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**Title:** Methyl-Tertiary Butyl Ether (MTBE) Remediation

**Identification Number:** WASTE-0055-NPD

**Date Originally Effective:** March 17, 2005

**Dates Revised:** None

**Other Policies Repealed or Amended:** None

**Brief Description of Subject Matter:**

This document addresses Remediation and Closure Levels for Methyl-Tertiary Butyl Ether (MTBE), a common additive to gasoline.

**Citations Affected:** IC 13-23-13; IC 13-24-1; IC 13-25-4; IC 13-25-5

This nonrule policy document is intended solely as guidance and does not have the effect of law or represent formal Indiana Department of Environmental Management (IDEM) decisions or final actions. This nonrule policy document shall be used in conjunction with applicable laws. It does not replace applicable laws, and if it conflicts with these laws, the laws shall control. This nonrule policy document may be put into effect by IDEM thirty days after presentation to the appropriate board. Pursuant to IC 13-14-1-11.5, this policy will be available for public inspection for at least forty-five (45) days prior to presentation to the appropriate board. If the nonrule policy is presented to more than one board, it will be effective thirty days after presentation to the last. IDEM will submit the policy to the Indiana Register for publication. Revisions to the policy will follow the same procedure of presentation to the board and publication.

**Background**

Methyl-Tertiary Butyl Ether (MTBE) is a common additive to gasoline, particularly in areas where smog and ozone are health concerns. It is an octane enhancing replacement for lead and used as an oxygenate to lower motor vehicle emissions by reducing the need for benzene, a known carcinogen and ozone precursor. MTBE concentrations in enhanced or re-engineered gasoline, generally ranges from 3 to 15 percent by volume. Due to cross mixing of products in storage, distribution and

transportation, MTBE can be found in virtually all petroleum products. Releases of gasoline and other petroleum products are common, mainly occurring through leaking underground storage tank releases and spills.

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MTBE is considered by the U.S. Environmental Protection Agency (EPA) to be a potential human carcinogen. The EPA is evaluating carcinogenic information on this additive and will be performing additional research on the risk to humans. CERCLA lists MTBE as a hazardous substance. Since MTBE is more soluble than other petroleum hydrocarbons, MTBE is usually out in front or downgradient of the main body of a groundwater plume of gasoline. Therefore areas with drinking water wells present are more susceptible to MTBE impacts than from the other gasoline constituents. While the EPA considers establishing a Maximum Contaminant Level (MCL), they have issued a drinking water advisory of 40 parts per billion (ppb) for MTBE intake. This level is below a taste/odor threshold for a majority of the population. This drinking water advisory concentration will likely protect consumers from potential health effects.

## Policy Statement

The Indiana Department of Environmental Management has established default risk-based site cleanup/closure levels for the gasoline additive MTBE. The following default levels apply to sites per their land use determination as Residential or Industrial.

	Soil	Groundwater
Residential	0.18 ppm	40 ppb
Industrial	3.9 ppm	870 ppb

- ppm = parts per million
- ppb= parts per billion

The use of a risk-based approach for the cleanup of MTBE provides environmental and human health benefits for the citizens of Indiana. This policy protects the drinking waters of the state by establishing soil levels that will not allow MTBE to have an adverse effect on groundwater while setting a drinking water level which protects against adverse taste and odor effects. This policy meets the regulatory mandate that IDEM use a risk-based approach to cleanup. This is not a significant departure from the way the Leaking Underground Storage Tank Program and the

Excess Liability Fund (ELF) Program currently deal with MTBE issues. The cost of delineating MTBE is an eligible reimbursable expense under the ELF Program. This policy will only affect sites that have a release of gasoline with MTBE present.

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## Implementation

All sites with gasoline releases should delineate for the constituent MTBE regardless of whether closing using IDEM's RISC (Risk Integrated System of Closure) Program (February 2001) including the RISC Technical Resource Guidance Document, Appendix I, July 2004 updates or the Underground Storage Tank (UST) Guidance Manual (October 1994) criteria. Delineation should be to the RISC Residential levels both on- and off-site.

For sites using the RISC program for closure, in a situation where surrounding properties are a mixture of Residential and Industrial the most protective numbers will apply (Residential) for both soils and groundwater. However, industrial levels may be used if the MTBE is confined to the Industrial property where the release occurred and it can be shown that the plume is stable and/or shrinking. Non-default RISC closure where site specific issues can be addressed is also an option.

For sites using the UST Guidance Manual criteria to close a site, MTBE needs to be delineated in the groundwater only. The RISC Residential groundwater numbers apply. The UST Guidance Manual does not allow for differences between residential and industrial land uses.

For sites where a Corrective Action Plan has already been approved as of the effective date of this policy, the responsible party will not be required to go back and delineate MTBE unless there is potential impact to a receptor (such as a private or public drinking water wells and/or vapors in structures or other impact). Sites that have been issued a No Further Action (NFA) letter for closure of a site will not be reopened unless MTBE contamination is discovered at a receptor (such as a private or public drinking water well and/or vapors in structures or other impact) and the site is the probable cause of that contamination. An exposure issue must be confirmed before IDEM will require the responsible party to provide further delineation for the closed sites.