



MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY
Remediation and Redevelopment Division

LEAKING UNDERGROUND STORAGE TANK SITE CLASSIFICATION FORM

Check the applicable scenarios for each pathway based on adequate characterization and monitoring events.
Review the scenarios from left to right. The site classification is determined by the column farthest to the left for which ANY scenario was check marked.

	General Scenario: Class 1		General Scenario: Class 2		General Scenario: Class 3		General Scenario: Class 4		General Scenario: Class 5	
RIDE Risk Category	Existing or immediate exposure or threat to human health, safety, welfare, environment, or sensitive environmental receptor.	<input type="checkbox"/>	Based on the site risk-based corrective action conceptual site model (RBCA CSM) and migration of contaminants, there is a potential for an exposure or threat to human health, environment, or sensitive environmental receptors in the short term. For the purpose of classification, potential exposures or threats considered to be short term generally are from the present to 2 years.	<input type="checkbox"/>	Based on the site RBCA CSM and migration of contaminants, there is a potential for exposure or threat to human health, safety, or welfare, or to the environment, or sensitive environmental receptors in the long term. For the purpose of classification, potential exposures or threats considered to be long term generally are greater than 2 years.	<input type="checkbox"/>	There is no short or long-term effect to human health, safety or welfare or sensitive environmental receptors based on current conditions. An unacceptable exposure to contamination is not anticipated based on implemented initial response actions and current uses. This includes any implemented initial response actions employed to control current risks (e.g., vapor mitigation system), and corrective actions are underway that will achieve closure.	<input type="checkbox"/>	There is no short or long-term effect to human health, safety or welfare or sensitive environmental receptors. An unacceptable risk from contamination is not anticipated based on current and reasonably foreseeable land use. All appropriate Part 213 corrective actions to close a LUST release are completed. This includes all appropriate restrictions and an approved Part 213 Closure Report.	<input type="checkbox"/>

	General Scenario: Class 1		General Scenario: Class 2		General Scenario: Class 3		General Scenario: Class 4		General Scenario: Class 5	
<p>Evaluate Pathway in Relation to NAPL</p> <p>(see NAPL Guidance)</p>	<p>Presence of migrating non-aqueous phase liquid (NAPL).</p> <p>Presence of acute risks due to direct contact or inhalation exposures to mobile or residual NAPL. This includes contaminants with acute (short-term) exposures in contact with the structure (including foundation and footers).</p>	<input type="checkbox"/>	<p>Presence of acute risks due to inhalation exposures from mobile or residual NAPL where contamination is not in contact with a structure</p>	<input type="checkbox"/>	<p>Presence of long term (chronic risks) due to direct contact or inhalation from mobile or residual NAPL.</p>	<input type="checkbox"/>	<p>Mobile and residual NAPL are not present.</p> <p>Mobile and residual NAPL is present and delineated, and risks are abated or managed.</p>	<input type="checkbox"/>	<p>Mobile and residual NAPL are not present.</p> <p>NAPL is present and delineated, risks are abated or managed and reliable restrictions are in place for potential future uses.</p>	<input type="checkbox"/>
<p>Fire and/or Explosion</p>	<p>Explosive vapor levels are present in a residence or other structure.</p> <p>Explosive vapor levels are present in subsurface utility system(s).</p> <p><i>NOTE: Explosive levels are present when vapor concentrations are at or greater than 10 percent of the Lower Explosive Limit (LEL) for any regulated substance or a mixture of regulated substances.</i></p>	<input type="checkbox"/>	<p>There is the potential for explosive vapor levels to accumulate in a residence, other structure, or utility systems. A potential for explosive conditions exists when soil gas concentrations are at or greater than 10 percent of the LEL and/or groundwater concentrations are greater than Flammability and Explosivity Screening Levels (FESLs).</p>	<input type="checkbox"/>	<p>Soil gas concentrations are less than 10 percent of the LEL and/or groundwater concentrations are lower than FESLs and unlikely to become potentially flammable or explosive.</p>	<input type="checkbox"/>	<p>No flammable or explosive vapor concentrations are present.</p>	<input type="checkbox"/>	<p>No flammable or explosive vapor concentrations are present.</p>	<input type="checkbox"/>

