

**FAIRFIELD COAL
GASIFICATION PLANT**

IOWA

EPA ID# IAD981124167

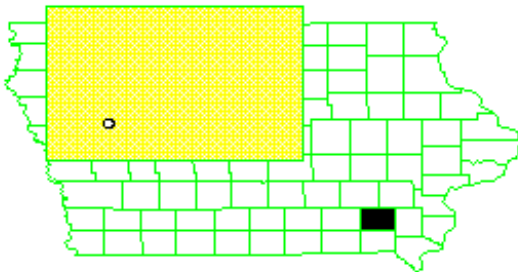
EPA Region 7

City: Fairfield

County: Jefferson County

**Other Names: Fairfield Gas Manufacturing
Plant**

02/11/2009



SITE DESCRIPTION

The Fairfield Coal Gasification Plant site occupies one city block between West Burlington and West Washington avenues in Fairfield. The plant produced a natural gas substitute from coal between 1878 and 1950. The plant has been owned and operated by Iowa Electric Light and Power since 1917. Since 1950, the utility has used the site as an operations facility. The main wastes are polycyclic aromatic hydrocarbons (PAHs) and volatile organic compounds (VOCs), which are found in the coal tar left over from the gasification process, and cyanide salts left in the iron oxide waste produced when the gas was purified. Operators sold some of the coal tar and buried some in an earthen pit on the site or dumped it in a nearby ditch. Disposal methods for the iron-cyanide waste are unknown, but it also may have been dumped on site. In 1985, the utility found that ground water near the site was contaminated. The utility began a monitoring program to assure that private wells were unaffected. EPA became involved in 1987, by conducting an expanded site investigation, installing and sampling on- and off-site monitoring wells, and conducting surface and subsurface soil sampling. In 1989, Iowa Electric found that the foundation for a gas holder was the main source of the ground water contamination. The gas holder was removed and destroyed in the 1950s, and wastes were dumped or left in its place. An estimated 1,000 people live within 1 mile of the site; 9,000 live within 3 miles. The local drinking water supply depends on both surface water and ground water, and serves 11,000 people. There are 23 drinking water wells within a 3-mile radius of the site; the closest is 1,900 feet away. Shallow and deep ground water wells are within 2 miles of the site. The closest well uses the shallow aquifer. Cedar Creek is less than 3 miles downslope of the site and is used for recreation.

Site Responsibility:

This site was addressed through Federal, State,

NPL LISTING HISTORY

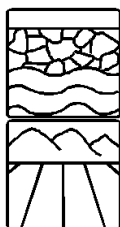
and potentially responsible parties' actions.

Proposed Date: 06/24/88

Final Date: 08/30/90

Deleted Date:

THREATS AND CONTAMINANTS



In 1985, the utility detected PAHs, including anthracene and pyrene from the coal gasification processes, in the ground water near the site. On-site ground water and soil contained VOCs such as benzene, toluene, and xylene, the metals lead and mercury, and cyanide salts. Direct contact with contaminated soil and ground water could pose a risk to public health.

CLEANUP APPROACH

Response Action Status



Initial Actions: Emergency Actions: Under EPA supervision, the utility undertook an emergency cleanup action, installing a ground water extraction system to contain and treat the contaminated ground water.



Cleanup Ongoing: Ground water and Soil: Also under EPA's guidance, the utility completed an intensive study of ground water and soil contamination at the site in 1990. The remedy selected included excavating and incinerating contaminated soil and source areas, continuing the ground water extraction and treatment system, and conducting a pilot study for possible in-place bioremediation of the contaminated ground water. The potentially responsible party completed the design of the remedy in June 1992, and began excavation in June 1993. The bioremediation pilot study proved ineffective and was terminated in May 1993. The excavation of contaminated soil and coal tar was completed by the potentially responsible party in May 1995.

EPA completed a 5-year review of the effectiveness of the cleanup actions in 1997, and found that the remedy was protective. A second and third 5-year review, conducted in September 2002 and September 2007, concluded that although the

contamination in ground water is still above the remediation levels set in the Record of Decision, the remedy remains protective as long as contamination is contained on site. The third 5-year review also concluded that the pump and treat system has not been cost effective in removing contamination. Prior to the third 5-year review, the pump and treat system was temporarily shut off to allow for a study to determine if natural attenuation was occurring at the site. The study concluded that monitored natural attenuation would not be an effective alternate remedy. EPA is currently considering other remedy options. In the interim, current data indicate the plume remains on-site; and ICs are preventing exposure to or the ingestion of contaminated ground water. The pump and treat system is still operational and can be turned back on if monitoring shows an increase in contamination levels or migration of the plume outside the site boundaries.

Site Facts: In 1989, Iowa Electric signed an Administrative Order on Consent with EPA to conduct additional site investigations. The Utility signed a Consent Decree with EPA in March 1991, to perform the technical design and undertake site cleanup activities.

ENVIRONMENTAL PROGRESS



All known source material and contaminated soil has been removed from the site and has undergone treatment using thermal destruction technology. Iowa Electric has merged with other electric utilities to become Alliant Energy Incorporated. They continue to successfully operate a long-term remedial action consisting of ground water collection and treatment.

COMMUNITY INVOLVEMENT

6/02 Fact Sheet announcing start of the second five-year review.

10/02 Fact Sheet announcing completion of second five-year review.

2/07 Fact sheet and display ad announcing start of the third five-year review

11/07 - Fact sheet announcing completion of third five-year review

SITE REPOSITORY



Fairfield Public Library
Court & Washington
Fairfield, IA 52556

Superfund Records Center
901 N. 5th St.
Kansas City, KS 66101
Mail Stop SUPR
(913)551-7166

REGIONAL CONTACTS

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MISCELLANEOUS INFORMATION

STATE:	IA
	07BX
CONGRESSIONAL DISTRICT:	02
EPA ORGANIZATION:	SFD-SUPR/MOKS

MODIFICATIONS

Created by:	Karla Asberry/SUPR/R7/USEPA/ US	Created Date:	11/13/98 09:43 AM
Last Modified by:	Beckie Himes/R7/USEPA/US	Last Modified Date:	02/11/2009 11:29 AM