

**KOPPERS CO. INC. (TEXARKANA PLANT)
SUPERFUND SITE
Texarkana, Texas**



EPA Region 6

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State Congressional District: 4**

**EPA ID# TXD980623904
Site ID: 0602570**

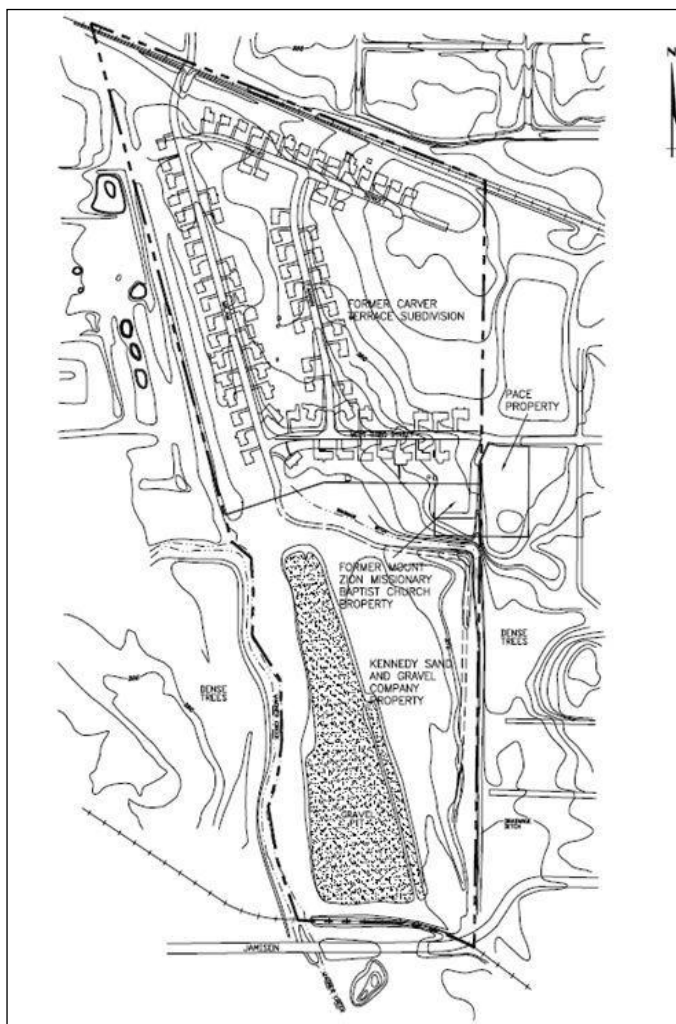
Updated: March 2012

Background

Koppers Co. Inc. is located at West 4th Street, one mile west of downtown, Texarkana, Bowie County, Texas. The site was a 62-acre wood treatment facility begun in 1903. The facility was purchased by Koppers Co., Inc. in 1933 and operated until 1961, when the plant was closed, the land sold and in 1962, the facilities demolished. Carver Terrace, Inc. acquired the north 34 acres and built a subdivision of 79 homes in 1964. Bruce Kennedy purchased the remaining south 28 acres and mined it for sand and gravel until the Texas Department of Water Resources (TDWR) ordered the company to cease operation in the fall of 1984.

The primary contaminants of concern are polynuclear aromatic hydrocarbons (PAHs), which are known carcinogens. An estimated 45 million gallons of shallow groundwater are contaminated, and approximately 2,150 cubic yards of soil are contaminated to a depth of one foot. Wagner Creek flows along southwest edge of site and the entire site is within the 100-year flood plain. Approximately 25,000 people live within 4 miles of the site. The nearest drinking water well is located 3 blocks from the site, but is not presently at risk.

The Record of Decision (ROD) was signed on September 23, 1988 and included the treatment or disposal of contaminated soils at an off-site hazardous waste facility and oil water separation and either carbon adsorption or fluidized carbon bed treatment of ground water. The Amended ROD was signed on March 4, 1992 and included the purchase of the homes in Carver Terrace and relocation assistance, the demolition, removal and disposal of debris to an appropriate facility, and reclassifying the future use of the property from residential to commercial. The Explanation of Significant Differences (ESD), which modified the 1992 ROD Amendment, was signed August 20, 2002. The ESD removed the use of surfactants to mobilize the subsurface Dense NAPLs and the surface treatment of the collected ground water/NAPL emulsion from the 1992 ROD Amendment. Soil removal and replacement activities were finished in July 1996. During these activities, up to one foot of contaminated soil was excavated and replaced. Approximately 3,000 tons of soils and materials were taken from the Site.



