

## Appendix D. Field Screening Methods

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Field Measurement Type	Method Name (+ Example Products)	Media			Analyte	Overview	Advantages	Limitations	Quantification	Reference
		S	W	V						
Immunoassay	DW 846 4030  • EcoSys Petro Test System  • SDI RaPID Assay	✓	✓		Bulk TPH (primarily low- to midrange)	Combination of immunoassay and colorimetry. Methanol extraction. Enzyme conjugate solution and antibody-coated test tube. Color developer solution and H <sub>2</sub> O <sub>2</sub> . Differential photometer and m-xylene reference standard.	<ul style="list-style-type: none"> <li>• Samples can be analyzed quickly on-site</li> <li>• Not affected significantly by moisture content or pH</li> </ul>	<ul style="list-style-type: none"> <li>• Small mass of soil tested</li> <li>• Sensitivity depends on the binding of the target analyte to antibodies; kits are most sensitive to small aromatic compounds</li> <li>• Non-TPH compounds such as chlorane and toluene show cross-reactivity and can cause false positives</li> </ul>	25- >1,000 ppm	<a href="https://www.epa.gov/itrc/production/itrc-production-2015-12/documents/4030.pdf">https://www.epa.gov/itrc/production/itrc-production-2015-12/documents/4030.pdf</a>
	Hach 10050  • Hach TPH in water and soil	✓	✓		Bulk TPH (low- to midrange)	Same as above, except reference standard not specified		<ul style="list-style-type: none"> <li>• Sensitivity of test influenced by the nature of the hydrocarbon contamination and any degradation processes at the site</li> </ul>	20/50/100/200 ppm in soil as diesel 2/5/10/20 ppm in water as diesel	<a href="https://www.hach.com/asset/get.download.jsa?id=7679982907">https://www.hach.com/asset/get.download.jsa?id=7679982907</a>
	Modern Water SOP  • Modern Water Total BTEX/TPH RaPID Assay	✓	✓		Bulk TPH (low- to midrange)	Same as above, except reference standard is BTEX		<ul style="list-style-type: none"> <li>• Organic and clay-rich soils may limit the effectiveness of soil extraction and may require longer extraction times than other soil types</li> </ul>	<ul style="list-style-type: none"> <li>• Soil: 0.9-30 ppm as total BTEX standard</li> <li>• Water: 0.02-3.0 ppm as total BTEX standard</li> <li>• TPH range varies based on fuel source (see supplier fact)</li> </ul>	<a href="https://www.modernwater.com/pdf/MW_Laclsheet_RapidAssay_BTEX_TPH.pdf">https://www.modernwater.com/pdf/MW_Laclsheet_RapidAssay_BTEX_TPH.pdf</a>

<sup>1</sup> S – Soil; W – Water; V – Vapor

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