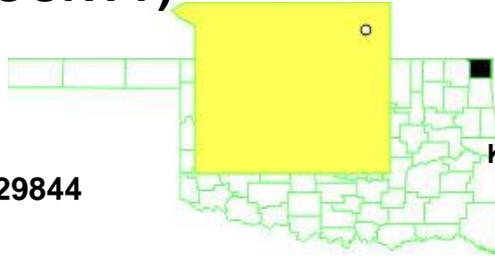


TAR CREEK (OTTAWA COUNTY) OKLAHOMA

EPA REGION 6
CONGRESSIONAL DISTRICT 02



EPA ID# OKD980629844
Site ID: 0601269

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Status

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 and demolition activities are completed and the Closeout Report was completed by ODEQ on November 23, 2011.

Project Period: Additional funding was added to the existing task order in December 2012, to continue the implementation of the RA activities. The Period of Performance on this Task Order is now extended to January 31, 20165. 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 the existing Task Order (TO). This project is incrementally funded with

Superfund 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 1st 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 25 years.

OU1 (Surface Water/Groundwater)

- The development of the 5th Five Year Review is underway and is being prepared by ODEQ.
- The 4th Five Year Review Report was signed by EPA on September 29, 2010.
- EPA is funding the ODEQ to monitor ground water in the Roubidoux aquifer; groundwater monitoring activities are on-going.

OU2 (Residential Properties)

- EPA celebrated a milestone event on September 22, 2014 with the completion of the work that was performed on residential properties and high access areas in multiple towns of Ottawa County. A number of stakeholders were recognized for their participation and the assistance they provided in encouraging participation in this effort.
- Through indepth discussions with ODEQ has transition two operable units of the Tar Creek site (i.e. OU1 – that addresses groundwater and surface water, and OU2) to ODEQ. OU1 will be a State Lead Operational and Maintenance and OU2 will be a State Lead Remedial Action and will address any remaining properties that did not previously participate.
- 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. For Tar Creek, the percentage of children screened with elevated blood lead levels (>10 g/dL) declined from 21.5% in 1997 to 0% in 2013. For Ottawa County, the percentage of children screened with elevated blood lead levels (>10 g/dL) declined from 12.61% in 1997 to 0% in 2013.

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 was used to complete the voluntary relocation efforts and enabled the start 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.
- 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. 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 of Oklahoma, BIA, Tribes in the area and the Mining Companies.
- Meetings and consultations between EPA, ODEQ, the Quapaw Tribe of Oklahoma, and the 10 Downstream Tribes on site activities are being conducted as needed.
- In September 2014, EPA received and disseminated to its stakeholders, the Remedial Action Optimization Report that was prepared by EPA-HQs on the Tar Creek OU4 site. OU4 addresses chat piles, and mine, mill, and smelter waste. One key goal of the Optimization Team’s effort is to help the project team refine the implementation approach to achieving remedial action objectives (RAOs), capture economies of scale, and leverage synergies in executing the project.
- EPA is working with ODEQ and the Quapaw Tribe to perform RA site work under cooperative agreements.

Catholic 40

- A Cooperative Agreement for Remedial Action at the “Catholic 40” between the EPA and the Quapaw Tribe of Oklahoma was signed on 10/01/12. This is the first-ever Remedial Action in the nation conducted by a Tribe on property that they own.
- The Catholic 40 is a 40-acre tract of land owned by the Quapaw Tribe that has cultural and historical significance. Historical structures include remnants of a Catholic Church and school constructed in 1893. The Remedial Action will involve the excavation, hauling, and disposal of approximately 107,000 tons of source material or chat. Chat is the mine waste left at the Site from the lead and zinc mining operations. Extra precautions will be taken during these activities in the areas near the historical structures in order prevent damage to them. The Remedial Action will also include restoration (e.g., contouring, seeding, etc.) of the Site and bank stabilization of Beaver Creek in order to ensure the integrity of the remedy. Beaver Creek also has cultural and historical significance to the Quapaw Tribe.
- The completion of the Remedial Action by the Quapaw Tribe, according to the Record of Decision for OU4, will enhance the Tribe’s technical capacity to perform work under the Superfund program.

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

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 surface 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 2,846 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 is projected to be completed in 2013.
- 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. The relocation and demolition of the structures was completed in 2011.

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

- BIA conducted a pre-bid Availability Session on April 27th, 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 30th.
- 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

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

214-665-6427 (Please call for an appointment if you desire to review the file)

- A public meeting was conducted on August 28, 2007 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

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

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)

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

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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