

Evaluation Study Comparing Oil Sheens vs. Bio Sheens

Sample ID No. Concentrations in ppm (mg/Kg or mg/L)	Test 1	Test 2:	Test 3:	Test 4:	Sitelab TPH Fingerprinting Ratios or "Signatures" Exhibited		
	UVF-3100D GRO (BTEX) Cal Kit #025 Slot B Optics	UVF-3100D Total PAHs Cal Kit #060 Slot A Optics	UVF-3100D Target PAHs Cal Kit #060 Slot D Optics	TD-500 Analyzer Heavy PAHs Using same PAH Cal Kit as UVF-3100	Total PAH to GRO	Total PAH to Target PAH	Total PAH to Heavy PAH
<u>Contaminated Samples</u>							
Oil Sheen No. 1	0.00	388	48	217	N/A	8.1	1.8
Oil Sheen No. 2	0.00	50	5.0	20	N/A	10	2.5
Oil Sheen No. 3	0.00	4.60	0.55	2.40	N/A	8.4	1.9
<u>Non-Contaminated Samples</u>							
Bio Sheen No. 1	0.00	0.060	0.010	0.063	N/A	N/A	N/A
Bio Sheen No. 2	0.00	0.005	0.000	0.015	N/A	N/A	N/A
Bio Sheen No. 4	0.00	0.003	0.000	0.043	N/A	N/A	N/A
Bio Sheen No. 5	0.00	0.004	0.000	0.070	N/A	N/A	N/A
<u>Water Samples Near Surface</u>							
Oil Sheen No. 2	0.00	6.10	0.70	3.00	N/A	8.7	2.0
Oil Sheen No. 3	0.00	0.081	0.011	0.040	N/A	7.4	2.0
Bio Sheen No. 1	0.00	0.000	0.000	0.000	N/A	N/A	N/A
<u>Quality Control Samples</u>							
Unused Sheen Net	0.00	0.005	0.000	0.002	N/A	N/A	N/A
Oil Sheen No. 2 Duplicate	0.00	45	4.6	18	N/A	9.8	2.5
	GRO detection limit is 0.5 ppm	Total PAH detection limit is 0.05 ppm	Target PAH detection limit is 0.05 ppm	Heavy PAH detection limit is 0.025 ppm	Test 2 divided by Test 1	Test 2 divided by Test 3	Test 2 divided by Test 4

Note: The bio sheen net samples contain no petroleum; the elevated TD-500 concentrations are due to natural organic interferences only (when Heavy PAHs are close to or exceed Total PAHs).

Photo showing sheen net samples extracted in 50 mL hexane solvent



Clean, unused sheen net tested and cause no interferences

Sitelab fingerprint "signatures" were similar for all three locations, indicating the same source of crude oil contamination.

No hydrocarbons were detected in the bio sheen nets. The samples only contain natural organic compounds.