	General Scenario: Class 1		General Scenario: Class 2		General Scenario: Class 3		General Scenario: Class 4		General Scenario: Class 5	
Drinking Water Ingestion	<p>A public or private potable water supply well, or public surface water intake or public water supply line exceeds drinking water risk-based screening levels (RBSLs) or is immediately threatened.</p> <p>A potable water supply is “immediately threatened” if contaminants are documented in the drinking water but below drinking water RBSL’s (or) no contaminants have yet been documented in the drinking water but contamination of the potable water supply is expected at any time due to the proximity of the well or surface water intake to groundwater or surface water contaminated above drinking water RBSLs.</p>	<input type="checkbox"/>	<p>A <u>non-potable water supply well</u> exceeds drinking water RBSLs or is immediately threatened, e.g., irrigation wells, non-contact cooling water, stab wells for filling pools or other outside uses, etc.</p>	<input type="checkbox"/>	<p>A <u>non-potable well supply</u> does <u>not</u> exceed drinking water RBSLs or is <u>not</u> immediately threatened.</p>	<input type="checkbox"/>	<p>Groundwater contamination is groundwater not in an aquifer.</p> <p>There is no <u>groundwater</u> contamination that exceeds drinking water RBSLs.</p> <p>There are no <u>current groundwater uses</u> for drinking water <u>or other uses that may have a long-term</u> effect on human health, safety, or welfare.</p>	<input type="checkbox"/>	<p>Groundwater contamination is not in an aquifer.</p> <p>There is no <u>groundwater</u> contamination that exceeds drinking water RBSLs.</p> <p>There are no <u>current groundwater uses</u> for drinking water <u>or other uses that may have a long-term</u> effect on human health, safety, or welfare, and <u>potential future uses</u> are reliably restricted.</p>	<input type="checkbox"/>
			<p><u>Groundwater</u> contamination exceeds drinking water RBSLs and a public or private potable water supply well that is producing from the contaminated aquifer, is located within two years groundwater travel time from the known extent of contaminants of concern.</p>		<p><u>Soil</u> is contaminated above the leaching to groundwater RBSLs, or <u>groundwater</u> is contaminated above drinking water RBSLs, and potable wells producing from the contaminated aquifer are located more than two years groundwater travel time from the known extent of the contaminants of concern.</p>		<input type="checkbox"/>			
			<p><u>Groundwater</u> contamination exceeds drinking water RBSLs and public or private potable water supply wells, producing from a different interval of the aquifer, are located within two years groundwater travel time from the known extent of contaminants of concern.</p>		<p><u>Groundwater</u> contamination exceeds drinking water RBSLs and non-potable water supply wells, producing from a different interval of the aquifer, are located within the known extent of the contaminants of concern.</p>				<input type="checkbox"/>	

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<p>Direct Contact</p> <p>(If RBSLs are not applicable, develop SSTLs.)</p>	<p>Evaluate applicability of RBSLs in relation to NAPL in the entire soil column. If RBSLs are not applicable, develop site-specific target levels (SSTLs).</p> <p>Contaminant concentrations in surficial soils (0-12 inches) exceed direct contact RBSLs (if applicable) or SSTLs..</p>	<input type="checkbox"/>	<p>Evaluate applicability of RBSLs in relation to NAPL in the entire soil column.</p> <p>Soil contamination that could typically be encountered by the public or by landscaping activities (generally at ≤ 3 feet below ground surface) exceeds the direct contact RBSLs (if applicable) or SSTLs.</p>	<input type="checkbox"/>	<p>Evaluate applicability of RBSLs in relation to NAPL in the entire soil column.</p> <p>Soil contamination at > 3 feet below ground surface exceeds the direct contact RBSLs (if applicable) or SSTLs.</p>	<input type="checkbox"/>	<p>Evaluate applicability of RBSLs in relation to NAPL in the entire soil column.</p> <p>Soil contamination does not exceed direct contact RBSLs (if applicable) or SSTLs;</p> <p>Soil contamination is adequately covered and managed for current uses.</p>	<input type="checkbox"/>	<p>Evaluate applicability of RBSLs in relation to NAPL in the entire soil column.</p> <p>Soil contamination does not exceed direct contact RBSLs (if applicable) or SSTLs;</p> <p>Soil contamination is adequately covered and restrictions to maintain the cover are in place.</p>	<input type="checkbox"/>
<p>Inhalation</p> <p>(see EGLE Guidance Document for the Vapor Intrusion Pathway)</p> <p>(If RBSLs are not applicable, develop SSTLs.)</p>	<p>RBSLs are not applicable for comparison to analytical results for acute (short-term) risk compounds. Acute (short-term) risk compounds are listed in Addendum 1 of EGLE Guidance Document for the Vapor Intrusion Pathway</p> <p>Concentrations of soil gas that could cause existing or immediate exposures are at levels above Time-Sensitive Media Specific Recommended Interim Action Screening Levels (TS MSSLs). TS MSSLs can be viewed at EGLE Guidance Document for The Vapor Intrusion Pathway, Appendix D.3.</p>	<input type="checkbox"/>	<p>Evaluate applicability of RBSLs (reference “Appendix C.1 Checklist for Determining if Generic VIAIC Apply” EGLE Guidance Document for the Vapor Intrusion Pathway).</p> <p>RBSLs are not applicable for comparison to analytical results for acute (short-term) risk compounds. Acute (short-term) risk compounds are listed in the EGLE Guidance Document for The Vapor Intrusion Pathway, Addendum 1.</p> <p>If RBSLs are not applicable, a site-specific evaluation is necessary, including developing SSTLs.</p>	<input type="checkbox"/>	<p>Evaluate applicability of RBSLs (reference “Appendix C.1 Checklist for Determining if Generic VIAIC Apply” EGLE Guidance Document for the Vapor Intrusion Pathway).</p> <p>If RBSLs are not applicable, a site-specific evaluation is necessary, including developing SSTLs.</p> <p>Concentrations of contaminants in soil or groundwater above RBSLs or SSTLs that may pose a chronic health risk are present.</p>	<input type="checkbox"/>	<p>No long-term threat to human health, safety and welfare is present based on any of the following:</p> <p>Volatile contaminants are not present.</p> <p>Soil, groundwater, and soil gas concentrations do not exceed acute or chronic RBSLs or SSTLs</p> <p>Representative soil gas concentrations demonstrate compliance.</p> <p>The vapor source is defined, there are no structures within the lateral inclusion zone.</p> <p>A vapor mitigation system has been installed and proven to be operating effectively.</p>	<input type="checkbox"/>	<p>No long-term threat to human health, safety and welfare is present based on any of the following:</p> <p>Volatile contaminants are not present.</p> <p>Soil, groundwater, and soil gas concentrations do not exceed acute or chronic RBSLs or SSTLs.</p> <p>Representative soil gas concentrations demonstrate compliance.</p> <p>The vapor source is defined, there are no structures within the lateral inclusion zone, and restrictions for future structures are in place.</p>	<input type="checkbox"/>

