

#

Land Use	² Soil Texture	Fraction 1	Fraction 2	Fraction 3	Fraction 4
Agricultural/	Course-grained soil	30	150	300	2,800
Residential/ Parkland	Fine-grained soil	170	150	1,300	5,600
Commercial/	Course-grained soil	240	260	1,700	3,300
Industrial	Fine-grained soil	170	230	2,500	6,600

¹ Most stringent Tier 1 soil criteria for potable groundwater protection [8].

² - Course sand and gravel, median grain size of >75 µm; Fine silt and clay, median grain size of <75 µm.

#

Table 2: Concentrations (nominal and measured) and percentages of Federated crude oil fractions in soils

Sample Days/ Carbon Ranges ^a	P1 Processed Peat	P2 Natural Peat	sP1 Highly Spiked Processed Peat	sP2 Moderately Spiked Natural Peat	sS Moderately Spiked Sand plus Bacteria and Nutrients
Nominal spiked concentrations (mg/kg)					
Total C10->C34	--	--	19,608	2,942	2,942
F2	--	--	6,078	912	912
F3	--	--	9,216	1,383	1,383
F4	--	--	4,314	647	647
F3a	--	--	4,147	622	622
F3b	--	--	5,069	761	761
Measured Day 0 mean ± standard deviation (n=3) concentrations and percentages					
Total C10->C34 (mg/kg)	3928±900	2071±545	17613±1819	3408±418	1839±82
F2 (mg/kg)	<20	<20	3535±279	610±35	435±25
F3 (mg/kg)	1921±378	1235±344	9793±1039	1953±261	1077±51
F4 (mg/kg)	2007±521	836±211	4285±534	844±162	327±9
F3a (mg/kg)	96±19	99±24	3819±114	508±15	506±5
F3b (mg/kg)	1824±18	1136±22	5974±180	1445±43	571±6
F2 (% of F2-F4)	0.3±0.1%	0.5±0.1%	20±1%	18±2%	24±1%
F3 (% of F2-F4)	49±2%	59±3%	56±1%	57±1%	59±0.3%
F4 (% of F2-F4)	51±2%	40±3%	24±1%	25±3%	17±0.4%
F3a (% of F3)	5±1%	8±2%	39±3%	26±3%	47±1% ^b
F3b (% of F3)	95±1%	92±2%	61±3%	74±3%	53±1% ^b
Measured Day 300 mean ± standard deviation (n=3) concentrations and percentages					
Total C10->C34 (mg/kg)	2991±592	1534±126	10161±609	2945±217	324±217
F2 (mg/kg)	<20	<20	1339±130	252±25	29±7
F3 (mg/kg)	1579±355	832±55	5877±288	1295±109	197±104
F4 (mg/kg)	1736±461	711±74	2945±217	781±27	98±42
F3a (mg/kg)	79±20	50±4	1508±72	155±13	61±35
F3b (mg/kg)	1495±338	779±54	4369±226	1140±96	135±69
F2 (% of F2-F4)	0.3±0.1%	0.6±0.1%	13±1%	11±1%	9±4%
F3 (% of F2-F4)	48±2%	54±1%	58±1%	56±1%	61±6%
F4 (% of F2-F4)	52±2%	46±1%	29±1%	34±2%	30±2%
F3a (% of F3)	5±1%	6±1%	26±1%	12±0%	31±2% ^c
F3b (% of F3)	95±1%	94±1%	74±1%	88±0%	69±2% ^c
Analysis of Variance By Carbon Group(s)					
F-test <i>p</i>-values, 95% confidence, Day 0 and Day 300 triplicate data (logcentred transform)					
F2 ^d	ND	ND	0.000	0.009	0.010
F3 ^e	0.162	0.056	0.005	0.134	0.371
F3a ^d	0.548	0.018	0.003	0.000	0.069
F3b ^d	0.077	0.292	0.000	0.001	0.006
F4 ^d	0.633	0.153	0.001	0.003	0.000
F2+F3 ^e	0.765	0.664	0.001	0.005	0.000
F2+F3a ^d	0.312	0.679	0.000	0.001	0.000
F2+F3a+F3b ^d	0.633	0.153	0.001	0.003	0.000
F2+F3+F4 ^e	0.492	0.047	0.725	0.305	0.279
F2+F3a+F3b+F4 ^d	0.643	0.417	0.189	0.710	0.294

^aF2 (C10-C16), F3 (C16-C34), F3a (C16-C22), F3b (C22-C34), F4 (>C34) concentrations^bThe 47%F3a:53%F3b ratio in the spiked Sand (sS) was used as the crude oil source in the Day 0 Equation 1 calculations^cThe 31%F3a:69%F3b ratio in the spiked Sand (sS) was used as the crude oil source in the Day 300 Equation 1 calculations^dproportions determined on the basis of a composition (F2+F3a+F3b+F4)^eproportions determined on the basis of a composition (F2+F3+F4)

F2, F3, F4 concentrations in spiked peat and sand exceeding Tier-1 course soil criteria indicate in bold font

Shaded bold numbers refer to F3 concentrations in clean peat that exceed Tier-1 course soil criteria of 300 mg/kg [8]

Italic, bold font refers to *p*-values exceed 95% confidence values for the F-test - reject the null hypothesis

ND non-detectable therefore not calculated; "--" Not applicable