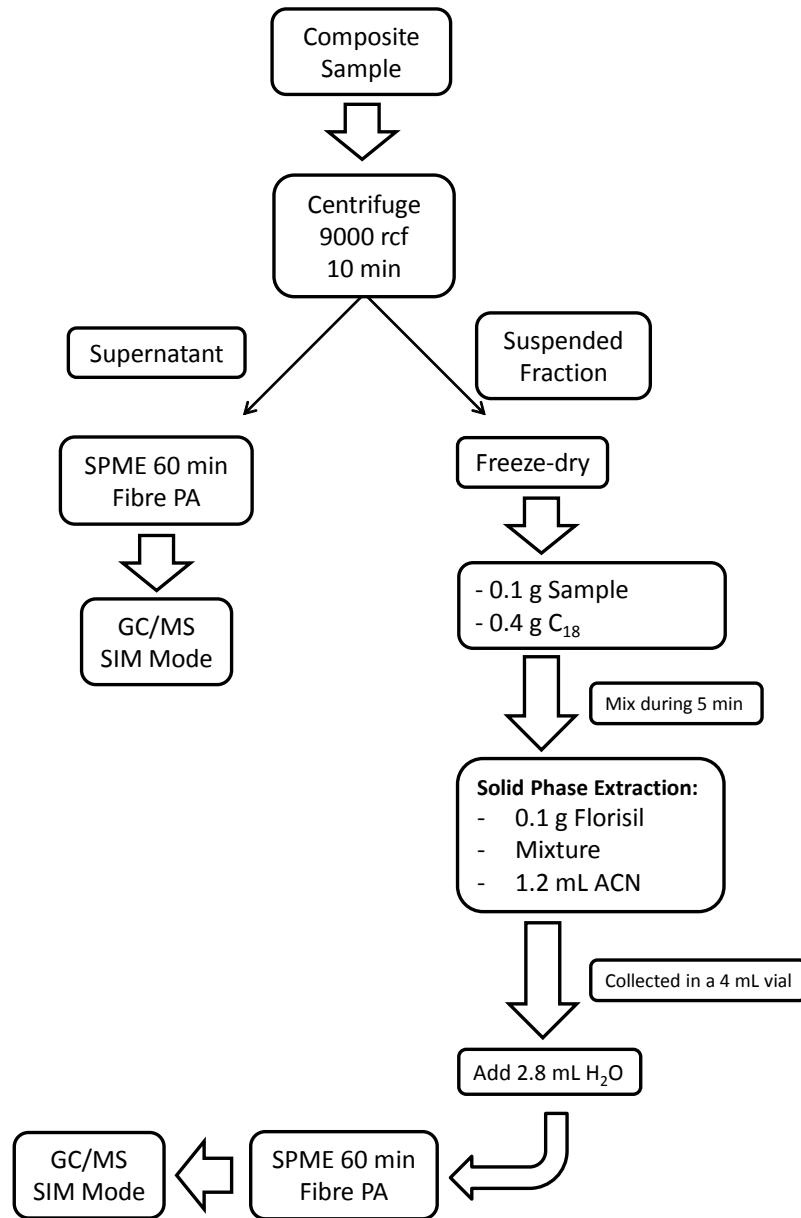# Supplementary material:

**Fate of Endocrine Disruptor Compounds in an Anaerobic Membrane BioReactor**

(AnMBR) coupled to an activated sludge reactor.

SM1. Water solubility and log Kow of studied compounds.