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Inhalation (cont.)	<p>Concentrations in soil gas immediately adjacent to or directly beneath an occupied structure exceed the acute SSTLs.</p> <p>Concentrations in soil, NAPL or groundwater in contact with a structure (including foundation and footers) exceed acute SSTLs.</p>		<p>Concentrations in soil or groundwater not in contact with a structure (including foundation and footers) exceed acute SSTLs, or concentrations in soil gas within the lateral inclusion zone exceed acute SSTLs.</p> <p>Concentrations of soil gas that may pose a chronic health risk are present immediately adjacent to or directly beneath an occupied structure.</p>		<p>Soil gas concentrations not immediately adjacent to or directly beneath an occupied structure within the lateral inclusion zone exceed chronic SSTLs.</p>					
	<p>NAPL or groundwater contamination above acute SSTLs is present in a sump at concentrations above acute SSTLs.</p>	<input type="checkbox"/>	<p>Groundwater contamination is present in a sump or is in contact with a structure (including foundation and footers) at concentrations above chronic SSTLs.</p>	<input type="checkbox"/>	<p>NAPL or groundwater contamination is not in a sump or in contact with a structure (including foundation and footers).</p>	<input type="checkbox"/>	<p>NAPL or groundwater contamination is not present in a sump or not in contact with a structure (including foundation and footers).</p>	<input type="checkbox"/>	<p>NAPL or groundwater contamination is not present in a sump or not in contact with a structure (including foundation and footers).</p>	<input type="checkbox"/>
	<p>Concentrations of vapors that cause existing or immediate exposures are at levels above MIOSHA PELs and/or STELs within the utilities or in subsurface utility corridor or construction trenches.</p>	<input type="checkbox"/>	<p>Concentrations of vapors are present within the utilities or in subsurface utility corridor or construction trenches above SSTLs.</p>	<input type="checkbox"/>	<p>Concentrations of vapors detected within the utilities or in subsurface utility corridor or construction trenches below SSTLs, but additional sampling required to verify concentrations.</p>	<input type="checkbox"/>	<p>No vapors present within the utilities or in subsurface utility corridor or construction trenches.</p>	<input type="checkbox"/>	<p>No vapors present within the utilities or in subsurface utility corridor or construction trenches.</p>	<input type="checkbox"/>

