

Texas Commission on Environmental Quality

INTEROFFICE MEMORANDUM

To: PST-RPR Project Managers
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Subject: Process for Expedited Closure Evaluation for Priority 4.1 Petroleum Hydrocarbon
LPST Sites

The goal of the risk-based corrective action program is to get low risk sites to closure quickly and appropriately so that limited resources can be concentrated on high risk sites. This guidance applies to sites reported prior to September 1, 2003, which are subject to 30 TAC 334 (Chapters D and G). It focuses on Priority 4.1 (groundwater is impacted) sites having a depth to water greater than 15 feet (or the depth to utilities if that is greater than 15 feet) and an affected groundwater zone that is not part of a fractured bedrock or karst environment.

Proper identification as a Priority 4.1 site is critical. An adequate receptor survey should be performed at all Priority 4.1 sites if this has not already been done. If upon evaluating the site for the criteria below, it is found to be more appropriately classified as a different priority, then it should be reclassified and this guidance may not apply. The following conditions are the criteria that define a site as a Priority 4.1:

- There are no water wells present within 0.5 mile radius of the site that are impacted or threatened by the affected groundwater zone;
- The affected groundwater zone is not considered part of a state designated major/minor aquifer;
- Future use of the affected groundwater is unlikely; and
- The affected groundwater zone does not discharge to a surface water body used for human drinking water, contact recreation or habitat to a protected or listed endangered plant and animal species located within 0.25 mile radius of the site.

If the site is verified to be properly classified as a Priority 4.1, then this IOM should be used in conjunction with the existing guidance on *Closure Evaluations (February 10, 1997 - Exit Criteria)*. In the existing

guidance, Priority 4.1 sites have already been identified as having the potential for meeting exit criteria under certain conditions. This guidance addresses several additional criteria that may also now allow a Priority 4.1 site to be closed. The two main issues that this IOM addresses in evaluating closure of Priority 4.1 sites are: (1) the presence of petroleum product in the form of a non-aqueous phase liquid (NAPL), and (2) the requirements for delineation and determining stability of groundwater plumes. These criteria are being modified to enable additional low priority, low risk sites to be closed.

Presence of NAPL

In order to evaluate the possibility of closure for sites where NAPL is still present, several lines of evidence must be evaluated to ensure that the NAPL is adequately delineated and that the potential risk associated with closing the site remains relatively low. Thus, if all other conditions in the *Closure Evaluation (February 10, 1997 - Exit Criteria)* guidance are met, the presence of NAPL will not automatically exclude a site from closure. If NAPL is present, the following criteria must be met to achieve expedited closure:

- NAPL is adequately delineated, with a minimum of at least one monitoring well downgradient of the NAPL plume that does not contain NAPL;
- the NAPL plume is stable;
- there is not an on-going release; and
- sufficient efforts to recover NAPL are documented.

These criteria will rely a great deal on professional judgement. Clearly, if a release was large and very recent, then closure should not be granted if the extent of the NAPL is not adequately delineated and the stability of the NAPL plume is not established. In addition, if NAPL is present beneath buildings or subsurface structures, then the potential risk from the vapor pathway must be evaluated. If NAPL extends off-site, then the possibility of expedited closure must be evaluated on a case by case basis. Also, the criteria for any dissolved phase groundwater plume (presented below) must also be met before closure can be approved for sites with NAPL.

Limited Groundwater Delineation and Plume Stability Evaluation

Under the current guidance for closing Priority 4.1 sites, if the groundwater concentrations for groundwater below 15 feet exceed Plan A Category III levels, the site can be closed once it has been demonstrated that dissolved phase concentrations are stable or decreasing in the groundwater. In order to expedite closure of these sites, since they are not going to be actively remediated, delineation of the extent of groundwater contamination can be more limited than in cases where receptors are an issue. The following conditions must be met in order to close these Priority 4.1 sites.

- at least 3 appropriately constructed monitoring wells must be present, with one being located in or near the source area and at least one located downgradient of the source area (or NAPL plume); and
- groundwater contamination in the dissolved-phase plume downgradient of the source area (or NAPL, if present) must be adequately shown to be stable or decreasing through a minimum of 4 quarterly (or less frequently) monitoring events.

The monitoring frequency for establishing stability in the dissolved plume can be less often than quarterly (e.g., four semi-annual events), but it cannot be more frequent than quarterly. Project managers should consider the natural variability in environmental samples and analyses when evaluating the stability of the groundwater plume. Stable or decreasing overall trends in data should be considered sufficient to support closure at these sites.

In order to be confident that highly contaminated groundwater does not actually represent the edge of a NAPL plume, if the downgradient well shows concentrations approaching the effective solubility of TPH in the C6 to C12 range or benzene, the possible presence of NAPL in this area should be investigated. If NAPL is confirmed, then an additional downgradient well will be needed to verify dissolved-phase plume stability.

If TPH analyses are only available that were performed by Method 418.1, then the total TPH value should be used for comparison. The values to be used for comparison for the effective solubility are presented in the table below.

Constituents	Effective Solubility Value
Benzene	36 mg/L or parts per million (ppm)
TPH (C6 - C12 range)	135 mg/L or ppm

As with the other criteria, this guidance is to be used in conjunction with the existing guidance to expedite closure at low priority LPST sites.