

The Environmental Corner

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Closure and Long-term Stewardship of Contaminated Sites

Will PCE and TCE Ever Go Away?

You are involved with a soil and groundwater cleanup and it seems to go on and on. Month after month your lawyer and your consultant send you a bill. This month they want to drill more borings, next month they want access to collect more groundwater samples, or maybe they want access to your building to collect additional indoor air samples. It's gone on so long that you are numb and it's to the point that you feel everyone is on the dole at your expense. What I want to tell you today is that there is, or should be, an end game. That end game is a plan and schedule for obtaining regulatory site closure.

Every site needs a plan and a schedule that lays out the steps that will be taken to obtain site closure. Like all plans, it can change based on new information, new regulations, new requirements, new science and technology. But, if you don't have a plan, you will be spending lots of time and money unnecessarily. Most

importantly, if you don't have a plan and a schedule, you won't get regulatory site closure.

Most consultants understand the basics of how to conduct a site investigation and proceed toward the cleanup. The basics include determining the extent of the horizontal (length) and vertical (depth) extent of the contamination, evaluating the remedial options, and implementing the remedial options. However, that is

only a part of the site closure process.

One of the most important things to understand is how long will the remediation take? That is the \$64,000 question, or in your case the \$500,000 question. The time it will take to obtain regulatory site closure and the cost will be greatly affected by the number of years that long-term monitoring and stewardship will be

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required.

Long-term stewardship applies to sites where contamination in subsurface mediums (soil, soil gas and groundwater) needs to be monitored over time to ensure that people are not adversely affected by the contamination. As a point of reference, if contamination is left in place or if residual concentrations of contamination remain in the soil and groundwater, long-term monitoring and stewardship is generally required. For example, when chlorinated solvents are remediated in soil and groundwater, it is not uncommon for some amount of contamination to remain in the subsurface. I would almost always advocate remediating the source area, even if the down gradient plume were allowed to degrade under natural conditions. But in some situations residual contamination may still exist in the source area after remediation has been completed, like when contaminated soil that is present under load bearing walls and footers that cannot be reached during excavation has to be left in place. Think of contamination in tight soils that are not porous and air and liquids do not easily move through. When contamination is left in place, long-term monitoring and stewardship will be required.

Long-term stewardship typically focuses on the physical and legal controls to prevent unacceptable exposure of the contamination to people. Examples of physical controls would include engineering controls such as asphalt caps (even parking lots), monitoring of groundwater to ensure

that the contamination is not continuing to migrate and increase in concentrations, monitoring indoor air or sub-slab soil gas to ensure that vapors are not entering buildings at unacceptable concentrations, and maintaining on-going mitigation equipment such as sub-slab depressurization systems (“radon mitigation systems”). Examples of legal controls would include ensuring that the deed restrictions (environmental restrictive covenants) are being adhered to, verifying that wells are not being used for water supply, making sure that construction workers in the area are following protocol when disturbing contaminated soils, and making sure workers follow appropriate procedures when managing contaminated soils and groundwater during construction and dewatering activities.

As more and more sites will close using risk-based approaches, contaminated soil and groundwater will be left in place and long-term stewardship will be required. It is going to be critical to know what future responsibilities will be required of you in order to leave contaminated soil and groundwater behind.

Unfortunately, post closure, long-term stewardship is a topic that is generally not discussed at the front end of the site investigation and remediation process. Failure to understand long-term stewardship as part of the risk based closure strategy could mean you’re on the hook a lot longer than you ever dreamed possible, leaving yourself open to liability along the way.

With 30 years of experience, Steve Henshaw holds professional geology registrations in numerous states. As President and CEO of EnviroForensics, Henshaw serves as a client and technical manager on projects associated with site characterization, remedial design, remedial implementation and operation, litigation support and insurance coverage matters. He has acted as Project Manager or Client Manager on several hundred projects involving dry cleaners, manufacturers, landfills, refineries, foundries, metal plating shops, food processors, wood treating facilities, chemical blenders and transportation facilities. Henshaw has built a leading edge environmental engineering company that specializes in finding the funding to pay for environmental liabilities. By combining responsible party searches with insurance archeology investigations, EnviroForensics has been successful at remediating and closing sites for property owners and small business owners across the country, with minimal capital outlay from clients. He is a regular contributing writer for several dry cleaning trade publications on environmental and regulatory issues and remains active with dry cleaning associations by providing insight on changes in law and policy. Contact www.enviroforensics.com; e-mail: shenshaw@enviroforensics.com.

