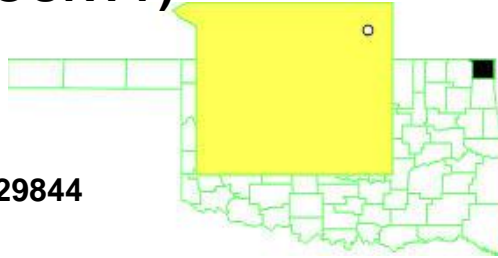


# TAR CREEK (OTTAWA COUNTY) OKLAHOMA

**EPA REGION 6**  
**CONGRESSIONAL DISTRICT 02**



EPA ID# OKD980629844  
Site ID: 0601269

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**Updated: February 2012**

## Current Status

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### Narrative for Tar Creek Source Material OU4 Remedial Action and Buyout, respectively

**Project Description:** This is a Fixed Rate Task Order for the Tar Creek Source Material OU4 Superfund Site Remedial Action (RA). SS ID: 06JW CERCLIS No.: OKD98062844. The RA is the implementation phase of site remediation or construction of the remedy, including necessary operation and maintenance, performance monitoring, and any special requirements. The RA is based on the remedial design (RD), which is designed to achieve the remediation goals specified in the Record of Decision (ROD) and includes the following remedial action activities:

- Project management
- Construction management
- Construction subcontracts
  - Clean up of 3 residential yards and a smelter site
  - Construction and operation of a waste repository
  - Removal and cleanup of Distal Area sites
  - Construction support contracts (survey, geotechnical and analytical laboratories, etc.)
- Engineering support during construction, including watershed planning
- Chat reuse facilitation and tracking
- Cleanup verification and reporting
- Stimulus funds (ARRA) reporting (September 25, 2009 – March 31, 2011).

The ongoing project is part of the overall remedial action required and was initially funded with ARRA funds.

The first ARRA funding for the buyout was awarded April 23, 2009 and the second award occurred on July 20, 2009. The buyout is complete and demolition activities are projected to be completed in June 2011.

**Project Period:** A new task order was awarded on November 23, 2010, to continue the implementation of the RA activities. The Period of Performance on this Task Order is scheduled to conclude May 31, 2012. Efforts are ongoing to ensure funding for future work.

**Money/The value of the work awarded:** The RA Work Plan dated August 12, 2009, contains the basis for continuing the work under a new Task Order (TO). This project is incrementally funded, and the funding and Expenditure Limit for this task order are both set at \$ 20,000,000. This task order is funded with ASARCO settlement funds.

Job Estimated Jobs created or maintained (use recipient reported jobs from recovery.gov and note these are recipient reported jobs): Recovery Act funds created/retained 10.83 jobs for the 1<sup>st</sup> Quarter FY2010 reporting cycle. (Job numbers are recorded from Recovery.gov as of February 6, 2010.) With respect to what currently exist on this project, the number of people reported on this task order is approximately 93 people for the prime contractor and 239 people for the subcontractor workers and haulers in the field. More jobs are expected as additional construction subcontract packages are awarded.

The Oklahoma Department of Environmental Quality was awarded \$15,760,000 in ARRA funding specifically for the buyout/relocation of the residents which will complete the buy-out of the towns of Picher, Cardin, and Hockerville. Seven positions for this effort were maintained by ARRA funding.

Date on site construction commenced plus anticipated date the work/project will be completed: Use of construction heavy equipment for field investigation purposes began on November 12, 2009. Site work for the construction of repository began on January 11, 2010. The construction activities are ongoing and expected to continue for the next 15 to 20 years.

### **OU1 (Surface Water/Groundwater)**

- The 4<sup>th</sup> Five Year Review is underway. The September 2005 version is available on EPA's website.
- EPA is funding the ODEQ to monitor ground water in the Roubidoux aquifer; groundwater monitoring activities are on-going.

### **OU2 (Residential Properties)**

- Evaluations are being conducted on the type of actions that may need to be performed on footprints and residential properties that possibly contain source material.
- The EPA is funding ODEQ and Ottawa County Health Department (OCHD) to provide community health education and blood lead screening for the five-city mining area. The OCHD also works with local health professionals including Indian Health Service physicians to provide education to the medical community.

