

## MEMORANDUM



**Date:** August 18, 2010

**To:** Tonya Howell, EPA Region 7, Remedial Project Manager and Land Revitalization Coordinator  
Candice McGhee, Missouri Department of Natural Resources, Remedial Project Manager  
Steven Anderson, City of Liberty, Director of Planning  
Brian Hess, City of Liberty, Assistant Director of Public Works  
Katherine Sharp, City of Liberty, City Planner

**From:** Matt Robbie, E² Inc.  
Casey Williams, E² Inc.

**Re:** Lee Chemical Superfund Site Situation Assessment

### Introduction

At the request of EPA Region 7, E² Inc. conducted a site visit of the Lee Chemical site in Liberty, Missouri on August 12, 2010 to gather information and assess the need for reuse planning services. E² Inc. toured the site and surrounding area with representatives from EPA Region 7, Missouri Department of Natural Resources (MDNR) and the City of Liberty. E² Inc. then met with City staff to discuss reuse goals for the site, identify relevant planning initiatives for the area, and discuss how EPA's Superfund Redevelopment Initiative's reuse planning assistance could potentially help facilitate the reuse of the Lee Chemical site. This memorandum summarizes preliminary considerations and recommended next steps based on information gathered to date.

### Meeting Participants

Participants in the City meeting included:

- Steven Anderson, City of Liberty, Director of Planning
- Katherine Sharp, City of Liberty, City Planner
- Brian Hess, City of Liberty, Assistant Director of Public Works
- David Jones, City of Liberty, Planning Intern
- Dana Ulmer, CH2MHILL, Operation and Maintenance Project Manager
- Tonya Howell, EPA Region 7, Reuse Coordinator
- Candice McGhee, Missouri Department of Natural Resources, Remedial Project Manager
- Matt Robbie, E² Inc.
- Casey Williams, E² Inc.

## Summary of Site Considerations

Based on information gathered during the site visit and additional research of site documents and related information, E<sup>2</sup> Inc. has compiled the following site considerations.

### *History of the Site*

- The Lee Chemical site is located in a rural industrial area near the southeastern edge of the City of Liberty, Clay County, Missouri. Liberty is located approximately 13 miles northeast of downtown Kansas City, Missouri, and has an estimated population (2007) of 30,000 residents. The site consists of a 2.5-acre vacant lot enclosed by a chain link fence with a locked gate to limit access.
- From 1965 to 1975, the City of Liberty leased a former water treatment plant building to the Lee Chemical Company. Lee Chemical used the site to package, distribute and dispose of commercial and industrial cleaning solvents and other chemicals. When Lee Chemical abandoned the site in 1976, the City found several hundred drums of chemicals, which were contaminating soils and ground water. The contamination migrated off-site, impacting portions of the City of Liberty's municipal well-field with volatile organic compounds (VOCs), including trichloroethylene (TCE). The primary human health risk at the site is the potential for exposure to TCE through ingestion and inhalation of contaminated ground water.

### *History of Response Actions*

- In 1977, the City removed and shipped approximately 300 55-gallon drums of waste off site for disposal. The City installed two new drinking water supply wells in 1982. In 1983, the building was demolished and other hazardous materials found in the building were properly disposed off-site. Clean soil was used to restore the site.
- In 1984, MDNR recommended the City discharge water from Public Water Supply Well #2 (PW#2) and an abandoned municipal well to a nearby creek using a segment of abandoned water line to contain the contaminated ground water plume and reduce levels of TCE in the municipal water supply.
- The Lee Chemical site was placed on the Missouri Registry of Confirmed Abandoned and Uncontrolled Hazardous Waste Disposal Sites in Missouri in 1984, and then placed on the National Priorities List in 1986.
- With oversight from MDNR, the City completed a Remedial Investigation identifying the nature and extent of the contamination in 1990. In 1991, EPA and MDNR issued a Record of Decision (ROD) outlining a remedy that included installation of a new on-site extraction well and the

continued operation of the City's well PW#2 for ground water extraction and surface water discharge to a nearby creek. The ROD also included an in-situ aqueous soil flushing system to remove TCE contamination from sub-surface soils. The soil flushing system included the installation of three sub-surface infiltration trenches and an ancillary pumping system.

