Supplementary Materials

Table S1. Watering schedule and sampling campaigns during the trial – the numbers represent the number of weeks and roman numerals represent watering events and * means after watering

Sampling campaigns				
Before first supply	**Watering**	**After supply**	**After 1 week**	**After 2 weeks**
0	I	0*	1	2
	II	2*	3	4
	III	4*	5	6
	IV	6*	7	8

Table S2. Physico-chemical data (± CI, n =3) of water extracts (WE) of the test biopile substrate. CI: Confidence Interval; Mean, SD (standard deviation), Min and Max correspond to the values measured during the trial for each parameter (n=12, excepted VFAs and before supply); *: LOQ (Limit of quantification)

Sampling campaigns	Watering	*pH*	*Conductivity*	*DOC*	*NO_3^-*	*NH_4^+*	*TDN*	*PO_4^{3-}*	*VFAs*	*$SUVA_{254}$*	*E_2/E_3*
		-	*mS cm^{-1}*	*mg g^{-1} DW*	*mgN g^{-1} DW*	*mgN g^{-1} DW*	*mgN g^{-1} DW*	*mgP_2O_5 g^{-1} DW*	*mg g^{-1} DW*	*L mgC^{-1} m^{-1}*	-
Before supply		7.7 ±0.26	2 ±0.2	15.00 ±12.62	0.027 ±0.032	0.32 ±0.16	1.34 ±0.75	0.107 ±0.050	< 0.4*	1.41 ±0.70	4.71 ±0.11
Supply	I	7.9 ±0.21	3 ±0.3	7.77 ±1.38	0.003 ±0.002	3.62 ±1.30	4.02 ±1.78	0.052 ±0.034	< 0.4*	3.55 ±0.56	3.28 ±0.76
	II	7.9 ±0.16	4 ±0.4	7.52 ±1.09	0.071 ±0.031	8.73 ±4.38	10.08 ±4.48	0.092 ±0.018	< 0.4*	1.89 ±0.12	4.53 ±0.56
	III	8.0 ±0.04	4 ±1.0	6.02 ±0.76	0.159 ±0.004	9.25 ±5.92	10.55 ±6.18	0.171 ±0.002	< 0.4*	1.84 ±0.14	4.35 ±0.46
	IV	7.9 ±0.09	5 ±0.8	5.95 ±1.36	0.101 ±0.130	10.34 ±5.42	13.18 ±5.88	0.106 ±0.017	< 0.4*	1.98 ±0.25	4.22 ±0.38
Abatement after 1 week	I	7.7 ±0.10	3 ±0.1	8.97 ±2.93	0.006 ±0.003	4.09 ±2.09	4.99 ±2.24	0.129 ±0.020	< 0.4*	2.07 ±0.25	4.67 ±0.30
	II	7.6 ±0.14	3 ±0.5	5.71 ±0.89	0.013 ±0.010	5.33 ±1.30	6.57 ±1.44	0.143 ±0.052	< 0.4*	2.10 ±0.44	4.58 ±0.41
	III	7.9 ±0.12	4 ±1.3	4.97 ±1.16	0.123 ±0.065	7.43 ±5.94	8.41 ±6.01	0.121 ±0.072	< 0.4*	1.89 ±0.30	4.61 ±0.52
	IV	7.8 ±0.26	5 ±0.9	4.75 ±0.35	0.055 ±0.058	8.80 ±3.90	12.43 ±2.08	0.199 ±0.063	< 0.4*	2.32 ±0.74	4.63 ±0.46
Abatement after 2 weeks	I	7.8 ±0.28	3 ±0.8	9.00 ±3.21	0.015 ±0.015	3.10 ±2.82	4.12 ±3.27	0.114 ±0.011	< 0.4*	1.62 ±0.51	5.11 ±0.37
	II	7.6 ±0.44	3 ±0.8	9.33 ±5.80	0.015 ±0.012	4.09 ±2.37	5.08 ±2.56	0.082 ±0.004	9.2	1.87 ±0.74	5.17 ±0.56
	III	7.9 ±0.03	3 ±0.9	5.55 ±1.49	0.082 ±0.104	4.84 ±4.88	6.27 ±5.24	0.085 ±0.041	< 0.4*	2.20 ±0.14	4.68 ±0.37
	IV	7.9 ±0.15	4 ±1.3	8.85 ±9.68	0.080 ±0.110	6.30 ±6.07	9.54 ±2.84	0.083 ±0.021	1.5	2.55 ±2.28	4.47 ±0.48
Mean		7.8	3.6	7.03	0.061	6.33	7.94	0.115	-	2.16	4.53
SD		0.1	0.7	1.72	0.051	2.50	3.21	0.041	-	0.50	0.48
MIN		7.6	3	4.75	0.003	3.10	4.02	0.052	<0.4*	1.62	3.28
MAX		8.0	5	9.33	0.159	10.34	13.18	0.199	9.2	3.55	5.17

Table S3. Physico-chemical data (± CI, n =3) of solid samples of the biopile substrate. CI: Confidence Interval; Mean, SD (standard deviation), Min and Max correspond to the values measured during the trial for each parameter (n=12, excepted TP and TMEs) except before supply;