Compound	log K_{ow}	Water Solubility (mg/L; 20 ºC)
Octylphenol	4.9	7.0
Technical nonylphenol	5.7	4.9
4-n-nonylphenol	5.8	6.0
Bisphenol-A	3.6	120.0
Pentachlorophenol	4.7	15.0
Estrone	3.6	1.3
17β-estradiol	3.8	1.5
17α-ethinylestradiol	4.0	9.2

```
                    ┌──────────────┐
                    │  Composite   │
                    │    Sample    │
                    └──────────────┘
                           ⇩
                    ┌──────────────┐
                    │  Centrifuge  │
                    │   9000 rcf   │
                    │    10 min    │
                    └──────────────┘
              ╱                        ╲
   ┌──────────────┐            ┌──────────────┐
   │ Supernatant  │            │  Suspended   │
   └──────────────┘            │   Fraction   │
                               └──────────────┘
   ┌──────────────┐            ┌──────────────┐
   │ SPME 60 min  │            │  Freeze-dry  │
   │  Fibre PA    │            └──────────────┘
   └──────────────┘                   ⇩
         ⇩                    ┌──────────────┐
   ┌──────────────┐           │ - 0.1 g Sample│
   │   GC/MS      │           │ - 0.4 g C18   │
   │  SIM Mode    │           └──────────────┘
   └──────────────┘                  ⇩    ┌────────────────┐
                                           │ Mix during 5 min│
                                           └────────────────┘
```
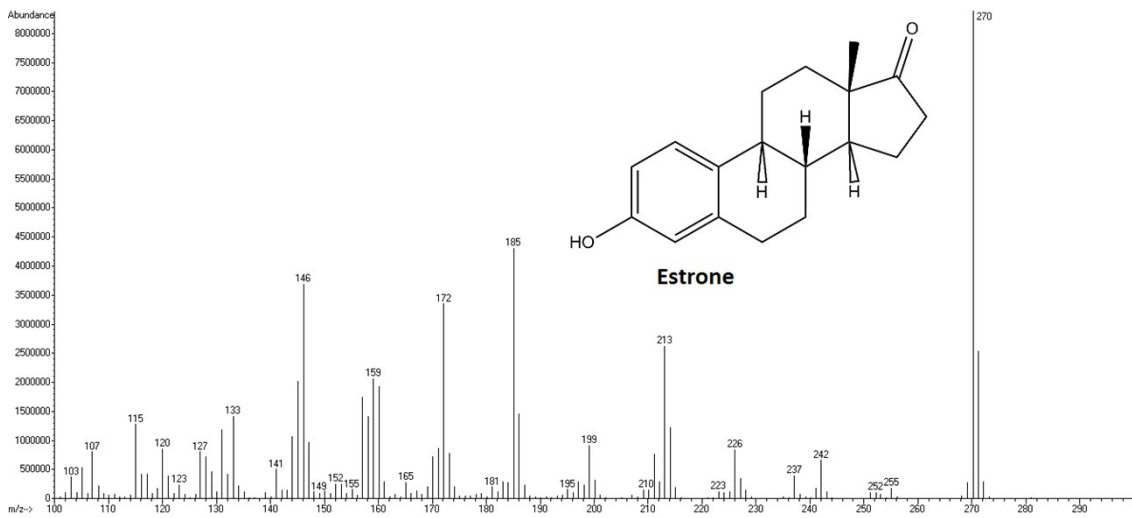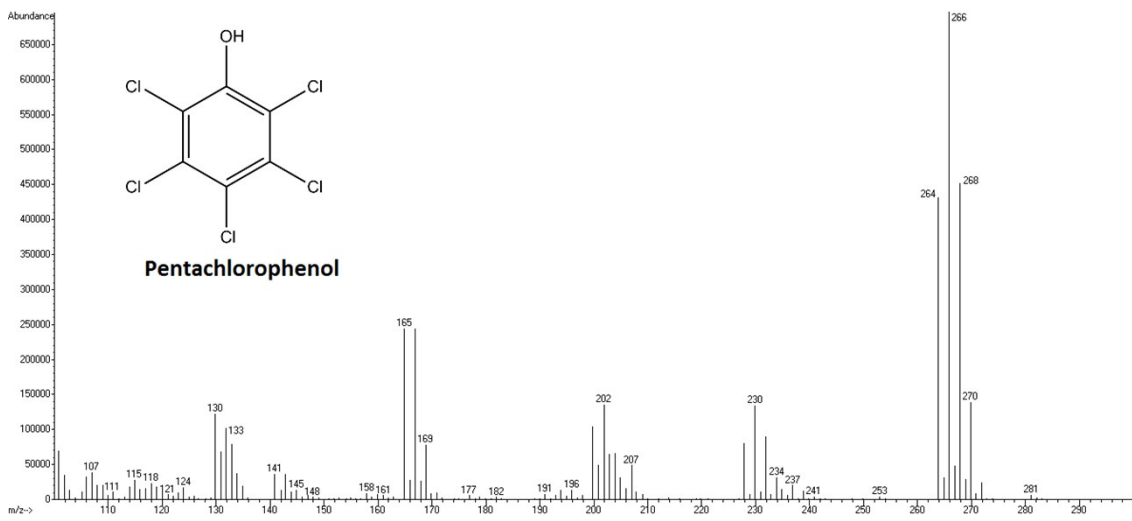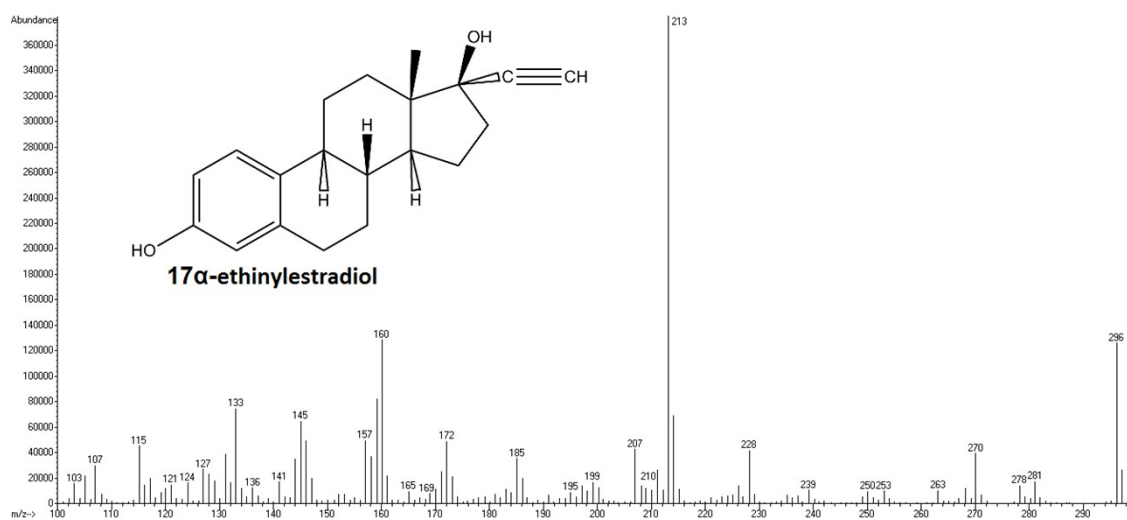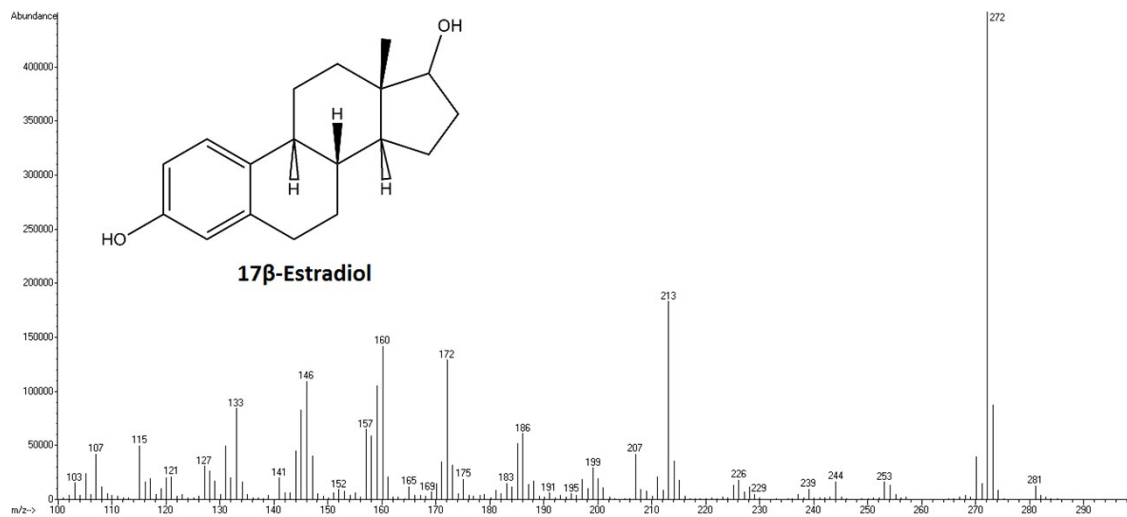
- 0.1 g Sample
- 0.4 g C_{18}

