



Frequently Asked Questions

about
**EPA's Proposed Cleanup of the
Keystone Corridor Ground Water
Contamination Superfund Site, Operable Unit 1
Indianapolis, Marion County, Indiana
Updated July 1, 2020**

Q-1: What are the contaminants remaining at the former Tuchman Cleaners?

A-1: Groundwater is an environmental term for underground supplies of fresh water. The groundwater and soil on the former Tuchman Cleaners property is contaminated with volatile organic compounds, or VOCs. The VOCs have names like vinyl chloride; tetrachloroethene, or PCE; and trichloroethene, or TCE. The groundwater and soil VOC concentrations on this property are so elevated that EPA considers them source material for the site contamination.

Q-2: What is source material?

A-2: Source material includes or contains hazardous substances, pollutants or contaminants that act as a reservoir for migration of contaminants to groundwater, surface water or air, or acts as a source for direct exposure. EPA established general expectations that certain source materials, such as what was found on the Tuchman Cleaners property, is addressed best through treatment.

Q-3: What is In-Situ Thermal Treatment?

A-3: Thermal treatment is described as “in situ” or “in place” because the heat is applied underground directly to the contaminated area. In-situ thermal treatment methods move or “mobilize” harmful chemicals in soil and groundwater using heat. The chemicals move through soil and groundwater toward wells where they are collected and piped to the ground surface to be treated using other cleanup methods. Some chemicals are destroyed underground during the heating process.

Q-4: How does thermal treatment work?

A-4: Soil and groundwater are heated to very high temperatures, using electrical energy. The chemicals are then vaporized into gases that move more easily through the soil. The system then collects those gases or vapors for disposal. The most common types of thermal treatment include electrical resistance heating, thermal conductive heating, and steam-enhanced extraction.

Q-5: Is in-situ thermal treatment safe?

A-5: Yes. In-situ thermal treatment methods do not pose a threat to site workers or the community when properly operated. The electrical current is prevented from traveling outside of the treatment area or to aboveground structures by using common electrical grounding techniques. A thermal treatment area is usually covered with an impermeable surface cover (such as concrete, asphalt, or a heavy-duty tarp) to keep the heat and steam underground. Such seals also help prevent the release of chemical vapors to the air. In addition, workers test air samples to make sure that vapors are being captured.

Q-6: How long would the cleanup take?

A-6: Cleanup time depends on site conditions and chemical characteristics. EPA estimates that once the thermal treatment system is constructed, the system will need to operate for a period of six months to one year. EPA monitors the treatment system performance to record the amount of contamination removed over time. Once the system is removing only minimal amounts of contamination, it is said to reach a point of “diminishing returns.” At that time, EPA looks at other information to make sure the system has performed as designed before it is shut down and removed.

Q-7: Is my drinking water affected by the contamination from the site?

A-7: No. Municipal drinking water usually comes from deep wells or surface water. Municipal drinking water is routinely tested for contamination to ensure that drinking water meets federal drinking water standards. If you use a private well for drinking water, contact us for more information.

Q-8: Where can people go to get help and answers regarding chemical exposure and background information on the site?

A-8: People can visit their local health departments, the local Superfund site information repositories, contact their doctor, and gather information from the state, local, and federal websites. Information on various pollutants can be found at: <http://www.atsdr.cdc.gov/toxfaqs/index.asp>. The EPA webpage for the Keystone Corridor Superfund site is available at: www.epa.gov/superfund/keystone-corridor-groundwater.

Q-9: Will my property value be affected by the site or the cleanup?

A-9: Many people who live near a hazardous waste site have questions about their property values. EPA suggests you consult a professional in your community who can give you a more accurate and current answer about property values. Real estate agents, banks and other lenders, appraisers, and public and private assessors should be able to answer this question for you. Local government agencies such as your taxing authority or planning commission may also be able to give you information on property values. EPA’s mission is to protect human health and the environment, so the agency is focused on getting the contamination at the site cleaned up, so it no longer poses unacceptable risks.

Q-10: What are the next steps?

A-10: EPA’s March 2020 Proposed Plan presents the Agency’s Preferred Alternative for Operable Unit 1 of the site. Operable units, or OUs, may address geographic areas, specific problems, or areas where a specific action is required. EPA selected an interim remedy in September 2018 to address site-wide vapor intrusion at Operable Unit 3 or OU3. The last remaining area is Operable Unit 2, or OU2, which will address site-wide groundwater contamination and other potential source areas at the site. EPA will propose and select a final remedy for OU2 in future decision documents. EPA intends to implement and assess the effectiveness of the OU1 remedy and collect additional groundwater data before implementing the OU2 remedy.