### **OU4 (Chat Piles, Other Mine and Mill Wastes, Smelter Wastes)**

- EPA was provided more than \$35 million in Recovery Act resources for the Tar Creek site. The projected cost of the remedy is \$167 million. This funding is being used to continue the ongoing voluntary relocation efforts and start the implementation of the Remedial Action which consists of removal of chat from remote areas of the site and from area streams
- The developments of multiple pre-bid packages are ongoing, and pre-bid meetings and site walk tours, and pre-construction meetings are continuously being conducted. Work on the repository, distal area and rural residential property and smelter waste, commenced on January 4, 2010.
- Chat piles and bases in the distal areas within the Tar Creek Superfund Site are being sampled and the results are available for viewing at: <http://projects.ch2m.com/TCOU4chat/> The intent of this effort is to help facilitate chat sales that comply with the Chat Rule. Please visit this website often; results will be added as they become available.
- The refinement of the Draft Pre-final Repository Design is ongoing. Four design packages are being utilized to implement the response action. The packages include: Rural Residential Properties and Smelter areas; Distal Areas; Repositories; and Chat in Streams – Tar Creek. Three of the four design packages are complete. The Repository package is in the final stage of being completed. To facilitate the development of all aspects of the plans and their implementation, workshops and weekly conference calls are conducted with EPA's stakeholders that include ODEQ, the Quapaw Tribe, BIA, Tribes in the area and the Mining Companies.

- Meetings and consultations between EPA, ODEQ, the Quapaw Tribe, and the 10 Downstream Tribes on site activities are being conducted as needed.
- A new Task Order was issued in November 2010, the amount of \$20 million, to continue the Remedial Action activities as ARRA funds deplete. The period of performance for this task order is November 23, 2010 to May 31, 2012.

#### **OU5 (Sediment and Surface Water)**

- EPA Region 6 is working with EPA Region 7 as part of multi-state effort to characterize sediment and surface water throughout the Spring and Neosho River basins.

#### **Memorandum of Understanding (MOU) Activities**

- Representatives from the various tribes, USACE, USGS, BIA, EPA, and ODEQ are conducting multiple meetings, in order to share information and keep parties abreast of pilots and studies that are being pursued in and around the site.

## **Background**

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#### **OU2 (Residential Properties)**

- On Saturday, May 10, 2008, an EF-4 tornado struck parts of the Tar Creek Superfund site. EPA responded to the scene and conducted air monitoring and surficial soil sampling. A risk evaluation of the field data collected was performed and concluded that there are no immediate adverse health concerns associated with lead from exposure to soil to first responders or residents returning to their homes and that there are no adverse health effect from inhalation of particulate matter.
- More than 2,295 residential yards and public areas have been remediated since the inception of cleanup in Quapaw, Cardin, Picher, Commerce, and North Miami. Work on the final 119 properties in Commerce began in December of 2005 and was completed in October 2007.
- October 2004, Report To Congress by the Agency for Toxic Substances and Disease Registry (ATSDR). This report showed children between the ages of 1 and 5 living at the Tar Creek site had a blood lead level in excess of the 10ug/dL level decreased from 31.2% in 1996 to 2.8% in 2003. The 2.8% level is only slightly higher than the findings of the National Health and Nutrition Examination Surveys (NHANES) for children living in the United States as a whole, which stands at 2.2% for children between the ages of 1 and 5 during the years 1999-2000.
- In May 2004, the State of Oklahoma implemented a relocation program for families with children under the age of seven. At the request of U. S. Senator Inhofe, the U.S. Army Corps of Engineers conducted a study which found that a third or more of the homes in the area have varying degrees of collapse potential due to extensive historic mining under the towns of Picher, Cardin, and Hockerville.
- A public Trust established by the State of Oklahoma implemented a voluntary relocation for properties in Cardin, Picher, and Hockerville that are impacted by potential subsidence. The Trust offered residents to voluntarily apply for relocation under conditions established by the State Legislature in May 2006. This effort is nearing completion.

