North Carolina Begins Using Risk-Based Corrective Action at High Risk UST Sites

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The North Carolina Department of Environmental Quality (NCDEQ) has issued guidance for remediation of petroleum groundwater contamination from leaking underground storage tanks (USTs). Its *North Carolina Petroleum UST Release Corrective Action Phase Project Management: A Calibrated Risk-Based Corrective Action Decision & Implementation Guide* (Guidance) follows NCDEQ's historic risk-based approach to low and intermediate risk sites and recognizes that requiring universal strict remediation goals is not always necessary or advisable at high risk sites.

Why the change?

Petroleum contamination in groundwater naturally degrades and attenuates over time. Under current state law, groundwater contamination at high risk UST sites must generally be remediated to state groundwater quality standards to the extent feasible. 15A NCAC 2L.0407(b). As a result, some UST owners attempting to achieve these strict numeric remediation standards have had to monitor concentrations for decades, unable to reach "no further action" status even when concentrations are stable or slowly decreasing.

According to the Guidance, current state law and EPA guidance also require use of monitored natural attenuation (MNA) to the maximum extent possible in any corrective action plan. However, EPA guidance states that if MNA is expected to take more than 10 years to achieve the cleanup goals at a site, then using groundwater quality standards as the cleanup goal may not be a viable option. As a result, the Guidance states that for future project planning, this 10 year period will be one of the design parameters NCDEQ uses in determining what cleanup goals should apply at a given site.

While environmentalists may argue NCDEQ should not concern itself with the time it takes to reach groundwater quality standards at high risk sites, NCDEQ justifies a different approach due to negative direct and indirect consequences, including:

- Virtually unending costs with lackluster results - often paid by state or federal funding;
- Lack of money to cover all sites through the NC Commercial Trust Fund;
- 'Stigma' to the property, thereby potentially deterring redevelopment;

- Administrative burdens on the state; and
- Little to no benefit to the environment.

NCDEQ believes current law supports its move towards a more holistic and cost-benefit approach to high risk sites.

When does the guidance apply?

The Guidance applies to persons cleaning up petroleum releases from USTs at all sites, including "high risk sites." Current NC UST regulations classify petroleum release sites as high, intermediate or low risk based on certain factors. These factors include the distance from a drinking water supply well, future availability of alternative water supply sources in the area, risk of explosion due to vapors, and whether the release poses an imminent threat to human health and the environment. 15A NCAC .0406. Once a site is classified based on risk, it is assigned a cleanup standard as follows:

- High risk sites – if feasible, remediation required to achieve NC groundwater protection standards for unrestricted use of groundwater;
- Intermediate risk sites - remediation to "Gross Contaminant Levels" (GCLs), meaning concentrations up to 1000 times the groundwater protection standards; and
- Low risk sites – possibly no remediation even where levels exceed groundwater protection standards.

Under the Guidance, high risk sites can now meet the intermediate risk site standard of GCLs if certain criteria are met.

How is the Guidance to be used?

The Guidance requires reevaluation of a site's classification and a cost-benefit analysis when proposing cleanup measures. First, pursuant to current law, a release is to be classified using the listed factors at the time of discovery. However, the agency recognizes a problem with this approach – site conditions change over time, and older sites once deemed high risk may not meet that classification today. Therefore, NCDEQ's new approach uses the existing statutory classification framework, but acknowledges that site risk "is a dynamic variable that will change over time." Thus, NCDEQ indicates in the Guidance that State law and regulations "provide for obtaining information during assessment, monitoring, and corrective action to allow for ongoing risk reclassification at Trust Fund-eligible sites."

Second, in addition to reclassification, the Guidance requires a cost-benefit analysis when choosing a remedy. If MNA is expected to take more than 10 years with limited results, cost will be a factor in determining whether lower goals and an earlier site closure is the best option.

The Guidance requires the following systematic approach:

1. Determine the release stage: is the release expanding, stable or contracting?
2. Use a dynamic risk analysis process: require notification by owners of changes in release

and site conditions.
3. Establish a groundwater cleanup level directly related to an up-to-date risk, ranking and abatement score.
4. Set measurable performance goals for the clean-up levels and the time required for each task.
5. Analyze the costs and weigh the benefits.

NCDEQ recognizes in its Guidance that use of a declining risk trend approach to high risk sites logically leads to establishment of a default cleanup standard of GCLs. Nevertheless, it justifies this approach as supported by logic and state law.

What does NCDEQ hope to achieve?

NCDEQ expects the Guidance will allow for closure of sites that otherwise would stay in MNA for undefinable periods of time. It also expects other benefits, including: (1) reducing per-site expenditures and redirecting available funds to a larger number of sites; (2) maximizing efficient use of funds; (3) a more streamlined, collaborative process; (4) increasing the ratio of reimbursement dollars paid to claims made; (5) improving communication among the UST owners, environmental consultants, and the agency; and (6) increasing transparency to the public.

Of course, some environmentalists worry the Guidance will result in closure of sites too soon and, thus, leave more pollution in place. However, perpetual monitoring of contamination levels that did not require active remediation prior to the new guidance did not result in less pollution – just more proof that the levels were stable. The Guidance makes a lot of sense.

North Carolina Petroleum UST Release Corrective Action Phase Project Management: A Calibrated Risk-Based Corrective Action Decision & Implementation Guide (June 1, 2016)

NCGS 143-215.94A(2a), -.94V(a)-(c), and (e2)

15A NCAC 2L .0402, .0406, and .0407

How to Evaluate Alternative Cleanup Technologies for Underground Storage Tank Sites: A Guide to Corrective Action Plan Reviewers (EPA 510-B-94-003; EPA 510-B-95-007, and EPA 510-R-04-002)

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