Current Status

- The soils remedy is complete; the ground water remedy is ongoing. The responsible party is funding the cleanup of this site. Physical construction of the DNAPL/Groundwater Remedy was completed on June 10, 2002. The system is presently collecting DNAPL as designed. The site is construction complete, human exposure and ground water migration under control. EPA is presently transferring the U.S. government owned properties at this Site to the State of Texas. The 3rd Five Year Review document was completed September 29, 2011.



Benefits

- Soil in areas identified in the Remedial Investigation where the sum of the carcinogenic Polynuclear Aromatic Hydrocarbons exceeded 100 ppm was excavated to one foot. Excavated areas were replaced with clean soil purchased from outside of the site. Performing this activity significantly reduced environmental risks associated with the site. A total of 2,113.57 cubic yard of material was generated from the excavation and container removal activities at the site.
- Non-aqueous phase liquids in the upper aquifer will be collected to the maximum extent possible. This aquifer is not a drinking water source; however, extraction of the NAPLs is necessary in order to avoid the potential of contaminating a lower aquifer and nearby Waggoner Creek. The Confining Zone, which exists between the two aquifers, will be allowed to naturally attenuate following remediation and will be monitored to ensure that it is being naturally cleansed.

Site Description

- **Location:** West 4th Street, one mile west of downtown, Texarkana, TX.
- **Population:** This site is located in an area characterized by an 85% minority population (1990 Census data). Approximately 25,000 people live within 4 miles of the site.
- **Setting:** 62-acre wood treatment facility operated by a succession of owners between 1903 and 1961, closed and sold in 1961, facilities demolished in 1962. The Carver Terrace residential subdivision built in 1964, comprising 79 homes on the north 34 acres of the site. Remaining south 28 acres, purchased by Bruce Kennedy, became a sand/gravel mining operation between the late 1970s and 1984.
- **Hydrology:** Wagner Creek flows along southwest edge of site. A shallow water table (that is not a drinking water source) is located 3 to 5 feet below surface and seeps into the sand and gravel pits located on the southern portion of the site. Entire site is within the 100-year flood plain.

Wastes and Volumes

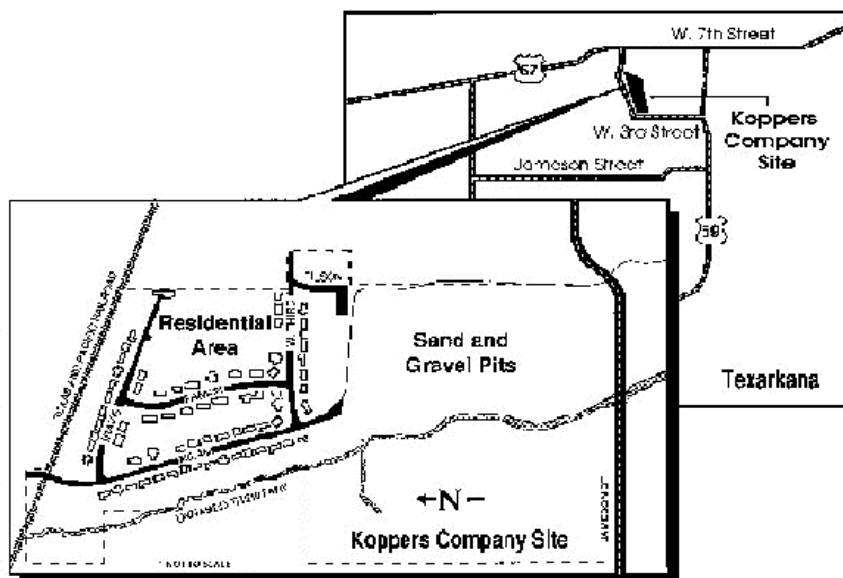
- An estimated 45 million gallons of shallow groundwater are contaminated, and approximately 2,150 cubic yards of soil are contaminated to a depth of one foot, creating a potential health risk.
- The primary contaminants of concern are polynuclear aromatic hydrocarbons (PAHs), which are known carcinogens.

