Texas Commission on Environmental Quality

INTEROFFICE MEMORANDUM

To: Toxicology and Risk Assessment and Remediation Division Project Managers

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Subject: Implementation of the new arsenic MCL in the Remediation Programs

On February 22, 2002 a new federal arsenic maximum contaminant level (MCL) of 10 µg/L was adopted by the US EPA. The former arsenic MCL was 50 µg/L. The new MCL was included in the March 28, 2002 annual update of the 30 TAC 335 Risk Reduction Rule Media-Specific Concentration (MSC) Tables and the 30 TAC 350 Texas Risk Reduction Program Tier 1 Protective Concentration Level (PCL) Tables. By that March 28, 2002 update, the agency implemented the new arsenic MSCs and PCLs immediately for the following exposure pathways:

- groundwater ingestion,
- Class 3 groundwater under 30 TAC 350 or groundwater meeting the criteria of §335.559(d)(3) or §335.563(h)(3)(A), and
- soil-to-groundwater.

This memorandum supercedes the March 28, 2002 implementation of the new arsenic MCL for both the 30 TAC 335 and 350 rules[A]. Follow the implementation strategy for the scenario presented below that is most applicable to the particular remediation project under consideration.

1. Remediation projects that were closed (achieved "no further action required" status or equivalent) prior to the date of this memorandum. The new arsenic MSCs or PCLs will only be of issue in those instances where a public drinking water supply well, private drinking water well or surface water intake for drinking water was affected[B] with arsenic at a concentration in excess of 10 µg/L at the time the project was closed. If such instances are identified, then adoption of the new arsenic MCL should be considered a "substantial change in circumstance" as set forth in §335.8(b)(5) or §350.35 and the project needs to be further addressed.

2. On-going remediation projects that were reported to TCEQ prior to March 28, 2002. Such remediation projects must comply with the new arsenic MSCs or PCLs if any of the three following conditions apply:

- a public drinking water supply well, private drinking water well or surface water intake for drinking water is currently affected or threatened[B] by the arsenic release;
- the soil or groundwater arsenic assessment was still on-going as of March 28, 2002; or
- the soil and groundwater arsenic assessments were completed prior March 28,2002, but the affected groundwater is anticipated to have a potential future use as a drinking water supply[C].

3. Remediation projects newly reported to TCEQ on or after March 28, 2002. Such remediation projects must comply with the new arsenic MSCs or PCLs.

4. Remediation projects where arsenic has been released to surface water but a surface water intake for drinking water is not affected or threatened. The 30 TAC 335 and 350 rules defer to the 30 TAC 307 Texas Surface Water Quality Standards. Currently, the human health standard for arsenic is 50 µg/L. Until 30 TAC 307 is amended to reflect the new MCL, use 50 µg/L to evaluate surface water impacts unless a surface water intake for drinking water has been affected or threatened, in which case the new MCL of 10 µg/L applies. Please note that on a site-specific basis other exposure pathways, such as ecological risks, can result in a surface water PCL or MSC below 50 µg/L.

Footnotes:

A. Both the 30 TAC 335 and 350 rules default to background in situations where background concentrations are higher than an MSC or PCL. If the background concentrations of arsenic in the soil or groundwater exceed the new or former MCL, then use the background concentrations as the MSC or PCL. It is important to note that this has implications for Footnote B as well. Specifically, in cases where background concentrations of arsenic have been demonstrated to exceed the MSC or PCL, consider a well or surface water intake affected or threatened only when concentrations of arsenic exceed the established background concentration.

B. Consider a well affected when the concentration of arsenic in the well exceeds 10 µg/L, and the arsenic concentration stems from a direct or secondary unauthorized release of arsenic. An example of a secondary release of arsenic is the leaching of arsenic from a geologic formation as a consequence of geochemical reactions occurring via anaerobic degradation of another chemical that has been released in an unauthorized manner (e.g., anaerobic degradation of perchloroethylene). Consider a well threatened if based on the chemical and physical properties of arsenic, the hydrogeologic conditions, and the construction and operation of the well, the well will likely become affected with an arsenic concentration in excess of 10 µg/L unless action is taken to prevent that from occurring.

   Similarly, consider a surface water intake affected when the concentration of arsenic in a surface water intake exceeds 10 µg/L, and the arsenic concentration stems from an unauthorized release. Consider a surface water intake threatened when based on arsenic concentrations in the surface water body and flow characteristics of the surface water body, that a surface water intake is likely to become affected with an arsenic concentration in excess of 10 µg/L unless action is taken to prevent that from occurring.

C. Consider the following groundwater to have potential for future use:
   - Class 1 and Class 2 groundwater (as defined in §350.52),
   - groundwater where the criteria of §335.559(d)(1) or (2) are applicable (for Risk Reduction Standard 2); or
   - groundwater that meets the criteria of §335.563(h)(1) (for Risk Reduction Standard 3).

   Exceptions to this requirement are limited to (1) sites where a demonstration can be made that groundwater is significantly impacted by non-point sources (e.g., releases from septic systems), (2) sites with specific deed prohibitions precluding use of the groundwater, and (3) sites where the TCEQ determines that future utilization of the groundwater resource is unlikely to be desired or necessary. The third exception must be based on consideration of factors such as long-term local and regional water plans, groundwater development trends, and the volume and productivity of groundwater-bearing units potentially affected by this decision.