

U.S. EPA Performance Evaluation Samples: siteLAB® UVF-3100A vs. GC Method 8015-GRO Testing Gasoline Range Organic Hydrocarbons

GRO in TPH :

GRO Fraction: C6, C10
 EDRO Fraction: C10, C40
 Total Petroleum Hydrocarbons

- The following tables compare the performance of *siteLAB*® analyzing Gasoline Range Organics (GRO) in soils containing (1) weathered gasoline only, (2) weathered gasoline + interferences and (3) weathered gasoline + spiked additives.
- Weathered gasoline contains BTEX and other volatile petroleum hydrocarbons, which make up the GRO fraction in TPH. Both *siteLAB*® and the Lab GC have the ability to measure GRO separately from TPH.
- The certified TPH concentrations are presented for reference use only; these concentrations are significantly greater as both the *siteLAB*® and Lab GC results do not include the Extended Diesel Range Organic (EDRO) fraction of the TPH.

Source: ITVR# EPA/600/R-01/080, September 2001

1 GRO: Weathered Gasoline in Soil with Variable Concentrations

Soils with Certified TPH Spike Concentrations	Sample ID #	siteLAB® GRO	Lab GC GRO
Weathered Gasoline: 0 ppm	PE S27	<0.2	<0.54
	PE S28	<0.2	<0.54
	PE S29	<0.2	<0.54
Weathered Gasoline: 1,090 ppm	PE S30	490	575
	PE S31	460	623
	PE S32	560	544
Weathered Gasoline: 3,120 ppm	PE S36	1,380	1,590
	PE S37	1,530	1,760
	PE S38	1,570	1,820
Weathered Gasoline: 2,780 ppm	PE S63	1,660	1,400
	PE S64	1,610	1,510
	PE S65	1,530	1,600

Units = ppm (mg/Kg)

2 GRO: Weathered Gasoline in Soil with Spiked Interferences

Soils with Certified TPH Spike Concentrations	Sample ID #	siteLAB® GRO	Lab GC GRO
Weathered Gasoline: 3,030 ppm with 2,810 ppm Tetrachloroethylene	PE S45	1,590	2,240
	PE S46	1,830	1,840
	PE S47	1,430	2,220
Weathered Gasoline: 2,800 ppm with 13,100 ppm Tetrachloroethylene	PE S48	1,250	4,330
	PE S49	1,330	4,240
	PE S50	1,320	3,670
Weathered Gasoline: 2,950 ppm with 2,730 ppm Turpentine	PE S57	1,460	4,070
	PE S58	1,340	3,480
	PE S59	1,170	3,800
Weathered Gasoline: 2,620 ppm with 12,900 ppm Turpentine	PE S60	1,200	12,200
	PE S61	1,680	10,600
	PE S62	1,200	13,900

Units = ppm (mg/Kg)

3 GRO: Weathered Gasoline in Soil with spiked Additives

Soils with Certified TPH Spike Concentrations	Sample ID #	siteLAB® GRO	Lab GC GRO
Weathered Gasoline: 2,830 ppm with 1,100 ppm MtBE	PE S39	1,250	1,570
	PE S40	1,300	1,450
	PE S41	1,460	1,930
Weathered Gasoline: 2,490 ppm with 1,760 ppm MtBE	PE S42	830	1,810
	PE S43	960	1,970
	PE S44	970	2,260
Weathered Gasoline: 2,770 ppm with 2,900 ppm Stoddard Solvent	PE S51	1,510	3,390
	PE S52	1,500	3,680
	PE S53	1,420	3,180
Weathered Gasoline: 2,730 ppm with 15,400 ppm Stoddard Solvent	PE S54	1,590	7,810
	PE S55	2,410	11,300
	PE S56	1,940	8,250

Units = ppm (mg/Kg)