoco has an ongoing effort to contain and recover the underground free-phase hydrocarbon plume and to remediate contaminated ground water. This effort includes over four hundred ground water monitoring wells, the pumping and treatment of hydrocarbons and ground water, and the reinjection of treated ground water. Several years of investigation of SWMUs, including soil sampling and analysis, is ongoing at the refinery. These investigations have resulted in “no further action” findings for many of the SWMUs. Corrective Measures Studies (CMSs) have been completed or initiated for other SWMUs resulting in remedy selection and subsequent removal or capping operations.

What’s Next?

Recovery and treatment of the hydrocarbon plume and contaminated ground water will continue.

Hudson Oil Refining Company, Inc.

NPL

Cushing, Payne County

Status: Emergency Removal & RI/FS Planning

DEQ Contact Person: Rita Kottke, Ph.D. (405) 702-5127 or

Dennis Datin, (405) 702-5125

Background

The approximately 200-acre site is a former oil refinery that produced propane gas, gasoline, diesel fuel, fuel oils, and petroleum coke. It operated under various owners from 1922 to 1984. Hudson went into bankruptcy, and the bankruptcy court ordered money to be set aside for RCRA closure of the facility. Remediation was conducted under a RCRA Final Consent Order between EPA and Hudson, and specific contamination issues were addressed. In 1994, recognizing that the requirements of the Final Consent Order had not been met, the U.S. District Court for the Western District of Oklahoma issued an “Order for Closure.” RCRA Closure proceeded under DEQ oversight as required in the original closure plans. A RCRA land treatment cell is on site. Questions about the closure arose due to recent discoveries of oil in tanks on site and the presence of sludges in areas that had supposedly been cleaned.

Several attempts were made to restart the facility and many process and laboratory chemicals were left stored on site in anticipation of start-up. Over the years, the refinery equipment deteriorated, asbestos weathered and fell off the equipment, and many of the chemicals on site became more dangerous due to the degradation of the chemical and deterioration of the container. There is also concern about potential contamination of the ground water under the site. The City of Cushing recently changed its community water source from surface water to ground water. In 1998 and 1999, EPA conducted an emergency response at the Hudson site.

The site was placed on the NPL in April, 1999.

During the response, laboratory chemicals, process chemicals, asbestos, petroleum products, tetraethyl lead and hydrogen fluoride were removed. EPA also demolished the refinery superstructure on the south side of the site. The south refinery area was older and presented a substantial threat to nearby residents.

Progress

Progress in the past year included development of a community relations plan and work plan for the RI/FS. A draft Engineering Evaluation and Cost Analysis (EE/CA) was prepared for the demolition of the north refinery. Public comments were taken on the draft EE/CA in July of 2001. EPA reviewed the public comments and a final determination was issued in September. A Class 3 permit modification application was submitted by the Hudson Refinery Trust in December 2001 for early termination of the RCRA permit which governs post-closure care activities at the closed land treatment unit.

What's Next?

Removal and Remedial enforcement and planning at the North Refinery are underway and will continue. DEQ will work to procure a contractor to perform the RI/FS in early 2002.

Kerr-McGee, Cleveland Refinery

Voluntary Clean Up

Cleveland, Pawnee County

Status: Remedial Investigation

DEQ Contact Person: Ray Roberts, (405) 702-5136

Background

This 480-acre former petroleum refinery site located on Highway 64, southwest of Cleveland is owned by the Kerr-McGee Corporation. The refinery operated from the early 1920s until 1972. The DEQ and Kerr-McGee entered into a CAFO in 1992 for investigation and remediation of the site. Waste sources characterized during the Phase I Remedial Investigation included petroleum coke, asbestos, acid sludge, and other sludges. During Phase I, Kerr-McGee consolidated similar waste piles, installed ground water monitor wells, demolished remaining structures, and mitigated the impact of oil seeps along Cedar Creek and an intermittent creek using oil booms and absorbent pads. Kerr-McGee regularly monitors oil seep areas to prevent oil from entering Cedar Creek.

Kerr-McGee completed the excavation, processing, and shipment of 12,200 tons of fuel grade petroleum coke. The coke materials remaining on site did not meet the BTU requirement for fuel. Coke-like wastes were terraced to divert storm water runoff from an intermittent stream near the wastes. A clay berm and a barrier of clean clay were constructed between the waste and the stream. Asbestos waste was contained in two on site landfills. The asbestos abatement project was completed in October 1993. Kerr-McGee completed the in-situ treatment of the sludge in Waste Pit 5, which has been capped and seeded and a ground water diversion system installed on three sides.

Naturally Occurring Radioactive Materials (NORM), which originated from pipe scale, and affected soil were placed in drums and shipped off-site for disposal. Site specific preliminary remediation goals have been established. The remediation of Waste Pit 3 and other wastes in the immediate area was completed in January 1996. Two remaining storage tanks were dismantled. A Phase III Remedial Investigation and disposal cell investigation have been completed. Neutralization of acidic soils and water near the juncture of the south tributary and a city water line was conducted as an interim remedial action. Several drums of characteristically hazardous waste were shipped off-site for disposal. An investigation of the on site sewer line was initiated as an interim remedial action. A biotreatment system was installed to treat water drained from Waste Pit 5 under an OPDES permit for the treated discharge.

Progress

Kerr-McGee and the DEQ conduct bimonthly meetings to discuss progress at this site. A draft Feasibility Study submitted by Kerr-McGee is under review by DEQ.

What's Next?

DEQ and Kerr-McGee will meet to discuss the draft Feasibility Study (FS). A final FS will be submitted and a remedy selected.

Kerr-McGee Cushing Refinery

Voluntary Clean Up

Cushing, Payne County

Status: Remedial Action

DEQ Contact Person: George Thomas, (405) 702-5126

Background

Located north of Cushing, the 440-acre site is a former oil refinery that operated from the early 1900s until 1972. In the 1960s, uranium and thorium processing activities were conducted on part of the facility that was licensed by the Atomic Energy Commission. The majority of waste left on site consists of five large acid oil sludge waste pits containing sulfuric acid, and heavy hydrocarbons. The waste and other refinery activities resulted in contamination of the shallow ground water and surface water adjacent to the pits. A portion of Pit 4 contains low-level radioactive wastes resulting from the demolition of the thorium processing facility. An old trash dump contains low-level radioactive debris from this same demolition. Kerr-McGee is working with the Nuclear Regulatory Commission to decommission the low-level radioactive waste at the site.

In 1990, the DEQ and Kerr-McGee entered into a Consent Order in which Kerr-McGee committed to conduct the RI/FS focusing on the five waste pits remaining on the site. Based on the RI/FS, the preferred remedy selected was neutralization and solidification of the acid sludge waste for disposal in an on-site landfill. The remedy will be implemented in phases.

Several interim actions have occurred at the site: large amounts of radioactive contaminated soil were excavated and shipped to an out-of-state storage facility; the original channel of Skull Creek was routed away from Pit 5, and a French drain and treatment system was constructed to collect and treat acid ground water from seepage from this pit; interceptor trenches were constructed along parts of Skull Creek to capture liquid petroleum on the water table. The Phase I Remedial Action on the five waste pits began in 1996. The City of Cushing formed the Kerr-McGee Citizens Oversight Committee to track the progress of the project and to provide local input to the DEQ and Kerr-McGee.

Progress

Quarterly public meetings were conducted to inform citizens of site progress and address citizen complaints. Five waste pits have been remediated as of July, 2001. Excavation of the smaller waste pits continues. The North Disposal cell cap construction continues. An Impoundment Closure Plan for the north disposal cell stormwater retention pond was approved by the DEQ. The DEQ commented on the draft Phase II Remedial Investigation Work Plan.

What's Next?

Treatment and placement of waste in the disposal cell will continue. The DEQ is reviewing the Impoundment Closure Plan for the Pit 4 stormwater retention pond. The Phase II Remedial Investigation Work Plan will be revised and resubmitted. Phase II is scheduled to begin soon and will focus on characterizing waste contaminated soils, ground water, and surface water. Low-level radiation waste decommissioning will continue

Moore Document Solutions

RCRA Generator Clean Up Site

Stillwater, Payne County

Status: Active Ground water Remediation,

DEQ Contact Person: Cindy Hailes, (405) 702-5114

Background

Moore Document Solutions manufactured business forms at this former facility. Dyes and adhesives were manufactured in one building where, in 1992, a perchloroethylene spill occurred. Moore remediated the spill by removing a section of concrete flooring and backfill material. A shallow well was installed to pump accumulated liquid from the backfill material. A Phase I and II site investigation was conducted. Perchloroethylene and degradation products were present in the backfill of the building and in the ground water downgradient towards Boomer Lake. Moore implemented a comprehensive monitoring program. In addition to the nine monitoring wells installed between the facility and Boomer Lake, in 1998, a 300-ft. horizontal well was installed to contain the perchloroethylene plume. Semiannual samples of water and sediment from Boomer Lake have shown no contamination. Although Moore has closed the facility, the remediation of the ground water will continue.

Progress

Moore submitted a closure report to the DEQ. Final cover must be established on the former building site before closure is approved by the DEQ. An administrative consent order between Moore and the DEQ is currently being finalized.

What's Next?

The company will continue semiannual sampling of the shallow aquifer and the deep aquifer monitoring wells.

National Standard

RCRA Generator Clean Up Site

Stillwater, Payne County

Status: Closure of RCRA Surface Impoundment

DEQ Contact Person: Cindy Hailes, (405) 702-5114

Background

National Standard produces bead wire used by tire companies to make steel-belted radial tires. National Standard's wastewater treatment plant and surface impoundment were constructed during the late 1970s. The surface impoundment was a backup system to deal with any problems with the wastewater treatment system. The sludge in the unpermitted surface impoundment contained high concentrations of lead, copper, and zinc with lower concentrations of cyanide, chromium, and mercury. The surface impoundment was never permitted under RCRA or water regulations. National Standard submitted a work plan for clean closure of the unpermitted surface impoundment to the DEQ in 1997 and it was approved in April, 1998. National Standard has submitted the final closure report for the unpermitted surface impoundment and a separate work plan to plug and abandon nine monitoring wells surrounding the unpermitted surface impoundment.

Progress

The monitoring wells, around the surface impoundment that was clean-closed, have been plugged and abandoned.