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Soil Inhalation (Ambient Air)	Concentrations of acute toxicants are present <u>in ambient air</u> that exceed time sensitive acceptable air concentrations and can potentially result in an unacceptable exposure to human receptors via the particulate soil inhalation and volatile soil inhalation pathways.	<input type="checkbox"/>	<u>Soil</u> contamination present in soil ≤3 feet below the ground surface exceeds the chronic particulate soil inhalation criteria (PSIC RBSL).	<input type="checkbox"/>	<u>Soil</u> contamination at > 3 feet below ground surface exceeds chronic PSIC RBSLs or exceeds chronic volatile soil inhalation criteria (VSIC) RBSL at any depth.	<input type="checkbox"/>	<u>Soil</u> contamination does not exceed acute or chronic VSIC or PSIC RBSLs. Soil contamination that exceeds acute or chronic VSIC or PSIC RBSLs is adequately covered.	<input type="checkbox"/>	<u>Soil</u> contamination does not exceed acute or chronic VSIC or PSIC RBSLs, or contamination is adequately covered and restrictions to maintain the cover are in place	<input type="checkbox"/>
Ground-water Surface Water Interface (GSI)	Contaminated <u>groundwater</u> is discharging to a surface water body above the Water Quality Standards - Final Acute Values (FAV) or resulting in visible NAPL film or sheen present on surface water.	<input type="checkbox"/>	The <u>groundwater</u> contaminant plume exceeds GSI RBSLs, and the leading edge of the contaminated groundwater plume is located within two years groundwater travel time of a surface water body, or the plume is entering a storm sewer and the contamination will reach the outfall of the storm sewer within two years travel time.	<input type="checkbox"/>	The <u>groundwater</u> contaminant plume exceeds GSI RBSLs, and the leading edge of the contaminated groundwater plume is located more than two years groundwater travel time from a surface water body, or the plume is entering a storm sewer and the contamination will reach the outfall of the storm sewer in more than two years.	<input type="checkbox"/>	<u>Groundwater</u> contamination is reasonably not expected to vent to surface waters. <u>Groundwater</u> contamination does not exceed GSI RBSLs. <u>Groundwater</u> contamination does not exceed mixing zone-based GSI screening levels established by EGLE.	<input type="checkbox"/>	<u>Groundwater</u> contamination is reasonably not expected to vent to surface waters. <u>Groundwater</u> contamination does not exceed GSI RBSLs. <u>Groundwater</u> contamination does not exceed mixing zone-based GSI screening levels established by EGLE.	<input type="checkbox"/>
Sensitive Environmental Receptors	A sensitive habitat or sensitive resource (e.g., sport fish, economically important species, threatened or endangered species, wetland, etc.) may be exposed to contaminated <u>media</u> or measurable or observable harm may occur.	<input type="checkbox"/>	The leading edge of the <u>groundwater</u> contaminant plume is located within two years groundwater travel time distance of a sensitive habitat or resources (e.g., sport fish, economically important species, threatened or endangered species, wetlands, etc.).	<input type="checkbox"/>	The leading edge of the <u>groundwater</u> contamination is located more than two years groundwater travel time from a sensitive habitat or resources (e.g., sport fish, economically important species, threatened or endangered species, wetlands, etc.).	<input type="checkbox"/>	No sensitive habitat or resources exist on or near the site.	<input type="checkbox"/>	No sensitive habitat or resources exist on or near the site.	<input type="checkbox"/>

NOTE: If RBSLs are not applicable for comparison to analytical results, then SSTLs must be developed.

Comments:

Acronyms:

ASTM – ASTM International

CSM - Conceptual Site Model

EGLE – Department of Environment, Great Lakes, and Energy

FAVs – Part 31 Water Quality Standards Aquatic Life Values Final Acute Values

FESLs - Flammability and Explosivity Screening Levels

GSI – Groundwater-Surface Water Interface

NAPL - Non-Aqueous Phase Liquids

MIOSHA – Michigan Occupational Safety and Health Administration

MIOSHA PELs – Permissible Exposure Limits

MIOSHA STELs – Short Term Exposure Limit

NAPL - Non-aqueous Phase Liquid – 21303(a)

Part 213 - Part 213, Leaking Underground Storage Tanks, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended

PSIC – Particulate Soil Inhalation Criteria

RBCA - ASTM Risk-Based Corrective Action (documents are referenced in Section 21303(g) of Part 213)

RBSL – Risk-Based Screening Level – 21303(k)

SSTL – Site-Specific Target Levels

TS MSSLs - Time-Sensitive Media Specific Recommended Interim Action Screening Levels

VIAIC - Volatilization to Indoor Air Inhalation Criteria

VSIC – Volatile Soil Inhalation Criteria

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