Q-11: When will construction of the OU 1 remedy begin?

A-11: Following issuance of the Record of Decision, EPA will start the remedial design. During the remedial design, EPA will request remedial action funding from EPA Headquarters to install the in-situ thermal treatment system. Remedial action funding is provided by Headquarters on a site-specific basis, with priority given to sites posing the greatest risk. It is not possible to predict when such funding will be provided. As EPA stated in its virtual presentation, the construction time is expected to be between 2 and 3 months once EPA funding is received and construction begins.

Q-12: What are the plans for the rest of the nearly one-mile plume?

A-12: The last operable unit, or OU, that will be addressed at the site is OU-2, which will address sitewide groundwater contamination and other potential source areas at the site. EPA is currently working on a feasibility study to evaluate viable cleanup options. EPA will then propose and select a final remedy for OU-2 in future decision documents. EPA intends to implement and assess the effectiveness of the OU-1 remedy and collect additional groundwater data before implementing the OU-2 remedy.

Q-13: The shallow contamination is much higher than deeper contamination. Will EPA continue with the same process as that for OU-1?

A-13: EPA will address the impacts outside of the former Tuchman property within the same Superfund cleanup process implemented for OU-1. The remedial investigation of the sitewide groundwater plume is complete and an evaluation of cleanup strategies is currently underway. EPA identified three intervals of chlorinated volatile organic compound impacts during its remedial investigation: in the shallow (approximately 5 to 30 feet below ground), in the intermediate (approximately 30 to 70 feet below ground), and in the deep interval (approximately 70 to 100 feet below ground). Most of the impacts are in the shallow interval with much less impact in the intermediate and less still in the deep interval. Therefore, EPA will continue to investigate cleanup options for all three intervals to be addressed in the OU-2 Record of Decision for the site.

Q-14: Can this plume impact Fall Creek?

A-14: If left untreated, the shallow groundwater plume has the potential to impact Fall Creek in the future. That is why it is important to treat the contamination and reduce the source contamination mass.

Q-15: Is the contamination getting into Fall Creek now?

A-15: During the remedial investigation, surface water samples were collected at 10 locations from Fall Creek. No volatile organic compounds were detected in surface water in Fall Creek.

Q-16: In general, has the EPA considered applying the heat or steam energy using soil mixing?

A-16: Following our technology screening, EPA evaluated various application techniques for in-situ thermal treatment to integrate into the detailed alternative analysis. Because soil mixing is highly disruptive to the current business operations at the former Tuchman property, and the current business would either need to shut down during construction or be relocated

within the property boundaries, EPA elected to retain electrical resistance heating (ERH), thermal conductive heating (TCH), and/or steam injection as the heat application approaches. They are less disruptive than soil mixing while still being able to meet our target of achieving greater than 99.9 percent reduction of contaminant mass within soil and groundwater. EPA also concluded that the ERH, TCH, and/or steam injection approaches would also have more treatment certainty than a soil mixing approach. We did retain soil mixing for the in-situ chemical reduction (ISCR) application, but that was because that was determined to be the most effective approach to applying and distributing the ISCR reagents – as compared to injection, for example.

Q-17: Will downgradient groundwater and soil vapor monitoring be performed while the OU-1 treatment is implemented to ensure that VOCs liberated from the clay unit are being fully captured by the extraction system and not moving offsite?

A-17: The thermal treatment system will be designed to maintain both hydraulic and pneumatic control (through groundwater extraction and soil vapor extraction wells, respectively). Performance monitoring during system operation will include, but will not be limited to, downgradient soil vapor and groundwater monitoring, treatment area vacuum and soil gas monitoring, and extracted groundwater quality monitoring.

Q-18: Will post thermal treatment soil sampling be performed to confirm post-remediation concentrations? If concentrations found are still above the 1,000 ug/kg source level, will additional remediation be performed?

A-18: Confirmation soil sampling will be collected when performance monitoring data indicate asymptotic contaminant mass recovery based on recovered soil vapor and extracted groundwater sampling results. The confirmation soil sampling data will be assessed in conjunction with the operational data to determine whether additional operation is warranted and if so, how it will be optimized to complete the treatment process.

Q-19: If an air stripper is used in the ex-situ treatment unit, will the output of the air stripper be monitored and run through a carbon filter to prevent ambient air contamination with extracted vapors?

A-19: Vapors collected by the soil vapor extraction system will be treated through a granular activated carbon unit before release into the ambient air.

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