What's Next?

No further action on the former surface impoundment is planned. This will be the last report for this site.

Kwikset

RCRA Generator Clean Up Site

Bristow, Creek County

Status: Preliminary Investigations

DEQ Contact Person: Hillary Young, (405) 702-5106

Background

Kwikset has operated a 230,000 square foot manufacturing facility in Bristow since 1979. The plant produces complete door knobs and deadbolts for the residential housing market. In 1997, Kwikset reported a suspected release of tetrachloroethylene. The source of the release, a small vapor degreaser, was situated on top of a concrete pit. The sludge and liquid contained tetrachloroethylene. Both the liquid and sludge in the pit were removed. Removal of the water and sludge mixture revealed a few dark areas of staining along the seams of the concrete pit. Kwikset collected soil samples beneath the concrete pit to determine possible tetrachloroethylene impacts. Kwikset installed a monitoring well system consisting of ten wells and conducted a Phase II Environmental Assessment in 1999. The investigation showed elevated levels of volatile organic compounds present in the ground water in the area of the former solvent degreasers.

Progress

In February 2001, Kwikset performed ground water flow and transport modeling. Ground water monitoring began in August 2001.

What's Next?

Kwikset will conduct semiannual monitoring for two years to obtain information that will determine remedy.

Safety-Kleen, Inc. Lone Mountain

RCRA Generator Clean Up Site

Major County

Status: Active Remediation

DEQ Contact Person: Sam Ukpaka, (405) 702-5148

Background

The SKI-Lone Mountain Facility is a commercial facility engaged in treating, storing, and disposing of hazardous and nonhazardous wastes generated by business and industry in the United States. Wastes generated at the site, mostly landfill leachate, designate it as a Large Quantity Generator. The Lone Mountain Facility has one source of ground water contamination located in the area of Cell 5. This area is under Corrective Action to remediate the plume.

In January 1998, the Cell 5 Corrective Action Program required remediation of hazardous constituents present in the ground water above the ground water protection standard. Pump and treat technology is being used to accomplish this.

Progress

The latest Cell 5 Ground Water Report indicates that the remedial action is performing as designed. No contamination has been detected in any of the compliance boundary wells and the dissolved plume appears to have been reduced in size since the start of the pump and treat system.

What's Next?

The remediation will continue.

Sinclair Topping Plant

Brownfields

Cushing, Payne County

Status: Remedial Action

DEQ Contact Person: George Thomas, (405) 702-5126

Background

The Sinclair Topping Plant, located two miles north of Cushing, occupies approximately 67 acres. The Chanutte Refining Company constructed the plant in 1914. The Sinclair Refining Company, a subsidiary of Sinclair Oil Corporation, purchased the facility in 1917. The plant produced gasoline, kerosene, and fuel oil. The plant closed in the early 1930s. Sinclair Oil Corporation merged into Atlantic Richfield Company (ARCO) in 1969.

EPA 1987 to 1988 site assessment disclosed elevated levels of several metals and semi-volatile compounds in soil, sediment, and well water samples. In March 1996, ARCO entered into a Consent Order with the DEQ to fully characterize and clean up the site. The investigation included waste, soil, sediment, surface water, and ground water sampling and confirmed the presence of metals and polyaromatic hydrocarbons (PAHs).

ARCO proposed off site removal action of waste sources and contaminated soils. The DEQ conducted a public meeting to inform local citizens of the investigation results and proposed remediation. The DEQ also approved a Remedial Plan for the action. The removal began in February 1998. All waste sources were excavated, removed, and backfilled. The topography of the excavated areas was re-contoured to allow drainage to Skull Creek. The former waste pits were re-vegetated.

Progress

A final Remedial Action document was approved and a Brownfield Certificate of Completion was issued in December 2000.

What's Next?

No further action is anticipated. This will be the last report for this site.

Texaco R&M Inc. (Equilon LLC)

RCRA Generator Clean Up Site

Alva, Woods County

Status: Closure

DEQ Contact Person: Askari Zaidi (405) 702-5145

Background

The former Texaco Terminal site was originally leased from the Atchison-Topeka and Santa Fe Railroad in 1928. Texaco subleased the property to Paul Woodson Oil. The Texaco lease expired in early 1990, and a real estate assessment was performed as part of the lease termination agreement with Santa Fe. The facility was used for storing, receiving, and delivering shipments of petroleum products. At the time of the assessment, all storage facilities and equipment had been removed from the site. Soil and ground water samples show benzene, toluene, ethylbenzene, xylene, (BTEX) and total petroleum hydrocarbons (TPH). Benzene concentrations were detected above regulatory limits. A Risk Assessment was conducted and submitted to the Department in June 1996. Texaco recommended abandoning monitoring wells and requested that the DEQ grant the site closure. The Department identified several deficiencies and requested additional sampling be conducted.

Progress

A remediation plan (non-risk-based) was approved in May 2001. Remediation and monitoring of the facility continued.

What's Next?

Remediation and monitoring of the facility will continue.

Texaco R&M Inc. (Equilon LLC)

RCRA Generator Clean Up Site

Woodward, Woodward County

Status Closure

DEQ Contact Person: Askari Zaidi (405) 702-5145

Background

The G.W. Gentry Facility site was initially leased from the Atchison-Topeka and Santa Fe Railroad in 1932. Texaco retained operations until the early 1980s. G.W. Gentry subleased the property from Texaco around 1983. The property was decommissioned in the early 1990s. Petroleum products were stored in above ground storage tanks with retaining walls and under ground storage tanks for subsequent wholesale distribution to local suppliers. The underground storage tanks stored diesel and were last used in the 1950s. The warehouse was used to temporarily store 55-gallon drums of motor oil. Soil and ground water samples show benzene, toluene, ethylbenzene, xylene, (BTEX) and total petroleum hydrocarbons (TPH). Benzene concentrations were detected regulatory limits. A Risk Assessment was conducted and submitted to the Department in June 1996. Texaco recommended abandoning monitoring wells and requested that the DEQ grant the site closure. The Department identified several deficiencies and requested additional sampling be conducted.

Progress

Remediation and monitoring of the facility continued. A remediation plan (non-risk-based) was approved in May 2001.

What's Next?

Remediation and monitoring of the facility will continue.

Union Pacific Railroad Company

Voluntary Clean Up

Kingfisher County

DEQ Contact Person: David Cates, (405) 702-5121

Background

On April 27, 1995, a Union Pacific Railroad Company (UPRR) train derailed less than a mile south of the Cimarron River near Kingfisher. Approximately 3,000 gallons of carbon tetrachloride (CT) were released. Emergency clean up of the spill occurred immediately. Approximately 300 cubic yards of contaminated soil were excavated, and treated by soil venting to reduce carbon tetrachloride concentrations to below risk levels. Not all CT was recovered in the emergency response. In July 1995, UPRR signed an Order with the DEQ to investigate and remediate the spill site. Between April and July 1995, 12 monitor wells a soil gas survey conducted to determine CT in the ground water. A dissolved plume of CT in the ground water. Three air sparging/soil venting (AS/SV) fences were installed to control the CT migration. The in-situ AS/SV continues.

A Phase II investigation to determine the vertical extent of the CT migration within the subsurface and to identify potential migration pathways was reviewed by the DEQ. Additional investigations evaluated the possibility of the plume reaching the City of Kingfisher's municipal water well field located on the other side of the river. The investigation showed the well field is safe at this time, but monitoring will continue.

Progress

The water supply pipeline from Kingfisher's well field was checked and no CT was found. The far east AS/SV trench was abandoned due to ineffective CT removal. CT concentrations continue to decline in the source area. Though reduced concentrations of CT have been observed over time, the daughter product, chloroform, was detected at two monitor wells. The CT plume continues to disperse and degrade as it moves down gradient. No CT has been observed at the downgradient monitor wells, in the Cimarron River, or at the sentinel well on the north side of the river. Stressed vegetation (alfalfa) growing above the CT ground water plume was reported but samples of alfalfa showed no CT. The cause of this phenomenon has not been explained and the alfalfa field was converted to wheat by the landowner. Also, CT was observed at one of the water wells located near the farmhouse south of the spill site. The appearance of CT here may be the result of well pumping or evapotranspiration by a grove of trees pulling the CT plume in a side gradient direction.

What's Next?

Continued monitoring and evaluation of the effectiveness of the remedy are planned. Negotiations for institutional controls are in progress and a risk-based closure for the site is being pursued.

Union Pacific Resources Land Treatment Unit

RCRA Generator Clean Up Site

Enid, Garfield County

Status: Preliminary Investigations

DEQ Contact Person: Hillary Young, (405) 702-5106

Background

The Land Treatment Unit (LTU) is part of the closed Union Pacific Resources (UPR) refinery, which operated from 1917 until 1984. The LTU is located in the far northeast corner of the old refinery site. It began operation in 1976 to treat hazardous sludge from the wastewater treatment units and other refinery-related oily waste. The LTU is comprised of 17 acres divided into six Land Treatment Unit Plots. LTU plots 1, 2, and 3 were permitted under RCRA Interim Status to receive hazardous waste streams. The hazardous constituents expected in the wastes that were land treated are; benzene, chrysene, phenols, pyrene, chromium and lead. LTU plots 4, 5, and 6 were permitted in 1986 for nonhazardous land treatment of sludge from bio-oxidation ponds. The plots later inadvertently received a recently listed hazardous sludge during pond closure activities. LTU plots 1, 2, and 3 last received hazardous waste in 1988 and were closed pursuant to a post-closure permit in 1989. LTU plots 4, 5, and 6, received the last waste in April 1994, were closed by 1998, and incorporated into the post-closure permit along with LTU plots 1, 2, and 3 in November 1998.

Progress

The extent of the impact has been well characterized and defined. All constituents were below detection limits since post-closure monitoring began.

What's Next?

UPR will continue post-closure ground water monitoring.

Vance Air Force Base

RCRA Corrective Action

Enid, Garfield County

Status: RFI approved

DEQ Contact Person: Bob Welch, (405) 702-5112

Background

Vance AFB opened in 1941 as a basic flying school. Multiple releases of solvents used in maintenance operations and fuel used for airplanes and other vehicles have occurred. Trichloroethylene and methyl ethyl ketone were the primary contaminants released from leaking underground storage tanks. Since 1996, Vance has had a post-closure permit requiring appropriate action on SWMUs on the base. It was later discovered that a contaminant plume had migrated off base to the north. Enid bought the contaminated land and deeded it to Vance so that the contamination would be within the boundaries of the base. The RFI was approved in March 1999.