Site Assessment and Ranking

NPL LISTING HISTORY
Site HRS Score: 31.31
Proposed Date: 10/15/84
Final Date: 6/10/86
NPL Update: No. 3

- The Texas Department of Water Resources (TDWR), now the Texas Commission on Environmental Quality (TCEQ) became aware of this site through the Eckhardt Survey in 1979.
- TDWR and EPA collected samples at the site in 1980-1981, and from these, TDWR referred the site to EPA for proposal to the National Priorities List (NPL).
- TDWR ordered Bruce Kennedy to cease mining operations in Fall 1984.
- Local residents expressed concern about health risk from site. Administrative Order issued 12/84 for posting of warning signs and fencing the gravel pit area, and in 5/85 to Koppers Co. for placement of clean dirt and sod in the yards of 24 residences.

Site Map and Diagram



The Remediation Process

Site History

- Wood treatment facility began in 1903; purchased by Koppers Co., Inc. in 1933 and operated it until 1961, when the plant was removed and the land sold.
- Carver Terrace, Inc. eventually acquired the north half and built a subdivision; the southern half was acquired by Bruce Kennedy who mined it for sand and gravel until the Texas Department of Water Resources (TDWR) ordered the company in Fall 1984 to cease operation.
- December 1984 - January 1985, EPA constructed a fence.
- July 1985 - March 86, the Potentially Responsible Party (PRP) placed clean dirt and sod in the yards of some residences to prevent exposure to the contaminated soils while the site was being studied. Approximately 24 homes were treated this way.
- Remedial Investigation/Feasibility Study completed April 1988.
- Record of Decision signed September 1988.
- Remedial Design/Remedial Action (RD/RA) negotiations commence June 1989.
- Remedial Design/Remedial Action negotiations with Koppers suspended in January 24, 1990 due to the need to revise the risk assessment and action levels to be reflective of continuous residential use - completed and discussed with the community in April 1990.
- Congressman Chapman attached an amendment to EPA's Budget Bill allocating \$5M to buy out the Carver Terrace community in May 1990 - Approved by Congress on November 5, 1990, signed by the President on October 6, 1991.
- An Interagency Agreement was signed with the U.S. Army Corps of Engineers (USACE) on May 21, 1991, to implement the Congressional mandated buyout.
- The Texas Department of Health conducted a Health Surveillance Survey in the community March 11-16, 1991. A follow-up health survey at the Koppers site was performed March 30 - April 4, 1992.
- The Amended Record of Decision (ROD), which outlined the 2 changes that would be included in the existing 1988 ROD, was sent to the public for public comment. The changes were: 1) the purchase of the homes in Carver Terrace and provide relocation assistance, and 2) reclassifying the future use of the property from residential to commercial.
- The public comment period for the Amended Proposed Plan started January 15, 1991, and was extended until April 1, 1991.
- A public meeting on the Amended Proposed Plan was conducted on January 22, 1991.
- TWC (Texas Water Commission)(now the TCEQ) signs the State Superfund Contract on March 2, 1992, enabling EPA to initiate the buyout once the Amended ROD is signed.
- The Amended ROD is signed March 4, 1992. Relocation efforts commenced.
- The Texas Department of Health conducted a follow-up survey on the community from March 29 through April 4, 1992.
- May 1992, the Agency for Toxic Substances and Disease Registry (ATSDR) in conjunction with the Texas Department of Health released their initial findings from the investigation conducted in 1991 in the "Health Surveillance Survey Report".
- FY93 Appropriations Bill, which allocated an additional \$612K for the USACE to complete the buyout, was approved and funded in November 1992.
- EPA issued a Unilateral Administrative Order (UAO) to The Potentially Responsible Party (PRP) 3/2/93, to conduct the RD/RA and demolition activities. The PRP complied 3/31/93.
- Relocation of the residents was completed July 30, 1993.
- RD/RA activities commenced 3/31/93.
- Demolition plans approved and demolition was completed 1/27/94.
- Closeout Demolition Report approved 5/94.
- Former residents filed a Class Action Suit against EPA and the USACE in May 1994, involving the execution of the buyout and relocation efforts.
- The Class Action Suit filed by the residents was dismissed August 1995, by the U.S. District Judge for the District of Columbia. An appeal was made and was denied.
- Conditional Approval given on the revised Pre-Design Groundwater & Soil Reports.
- Soil removal/replacement activities commenced 5/13/96 and were completed in July 1996.