Sampling campaigns	Watering	*TC*	*TN*	*TC/TN*	*$\delta^{15}N$*	*TP*	*TMEs (mg kg^{-1} DW)*							*DW*
		mg g^{-1} DW	*mgN g^{-1} DW*	*-*	*‰*	*mgP_2O_5 g^{-1} DW*	*As*	*Cd*	*Cr*	*Cu*	*Ni*	*Pb*	*Zn*	*% RW*
Before supply		324 ±38	24 ±3	13 ±13	6.7 ±0.9	8.2 ±1.6	1.1 ±0.4	0.3 ±0.1	17.9 ±4.7	44.0 ±9.3	9.7 ±2.4	19.1 ±4.0	120.7 ±25.1	69±11
Supply	I	317 ±7	25 ±2	13 ±4	7.3 ±1.1	8.0 ±1.9	1.3 ±0.4	0.2 ±0.1	25.5 ±16.4	45.1 ±18.1	9.7 ±1.3	16.6 ±3.8	118.6 ±26.6	62±1
	II	330 ±41	32 ±8	10 ±5	7.4 ±0.1									48±9
	III	334 ±16	25 ±3	14 ±4	6.7 ±0.5									45±11
	IV	318 ±12	27 ±4	12 ±3	7.1 ±0.4									42±6
Abatement 1 week after	I	323 ±18	28 ±1	12 ±18	6.8 ±0.4									58±10
	II	325 ±16	22 ±1	15 ±24	6.7 ±0.9									47±1
	III	334 ±33	24 ±6	14 ±5	5.9 ±0.4									51±17
	IV	317 ±7	23 ±4	14 ±2	6.8 ±1.1									45±3
Abatement 2 weeks after	I	324 ±14	27 ±3	12 ±4	6.0 ±0.7									61±18
	II	342 ±9	21 ±1	16 ±12	6.1 ±0.8									50±4
	III	332 ±9	23 ±4	14 ±2	5.2 ±0.8									48±8
	IV	345 ±12	24 ±4	15 ±3	5.2 ±0.5	9.0 ±0.6	1.5±0.5	0.3 ±0.1	16.9 ±3.0	49.6 ±5.2	10.0 ±1.2	23.1 ±7.3	133.2 ±7.2	47±8
Mean		328	25	13	6.5	8.4	1.3	0.3	20	46	9.8	20	124	52
SD		9.12	2.93	1.56	0.7	0.6	0.2	0.05	4.7	3.0	0.2	3.3	7.9	8.0
MIN		317	21	10	5.2	8.0	1.1	0.2	16.9	44.0	9.7	16.6	119	42
MAX		345	32	16	7.4	9.0	1.6	0.3	25.5	49.6	10.0	23.1	133	62

Not analyzed

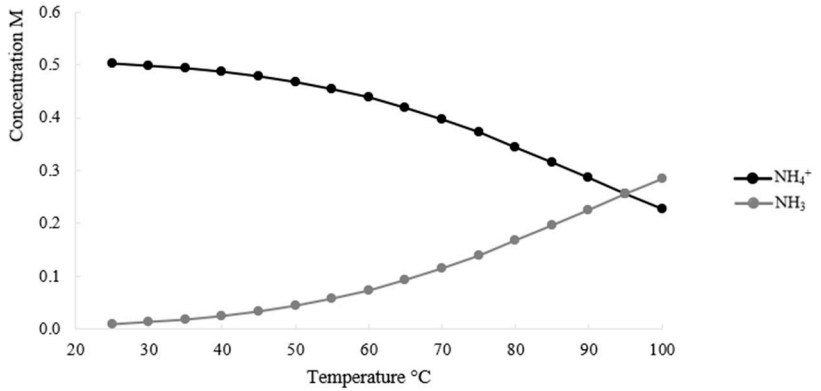

Figure S1. Speciation of dissolved NH_4^+ (0.5 M) as a function of Temperature, calculated using PHREEQC (USGS), Version 3.7 with database Phreeqc.dat.

Table S4. Persistent organic pollutants (Mean ± CI, n = 5) of solid samples of the biopile substrate. CI: Confidence Interval; *: LOD (Limit of detection); **: LOQ (Limit of quantification)

Compound	Before first supply	After 8 weeks
	PCB ($\mu g.kg^{-1}$)	
PCB 28	< 2.45*	< 2.45*
PCB 52	< 2.85*	< 2.85*
PCB 101	< 4.19*	< 4.19*
PCB 118	< 5.45*	< 5.45*
PCB 138	< 9.71*	< 9.71*
PCB 153	< 8.09*	< 8.09*
PCB 180	< 19.11*	< 19.11*
	HAP ($\mu g.kg^{-1}$)	
Fluoranthene	107±32	92±14
Benzo(b,k)fluoranthene	27±3	27±0.3
Benzo(a)pyrene	< 39**	<39**
∑3HAP	134±35	119±14.3
	*: LOD; **: LOQ	