Progress

Interim corrective measures for North Site 7 was approved. Investigation of the new area is ongoing and when it is completed a work plan for a remediation alternative will be submitted.

What's Next?

DEQ is awaiting a remedial design for the interceptor trench at the intermediate water-bearing zone on the north side of the base.

Willey Ranch Site

Voluntary Clean Up

Near Ringwood, Major County

Status: After Action Monitoring

DEQ Contact Person: Ray Roberts (405) 702-5137

Background

This 320-acre site southwest of Ringwood, near the Cimarron River, has ground water with high chloride concentrations that could affect the Enid public water supply wells. Although the chloride contamination had not affected the quality of Enid's public water supply, the wells east of the site were not used for a time to prevent drawing the chlorides toward the well field. The chloride contamination is from historical saltwater injection wells and/or other oil production activities conducted by Tenneco now Mesa Mid-Continent Limited Partnership (Mesa). Mesa conducted investigations that detected significant levels of chlorides in the ground water.

In 1993, Mesa entered into a consent agreement with the DEQ to remediate the chloride contamination. The remedy called for pumping contaminated ground water and discharging it to the Cimarron River, which has naturally occurring chloride concentrations higher than has been found in the ground water. A National Pollutant Discharge Elimination System permit was issued by the DEQ in 1995. Pumping of the recovery wells and discharge of the water into the Cimarron River began in March 1995. Based on pumping and discharge results the DEQ has approved discontinuing the remedial action. Two years of quarterly sampling data from the monitoring wells was gathered. The site was evaluated for closure. The Remedial Action was completed and closure was granted on July 10, 2000.

What's Next?

No further action is anticipated. This will be the last report for this site.

Northeast Region

Osage, Washington, Nowata, Craig, Ottawa, Rogers, Delaware, Mayes, Delaware, Wagoner, Cherokee, Adair, Ofuskee, Okmulgee, Muskogee and Sequoyah Counties.

Cavenham Forest Industries, Inc. (CFI) formerly Crown-Zellerbach

RCRA Generator Clean Up Site

Sallisaw, Sequoyah County

Status: Monitoring

DEQ Contact Person: Askari Zaidi, (405) 702-5145

Background

Cavenham Forest Industries (CFI) produced treated wood products using the preservatives pentachlorophenol and creosote. The manufacturing plant is no longer active and CFI has completed closure of a system of surface impoundments that were used for treatment of waste waters. CFI currently maintains a closed landfill that has a 1991 post-closure permit for maintenance and monitoring which has shown no contamination, and closed surface impoundments that are under corrective action. A revised corrective action plan was approved in 1995. The residual subsoils were excavated, treated and replaced. Work continued through 1997 and the Soil Corrective Action Report was submitted in 1998.

Progress

Ground water monitoring continued to confirm the ground water clean up.

What's Next?

Monitoring will continue until the wells are clean.

Centrilift (formerly Hughes Centrilift)

RCRA Generator Clean Up Site

Claremore, Rogers County

Status: Operation and Maintenance

DEQ Contact Person: Askari Zaidi, (405) 702-5145

Background

Centrilift manufactures submersible pumps for the petroleum industry. Some releases occurred from underground storage tanks and from a drum storage area in the 1980s resulting in localized soil and ground water contamination. A closure plan was approved in November 1991. Since clean closure was not possible, a post-closure plan was approved in January 1993.

A ground water recovery and treatment system was implemented. Volatile hydrocarbons were stripped from the recovered ground water and exhausted to the atmosphere. The stripped water was then discharged to the City of Claremore sewer system.

In August 1996, DEQ approved installation of an air sparging/vapor extraction system. Ground water monitoring wells were installed and are monitored regularly to determine the effect of the ongoing remediation.

Progress

Semiannual sampling continued. A monitoring report was submitted in July 2001.

What's Next?

Monitoring will continue and the facility will submit a risk assessment plan for DEQ review and approval.

Coltec, Inc.

Voluntary Clean Up

Sallisaw, Sequoyah County

Status: Remedial Investigation

DEQ Contact Person: Ray Roberts, (405) 702-5137

Background

The Borg Warner Automotive Plant (formerly Coltec, Inc.) plant produces automotive parts. Initial investigations in 1995 revealed perchloroethylene (PCE) in the ground water. An area of soil near a vapor degreaser also showed contamination. The degreaser was taken out of service in 1995, and contaminated soil excavated. The Remedial Investigation indicates that a small area of soil contamination remains, beneath the concrete floor of the building. One monitor well in the Boggy Formation continues to show PCE contamination in the ground water.

Progress

The Remedial Investigation is complete. PCE was detected in two additional monitor wells. Two more monitor wells were installed to define the extent of the contaminant plume.

What's Next?

Quarterly ground water monitoring is being conducted as part of the Feasibility Study to determine the applicability of various remedial options.

Eagle-Picher EOM

RCRA Generator Clean Up Site

Quapaw, Ottawa County

Status: Monitoring

DEQ Contact Person: Askari Zaidi (405) 702-5145

Background

Eagle-Picher EOM (E-P) has been in operation since 1961. Its operations include primary and secondary refining of germanium and gallium, growth of single crystal silicon and the fabrication of gallium arsenide infrared parts. E-P has two permits, an Operations Permit for the operating units and a Post-Closure Permit for an eight acre closed surface impoundment. E-P is located in a lead and zinc mining area and has local ground water contamination. E-P submitted a corrective action plan to install a slurry wall down gradient of the closed surface impoundment to collect, remove and treat the contaminated ground water. The plan was approved in 1994. After installation of the slurry wall, new ground water monitoring wells were installed and are being monitored.

Progress

Monitoring of the wells continues. A partial closure plan for tanks was submitted and approved in July 2000.

What's Next?

Monitoring will continue until the wells meet clean up requirements. Another remedial proposal may be submitted if the wells are not being cleaned up to the required degree within the expected timeframe.

Kusa Smelter Site

Voluntary Clean Up

Dewar, Okmulgee County

Status: Site Characterization

DEQ Contact Person: Scott Stegmann, (405) 702-5118

Background

The 80-acre site located approximately one mile southeast of Dewar, was the location of a horizontal retort smelter that processed zinc ore. The smelter operated from approximately 1915 to 1928. US Zinc Company, a former subsidiary of ASARCO, Inc., leased and operated zinc-smelting facilities in Kusa during the early 1920s. Initial investigations revealed high concentrations of lead, zinc, and arsenic in the soils. The work to be performed includes the necessary investigations and plans to develop and implement site remediation. ASARCO voluntarily entered into a Consent Order (CO) with the DEQ in January 1997 to perform a site investigation, and, if necessary, develop a remedial plan. The CO stipulates the work to be performed at the site with the DEQ providing oversight.

Progress

ASARCO submitted a Remediation Plan to DEQ for review and approval by DEQ.

What's Next?

DEQ will review and comment on the Remediation Plan. Once the plan is approved ARCO will sign an agreement for the remediation

Madewell Metals, Inc. (SES Land Corporation)

Generator Clean Up Site

Muskogee, Muskogee County

Status: Closure

DEQ Contact Person: Sam Ukpaka (405) 702-5148

Background

Madewell Metals is a former spent lead-acid battery breaking/reclamation facility located in Muskogee, Oklahoma. Operations began around 1967 in the original processing building, and in 1989, the processing operations were transferred to a new building located at the same site. The spent lead-acid battery breaking/reclamation process generated two hazardous waste streams: lead plates/lead oxides and sulfuric acid.

The Madewell facility was cited for several violations in 1988 and 1989 that resulted in two OSDH enforcement orders. Madewell's closure plan for hazardous waste management units at the older facility was approved June 1990. Waste piles and tank system removal were to be completed by February 1991. But, Madewell never provided the required analytical results and closure certification to the Department. As part of the OSDH approved closure requirements a site characterization report was completed by Gulf-Pacific Engineering in December 1993. Madewell Metals, Inc. was sold to SES Land Corporation. Thereafter, SES began negotiations with the DEQ to address site contamination and closure activities. Building surfaces, equipment, soils, and ground water at the site and off site were contaminated. The contaminants were: lead, antimony, cadmium, chromium, arsenic, and pH. After several closure plan modifications, closure activities were completed in 1997. SES submitted a closure report in May 1997. The DEQ approved the risk-based closure (industrial risk-based levels) of the site in January 1998.

Progress

Monitoring of the ground water continued.

What's Next?

Monitoring of the ground water will continue.

National Zinc

Voluntary Clean Up

Bartlesville, Washington County

Status: Remedial Action

DEQ Contact Person: Dennis Datin, (405) 702-5125

Background

Historical air emissions from this Bartlesville metal smelting facility contaminated soils in the surrounding area with lead, cadmium, and other heavy metals. Contaminated soils were found in 29 public use areas that included schools, day-care centers, public parks and residential areas. Contaminated soils in public use areas were remediated through the first Removal Action conducted by the EPA's Emergency Response Program. Before determining whether the site should be placed on the NPL, EPA provided the State an opportunity to participate in a pilot project that would allow the PRPs and the DEQ to perform the RI/FS and RD in lieu of EPA. The PRPs entered into a Consent Agreement and Final Order with the DEQ for remedial activities in April 1994.

In the spring of 1994, removal Action of contaminated soil in residential areas began. The PRPs under EPA oversight conducted this second Removal Action. Soil samples have been collected across the project area encompassing approximately eight square miles.

The DEQ divided the site into two remediation operable units. The first - residential, commercial, and industrial properties - is intended to be protective of human health. The second unit consists of areas that may be ecologically sensitive. These areas are mostly undeveloped properties and streams that serve as wildlife habitat.

In December 1994 the selected remedy required removal of soils impacted in residential areas, followed by restoration of the residential yards. In response to public comments to the remedy, a program to monitor blood-lead levels was included. The remedy for the first unit began in August 1995. Approximately 160 properties were cleaned from August, 1995, through November 1, 1995. From April to October 1996, more than 300 properties were remediated.

The cleanup of the upper reach of no name creek started in December, 1997 and was completed in the second quarter of 1998.