#### **OU4 (Chat Piles, Other Mine and Mill Wastes, Smelter Wastes)**

- BIA conducted a pre-bid Availability Session on April 27<sup>th</sup>, EPA participated in its ongoing effort to promote chat sales.
- To help facilitate chat sales associated with the Western Chat pile, that is owned by Tribal members, EPA met with Missouri Department of Natural Resources, Region 7, and APAC on August 20, 2009, in Springfield, MO, to discuss the Chat Rule and data needs.
- EPA participated in the Quapaw Tribe's meeting on chat sales and access agreements on May 9, 2009 and July 30<sup>th</sup>.
- EPA in coordination with ODEQ, the Quapaw Tribe, BIA, DOI, and the OK-DOT conducted Chat Sales Availability Sessions and a Workshop August 19-20, 2008. The Availability Sessions enabled

participants to meet one-on-one with the parties listed above, and gain additional insight on their role involving chat and chat sales. The workshop informed participants on the purpose of the Chat Rule, record keeping requirements, the desire to facilitate chat sales and encouraged the exchange of information between chat sellers, purchasers, and owners of chat.

- On June 17, 2008 EPA conducted a series of meetings with chat sellers and a gravel operator in Picher, OK. Participants included representatives from the Bureau of Indian Affairs, EPA-Region 7, the Oklahoma Department of Environmental Quality and the Quapaw Tribe. During these meetings, EPA discussed the Chat Rule, reporting requirements, upcoming plans to conduct a chat sales workshop in August, and addressed questions posed by the participants. The exchange was beneficial to all parties and EPA gained additional insight on measures that should be pursued to enhance participation at the upcoming chat sale workshop. EPA will continue to meet and coordinate with its stakeholders in preparation for the workshop.
- EPA signed the Record of Decision (ROD) for OU4 on February 20, 2008. The ROD provides a complete explanation of EPA's final decision, a summary of site investigations, and a responsiveness summary that addresses comments received during the public comment period on the July 2007 Proposed Plan. The ROD is available on EPA's webpage - <http://www.epa.gov/earth1r6/6sf/6sf-decisiondocs.htm>. The ROD and the OU4 Administrative Record, which is a collection of technical site material and documents that forms the basis for the selected remedy, is available at the following site repositories:

Miami Public Library  
200 North Main St  
Miami, OK 74354  
918-542-3064  
U.S. EPA - Region 6  
1445 Ross Ave  
Dallas, TX 75202  
214-665-6427 (Please call for an appointment if you desire to review the file)

Oklahoma Department of Environmental Quality  
707 North Robinson  
Oklahoma City, OK 73102  
405-702-1000

- A public meeting was conducted on August 28, and an Availability Session was held the following day (August 29) for the public to meet with EPA representatives on a one-on-one basis to ask any questions related to the Proposed Plan.
- EPA released the Proposed Plan of Action for OU4 on July 29, 2007 for public comment. The 30-day public comment period that was scheduled to conclude August 30, 2007, was extended, to accommodate the public's request. The public comment period on the Proposed Plan of Action for OU4 concluded October 1, 2007.
- EPA conducted consultations with representatives of the eleven Federally-recognized tribes from January through July 2007, to hear and address their concerns on the draft Proposed Plan of Action. The consultations were accomplished through group meetings, individual meetings and conference calls.
- EPA has completed 3 chat disposal pilot projects. Approximately 34,600 tons of chat was injected into under ground mine caverns. An additional 40,000 tons of mine waste were contained in an innovative trench/road system. Two more pilots are underway. Both include injecting washed chat fines directly into mine caverns and eliminating sediment/holding ponds. The data will help better define design criteria.

## Benefits

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The cleanup of lead-contaminated soils from over 2,295 residential yards and high access areas located within the five-city mining area has significantly reduced the exposure of the population, especially young children.

- October 2004, Report To Congress by the Agency for Toxic Substances and Disease Registry (ATSDR). This report shows that children between the ages of 1 and 5 living at the Tar Creek site who had a blood lead level in excess of the 10ug/dL level decreased from 31.2% in 1996 to 2.8% in 2003. The 2.8% level is only slightly higher than the findings of the National Health and Nutrition Examination Surveys (NHANES) for children living in the United States as a whole, which stands at 2.2% for children between the ages of 1 and 5 during the years 1999-2000.

- Abandoned well plugging has reduced the potential for contaminants in the shallow Boone Aquifer to migrate to the Roubideax drinking water aquifer.

