Region 7

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Fact Sheet

April 2004

Non-Time-Critical Removal Action To Begin

Le Mars Coal Gas Plant Site, Le Mars, Plymouth County, Iowa

INTRODUCTION

The U.S. Environmental Protection Agency (EPA) will begin work on a non-time-critical removal action at the Le Mars Coal Gas Plant site in Le Mars, Plymouth County, Iowa.

During the excavation, there will be noticeable odors similar to hot asphalt mixed with moth balls, coming from the site. The air will be monitored by EPA to ensure contaminants in the air remain below health-based levels of concern.

The removal will begin on April 19, 2004, and the estimated duration is three months. The site is a former manufactured gas plant (FMGP). EPA is performing this action to remove the human health and ground water threat posed by the site.

BACKGROUND

The Le Mars Coal Gas plant was constructed by the Le Mars Gas Light Company in 1884. Originally, the plant included a single production building, housing the retort well, and a main office building. The Le Mars Gas Company gained ownership of the facility in 1898, and expanded their operations. This expansion included the conversion from coal gas to water and oil gas, the addition of an oil tank and a 100,000-cubic-foot gas holder (Gas Holder B).

Some time before 1920, the Le Mars Gas Company discontinued production of oil gas and by 1930, converted from water gas to carbureted water gas. In 1929, the Le Mars Gas Company produced 23 million feet of gas. In 1939, Le Mars ceased operation when the facility converted from manufactured gas to natural gas. This conversion was completed in December, 1939, while the Le Mars Gas Company was a subsidiary of Great Lakes Utilities Corporation.

The Iowa Public Service Company (IPS) purchased the natural gas distribution system in 1942. The site was included in this purchase. In March, 1953, IPS entered into a contractual agreement with C.W. Miller of Le Mars for the sale of the Le Mars site property. A service building was constructed and the building was leased to IPS for 20 years. In September, 1967, Miller sold the property to the City of Le Mars which is the current property owner. The site is currently occupied by the Le Mars Street Department, which uses it for office, maintenance, and storage facilities. The street department vehicles are parked and maintained on the site property.

The site is located at 331 1st Street, Northeast, Le Mars, Plymouth County, Iowa, and is a 1.6-acre site. The property is bordered on the northwest by the Union Pacific and Canadian National railroads, on the east by 4th Avenue Northeast, and on the south by 1st Street Northeast.

THE CONTAMINATION

The contaminants of concern (COCs) identified for the site are BTEXs and Polycyclic Aromatic Hydrocarbons (PAHs) in the soil and ground water. Sources of COCs at FMGP sites usually are associated with gas holders, tar wells, and

oil tanks. The likely sources of COCs at the site include Gas Holders A and B, a tar well, and two oil tanks. Three underground storage tanks (USTs) installed after the site discontinued operations could also be sources of COCs.

EPA conducted site inspection sampling activities in 1997 which included ground water testing, near-surface and subsurface soil sampling and sediment sampling. The results of the testing indicated elevated volatile and semi-volatile organic compounds (VOCs and SVOCs) throughout the site. Soils on the eastern portion of the site contained up to 2,273 parts per million (ppm) of carcinogenic PAHs and 8,506 ppm total PAHs. Elevated VOCs and PAH levels were found in soil samples taken as deep as 16 feet below ground surface in the area of the former gas holder.

Elevated VOCs, SVOCs, and cyanide levels were found in samples taken from the Le Mars municipal well number 8, the drainage ditch, Willow Creek, and nearby residential surface and subsurface soils. These levels, however, were not above EPA's Maximun Contaminant Levels (MCLs).

EPA conducted an Expanded Site Inspection (ESI) in 2000 to: (1) delineate soil contamination detected at the site; (2) evaluate the threat posed by contaminated soil at the site to ground water; (3) identify the effect of on-site contamination on local surface water features; and (4) evaluate the threat posed to both human health and the environment. The ESI included the installation of 12 ground water monitoring wells, and the sampling of soil, sediment, and surface water. The analysis of samples from the monitoring wells indicated that VOCs, including benzene and toluene, PAHs and cyanide have migrated off-site in the shallow aquifer. Sediment samples taken from the drainage ditch indicated elevated PAH levels were detected in surface and subsurface soils on site as well as at an adjacent residence. The highest contaminated soil samples were collected from locations where FMGP structures, such as the gasometer, gas holder and tar well were located.

A potential exposure risk exists for on-site workers, nearby residents, and further contamination of the ground water. Elevated levels of PAHs and cyanide were identified in soils at levels above health-based benchmarks. Based on analytical data, contamination has migrated off site in the shallow aquifer approximately 2,700 feet northwest with the potential to travel to the Le Mars municipal water supply. A human health risk might also exist for individuals that fish in Willow Creek.

In 2003, EPA completed an Engineering Evaluation/Cost Analysis (EE/CA) to identify proposed removal action alternatives for contaminated soil and ground water at the site. A 30-day public comment period was held. On August 18, 2003, EPA held an availability session at the Le Mars Public Library to discuss the EE/CA and EPA's proposed removal alternative. Several city officials and local residents attended the session to discuss the cleanup alternatives. No comments were received during the public comment period.

WHAT ABOUT THE GROUND WATER?

A benzene plume in the surficial aquifer emanates from the site and is about 1,600 feet long by 650 feet wide. The direction of flow is toward the west-northwest, which is about the same direction as the ground water flow.

Site-related contaminants have been detected in ground water from the surficial aquifer. All of these MCL exceedances occurred at sampling locations within the benzene plume.

CURRENT ACTIONS

The following listed steps are planned during the removal action to alleviate the ground water and human health threat posed by the site:

- Air monitoring during the removal
- UST removal
- Removal of the on-site soil contaminants

- Off-site thermal treatment of highly contaminated soil
- Off-site disposal of nonhazardous soil and debris
- Backfill with clean soil and site restoration

ADDITIONAL INFORMATION

EPA encourages the community to review the Administrative Record file, which is available at the following locations:

Le Mars Public Library
46 First Street, S.W.
Le Mars, Iowa

Records Center
EPA Region 7
901 N. 5th Street
Kansas City, Kansas

If you have questions or need additional information, please contact:

Belinda Young
Office of External Programs
U.S. EPA Region 7
901 N. 5th Street
Kansas City, KS 66101
Phone: 913-551-7003 or
Toll Free: 1-800-223-0425

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Examples of coal tar removal at superfund sites

Coal tar removal at Clear Lake Coal Gas, Clear Lake, Iowa 1994

Clinton Coal-Tar Site, Clinton, Missouri 2000

Decorah FMGP - Cleaning Gas Holder #1
Decorah, Iowa 1998