Progress

The Union Pacific Railroad right-of-way remedial action has taken place. The SK&O and CAFO railroad property is being remediated.

What's Next?

The ecological remedy closeout report is being reviewed and the five-year review is being prepared.

Land Protection Staff
sampling for
metals contamination



Okmulgee Refinery

Voluntary Clean Up

Okmulgee, Okmulgee County

Status: Awaiting Site Assessment

DEQ Contact Person: Ray Roberts, (405) 702-5137

Background

This 240-acre petroleum refinery operated from as early as 1909 until 1983. The refinery was not closed properly due to the bankruptcy of Basin Refining, a former owner. Investigations indicate the presence of asbestos, acid sludge pits, API separator pits, settling ponds, miscellaneous drums and chemicals, buried drums, tank bottoms, and hydrofluoric acid. An ecological survey of Okmulgee Creek reported lower diversity near the refinery than at the upstream and downstream stations. Phillips Petroleum Company owned the site from 1930 to 1966 and agreed to lead the clean up effort to turn the site into an industrial park. The Okmulgee Area Development Corporation, (OADC) the current owner, is joining Phillips in the project. Phillips Petroleum, the OADC and the DEQ entered into an Agreement for investigation and remediation of the site in December 1997. A public meeting to present the remediation plan was held in April 1998 and again in August, 2000. Site security was improved. Phillips inventoried and removed chemicals in the on site laboratory, sample building, specialty building and emulsion building. Asbestos abatement was conducted. All tanks, buildings, lines, vessels and drums have been removed. All API separator pits have been cleaned.

Progress

Quarterly sampling of new ground water monitoring wells was conducted to determine the conditions on the perimeter of the site and to help determine the degree of any off site impacts. Field work for the Site Investigation was completed.

What's Next?

The results of the site investigation will be reported and remedies selected. The DEQ, Phillips and OADC are meeting on a regular basis to discuss the progress at this site.

Phillips Research Center

RCRA Generator Clean Up Site

Bartlesville, Osage County

Status: Operation and Maintenance

DEQ Contact Person: J. David Lawson, (405) 702-5104

Background

Phillips Petroleum Company operated a research and development facility with both laboratory and/or pilot plant work in the areas of geology, geophysics, petroleum production, hydrocarbon processing, petroleum products, refining and separation, organic chemicals, plastics and catalysts. A RCRA Facility Investigation identified several Solid Waste Management Units (SWMUs).

Progress

These SWMUs were subsequently determined to require "no further action" or were closed after removal of contamination. Also, within the last few years, two separate storage areas and an incineration unit for hazardous waste were closed under approved closure plans.

What's Next?

Monitoring and maintenance of the remediated closed areas will continue.

Tar Creek Superfund Site

NPL Site

Ottawa County

Status of Ground Water Operable Unit: After Action Monitoring

Status of Surface Waste Operable Unit: Remedial Action

DEQ Contact Persons:

Ground Water Operable Unit - David Cates, (405) 702-5121

Surface Waste Operable Unit - Dennis Datin, (405) 702-5125

Site History

The Tar Creek site encompasses 40 square miles in far northeastern Oklahoma and affects the towns of Quapaw, Commerce, Picher, North Miami, and Cardin. This site is part of the former Tri-state Mining Area that covers parts of northeastern Oklahoma, through southeast Kansas, and into southwest Missouri. Extensive lead and zinc mining from the early 1900s through the 1960s resulted in the formation of acid mine water that has contaminated the shallow ground water and surface water with iron, sulfate, zinc, lead, and cadmium throughout the Tar Creek site.

Ground Water Operable Unit

Background

Acid mine water discharge into shallow ground water beginning in the early 1980s contaminated Tar Creek. The site was placed on the NPL in 1983 and became Oklahoma's first Superfund site. The 1983 RI/FS focused on ground water and surface water quality and an inventory of mining waste tailings (chat piles). The potential for contaminated water to migrate into the Roubidoux aquifer, a primary drinking water source was significant concern. The remedy described in the 1984 ROD included construction of diversion dikes to reduce water recharge into the mines and plugging eighty-three abandoned Roubidoux wells. A monitoring plan to assess effectiveness was also included in the remedy. The RA was completed in December 1986.

EPA's five-year review concluded that diverting surface water away from the mines had no effect on the quality or quantity of acid mine discharges into Tar Creek and that discrete sampling of the Roubidoux aquifer would be necessary to determine the effectiveness of well-plugging. The review recommended no further action on the surface water, but suggested the DEQ should continue ground water investigations on the wells impacted by shallow mine water/ground water contamination in the cities of Picher, Quapaw, and Commerce. The EPA also recommended another RI for human health concerns related to direct contact with mining wastes, thereby creating the Surface Waste Operable Unit.

Progress

DEQ continues to monitor Roubidoux wells to determine the impact of mine water on the aquifer. A new supply well continues to produce good quality water. Monitoring of other wells shows some increasing trends for iron and other parameters that indicate local contamination of the Roubidoux Aquifer

What's Next?

Monitoring will continue and will help DEQ determine whether other actions are needed. Fifteen old wells will be plugged. DEQ will prepare a report that evaluates all the monitoring data and make recommendations for the next actions.



Residential Operable Unit

Background

In 1994, EPA designated a new Surface Waste Operable Unit to assess the health risks of mine tailings (chat) and the former flotation ponds. Several blood-lead studies conducted in the area showed that 34% of the 192 Native American children tested had blood-lead levels higher than the 10 mg/dl standard.

This high percentage of elevated blood-lead levels in Native American children residing in the Tar Creek area prompted EPA to remove contaminated soil from high access area starting in 1995. Residential soils with lead levels 1500 ppm or greater were removed. Following the RI/FS the August 1997 remedy of removal of soil with lead levels 500 ppm or greater started. The Emergency Response Action transitioned to the Remedial Action in February, 1998.

Progress

Approximately 1,590 residential properties have been remediated to date. EPA sampled high access areas (schools, daycare centers, and parks etc.) and residential soils in Miami, in March 2001 and showed that 90% of the samples were above the remedial action level of 500 ppm.

What's Next?

Work will continue on the remaining 600 yards. A more detailed investigation of high access areas in Miami and surrounding areas is scheduled to begin in first quarter of 2002.

Non Residential Operable Unit

Background

The mining waste, mostly chat piles and mill ponds, is the focus of this operable unit. EPA initiated discussion with the PRPs for them to investigate the mining waste in 2000. EPA continues to negotiate with the PRPs.

US Zinc Company Smelter Site

Voluntary Clean Up

Henryetta, Okmulgee County

Status: Site Characterization

DEQ Contact Person: Scott Stegmann, (405) 702-5118

Background

The site is in Henryetta, just west of US Highway 75 at the current location of G&H Decoy Manufacturing Co. The site is a former horizontal retort smelter that processed zinc ore. The smelter operated from approximately 1916 to 1928. In 1918, US Zinc Company, a former subsidiary of ASARCO, Inc., purchased the 18-acre parcel and operated the zinc smelting facility beginning in the early 1920s. Initial investigations reveal high concentrations of lead and arsenic in the soils.

ASARCO voluntarily entered into a Consent Order (CO) in January 1997 to conduct a site investigation, and develop a remedial plan. The CO stipulates the work to be performed at the site with the DEQ providing oversight.

Progress

ASARCO submitted a Remediation Plan to DEQ for review by DEQ.

What's Next?

DEQ will review and comment on the Remediation Plan. Once the plan is approved ASARCO will sign a CO to clean up the site.

Zinc Corporation of America

RCRA Generator Clean Up Site

Bartlesville. Washington County

Status: Active Remediation

DEQ Contact Person: David Lawson, (405) 702-5104

Background

The Zinc Corporation of America (ZCA) operated a zinc refinery in Bartlesville, Oklahoma, producing various metals from the refining of zinc concentrates, secondary materials, and other zinc rich materials. Prior to July 18, 1991, solid wastes generated from the refining and processing activities conducted at the Facility were exempt from regulation as hazardous wastes under RCRA

The law changed and the Oklahoma Department of Health (OSDH), now the DEQ, notified ZCA that certain solid wastes generated at the Facility would be regulated as hazardous wastes effective July 1991. Subsequent to becoming subject to RCRA, ZCA submitted RCRA permit applications to the DEQ.

A RCRA Facility Assessment (RFA) identified certain historical units that may contain hazardous constituents (SWMUs). The RFA recommended that a total of thirty-seven (37) of these SWMUs be investigated by performing an RFI.

In September, 1993, ZCA and the EPA signed a RCRA Administrative Order on Consent (AOC) to perform an RFI as well as Interim Measures and a Corrective Measures Study (CMS). The AOC included provisions that allowed EPA to direct ZCA to implement Subsequent Interim Measure.

The RCRA Operations Permit, replacing the AOC, was issued to ZCA by the DEQ, effective July, 1995. The permit allows operation of one landfill to dispose of wastes generated at the facility. In issuing this permit, DEQ incorporated the technical provisions of the AOC. This provides the facility with greater on-site waste management flexibility during RCRA corrective measures.

ZCA's RCRA Operations Permit was modified in October, 1997 to adopt the final remedy from the Corrective Measures Study (CMS) Report and Summary. It also established the specifications for use of off site soils affected by the past operations of the facility, and expanded the boundaries of the CAMU to include all inactive portions of the facility.

Progress

In the Class II Area concrete work was completed on some areas as well as subgrade preparation for asphalt paving and continued cap construction. In the Class IV Area vegetation removal and construction of the multimedia cap began. Construction of the embankments continued.

What's Next?

Concrete and utility work in Class II Area will continue. In Class IV Area construction of the multimedia cap will continue. Construction of the embankments will be completed.

Southwest Region

Caddo, Canadian, Grady, McLain, Cleveland, Lincoln, Pottawatomie, Seminole, Harmon, Jackson, Kiowa, Comanche, Tillman, Cotton, Stephens and Jefferson, Counties.

Allied Materials Corporation

RCRA Generator Clean Up Site

Stroud, Lincoln County

Status: Post-Closure Maintenance

DEQ Contact Person: Hillary Young, (405) 702-5106.