## National Priorities Listing (NPL) History

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Site Hazard Ranking System Score: 58.15

Proposed Date: 7/27/1981

Final Date: **9/08/1983**

**Location:** The Tar Creek Superfund Site (hereinafter "the Site") is part of the Tri-State Mining District, which includes northeastern Oklahoma, southeastern Kansas, and southwestern Missouri. Specifically, the Site includes the Old Picher Field lead and zinc mining area located in northeastern Ottawa County.

**Population:** Approximately 19,556 people live in the surrounding area.

**Setting:** The Site consists of five mining cities, Picher, Cardin, Quapaw, Commerce, and North Miami, and other areas within Ottawa County. Chat piles are located throughout the communities.

**Photos:** [Site Photos](#)

**Principal Pollutants:** Lead, cadmium, and zinc.

### Health Considerations:

- Lead-contaminated soils and chat piles are a source of exposure to the population, especially to young children. A percentage of young children living in the five-city mining area are known to have blood lead levels in excess of the 10 µg/dL (micrograms per deciliter) standard set by the Center for Disease Control (CDC). The percentage of children with elevated blood lead levels remains well above state and national averages.
- Children are the most sensitive population for lead exposures. Chronic exposure can deleteriously affect the immune system, blood system, nervous system, and kidneys. Harmful effects include premature births, smaller babies, decreased mental ability in the infant, learning difficulties, and reduced growth in young children.

## Record of Decision (ROD)

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**Operable Unit 1: ROD signed on June 6, 1984**

**Operable Unit 2: ROD signed on August 27, 1997**

**Operable Unit 4: ROD signed on February 20, 2008**

The OU1 ROD addressed (1) the surface water degradation by the discharge of acid mine water, and (2) the threat of contamination of the Roubidoux Aquifer, the regional water supply, by downward migration of acid mine water from the overlying Boone Aquifer through abandoned wells connecting the two. Recharge was to be prevented by utilizing diking and diversion structures to stop the surface water of Tar Creek from entering the two collapsed mine shafts in Kansas, which were identified as the main inflow points. Additionally, the remedy called for preventing the downward migration of acid mine water into the Roubidoux Aquifer by plugging 66 abandoned wells. During remediation, an additional 17 wells were identified and addressed, bringing the total to 83 wells. Construction activities were concluded on December 22, 1986.

The OU2 ROD addressed the residential areas. The full text for this ROD is located on the Internet at: [www.epa.gov/earth1r6/6sf/6sf-decisiondocs.htm](http://www.epa.gov/earth1r6/6sf/6sf-decisiondocs.htm)

The OU4 ROD addresses the source materials, rural residential yard contamination, transition zone soil contamination, and contamination in water drawn from rural residential wells. The selected remedy also includes relocation, which will continue to be implemented by the Lead Impacted Communities Relocation Assistance Trust (LICRAT), and chat sales. Though EPA does not own any chat and will not purchase any chat, it will assist chat sales participants as part of EPA's CERCLA remedy. The full text for this ROD is available at the webpage listed above.

## Site Contacts

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|--|--------------------------|----------------|
| EPA Remedial Project Managers:         | Bob Sullivan, OU1 & 2    | 214-665-2223   |
|  | Ursula Lennox, OU4       | 214-665-6743   |
|  | Gary Baumgarten, OU4 & 5 | 214-665-6749   |
| EPA Community Coordinator:             | Janetta Coats            | 214-665-7308   |
| EPA Site Attorney:                     | Jim Costello             | 214-665-8045   |
| EPA State Coordinator:                 | Kathy Gibson             | 214-665-7196   |
| EPA Regional Public Liaison:           | Donn R. Walters          | 214-665-6483   |
| EPA Toll-Free Telephone Number:        |                          | 1-800-533-3508 |
| ODEQ Program Manager:                  | Amy Brittain             | 405-702-5133   |
| ODEQ Tar Creek Coordinator             | Angela Hughes            | 405-702-5141   |
| ODEQ Project Managers:                 | Dennis Datin, P.E.       | 405-702-5125   |
|  | David Cates, P.E.        | 405-702-5133   |
| Quapaw Environmental Program Director: | Tim Kent                 | 918-542-1853   |
| Quapaw Superfund Program Manager:      | Vacant                   |                |