

# Texas Natural Resource Conservation Commission

## INTEROFFICE MEMORANDUM

TO : PST-RPR Coordinators  
State Lead Project Managers  
VCP Project Managers

DATE: November 1, 1999

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SUBJECT : Guidance for Leaking Petroleum Storage Tank (LPST) Sites Located on State Designated Major/Minor Aquifers or Local Water Supply.

The following guidance applies to LPST sites where the impact has affected a known local/regional water supply or a state designated major/minor aquifer. The following criteria replace applicable portions of Items 3 and 4 of the March 6, 1997 Interoffice Memorandum entitled *Clarifications and Amendments for Implementation of RG-36* which established guidelines to select the reasonable points of exposure, applicable risk levels, and exposure factors in calculating Plan B target concentrations for groundwater exposure pathways. All other items in the March 6, 1997 Interoffice Memorandum are still applicable.

### Selecting Reasonable Points of Exposure (POE) for Groundwater Exposure Pathways:

The POE should be assumed at the nearest downgradient off-site residential or commercial property line. The future on-site use of groundwater may be eliminated via institutional controls. When the on-site land use is commercial/industrial, water is supplied to the site by a municipal supply (not an on-site water well), and there is no history of commercial/industrial use of the groundwater within half a mile; then institutional controls are not necessary and future on-site use may be qualitatively eliminated.

### Applicable Risk Levels and Exposure Factors for Groundwater Exposure Pathways:

For actual or currently existing POEs, the Plan B target concentrations should be based on a  $1 \times 10^{-6}$  risk level for Class A and B carcinogens and a  $1 \times 10^{-5}$  risk for Class C carcinogens. For non-carcinogens, target concentrations should be based on a hazard quotient of 1. Additionally, cumulative carcinogenic risk and hazard index values should not exceed  $1 \times 10^{-4}$  and 1 respectively. The Reasonable Maximum Exposure factors (RMEs) for the appropriate land use should be used to calculate the target concentrations. If the calculated target concentrations are below the Federal Maximum Contaminant Levels (MCLs), then the MCLs should be used as target concentrations.

For hypothetical or assumed POEs, the Plan B target concentrations should be based on a  $1 \times 10^{-4}$  risk level for Class A, B, and C carcinogens. For non-carcinogens, target concentrations should be based on a hazard quotient of 1. Additionally, cumulative carcinogenic risk and hazard index values should not exceed  $1 \times 10^{-4}$  and 1 respectively. The Most Likely Exposure factors (MLEs) for the appropriate land use should be used to calculate the target concentrations.

Additional Corrective Action Criteria:

This guidance applies to sites where a Plan B Risk Assessment for establishment of Site-Specific Target Levels (SSTLs) is necessary but has not yet been conducted or approved. In addition, for sites where an engineered Corrective Action Plan (CAP) has been approved based on SSTLs for a groundwater exposure pathway, re-evaluation of the SSTLs is required. For an existing remediation system, the remainder of any approved operation, monitoring, and performance (OMP) activities may be completed. However, the necessity for continued system operation should be evaluated based on the revised SSTLs. The following criteria are also applicable:

- Plume Delineation: Define the groundwater contaminant plume to appropriate Plan A Beneficial Use Category levels.
- Target Concentrations: Establish target concentrations protective of both existing POEs and hypothetical POEs. The more stringent target level would apply for the site. The exposure factors should be chosen for the appropriate land use and POE setting.
- Remediation: If active engineered remediation is necessary it would be driven by the more stringent target level. For some LPST sites, remediation by natural attenuation (RNA) may be more appropriate as compared to engineered remediation. Please refer to Figure 4 of the February 10, 1997 TNRCC Interoffice Memo entitled "Process for Closure Evaluation for Petroleum Hydrocarbon LPST Sites Exceeding Target Concentrations". For LPST sites where RNA is appropriate, verify a stable/declining plume in size and concentration. At a minimum, 4 quarters of groundwater monitoring should be available to verify a stable/declining plume. If the difference between the SSTLs and the on-site concentrations is greater than an order of magnitude, long term monitoring may be necessary.

Please note that if delineation and monitoring activities document that the POE has not been impacted above MCLs and the plume is stable/declining, evaluation of the off-site groundwater ingestion pathway will not be required. In other words, do not model to a farther POE if the plume is stable/declining.

Upon granting final closure for a site, if the POE assumptions for the site change in the future i.e., a hypothetical POE becomes an existing POE, then the risk evaluation has to be revised appropriately and the need for further corrective action has to be determined. The final closure letters issued by this Office should include appropriate language in this regard. Finally, based on site-specific conditions, the TNRCC may require more or less stringent actions than those outlined in this guidance.

Reimbursable Costs for Re-evaluation of SSTLs:

For sites that are eligible for reimbursement, the reimbursable cost for re-evaluation and reporting is \$550 per site. However, preapproval for this activity is not necessary. The application for reimbursement should include a copy of this memorandum in lieu of the preapproval.