Background

The Allied Materials Corporation Refinery operated from the 1930s to 1984. Since 1984 the majority of the refinery has been dismantled and removed from the site. All remaining equipment was purchased by Tamko Asphalt Company. Koch Asphalt Company is currently leasing and operating the active portion of the refinery. During the active life of the refinery, lube oils, diesel fuel, jet fuel, and asphaltic roofing materials were produced. Sludges were placed in impoundments and the asphalt shingles were placed in landfills.

Closure activities began in July 1986 and were completed in 1989. Closure included construction of two new landfills, each with double synthetic liners and caps and a leachate collection and leak detection system. During the construction of these landfills, the old impoundments and landfills were excavated. The excavated material was mixed with cement kiln dust to neutralize the acid and was processed with a pulverizer prior to being placed into the new landfills. Once excavation was complete, a synthetic liner was placed on top, covered with a clay cap and top soil. After construction was completed, an additional eleven monitoring wells were drilled. Allied conducts semi-annual monitoring, leachate collection and landfill maintenance as a part of its post-closure permit.

Progress

Allied continued with the semiannual monitoring, leachate collection and landfill maintenance .

What's Next?

Allied will continue with semiannual monitoring, leachate collection and landfill maintenance .

Cimarron Aviation

RCRA Generator Clean Up Site

El Reno, Canadian County

Status: Post Closure Monitoring

DEQ Contact Person: Bob Welch, (405) 702-5112

Background

The El Reno Airpark was owned and operated during the 1940s by the Federal government and was used for pilot training during World War II. All three sewage lagoons at the El Reno Municipal Airpark were constructed during this time. The City of El Reno acquired the property in 1948 and formed the El Reno Airpark Authority to manage the property in 1986. Facilities within the Airpark are leased to tenants by the El Reno Airpark Authority.

Cimarron Aviation, an airplane refurbishing and painting business, began operations at the Airpark in 1970. In January, 1990, representatives of the OSDH (now DEQ) inspected the El Reno Airpark and determined the Airpark to be the owner of unpermitted hazardous waste impoundments in noncompliance with regulations.

Cimarron Aviation had reportedly been discharging industrial waste substances into the unpermitted sewage lagoons. In July, 1990, OSDH issued an Administrative Order which required the city to cease wastewater treatment operations and to close the disposal facility in accordance with RCRA. Two of the three lagoons were closed by stabilizing the sediment and installing a cap. The third lagoon had only minor contamination and was not closed. The final cap construction was approved in November, 1997.

Progress

Post closure monitoring of the cap and annual water samples from the headwaters of a nearby stream have been terminated and a final closure approved.

What's Next?

The site will be closed out. This is the last report for this site.

Dowell-Schlumberger

RCRA Risk-Based Corrective Action Site

El Reno, Canadian County

Status: Operation and Maintenance

DEQ Contact Person: Bob Welch, (405) 702-5112

Background

Dowell-Schlumberger El Reno is located approximately 1 mile south of El Reno, Oklahoma on a 17-acre parcel of land. The facility provides products and services for cementing and stimulating oil & gas wells.

Four underground storage tanks (USTs) that stored diesel, gasoline, and waste oil were removed during June 1989. During removal, the soil was monitored with a photoionization detector (PID) to detect any potential release of volatile organic constituents from the tanks. Areas with elevated PID readings were excavated until acceptable readings were obtained. Water from the pit containing the waste oil tank indicated high levels of 1,1,1-trichloroethane and 1,1-dichloroethane; both common degreasers used in machine and repair shops.

A general site investigation conducted in 1990, consisting of soil vapor survey, soil sampling, and temporary ground water monitoring wells, showed elevated levels of volatile organics in ground water and soil vapor in two separate locations. Borings were drilled to ground water to establish direction of flow. Natural attenuation was determined to be a viable means of remediation. Seven wells are used to monitor the natural attenuation of the ground water at the facility. The monitoring program consists of quarterly monitoring for one year and semiannual monitoring thereafter until three consecutive sampling events exhibit consistent concentrations below the approved limits. The facility completed the first year of quarterly ground water monitoring December 1998. Semiannual sampling is planned for the next several years,

Progress

Monitoring to measure natural attenuation continued.

What's Next?

Monitoring will continue annually until three consecutive sampling events exhibit consistent concentrations below the approved limits.

Duncan Refinery

Voluntary Clean Up

Duncan, Stephens County

Status: Interim Action / Remedial Investigation

DEQ Contact Person: Ray Roberts (405) 702-5137

Background

The Duncan Refinery occupies approximately 400 acres located five miles south of Duncan. The facility began as the Rock Island Oil and Refining Company, built in the early 1920s as an aviation fuel producer. The refinery went through several expansions and changes in ownership before Tosco Corporation purchased the facility in November 1980 from Sun Petroleum Company. While active, the refinery manufactured automotive gasoline, diesel fuel, and various grades of fuel oil, along with liquid propane gas, petrochemical feedstock, and petroleum coke. The refinery had a rated capacity of 55,000 barrels of oil per day. Operations ceased in July 1983. RCRA closure activities were conducted until 1986 when the property and contents were sold to Alpha Oil.

In September 1995, Tosco Corporation entered into a Consent Order with the DEQ to conduct an investigation and propose a remedy for the contaminated portions of the site. As an interim action, Tosco installed a cut off wall to intercept and allow the removal of the hydrocarbon plume that was discharging into Claridy Creek. Stabilization with riprap of the west bank of the creek was completed to prevent erosion of the creek into the cut off wall and recovery system. Field activities for the Phase I investigation were completed. A draft RI report was submitted in June 1998. Evaluation of this document was completed. Phillips Petroleum recently purchased the TOSCO corporation and is negotiating the cleanup activities with the DEQ.

Progress

The DEQ conducted regular site inspections of the oil interceptor system adjacent to Claridy Creek. The hydrocarbon plume is being withdrawn by a series of extraction wells. During site inspections, the DEQ noted problems with leaking drums, chemicals in an on-site laboratory, the possible presence of hydrofluoric acid in the alkylation unit, and numerous seeps into the creek and unnamed tributaries. In addition, waste pits were found to be breached and the wastes no longer adequately contained. A number of interim actions have taken place to address these issues. An Expanded Site Inspection (ESI) was conducted to determine the potential to rank the site on the National Priorities List. EPA is reviewing the ESI

What's Next?

Additional interim actions are planned. A work plan for a Phase II Remedial Investigation is being developed.

El Reno Federal Correctional Institution

RCRA Generator Clean Up Site

Canadian County

Status: Compliance Monitoring

DEQ Contact Person: Bob Welch, (405) 702-5112

Background

In July of 1993 the El Reno Federal Correctional Institution (ERFCI) identified three landfills and four lagoons that had received or were suspected of receiving hazardous materials generated at the facility. In December 1995, a Consent Agreement and Final Order was signed by ERFCI. Subsequent investigations showed that the lagoons contained contaminated sediment. The sediment was subsequently stabilized and hauled to a permitted landfill. The lagoons were backfilled with dirt, capped with clay and soil, and seeded with native grasses.

Progress

Quarterly inspection and ground water monitoring reports were completed.

What's Next?

Quarterly inspection and ground water reports will be prepared and submitted to DEQ

Gemini Coatings, Inc.

RCRA Generator Clean Up Site

El Reno, Canadian County

Status: Post Closure Monitoring

DEQ Contact Person: Bob Welch, (405) 702-5112

Background

Gemini Coatings is a paint manufacturing facility situated in an industrial area bounded by the main railroad line and industrial/commercial properties. An area previously used to store solvents had underground piping that apparently leaked, resulting in contaminated ground water. The main contaminants are 4-methyl-2-pentanone and toluene. A ground water recovery system to prevent off site migration of the contaminated water was installed in 1993.

Progress

Pumping and treatment was discontinued. Monitoring shows the plume is contained on site and is decreasing in concentration.

What's Next?

The plume will continue to be monitored and reports submitted to DEQ.

Halliburton Industrial Services - Osage Road Facility

RCRA Generator Clean Up Site

Duncan, Stephens County

Status: Operation and Maintenance

DEQ Contact Person: Dutchie Young, (405) 702-5107

Background

The Halliburton Osage Road Facility is a currently inactive facility. No regulated hazardous waste has been handled there since the summer of 1989. During the life of the facility, Halliburton received military rocket and missile motor cases and was responsible for removing the characteristically hazardous ammonium perchlorate propellant (Class B Explosive) and the liner from each motor case. Water was hydrojetted into the case at 6000-8000 psi to remove the propellant. The propellant was collected in 30-gallon aluminum containers, and the water was recycled back to the water storage tank and used until it became dirty. Waste water was pumped into a lined evaporation lagoon with a "no discharge" NPDES permit. The propellant and liner were taken to unlined earthen pits and ignited.

In 1993, Halliburton prepared a closure plan to address the inactive burn pits, PVC line, evaporation pond, concrete pad, missile cleaning equipment, concrete basin (sump), and container storage area. Closure began in the summer of 1993. Liquids, ash and sludge removed from the evaporation pond, burn pits, and sump, respectively, were determined to be nonhazardous through testing and disposed of appropriately. Thirty-three soil borings were taken around the burn pits, and soils beneath the liner of the pond were tested. There were no indications of contamination in the soils.

Seven wells were installed to monitor the ground water beneath the burn pits for approximately five years.

Progress

To date, no statistically significant increase (or pH decrease) in the monitored parameters has been indicated. The facility is in the final year of ground water monitoring.

What's Next?

If no increases are indicated by the end of the monitoring period, Halliburton may petition for final closure of the site.

Hardage Criner

NPL Site

McClain County

Status: Remedial Action for Ground

Water and Operation and Maintenance of the Cap

DEQ Contact Person: Hal Cantwell, (405) 702-5139

Background

Located near Criner in McClain County, this site operated as a commercial disposal facility for industrial wastes from 1972 to 1980. It covers about 80 acres and consists of several surface impoundments and a drum burial area. It was proposed to the NPL in 1981. Compounds detected on the site include pesticides, solvents, alcohols, acids, caustics, and heavy metals. Due to technical disagreements between EPA, the State, and the PRPs, in August 1990, the federal District Court in Oklahoma City selected the remedy.

The remedy included the following features: waste source control via extraction and off-site incineration of known pools of liquid followed by installation of a cap over the remaining wastes; containment of contaminated ground water flowing towards North Criner Creek by intercepting, extracting, and treating on site; and natural attenuation of contaminants already present in sandy, water-bearing soil beneath North Criner Creek.