- Remedial construction was completed in early 1994 and the system is in full operation. Three five-year reviews have been completed for the site. All three conclude that, although the cleanup process will continue until clean up goals have been met, the remedy remains protective of human health and the environment. The third five-year review completed in July 2009 recommends the City conduct an Optimization Study to determine how to achieve cleanup goals in a more efficient manner. In the interim, routine ground water monitoring is being conducted to ensure the contamination plume does not enter the City's municipal wells and drinking water supply.

### *Land Use Considerations*

The site is located in a rural industrial area, which is characterized by a number of current and proposed land use considerations that could influence potential future use of the site. These land use considerations are outlined below in more detail.

- *Access and Infrastructure:* The long and narrow site is situated between Old Highway 210 to the north and an active railroad line to the south. Missouri Highway 291 is approximately 0.7 mile west and Missouri Highway 210 is approximately 1.5 miles to the east. Water and sewer are available to support future development on the site.
- *Zoning and Surrounding Land Uses:* The site is currently zoned for industrial use. The land uses surrounding the site are predominately commercial, industrial and rural and include industrial properties, a city owned/operated business, a new City-owned recreational facility, a single family residence, a municipal well-field and agricultural land. The City owns an animal control shelter immediately west of the site. Further to the west, the City operates two waste water lagoons and a lift station to manage lime sludge from the City's water treatment plant. Commercial and industrial uses include American Central Transport (ACT), a trucking facility; Douglas Products, a chemical manufacturer and distributor; a company that manufactures concrete pavers and a permitted landscaping nursery. The most significant recent development near the Lee Chemical site is the 146-acre Fountain Bluff Sports Complex, which includes 20 athletic fields and attracts thousands of people from the region every year to participate in sports leagues and tournaments. This diverse mix of land uses surrounding the site indicates the need to carefully consider land use compatibility in the future.
- *Resource Protection Zones:* The site falls within the City's floodplain protection area and wellhead protection area and is subject to land use restrictions defined for these zones. The Missouri River is located approximately two miles south of the site in the relatively flat alluvial

plain which is prone to flooding during wet times of the year. Town Branch Creek is located approximately one-third mile west of the site. The City's municipal well field is located approximately one-half mile southeast of the site, and ground water flow is generally in the direction of the City's well field. New construction requires special approval and may be subject to specific construction requirements defined for these zones.

- *Future Land Use:* The City of Liberty is proactively planning for the future. *Blueprint for Liberty*, the City's comprehensive plan, includes several components that form together the City's long-range strategy for growth, development and resource management. The City's Future Land Use Map indicates the area north and east of the Lee Chemical site will remain in active commercial use, while the area to the southeast (the municipal well field) will be institutional, the area to the west and southwest will be residential, and the area to the northeast will continue as recreational.
- *Economic Development:* The City hopes to attract new industries in coming years to areas prioritized for industrial growth in the northeastern and southwestern corners of the community. While the area around the Lee Chemical site is designated for continued commercial activity, the land located in the floodplain is likely to remain low in value. City representatives believe the floodplain restrictions will be a deterrent to industrial developers.
- *American Trucking Company:* The ACT trucking facility across from the Lee Chemical site is currently for sale. City staff believe ACT is seeking an alternative location outside the floodplain and in areas with more desirable transportation connections.

### *Stakeholder Considerations*

Below is a set of preliminary site reuse goals and considerations based on initial discussions with City of Liberty staff.

- *Ownership Considerations:* The City owns the Lee Chemical site and is responsible for operation and maintenance of the site remedy components. There are no concrete plans for the site's reuse. However, City representatives expressed interest in the reuse planning assistance available through the Superfund Redevelopment Initiative program to evaluate short- and long-term reuse opportunities for the Lee Chemical property.
- *Municipal Well Recovery:* The City would like to reclaim use of the PW#2 once the Remedial Action is complete. While the existing municipal well-field provides adequate water supply capacity in the near-term, the City hopes to reduce expenditures on the operation of PW#2 as a remedy component and reclaim the well for water supply as soon as possible.
- *Zoning Considerations:* City staff recognize the site's existing industrial zoning designation would allow the property to be marketed for industrial use once the remedial action is complete.