- A final construction site inspection for the Soil Remedial Action was conducted by EPA on June 11, 1996. A Soil Remedial Action Report was submitted November 23, 1996.
- Several meetings (3/2/99 and 11/22/99) and conference calls (7/8/99 and 7/29/99) were conducted to discuss/resolve EPA and State concerns on the draft Dense Non-Aqueous Phase Liquid (DNAPL)/Groundwater Pilot Study Report and 95% Remedial Design. During the 3/2/99 meeting Beazer was informed that the Soil Remedial Action Report would be approved and the close out of the soil operable unit would occur once Beazer implemented recommendations for further evaluation of magnetic anomalies identified by the geophysical investigation in the former process and lagoon areas.
- State and Federal Natural Resource Trustees (Trustees) reviewed and provided EPA comments on the DNAPL/Groundwater Pilot Study Draft Report and 95% Remedial Design (dated November 1998), developed for the Koppers Texarkana Superfund site located in Texarkana, Texas. The Trustees with natural resource interests at this site are: the United States Department of the Interior (DOI), the Texas General Land Office (GLO), the Texas Parks and Wildlife Department (TPWD), and the TCEQ. Trustees comments were forwarded to Beazer in June 2000 for inclusion in the revised report.
- A containment wall was installed between the gravel pits and Wagner Creek in the spring of 1998. The wall will contain the seeps, which have affected the creek over the years.
- Development of the five-year review was completed and approved September 2001.
- The “DNAPL/Groundwater Pilot Study Report and 100% Remedial Design”, which is specific to Operable Unit No. 3 (Ground Water), was approved by EPA on January 15, 2002.
- The Explanation of Significant Differences (ESD), which modified the 1992 ROD Amendment, was signed August 20, 2002. The State’s approval letter for the ESD was received by EPA Region 6 on July 31, 2002.
- The Soils Remedial Action Report was completed on November 21, 1996. However, subsurface anomalies were found through magnetic surveys. Therefore, to obtain a comprehensive Remedial Action Report for the soil, the Responsible Party (RP) conducted excavations at previous geophysical anomaly locations to ensure that underground storage tanks (USTs) did not exist on-site. Excavations found only non-hazardous debris at the suspect locations. A “Report on Confirmation Excavations Koppers Texarkana Site” was submitted by the RP, which finalized the Soils Remedial Action Report submitted in 1996. The “Soil Remedial Action Report” (submitted November 23, 1996) and Addendum (submitted August 2000, with revision in March 2003) for Operable Unit 2 was accepted and signed by EPA in March 2003.
- The “DNAPL/Groundwater Pilot Study Report and 100% Remedial Design”, which is specific to Operable Unit No. 3 (Ground Water), was approved by EPA on January 15, 2002. Physical construction of the DNAPL/Groundwater Remedy was completed on June 10, 2002; a pre-final inspection was conducted on June 27, 2002, which documented that the remedy was constructed as designed.
- The DNAPL/Groundwater Remedy system is presently collecting DNAPL as designed.
- EPA conducted a site inspection and community interviews on July 14, 2006, to develop the 2nd 5-Year Review document. The community was notified of the site visit and pending 5-Year Review document through the local newspaper. The Final 2nd 5-Year Review document was signed by the Region 6 Superfund Division Director on September 18, 2006. The community was notified through the local newspaper of the availability of this document at the Texarkana Library.
- Ready-For-Reuse: The property is in Remedial Action for ground water; a decision regarding reuse of this property has not been made. The city of Texarkana has indicated that when the property is available, reuse would be for a city baseball park.
- The site is construction complete, human exposure and ground water migration under control.
- EPA is presently transferring the U.S. government owned properties (former residences) at this Site to the State of Texas.
- EPA conducted a site inspection and community interviews on June 22, 2011, to develop the 3rd 5-Year Review document. The community was notified of the site visit and pending 5-Year Review document development, and document completion through the local newspaper. The document was completed/signed on September 27, 2011.

Health Considerations:

- Potential human exposure risks included direct contact with, and accidental ingestion of, contaminated soils and inhalation of contaminated dust. Contaminated soils have been removed and restrictions put in place for this land being used for commercial purposes only.
- Contamination was found in the shallow water table, NAPL collection and dissolved end controls have been implemented.
- The nearest drinking water well is located 3 blocks from the site, but is not presently at risk.