The remedy began in early 1994. The ground water Interceptor Trench (V-Trench) was installed and became operational upon completion of the water treatment plant. The composite cap over the waste source areas was finished, and the cap on top of the Barrel and Sludge Mounds and the Main Pit was also installed. The Mounds Liquid Recovery System to extract pumpable liquids from the source areas and the off site incineration of those liquids is complete. The Southwest Interceptor Wells were installed; and construction of the Ground Water Treatment System, which began in early 1994, was finished. The installation of the disposal well for treated water is complete. Contaminated ground water seeps were discovered in the Northwest Barrow Area in mid-1996. The Final Report on the Northwest Barrow Area review has been completed, an evaluation of remedial alternatives was performed and phytoremediation was selected as the most appropriate remedy.

Progress

Barrel and sludge mound liquids continue to be extracted and shipped off site for disposal. V-trench and southwest well water is pumped and treated regularly. Monitoring of the Northwest Barrow Area continued and a phytoremediation system was designed and implemented in the Northwest Barrow Area. Monitoring shows the plume has not expanded and the remedy is functioning as designed.

What's Next?

Full operation of the remedy will continue.

Newcastle Land Company

RCRA Risk-Based Corrective Action Site

McClain County

Status: Operation and Maintenance

DEQ Contact Person: Askari Zaidi, (405) 702-5145

Background

The Newcastle Land Company site was originally the location of a lagoon used for drilling mud disposal. It later became an illegal dump used for the disposal of numerous other waste streams. The lagoon came to the attention of DEQ in 1990, when a review of the findings revealed an apparent release of hazardous constituents to the ground water beneath the site. A Consent Decree was issued in October, 1992 requiring remediation of the lagoon. Low pH and high lead concentrations were discovered in the mud and water found in the surface impoundments. Newcastle Land Company removed the source of contamination, stabilized the hazardous waste in the impoundments, and capped the site with asphalt to prevent continued impact to the ground water. Monitoring wells were installed to evaluate the organic and heavy metal contamination in the ground water beneath the site and to monitor the impact over time. Newcastle Land Company completed the initial four quarters of ground water monitoring in April 1998. Monitoring reports are submitted annually

Progress

Monitoring of the remedy continues.

What's Next?

Annual monitoring will continue.

A Hazardous Waste Sample



Oklahoma Refining Company

NPL Site

Cyril, Caddo County

Status: Remedial Action

DEQ Contact Person: Angela Brunsman, (405) 702-5135

Background

The Oklahoma Refining Company (ORC) site, located in Cyril, is an abandoned oil refinery that encompasses approximately 160 acres. The refinery was active between 1908 and 1984. During the many years of production, wastes were placed in pits and impoundments on the refinery property, and leakage from crude oil tanks, product tanks, and surface impoundments occurred. This resulted in petroleum related contamination of soil, sediment and the shallow ground water beneath the site. Initial investigations were conducted from 1982-1986 and the site was added to the NPL on February 21, 1990.

The 1991 RI/FS showed extensive surface and subsurface contamination, including petroleum related organic compounds, heavy metals, and acidic and caustic materials. The remedy included containment of contaminated ground water by a well system ; removal light nonaqueous phase liquids (LNAPL); treatment and injection of extracted ground water into the contaminated aquifer to encourage in-situ bioremediation. Contaminated soil and sediment will be addressed by a combination of bioremediation, in-situ stabilization, and neutralization.

In December 1995, limited funding, coupled with information on the technical impracticality of full scale ground water containment, treatment and injection, resulted an agreement to postpone the ground water portion of the remedy. Both EPA and DEQ agreed that the waste source remedy was the most important aspect of the clean up. The ground water portion of the remedy was postponed indefinitely.

Remediation of the surface and subsurface wastes is complete. The bioremediation of the wastes from the Skimmer Ponds, process sewers, and sludge traps went as planned. All waste was placed in either the Hazardous Waste or Nonhazardous Landfills depending on the wastes characteristics.

Progress

Following waste remediation, grading and vegetating the site became the focus of the work. The Association of South Central Governments (ASCOG) provided assistance in revegetation of the site through the application of biosolids from the Anadarko Wastewater treatment plant. ASCOG applied 18,000 cubic yards during June 2001, of biosolid material to the former pitch pit area, the north ponds area, and the former biotreatment areas. The material was incorporated into the existing soil then seeded and fertilized. Final site cleanup is ongoing. A Pre-final Inspection was done October 2, 2001.

What's Next?

DEQ, DSC, EPA, and the oversight consultant will determine whether the work is substantial complete. Once complete, the consultant will submit a Final Completion Report. DEQ will maintain the landfill and sumps, monitor ground water and mow. The ground water remedy will be evaluated by EPA and DEQ to determine further cleanup needs. A public meeting and tour of the site is planned for January 2002.

Southeast Region

Garvin, Pontotoc, Hughes, McIntosh, Haskell, Pittsburg, Latimer, Le Flore, Carter, Murray, Coal, Atoka, Pushmataha, Love, Marshall, Bryan, Choctaw, and McCurtain Counties

Camrose Technologies

RCRA Risk-Based Corrective Action Site

Ada, Pontotoc County

Status: Operation and Maintenance

DEQ Contact Person: Hillary Young (405) 702-5106

Background

Camrose Technologies manufactures plastic, felt and rubber molding and seals for the automotive industry. In the process, various waste solvents are generated and stored in an above ground tank and in 55 gallon drums for disposal. In the 1970s and early 1980s, when the site was owned by General Tire Company, the facility apparently experienced leaking underground piping used to transfer waste methyl ethyl ketone (MEK), and other solvents, to an above ground storage unit. Contamination from spilled and leaked product in the handling of drums was also discovered in an area approximately 30 feet by 100 feet.

To address the contamination, the facility installed a ground water monitoring/remediation system consisting of approximately 15 wells, a recovery trench/french drain, a pump and treat system for the ground water and a passive soil vapor extraction system over a period from 1988 through 1994. The current remediation using an air sparge system has reduced the levels of contamination in a majority of the wells to non-detect limits. Analytical results are monitored closely by Camrose and DEQ personnel.

Progress

The air sparge system was shut down in April 2000 when all constituents had decreased below MCLs. In subsequent samplings, the constituents of concern rebounded as is common when air sparging is discontinued. Currently Camrose is still conducting semiannual groundwater sampling.

What's Next?

Monitoring will continue. Once levels are consistently found to be below levels of concern, DEQ will consider terminating the remediation activities.

Exxon Chemical

RCRA Generator Clean Up Site

Ada, Pontotoc County

Status: Monitoring

DEQ Contact Person: Askari Zaidi, (405) 702-5145

Background

Exxon operated a one-acre oilfield chemical storage and distribution facility that closed in 1991. The facility does not have any operating or closed units, but is only involved in corrective action activities for chromium and hydrocarbon contamination. This contamination resulted from spills. Initial spill clean up was started in 1988, a PA/SI was conducted in 1991, and removal action was approved in 1992.

Contaminated soils were removed, and a report submitted in 1993. Installation of monitoring wells was approved in 1994, and the remediation strategy was approved in 1995. As an alternate clean up program for chromium impacted ground water, perched ground water pumping was also approved in 1996.

Progress

Pumping and monitoring of ground water continued.

What's Next?

When the approved chromium clean up levels are achieved, the facility will certify clean up as required in the remediation plan.

McAlester Army Ammunition Plant

RCRA Generator Clean Up Site

Pittsburg County

Status: Operation and Maintenance

DEQ Contact Person: J. David Lawson, (405) 702-5104

Background

McAlester Army Ammunition Plant (McAAP) is a federally owned and operated ammunition storage facility that was constructed during World War II. The plant has the responsibility to receive, store, and issue ammunition, explosives, and other expendable ordnance items for the Department of Defense. As a production facility, McAAP has six load, assembly, and pack plants and the capability to renovate, maintain, and demilitarize conventional ammunition.

Progress

In accordance with requirements of the RCRA hazardous waste permit, RCRA Facility Investigations have been performed which identified several SWMUs at McAAP. Subsequently, several SWMUs were found to require no further action while others were corrected by removal of lead and pentachlorophenol contamination.

What's Next?

Continued monitoring of remediated SWMUs and the clean up of contamination from a newly identified SWMU.

Mixon Brothers Wood Preserving, Inc.

RCRA Generator Clean Up Site

Idabel, McCurtain County

Status: Post Closure

DEQ Contact Person: Cindy Hailes, (405) 702-5114

Background

The wood preserving facility used both creosote and pentachlorophenol to preserve wood products. Historically, bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote and pentachlorophenol was disposed of in a series of surface impoundments. In 1993 and 1994, one waste pile and three waste lagoons were closed in place as landfills. Used motor oil was disposed of in the hazardous waste pile and analytical data indicates that some PCP materials are also present in this area. Approximately 300 cubic yards of contaminated sludge was stored in the hazardous waste pile, according to operating log information. Approximately 380 cubic yards of this waste was disposed in the hazardous waste impoundments, which were subsequently closed as landfills. Elevated concentrations of chromium and measurable concentrations of mercury and cadmium were detected in the units in addition to creosote constituents and pentachlorophenol. The post-closure activities require ground water monitoring for a thirty year period or until a demonstration of no endangerment to human health or the environment is approved by the DEQ.

Progress

Compliance monitoring wells are installed and have been sampled semiannually by Mixon.

What's Next?

Compliance monitoring wells will be sampled semiannually by Mixon.

Rab Valley Lumber Preservative Site

EPA Removal

Panama, Le Flore County

Status, Feasibility Study

DEQ Contact Person: Karen Khalafian, (405) 702-5116

Background

The Rab Valley Wood Preservative Site encompasses approximately 30-acres southeast of Panama. The former wood-preserving facility, which operated from the 1930s to 1976, consisted of a liquid recycling pond, a firewater pond, and four unlined surface water impoundments containing wood treating liquids and sludge. Historical operations conducted at the site included pole manufacturing, wood treatment and shipping. The treatment process consisted of removing the natural fluids from the raw wood and replacing these fluids with creosote and pentachlorophenol (PCP) oils. During wood-preserving operations, wastewater and unused chemicals were discharged into the surface impoundments.

