



Vapour Migration

Village of Endicott Vapor Migration Project

Purpose:

The purpose of this website is to provide information on the status of the environmental investigation and remediation program associated with historic releases of industrial solvents containing Volatile Organic Compounds (VOCs) from the former IBM Endicott Facility. Specifically, this website has been developed to describe the results of ongoing investigations conducted by IBM to determine the degree to which off-site groundwater contamination has impacted indoor air quality in the areas south of the facility, and to evaluate potential enhancements to the groundwater remedial program.

Background:

Groundwater

VOCs were formerly used in manufacturing operations at the facility. Groundwater contamination at the site has resulted from past accidental releases (spills and leaks) of those compounds. Although the compounds are no longer used at the facility, the contamination associated with their use remains. Cleanup and monitoring of the groundwater contamination began in 1980 and continue today under the authority of a New York State Hazardous Waste Management Permit. The primary contaminants are 1,1,1-Trichloroethane (also known as Methyl Chloroform), Trichloroethylene and their breakdown products. The degree of contamination is highest in the vicinity of the manufacturing complex along the railroad between Watson Boulevard and North Street and diminishes with distance from the site. The contamination is transported via groundwater flow from the source areas at the facility to off-site areas southwest of the plant. Lower levels of contamination extend as far as the Susquehanna River.

Since 1980, IBM has sought to protect the village drinking water supply by halting the spread of groundwater contamination. That process involves the use of pumping wells to capture the contaminated groundwater so it can be treated to remove the VOCs. Although groundwater data indicate that this program has been effective, it typically takes many years (possibly decades) to clean up the groundwater. IBM is currently evaluating possible actions to expedite groundwater source containment and removal. They are also evaluating potential enhancements to the groundwater remedial program that would shrink the plume as quickly as possible so that it is under fewer buildings as time goes on. The results of that evaluation are expected by the end of 2003.

Once the Department conducts a thorough review of IBM's groundwater evaluation and selects additional corrective measures that IBM will be required to perform, they will be incorporated into a proposed modification to the company's Hazardous Waste Management Permit and submitted to public review and comment.

Vapor

In Fall, 2002, New York State, Broome County and IBM determined that there is a potential for migration of the VOCs from the groundwater through the soil as vapors into buildings above. Consequently, the Agencies and IBM developed an action plan to determine whether vapor migration related to the groundwater contamination is occurring, and, if so, to cut off the vapor migration pathways. The results of the investigation indicate that vapor migration has impacted the indoor air in buildings above the plume. As of July 2003, IBM had identified and offered to

install vapor mitigation systems at 480 properties in the Village of Endicott and the Town of Union. The agencies estimate that 85 to 95 % of the buildings which need mitigation systems to intercept the IBM-related contaminant vapors have now been identified. Those that remain to be identified are in areas where the concentrations of IBM-related contaminants in the soil gas, and in the indoor air, are low.

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Cleanup plan proposed for Lockwood water

By CLAIR JOHNSON Of The Gazette Staff

Government officials this week released a proposal for cleaning up solvent-contaminated soil and groundwater at the Lockwood Superfund site.

The preferred alternative calls for using a variety of technologies that should eventually reduce pollution from two main sources in the area.

The Lockwood Superfund site is a 580-acre area in northwestern Lockwood. EPA listed the area as a national Superfund site in December 2000 after the state found high concentrations of chlorinated solvents in the groundwater two years earlier.

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Although there were indications in the early 1990s of solvent contamination in the groundwater, the concentrations did not exceed drinking water standards. The national listing made the site eligible for extensive, long-term cleanup under the Superfund program.

State Superfund sites

The Lockwood site is one of 11 Superfund sites in Montana. The site, with a mix of industrial, commercial and residential buildings, is bounded by the Yellowstone River on the west and north, Rosebud Lane on the south and Klenck Lane on the east.

A health assessment in 2002 by the federal Agency for Toxic Substances and Disease Registry found that the underground solvent plume was a public health hazard because residents had been exposed to chemicals that may have harmed their health.

