VOLTERRE ENVIRONMENTAL

DIFFERENT BY DESIGN

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vTerra* TPH Soil and Sediment Solutions

Today's Most Surgical Approach to Contaminated Soil and Groundwater Testing

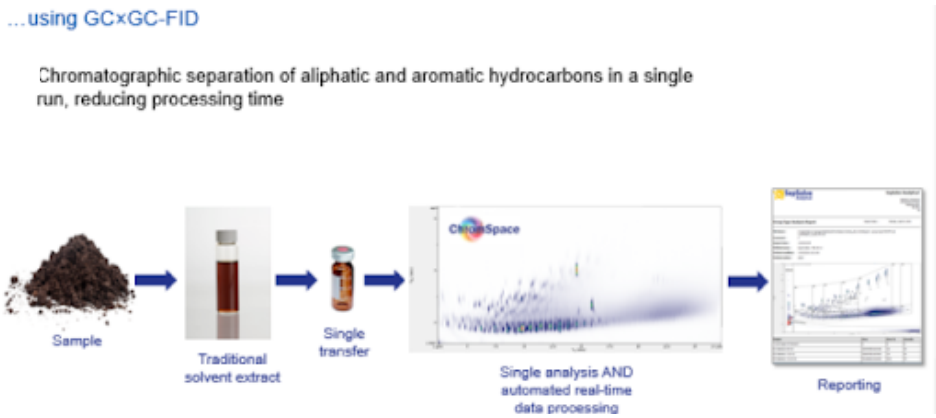
Introducing **vTerra*** - Volterre Environmental's family of soil, sediment, and groundwater contamination methodologies and solutions. Our **vTerra TPH solution** tells you the exact nature and level of **Total Petroleum Hydrocarbon** (TPH) contaminants at your site through enhanced separation of compounds and multi-dimensional analysis.

The term TPH describes a family of several hundred chemical compounds that originate from crude oil including. naphthalene, benzene, toluene, and other toxic chemicals.

From the start**, the vTerra TPH solution** tests soil samples differently from the traditional methods, resulting in superior data results in less time. We do that by separating TPH fractions from C10-44 – a mix of aliphatic and aromatic hydrocarbons – through multi-dimensional analysis. The vTerra TPH solution produces cleaner, more precise, real-time data, thereby enhancing our understanding of soil degradation, environmental impact, and risk assessment at your site.

What Makes vTerra TPH Different?

With vTerra TPH multi-dimensional analysis, we use single solvent extraction to separate the liquids from solvents upfront, appearing as one or more layers. More definitive separation allows for quicker and more efficient results and real-time data processing. The heavily



What is TPH and Why Does It Matter?

TPH stands for Total Petroleum Hydrocarbons. Toxic TPH compounds are released to the environment through accidents - such as chemical spills from factories or transportation, leaking underground storage tanks, failed pipelines, or byproducts from commercial and manufacturing uses.

These fossil fuel-based pollutants can cause soil damage, ground and drinking water contamination, and loss of land usability. Residual hydrocarbon compounds can remain for decades - resulting in unsafe conditions and delayed projects.

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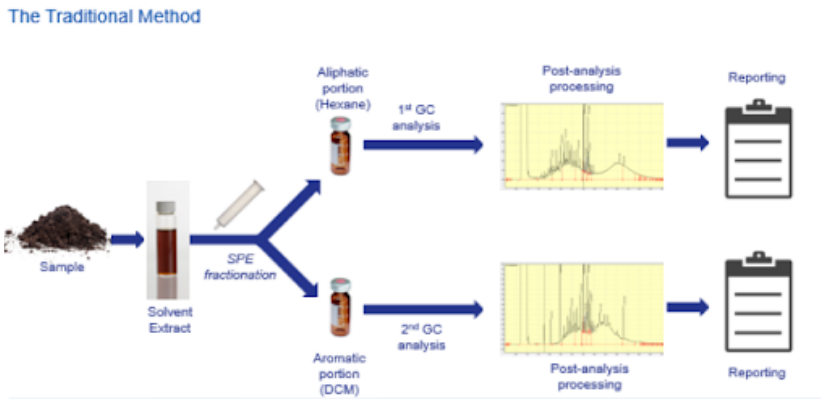
oil-contaminated layer has an obvious dark brown or gray color, a notable smell, and a tendency to rise to the top. We run a separate test on this darker - likely more toxic – layer to break it down into its individual properties for cleaner spectra that displays on Volterre's expert reports.

You have the choice of sending in a full soil sample for testing, or the extracted solvent which is a more complex, sophisticated testing method expertly handled by **vTerra TPH** for precise results.

Slower, Less Precise Traditional TPH Analysis

In traditional TPH soil analysis, solid-phase extractions (SPE) are used to separate aliphatics from aromatics with two separate instruments analyzing one soil sample. Next, the traditional method runs a one-dimensional analysis of each through the standard gas chromatography (GC) method of separation.

The downside? It's not only labor-intensive and time-consuming but also delivers subpar results due to **co-elution** (when two or more chemicals are extracted at the same time) making separation and identification difficult if not impossible.



Dig Deeper with vTerra*

Volterre's **vTerra TPH solutions** deliver real-time data automation and a deeper analysis of soil and sedimentation. It unearths an exact versus an estimated picture of soil pollutants.

That level of precision holds up to federal, state, and local standards and helps you overcome obstacles and indecision in your land acquisition, development, and use.

With more accurate data delivered faster, Volterre Environmental then partners with you to formulate the most surgical and effective remediation plan to return your land to safe, economic use should you so choose.