A 1989 Preliminary Assessment was followed in 1993 with an EPA investigation of the wood-treatment area, pond and surface impoundments. Numerous polycyclic aromatic hydrocarbon (PAH) contaminants in the soil, sludge, surface water, and ground water were identified. A wetland 400 feet east of the site had been impacted as well. The Emergency Response Branch (ERB) of the EPA installed fencing and warning signs, constructed lagoon berms to contain the contaminants, and decontaminated some of the large on site tanks.

In April 1996, EPA and Joslyn Manufacturing Company entered into an AOC for immediate excavation of the sludge and sediment from the process area and impoundments. Joslyn started the removal process in May 1996. A wastewater treatment plant was constructed to remove the existing impoundment waters and other residual water generated during the removal action. Periodic laboratory analyses of selected constituents were conducted to confirm that DEQ discharge standards were met.

Joslyn completed excavating additional process area soils, soil consolidation with remaining waste material, and stockpiling into three areas in early 1998. Residual piping and tank materials were consolidated as well. Each stockpile was reshaped and capped with a 10-mil HDPE cover.

Progress

Remedial Investigation sampling activities were conducted. A Feasibility Study Workplan was submitted for determining the final remedy for the site.

What's Next?

A Feasibility Study will now be prepared and submitted to DEQ. DEQ will continue to inspect the site on a regular basis.

Texaco R&M Inc. (Equilon LLC)

RCRA Generator Clean Up Site

Ada, Pontotoc County

Status: Closure

EQ Contact Person: Askari Zaidi, (405) 702-5145

Background

The Flowers Oil Company site was first leased from the St. Louis and San Francisco Railroad by Skelly Oil Company and the storage facility built in the early 1930s. Skelly Oil was subsequently purchased by Getty Oil and later Texaco acquired Getty Oil. In 1980, Gerald Flowers leased the property from the railroad, and in 1985 Chris Flowers assumed operations from Gerald. The site was operated as a refined petroleum hydrocarbon storage and distribution facility. Petroleum products were stored in above ground storage tanks with retaining walls for subsequent wholesale distribution to local suppliers. In addition, the warehouse was used to store 55-gallon drums of motor oil.

Soil and ground water samples have been collected at this site. The constituents of concern are benzene, toluene, ethylbenzene, xylene, (BTEX) and total petroleum hydrocarbons (TPH). Benzene concentrations were detected above regulatory limits. A Risk Assessment was conducted and submitted to the Department in June 1996. Texaco recommended abandoning monitoring wells and requested that the DEQ grant the site closure. The Department identified several deficiencies and requested additional sampling be conducted.

Progress

A remediation plan was approved in May 2001. Remediation and monitoring of the facility continued.

What's Next?

Remediation and monitoring of the facility will continue.

Thomason Lumber and Timber Company, Inc.

RCRA Generator Clean Up Site

Broken Bow, McCurtain County

Status: Post Closure, Compliance Monitoring,

DEQ Contact Person: Cindy Hailes, (405) 702-5114

Background

The facility was a wood preserving operation that has used both creosote and pentachlorophenol to preserve wood products. Historically, bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote and pentachlorophenol was disposed in a series of surface impoundments. In 1985, two of these interim status surface impoundments were closed in place as landfills. Post-Closure maintenance activities including ground water monitoring for a thirty year period or until a demonstration that no endangerment to human health or the environment is accepted by the DEQ.

Progress

The owner of Thomason abandoned the property in 1999. Another company, Oklahoma Pole and Lumber Company, took title to the facility property. Oklahoma Pole and Lumber Company transferred the Permit and operates the wood preserving operation.

What's Next?

Oklahoma Pole and Lumber Company will assume all of the requirements of the Post-Closure maintenance activities including ground water monitoring. The company's new operation is regulated by RCRA.

Wynnewood Refining Company

RCRA Corrective Action

Wynnewood, Garvin County

Status: Deferred RFI

DEQ Contact Person: Hillary Young, (405) 702-5106

Background

The Wynnewood Refinery was originally constructed in 1923 by the Texas Pacific Company. In November, 1950, after changing hands a number of times, the refinery began operating under Kerr-McGee ownership. In 1995, Kerr-McGee sold the facility to Gary-Williams Energy Corporation of Denver, which operates the facility under the name of Wynnewood Refining Company. The Wynnewood refinery currently processes approximately 47,000 barrels of Oklahoma sweet crude oil daily, primarily producing gasoline, diesel and fuel oils. Several SWMUs were identified in the original RCRA Facility Assessment conducted by EPA in 1989. Many of these SWMUs were removed during the RCRA Facility Investigation. They included asphalt pits, USTs, and former waste storage areas. After it was determined to pose no future threat to human health or the environment, the closed Land Treatment Unit was dropped from the RCRA post-closure care permit and RCRA authority in 1997.

Progress

Currently, two RCRA permits exist for this facility: one for operation of a hazardous waste storage tank, and one for post-closure care of a surface impoundment.

What's Next?

Further elements of the RFI have been deferred until remediation of the free-product plume beneath the facility has been completed.

Brownfields Voluntary Clean up and Redevelopment Sites

The Brownfields Concept

Brownfields, as defined by state law, are abandoned, idled, or underused industrial or commercial facilities or other real property at which expansion or redevelopment of the real property is complicated by environmental contamination caused by regulated substances. Brownfields have resulted in part from environmental legislation such as CERCLA (Superfund), which was designed to clean up contaminated property. CERCLA provides for strict, joint and several liability for any environmental contamination at a site, which means anyone who deposited hazardous waste at a site, owned or leased the site, acquired title to the site via foreclosure, and certain other persons could be held accountable for the entire cost of clean up. Unfortunately, CERCLA led to the abandonment of many former industrial facilities due to the increased environmental liability attached to the property. Lenders, purchasers, and developers, unwilling to become PRPs at existing sites, have turned to building new industrial facilities in “greenfields” (undeveloped natural areas and farmland). The desertion of brownfield areas for greenfields has contributed to unemployment, a depressed tax base, under-use of existing infrastructure, environmental degradation, urban blight, and urban sprawl.

Private parties working in cooperation with the DEQ have conducted voluntary clean ups in Oklahoma for several years. However, the clean ups were not afforded formal release of future liability because no legal mechanism was available. The concept supporting the Brownfields Initiative is that properties, which are perceived to be contaminated, require a formal, legal mechanism to provide prospective purchasers, lenders, insurers, and other future owners some assurance that the environmental issues at these sites have been properly addressed, and, therefore, the liability issues have been resolved. EPA introduced the Brownfield Action Agenda in 1995 to address this issue. One of the Environmental Protection Agency’s roles in the Brownfields Initiative is to provide funding for states to develop their own Brownfield programs tailored to their specific needs. Once a state has a formal program, EPA may reciprocally participate in limiting liability. EPA and DEQ have signed an agreement that specifies the EPA will not pursue sites in the Oklahoma Brownfield Program under Superfund Authority.

Oklahoma’s Brownfields Law

On June 14, 1996, the Oklahoma Brownfields Voluntary Redevelopment Act, (27A O.S. §2-15-101 through 110) was signed into law. The purpose of the law is to establish a voluntary clean up program to foster the voluntary redevelopment and reuse of brownfields by limiting liability of property owners, lenders, lessees, and successors from DEQ actions. The limited liability protection provided by the law may be dependent upon successful completion of a risk-based environmental clean up. The law does not negate the rights of any other person from pursuing other legal action. The DEQ has been given the responsibility of implementing this program. Implementing Rules were adopted by the Environmental Quality Board in January 1997 and were signed by Governor Keating on March 18, 1997.

Instructional Guide

DEQ has produced an Instructional Guide to the Oklahoma Brownfields Program entitled “Voluntary Redevelopment of Contaminated Property.” The document gives valuable information about the process and is available upon request. To obtain a copy, contact:

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Brownfields Pilots

Brownfields Assessment Demonstration Pilots

The USEPA has awarded Brownfields Assessment Demonstration Pilots Grants to states, political subdivisions, and Indian Tribes to test clean up and redevelopment planning models, direct special efforts toward removing regulatory barriers without sacrificing protectiveness, and facilitate coordinated environmental clean up and redevelopment efforts at the federal, state, tribal, and local level. The pilots are for \$200,000 for two years, and the funds may be used for environmental assessment of property, project planning, and program development; however, the funds may not be used for clean up or redevelopment. Oklahoma has five active Pilots and one closed Pilot. Active Pilots include: Tulsa, Oklahoma City, the Cherokee Nation, the Cheyenne-Arapaho Nation and the Association of South Central Oklahoma Governments. The Comanche Nation pilot was completed this year.

Brownfields Cleanup Revolving Loan Fund Pilots

The DEQ was awarded a Brownfields Cleanup Revolving Loan Fund Pilot grant this year. The grant provides \$1,000,000 to create a low-interest, revolving loan fund that is available to both public and private borrowers for the cleanup of brownfield sites. To be eligible for the program the sites must be cleaned up under the authority of the Oklahoma Brownfields Voluntary Redevelopment Act. DEQ plans to have the fund operational by late 2002.

Memorandum of Agreement

On April 20, 1999, EPA and DEQ signed a Brownfields Memorandum of Agreement (MOA) for the Oklahoma Brownfields Program. The agreement represents EPA endorsement of the Oklahoma Brownfields Program and its concurrence on all certificates issued under the authority of the Oklahoma Brownfields Voluntary Redevelopment Act. Functionally, it means that EPA will not pursue Superfund actions at sites that are in or have been addressed under DEQ's Brownfields Program. The agreement sets a national precedent because it is the first MOA to be approved by EPA Headquarters that includes the potential for RCRA sites to participate in the Brownfield Program

Financial Incentives

In June 1999 legislation was signed into law that allows certain brownfield cleanups that will improve water quality in urban areas to qualify for Clean Water Act State Revolving Loan Funds. DEQ and OWRB are working together to write the necessary implementing rules. Municipalities with properties within metropolitan storm water permitted areas are eligible for the funds.