The preferred cleanup plan, released by the Montana Department of Environmental Quality and the U.S. Environmental Protection Agency, is available for public comment until Dec. 14. DEQ will hold a public meeting Dec. 2 at the Lockwood school cafeteria to discuss the plan and to hear comments. The meeting will begin at 7 p.m.

Catherine LeCours, DEQ's project manager, encouraged public input.

"This is the ultimate time of the entire process where the public gets involved. There's been a lot of cases where the public has changed the way the remedial plan reads," she said.

The agencies considered a feasibility study that identified eight cleanup alternatives. The alternatives ranged from no action or cleaning only the soil or cleaning only the groundwater to

the most aggressive cleanup.

The cost of the various alternatives ranged up to \$20.3 million. The feasibility study was prepared by Tetra Tech EM Inc. and was released in July.

LeCours said the preferred alternative is "moderately aggressive" and is a modified version of alternative 6. It is expected to cost \$14.3 million. Most of the cleanup under this plan would take about 10 years.

The alternative was selected because it is expected to meet all of the objectives and regulations in the shortest time for the lowest cost, LeCours said. The treatment will permanently reduce the toxicity, mobility and volume of the pollution.

The solvents, which are commonly used as degreasers and in dry cleaning, include tetrachloroethene (PCE) and its breakdown chemicals, trichloroethene (TCE), dichloroethene (DCE) and vinyl chloride. Vinyl chloride is known to cause cancer; the other chemicals are suspected carcinogens.

Warning from 1998

The high concentrations of solvents in the groundwater prompted the state in 1998 to warn residents in the area not to drink or bathe in their well water. The warning affected mostly residents living along Lomond Lane and nearby streets.

The government supplied the residents with bottled water and in 2000, the EPA installed a water line to supply the residents with municipal water.

The pollution prompted 19 residents to sue three companies that they alleged caused the contamination of their water. The residents and two of the companies, Brenntag and Beall Trailers Inc., settled earlier this year, while the suit against Kuck Trucking Inc. continues. The terms of the settlement were not disclosed.

Studies identified Brenntag, formerly known as HCl Dyce Chemical Inc., 1353 Taylor Place, and Beall, at 1430 U.S. Highway 87 East, as principal sources of the pollution.

LeCours said the government will negotiate with the companies about paying for and conducting the cleanup. The work would be done with agency approval, she said, and "both parties have been very cooperative."

Brenntag is a chemical repackaging and distribution company. Under previous owners, the property was developed and operations began in 1972, the DEQ said. The contamination is believed to have been caused by releases of PCE and TCE, as well as petroleum products and other, unidentified organic compounds.

Beall makes and repairs tanker truck trailers used primarily to haul asphalt. From 1978 to 1990, trailers were cleaned with a solution of dissolved TCE and steam, the DEQ said. The wastewater from the steam-clean bay was discharged to a septic system and drain field.

Treatment and cleanup methods would vary across the site.

At Brenntag, the plan calls for using soil vapor extraction for contaminated soils at its tank farm and excavating, thermally treating and then incinerating contaminated soil near its northwest fence line.

In soil vapor extraction, small wells are drilled and blowers inject air to push out vapors, which will be captured and treated. A mobile incinerator could be used to handle contaminated soil.

LeCours said emissions are captured and run through a filter.

Contaminated soil at Brenntag will be treated by injecting a chemical to oxidize or break down the solvents in the soil.

Migration of polluted groundwater at Brenntag will be prevented by constructing underground barriers using iron filings. As groundwater moves through the barrier, the chemicals break down into harmless elements.

At Beall, because the contaminated soil is as much as 45 feet deep, the cleanup method proposed is soil vapor extraction, LeCours said.

Polluted groundwater at Beall would be cleansed by injecting oxygen or microorganisms to help break down the chemicals through natural processes.

Copies of the proposed plan are available for review at the Montana State University-Billings Library and at DEQ offices at 1100 N. Last Chance Gulch in Helena. The proposed plan also is available online at www.epa.gov/Region8/superfund/sites/mt/lockwood_.html.