Solid Phase Extraction:
- 0.1 g Florisil
- Mixture
- 1.2 mL ACN

Collected in a 4 mL vial

Add 2.8 mL H_2O

GC/MS SIM Mode ← SPME 60 min Fibre PA ←

SM2. Scheme of the method used for soluble and suspended fractions analysis.

Octylphenol

4-Nonylphenol

t-Nonylphenol (R = Branched Nonyl chain)

Bisphenol-A

Pentachlorophenol

Estrone
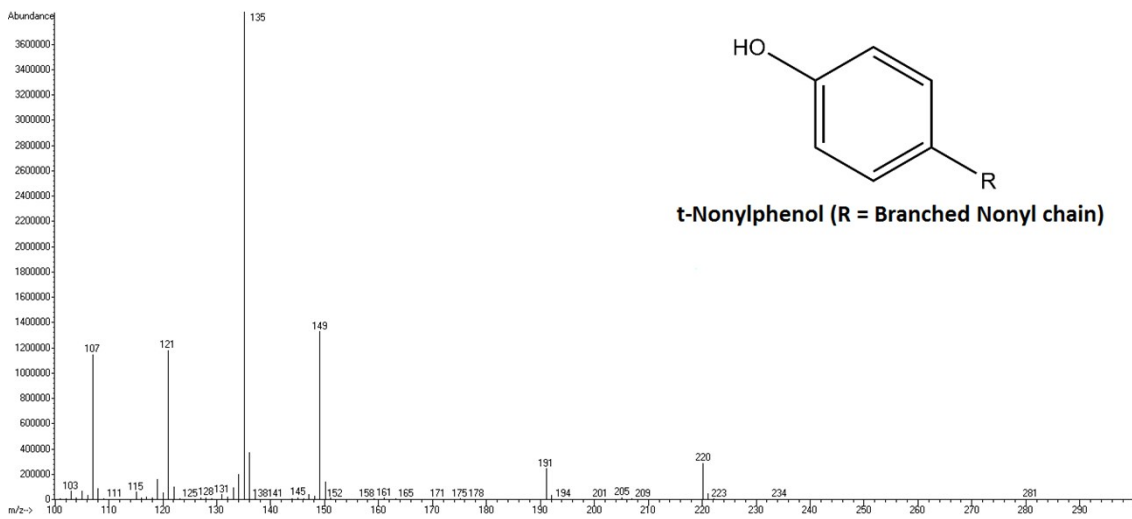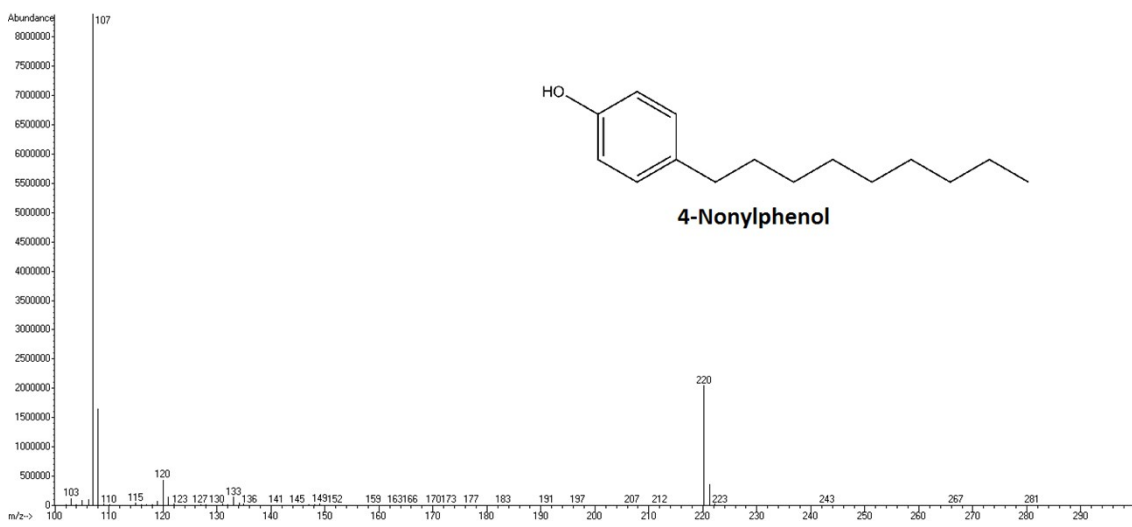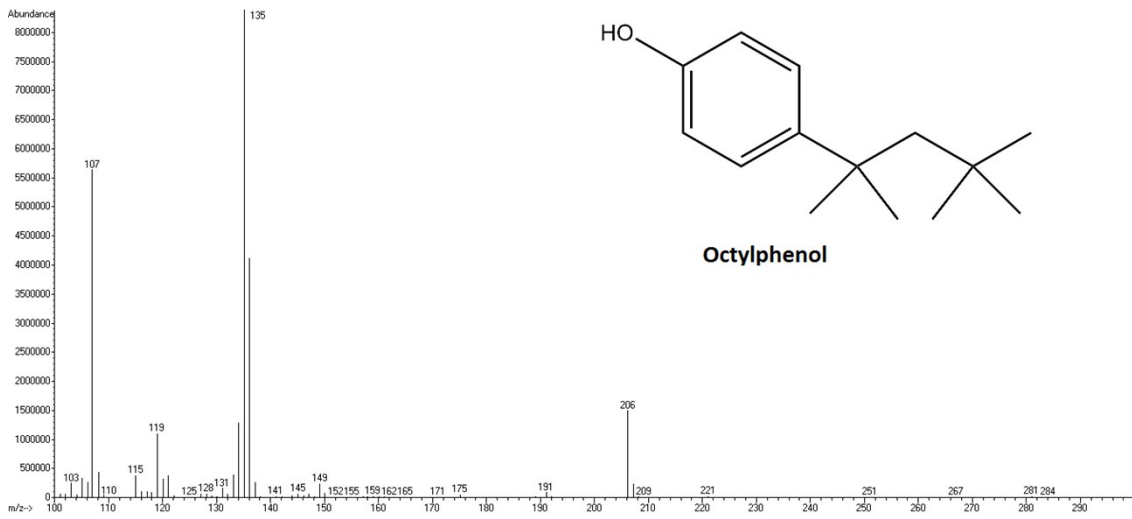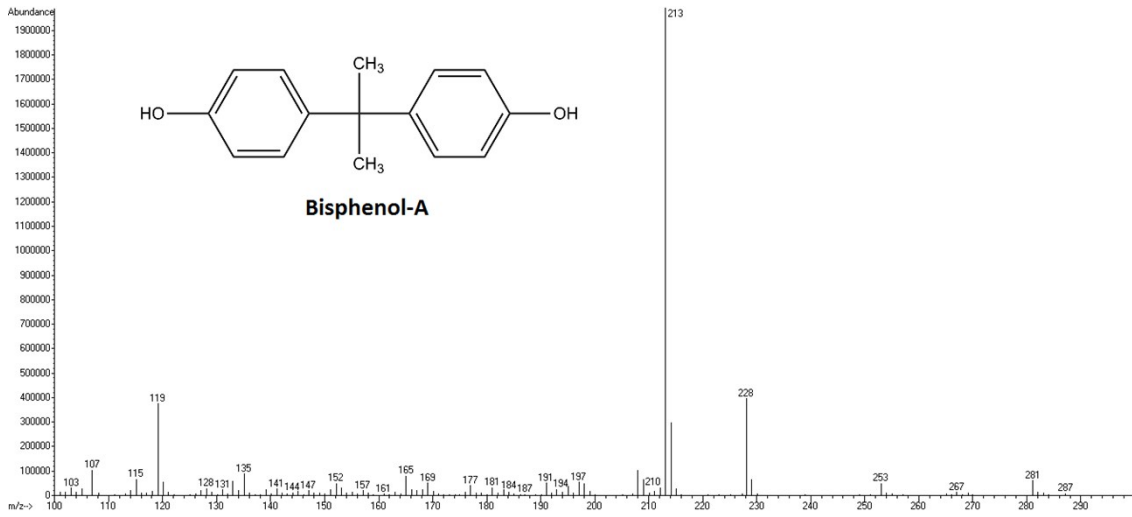
SM3. Mass spectra in scan mode (work range from 100 to 300 m/z) for OP, 4-NP, t-NP, BPA, PCP, E1, E2 and EE2 at 5 µg/L each one.

