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Petroleum Hydrocarbon Solutions
Sitelab Corporation
Visit: site-lab.com
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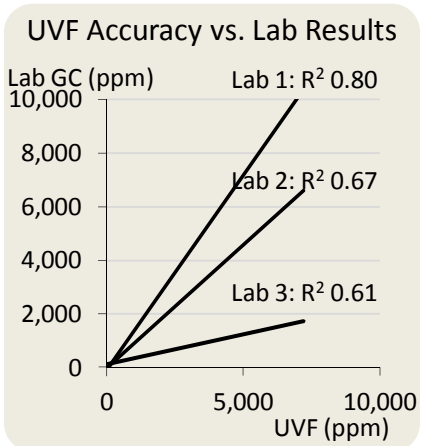
EPH Evaluation Study

EPH C11-C22 Aromatic Hydrocarbons Comparing Sitelab UVF-3100A to Three Certified Laboratories. Soil concentrations in ppm (mg/Kg)

ID	Lab 1	Lab 2	Lab 3	Sitelab
1	197	35	4	16
2	333	280	82	240
3	196	240	110	247
4	1,130	800	280	1,100
5	1,730	1,500	510	2,330
6	4,600	3,000	1,400	3,585
7	9,580	6,000	1,800	4,030
8	7,110	3,300	630	5,275
9	6,820	3,500	1,000	7,200
10	13,000	9,900	2,300	7,200



South Boston oil terminal, 1940s

Ambient Engineering, Inc. (Concord, MA) used Sitelab to investigate and remediate a former tank farm along Boston Harbor contaminated by a large, subsurface plume of commingled diesel fuel and No. 6 fuel oil.

Ambient's Licensed Site Professional (LSP) had the opportunity – and budget – to evaluate Sitelab against three certified laboratories. Soil samples were collected from ten different locations having different depths and concentrations. Samples were analyzed using the Massachusetts DEP's method for Extractable Petroleum Hydrocarbons and results were compared to Sitelab's UVF-3100A analyzer for EPH C11-C22 aromatic hydrocarbons, the primary TPH driver for this site.

Geoprobe drill rig was used to collect samples. Soils were carefully homogenized and split four ways so that each laboratory received the same material for analysis.

Loading racks (above) may have slowly leaked over time, causing most of the site's contamination 7-acres in size. This facility once provided the region with home heating oil and heavy fuel oil for naval ships and a nearby power plant.

The wide range of concentration differences exhibited illustrates how difficult it can be when comparing field screening results to the big labs.

Who's right? Who's wrong?

According to the LSP "Statistically, Sitelab performed better than all three laboratories and it cost us a lot less money."

Soils are extracted in methanol and then measured on the UVF-3100A analyzer. Per sample cost <$20

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