State and federal governments provided financial incentives to encourage the cleanup and reuse of contaminated sites. The state legislature amended the Oklahoma Quality Jobs [68 O.S. Supp. 2000 § 3604 (E)] to include businesses that locate their principal activities on properties of a least ten acres in area that qualify as a federal Superfund removal site, an NPL site, one that has been formally deferred to the state in lieu of NPL listing, or was remediated pursuant to an order of the DEQ. These sites are eligible for the Quality Jobs Act tax incentive benefits irrespective of their actual gross payroll or the number of full-time-equivalent employees in new direct jobs. The Oklahoma Sales Tax Code [68 O.S. Supp. 2000 § 1359 (7)] provides an exemption for machinery, equipment, fuels, and chemicals incorporated into and directly used or consumed in the treatment of hazardous wastes. On the national level, Congress passed the Taxpayer Relief Act (PL 105-34) which includes a tax incentive designed to encourage environmental cleanup and redevelopment of contaminated properties. Under the law, environmental cleanup costs in targeted areas are fully deductible in the year they are incurred. On October 1, 1997, Governor Keating designated DEQ as the appropriate state agency to provide taxpayers the needed certification to qualify under the law.

Success

Since the inception of the program seven Brownfield Certificates have been issued.

Intergovernmental Cooperation

Brownfields occur throughout the state of Oklahoma. Local governments have often acquired these properties as gifts, through purchase, and through foreclosure proceedings. Communities discover after acquisition that their new property may have environmental problems. Unfortunately, few communities have the necessary funds to investigate such properties. DEQ and EPA recognize this problem and have been working closely with local communities to conduct site assessments and provide technical assistance at publicly owned brownfields. DEQ and EPA have provided technical assistance to Collinsville, Quinton, Blackwell, Newkirk, Headrick, Grandfield, Haskell, Woodward, Keyes, the Ponca Tribe, and Kaw City. DEQ is currently providing assistance to Bethel Acres, Ardmore, and the Association of South Central Oklahoma Governments.

DEQ Home Page

DEQ will ensure that the Brownfields Cleanup Revolving Loan Fund is properly administered and user friendly. DEQ has posted its Brownfields publications on the DEQ Home Page. Please refer to the following address: www.deq.state.ok.us/brownfields_information.htm

What's Next for the DEQ Brownfields Program?

DEQ will continue to expand the brownfield information available on the DEQ Home Page (www.deq.state.ok.us). DEQ will continue to produce fact sheets and informational brochures to clarify the program.

DEQ will continue to provide knowledgeable speakers who are available for presentations to organizations on the facts and issues surrounding Brownfields.

DEQ and EPA will continue to offer technical assistance to government entities by providing environmental assessments of publicly owned Brownfield property.



Land Protection Staff sampling an abandoned tank.

Glossary

After-Action Monitoring - Following Remedial Action (RA), a site is monitored for a period specified by EPA to ensure the RA was complete.

Brownfields - Brownfields are sites that are abandoned, idled, or underused industrial or commercial facilities or other real property at which expansion or redevelopment of the said real property is complicated by environmental contamination caused by regulated substances.

CERCLA - Comprehensive Environmental Response, Compensation and Liability Act that established the regulatory framework to address historical contamination at uncontrolled hazardous waste sites. The law was passed by Congress in 1980 and amended in 1986.

CERCLIS - EPA maintains a nationwide database of sites that have been or are slated to be investigated under CERCLA.

Consent Order (CO) – Legal document that states terms of remediation. Both parties agree upon terms defined in the Order.

Deletion from the NPL (delisting) – After the remedy has been implemented and it is certain the site will not pose a threat to human health or the environment, the site may be deleted from the NPL.

Deferral - The formal federal process of proposing and listing a site on the NPL is deferred pending equivalent action under state authority. EPA does retain the authority to impose federal action if they determine that the site is not properly addressed under state authority. CERCLA deferrals are relatively new and many are considered pilot projects.

Discovery - This is the initial identification of a site that may qualify for action under the Superfund program. The discovery may be reported to EPA by a state or federal or other governmental agency or by a citizen petition.

Expanded Site Inspection (ESI) - An Expanded Site Inspection further investigates a site for the purpose of obtaining the information necessary to prepare a Hazard Ranking System (HRS) Package. The HRS package is used to rank sites for the NPL. An ESI generally involves additional sampling and may include air sampling and the drilling of monitor wells to further investigate ground water.

Feasibility Study (FS) - The Feasibility Study utilizes data gathered during the Remedial Investigation (RI) to examine the various options for remedial action at a site.

Federal Lead - NPL activities that are administered by the EPA are considered federal lead projects. These activities include contracting for various phases of the Superfund process and conducting the day to day project management.

Greenfields - Greenfields are undeveloped natural areas including farmland where contamination is not an issue for development.

Hazard Ranking System (HRS) - The Hazard Ranking System is a standardized scoring method used to rank sites based on the actual or potential impacts posed to human or environmental health. The HRS is one of the primary mechanisms for proposing a site for inclusion on the NPL. The HRS has been revised several times.

Management Assistance - An agreement with EPA for the DEQ to provide technical and regulatory input at sites where EPA is the lead agency for clean up activities.

Memorandum of Agreement and Consent Order (MACO) – A document signed by the Brownfields applicant and the DEQ that covers site characterization and includes a provision for reasonable oversight costs.

National Priorities List (NPL) - The HRS score is one of the methods used to determine which sites are added to the National Priorities List (NPL). The NPL is an inventory of sites where the environmental problems are of sufficient national importance to merit the use of the federal Superfund to correct them. Currently any site that earns a HRS score of 28.5 or above is eligible for the NPL. A site must be on the NPL in order for the federal Superfund clean up process to move forward.

Operable Unit - An operable unit is a portion of a site undergoing CERCLA action that is distinguished from other portions of a site based on waste type, the contaminated media, physical separation, or other characteristics. Ground water is often treated as a separate operable unit at sites.

Operation and Maintenance (O&M) - As remedial action (RA) is completed, plans are implemented for long term operation and maintenance (O&M) of the construction project. O&M may include activities ranging from continued environmental sampling, repairing erosion and performing other maintenance activities, to mowing the grass on a site. If PRPs perform the clean up, the long term O&M is their responsibility. States are required to assume O&M for projects financed by the Superfund.

Potentially Responsible Party (PRP) - PRPs are entities that are in part or wholly responsible for environmental pollution at a site. PRPs have the opportunity to participate in the clean up of a site. If a PRP declines, EPA may pursue cost recovery actions for costs incurred by the federal government for site remediation.

Pre-Application Conference – Brownfields applicant and DEQ staff determine whether the applicant is eligible to apply for a certificate/permit.

Preliminary Assessment (PA) - A PA is the initial investigation of a site that is used to identify potential environmental problems through a review of available file and historical information and a visual site reconnaissance. Sample collection is usually not performed during a PA. A large portion of the PA is devoted to identifying surrounding land use, ground water and surface water uses, proximity of population to the site, geology, surface topography and other information. This information is used to quantify potential impacts from an uncontrolled waste site by assigning a preliminary score to a site. If the site appears to have the potential to score high enough to qualify for the NPL, EPA usually recommends the site be evaluated by the next step in the Superfund process, the Site Inspection.

Proposed Plan - Once the RI/FS process is completed a Proposed Plan is developed, which identifies a preferred remedial alternative, and solicits public comments on the remedy.

Record of Decision (ROD) - The Record of Decision memorializes EPA's selection of a remedy for the environmental problems at a site. The ROD is adopted through a formal set of procedures that incorporate views and opinions of the state, PRPs, and the public. The completion of the ROD is a necessary precursor to any further action by a PRP or the government on the site.

Remedial Action (RA) - The Remedial Action is the construction process used to achieve the remedy for environmental problems at a site. Many RAs include complex ground and surface water clean up projects that may last several years. The RA is detailed in the Record of Decision.

Remedial Design (RD) - The Remedial Design takes place after the Record of Decision. The Record of Decision states what the remedy for the site will be; the RD determines how that remedy will be achieved. The RD typically consists of a short period of field work, if necessary, to conduct pilot studies and tests to come up with design parameters, and then progresses through several iterations of design and specifications. The end result of the RD is a design and specification package that is put out to bid for the Remedial Action.

Remedial Investigation (RI) - The Remedial Investigation is designed to gather the environmental data necessary to define the nature and extent of problems at a site. The RI includes extensive sampling and waste characterization and a risk assessment. The data gathered during the RI forms the basis for the Feasibility Study.

Removal Action - A removal action is performed to mitigate an imminent human or environmental health threat posed by a site. A removal can take place during any phase of the Superfund process.

Risk Assessment - A risk assessment is performed during the remedial investigation. The risk assessment is intended to quantify long and short-term health hazards to humans and the environment associated with the site. The assessment addresses both current and future potential risks. The risk assessment often drives the remedy by defining the level of remediation necessary to eliminate identified risks.

Superfund Amendments and Reauthorization Act (SARA) – Congress passed this law in 1986. SARA reauthorized CERCLA, established additional funding, revised the HRS, provided provisions for worker health and safety at Superfund site, and made other changes to CERCLA.

Site Inspection (SI) - An SI utilizes limited sampling to gather enough data on waste characterization and migration to identify potential human exposure through air releases, drinking water contamination, or direct contact. As with the PA, a preliminary HRS score is calculated with the increased data available at the SI stage.

State Lead - NPL activities that are administered by the state are considered state lead projects. These activities include hiring contractors for various phases in the Superfund process and daily project management.

Technical Assistance Grant (TAG) - A grant available to local citizens' group to secure the services of a technical advisor to increase citizen understanding of information that will be developed about the site in the Superfund process. Law may award only one grant for up to \$50,000 awarded to a citizen's group at any one Superfund site. To be eligible for a grant, a group must incorporate. Also, the group must meet a 20 percent matching requirement, which may be cash or donated services.

About This Report

This status report provides current information on the major land remediation sites addressed by the DEQ and is updated annually. The sites are grouped by geographic region or county and divided into categories: NPL sites, Brownfields/Voluntary Clean up, DOD/COE, EPA Removal Actions, RCRA Corrective Actions, Tire Clean ups and the Oil and Mining Land Restoration Program. Only long term projects are represented in this report. For additional details please contact the listed Land Protection Division project manager or one of the following :

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A glossary of terminology is provided at the end of the report.

LAND PROTECTION REPORT

January 2001 through Decem



O K L A H O M A
DEPARTMENT OF ENVIRONMENTAL QUALITY