

**Table S1.** Characteristics of raw water collected from Skudai river at the inflow of water treatment plant.

Parameter	Range
Turbidity (NTU)	228
TOC (mg/L)	2.9
pH	6.02
Alkalinity (mg CaCO <sub>3</sub> /L)	75-80
UV absorbance (cm <sup>-1</sup> )	0.09-0.10
BOD (mg/L)	6.0
COD (mg/L)	9.0

<sup>TOC</sup> Total organic carbon, <sup>BOD</sup> Biological oxygen demand, <sup>COD</sup> Chemical oxygen demand.

**Table S2.** A list of non-targeted NEPs and their concentrations found in river water those are not included in RSM model.

Name of NEP	Amount found in water sample (mg/L)	Major sources to discharge into river water	Health effects
Benzene	0.12	Factories, landfills, gas storage tanks etc.	Anemia, risk of cancer,
Fluorides	1.62	Fertilizer factories and aluminum factories.	Dental Problems, bone fractures
Toluene	0.18	Discharge from petrol refineries	Affects nervous system
Ethylbenzene	0.35	Industrial discharge, pesticides and paints etc.,	Reproductive damage
Xylene	0.68	Petroleum products, plastics etc.	Skin irritation, respiratory problems.
Bisphenol-A	0.54	Water supply pipes, food cans, bottle caps etc.,	Affects brain, behavior, and prostate glands in fetuses
Dodecene	1.02	Skin care products	Affects uterine functioning in animals
Ibuprofen	5.32	Excretion, disposal etc.	Expected carcinogenicity