However, the floodplain protection zone designation and property configuration would likely be limiting factors for prospective industrial users.

- *Municipal Maintenance and Storage:* The City has contemplated acquiring the ACT property for use as a vehicle fleet storage and maintenance facility. The Lee Chemical property, which is located at a slightly higher elevation, has also been considered as suitable for a similar use, such as a maintenance facility for the Parks and Recreation Department.
- *Animal Shelter:* The City's animal control facility is in need of repair and actively seeking a site to construct a new facility. The shelter has expressed interest in expanding to the Lee Chemical property. EPA, MDNR and City staff discussed potentially reusing the Lee Chemical site as a dog park that could serve dual functions for a public dog park and the animal shelter. Because the shelter includes an incinerator, City staff believe that a permanent location for the animal control shelter at or adjacent to the Lee Chemical site would be more suitable than other City owned properties located adjacent to residential areas.

#### *Remedial Considerations*

- *Optimization Strategy:* MDNR and EPA have suggested the City conduct a study to determine if optimization of the remedy will decrease the amount of time needed to reach the Remedial Action Objectives. An Optimization Study would identify and evaluate potential remedial modifications along with the costs and benefits of the various options. The City is in the process of trying to reserve funds for the study in the 2011 operating budget. As the City evaluates optimization strategies, there may be opportunities to consider how remedy modifications would influence future use options.
- *Compatibility:* The City staff are interested in considering the compatibility of remedy components and infrastructure with potential future uses. Considerations could include evaluating whether access to remedy components such as the soil washing system would be needed after the remedial actions are complete. Additional research may be needed to confirm the depth and location of the subsurface soil washing system and whether subsurface TCE contamination would present vapor intrusion issues for structures that may be located at the site.
- *Institutional Controls:* Institutional Controls (ICs) currently include restrictions on excavation and ground water use. Depending on the optimization strategy selected, ICs may need to be established or modified for the site to ensure the site remains protective of human health and the environment. For example, an optimization method, if selected and implemented, could result in reduced restrictions or unrestricted use of the site.

## **Recommendations and Next Steps**

The Lee Chemical site faces a number of reuse challenges; an existing ground water contamination plume, the prolonged implementation of the site's remedy, a lack of information about the current location and extent of soil contamination, including the possibility for vapor intrusion in new structures, and an intersection of different land uses around the site. The City has expressed interest in better understanding the remedial constraints to reuse in relation to potential future uses. E<sup>2</sup> Inc. has outlined potential next steps below for further discussion in a follow up call.

### **1. Site Reuse Assessment**

Given the uncertainty about the site's suitability for reuse under current conditions, coordination with MDNR, EPA and the City could help to clarify the location of the contamination source area, the remedy components, and the range of potential remedial constraints that may affect reuse under current conditions. Development of a site reuse assessment could help to clarify reuse goals, remedial constraints, surrounding land use compatibility, and reuse suitability zones and help to inform future land use planning efforts.

### **2. Site Reuse Framework**

Based on the future use goals and the reuse suitability zones developed through the reuse assessment, potential reuse scenarios could be developed to illustrate how future uses could be configured on the site. Scenarios could include expansion of the City's animal shelter or a broader range of reuse activities based on other identified reuse goals. Reuse goals, suitability considerations and preferred reuse scenarios could be documented in a summary document to coordinate reuse and remedial activities among the City, MDNR and EPA in the future. If conducted in parallel with the Optimization Study, the reuse assessment and framework could help to inform the City's decision making about remedy modifications.

**Site Photos**



Lee Chemical looking east, with a bulkhead providing access to the soil washing operation in the foreground



Lee Chemical looking west towards the City's active animal shelter



ATC Trucking facility across the street from Lee Chemical



Fountain Bluff Sports Complex located one half mile east of Lee Chemical





The bulkhead providing access to the soil washing system with pumping station in the background



Agriculture surrounding the municipal well field south of the Lee Chemical