Other Environmental Risks:

- Creosote seeps and discharges to Wagner Creek have been documented. These seeps are presently being controlled by the onsite ground water/NAPL collection system and subsurface barriers. Surface water samples are being taken to monitor the creek; to date, all samples have been below risk values.

Record of Decision

Signed: September 23, 1988
 Amended: March 4, 1992

- Treatment or disposal of contaminated soils at an off-site hazardous waste facility and oil water separation and either carbon adsorption or fluidized carbon bed treatment of ground water.
- The 1988 selected remedy was amended to include 1) the buyout of the Carver Terrace subdivision, 2) the demolition, removal and disposal of debris to an appropriate facility, and 3) the reclassification of the property to "non-residential use."

Ground Water:

- Separation of oily phase from ground water extracted through on-site wells.
- Removal of organic contaminants by either carbon adsorption or fluidized carbon bed treatment, then return clean, treated water back to the aquifer.

Soil Treatment:

- As a result of the Surface Soil Predesign Investigation performed at the site during the summer and fall of 1994, soil washing was not utilized due to the limited volume of soil requiring treatment. Implementation of the soil washing alternative is not a cost-effective remedial option for surface soils due to volume and its ineffectiveness in handling soils, which contain high percentages of fines, debris, and tar-like consistency. Thus, excavated soils were disposed off-site at an appropriate facility, as provided for in the ROD.

Buyout and Relocation:

- The amended remedy included provisions for buyout and relocation of the Carver Terrace subdivision residents and a church.
- The USACE executed the buyout and relocation effort on behalf of EPA and completed these activities 7/93.
- Structures in the Carver Terrace Subdivision were demolished and the debris was taken to an appropriate facility.

<u>Other Remedies Considered</u>	<u>Reason Not Chosen</u>
1. "No Action"	Did not meet remedial objectives
2. Capping	Not as effective as selected remedy
3. In Situ Biological Treatment	Difficult to implement effectively
4. On-site Incineration	Difficult to implement effectively
5. Off-site Incineration	Poor cost-effectiveness
6. Off-site Landfill disposal	Not as cost-effective as selected remedy

This site is being addressed through Federal and potentially responsible party actions.

Explanation of Significant Differences

Signed: August 20, 2002

The ESD was developed to only modify the 1992 Amendment requirements for OU#3 - subsurface NAPL/ground water. The ESD removed the use of surfactants to mobilize the subsurface Dense NAPLs and the surface treatment of the collected ground water/NAPL emulsion from the 1992 ROD Amendment. The ESD modification is still protective through the use of subsurface ground water/NAPL separators, which separate the NAPLs from the ground water; the collected/separated ground water is reinfiltrated back into the aquifer to enhance NAPL mobility, and therefore, collect more NAPL.

Community Involvement

- Community Involvement Plan: Developed 10/84, revised 6/88 and again 6/92.
- Open houses and workshops: 1/85, 5/85, 4/90, 7/91, 4/92, and 1/93
- Original Proposed Plan Fact Sheet and Public Meeting: 6/88.
- Original ROD Fact Sheet: 10/88
- Milestone Fact Sheets/Public Notices: 2/85, 6/88, 10/88, 1/89, 1, 3, & 8/91, 1, 3, & 4/92, 4/96.
- EPA Amended Proposed Plan and Public Meeting: 1/92
 - Addressed the basis for the buyout and reclassification of the residential property
 - Discussed how the revised action level would have impacted the original projections on volume, time, and cost for excavating and treating the contaminated soil if a buyout did not occur.
- Citizens on site mailing list: 160
- Constituency Interest:
 - Health Study conducted by the Texas State Department of Health.
 - Relocation effort completed 7/93.
- Site Repository: Texarkana City Hall, 320 Texas Blvd., Texarkana, TX 75501

Technical Assistance Grant

- Availability Notice: 12/21/88; Re-advertised 8/17 & 31/90
- Letters of Intent Received:
 - 1) Coalition for a Clean Carver Terrace - Terminated for non-response.
 - 2) Texarkana Black Chamber of Commerce (TBCC) - Public Notice acknowledging receipt run 9/14/90.
- Final Application Received: TBCC submitted final application for TAG 1/91.
- Grant Award: 3/08/91
- Current Status: Grant funds expended, TAG closed.

Contacts

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Prime Contractor: KEY Environmental, Inc. (PRP contractor)
R6 Public Liaison: Donn R. Walters, 214-665-6483
EPA Region 6 Toll Free Number: 1-800-533-3508