EDC	LOD (ng/L)	LOQ (ng/kg)	$a \pm s_a$	$b \pm s_b$	r^2	Range (ng/L)	RSD(%)
OP	2	7	$(-18\pm4) \times 10^5$	$(11\pm5) \times 10^3$	0.990	2 - 6000	18
t-NP	25	83	$(-6\pm2) \times 10^6$	$(5.0\pm0.2) \times 10^3$	0.990	25 - 50000	18
4-NP	8	27	$(-8\pm3) \times 10^6$	$(12.1\pm0.5) \times 10^3$	0.995	5 - 10000	20
BPA	500	1667	$(-4\pm2) \times 10^5$	$(4.4\pm0.2) \times 10^2$	0.990	500 - 50000	16
PCP	600	2000	$(-1\pm3) \times 10^6$	$(1.1\pm0.1) \times 10^3$	0.991	500 - 50000	17
E1	200	667	$(-20\pm16) \times 10^4$	74 ± 9	0.990	200 - 100000	18
E2	300	1000	$(-14\pm8) \times 10^4$	44 ± 5	0.991	200 - 100000	13
EE2	300	1000	$(-15\pm4) \times 10^4$	68 ± 2	0.993	200 - 100000	14

SM4. Analytical parameters obtained for the target analytes with SPME/GC/MS for the soluble fraction. LOD, calibration line parameters (where "a" is y-intercept and "b" is slope), correlation coefficient (r^2), linear dynamic range and intra-day precision (RSD) are shown.

EDC	LOD (ng/kg)	LOQ (ng/kg)	$a \pm s_a$	$b \pm s_b$	r^2	Range (ng/kg)	RSD(%)
OP	20	67	$(-20\pm8) \times 10^5$	$(14\pm1) \times 10^3$	0.997	20 - 6000	17
t-NP	110	367	$(-6\pm5) \times 10^6$	$(6.4\pm0.5) \times 10^3$	0.996	100 - 50000	15
4-NP	30	100	$(-11\pm4) \times 10^6$	$(16.0\pm0.8) \times 10^3$	0.990	30 - 10000	18
BPA	1000	3333	$(2.6\pm0.9) \times 10^6$	$(7\pm1) \times 10^3$	0.990	1000 - 50000	12
PCP	1000	3333	$(-5\pm4) \times 10^6$	$(1.4\pm0.1) \times 10^3$	0.994	1000 - 50000	16
E1	400	1333	$(-5\pm3) \times 10^5$	$(2.0\pm0.2) \times 10^2$	0.995	400 - 100000	15
E2	600	2000	$(-2\pm1) \times 10^5$	96 ± 8	0.996	600 - 100000	18
EE2	600	2000	$(-4\pm4) \times 10^5$	$(2.0\pm0.3) \times 10^2$	0.992	600 - 100000	19

SM5. Analytical parameters obtained for the target analytes with SPME/GC/MS for the suspended fraction. LOD, calibration line parameters (where "a" is y-intercept and "b" is slope), correlation coefficient (r^2), linear dynamic range and intra-day precision (RSD) are shown.