

Table S1. The spectral slopes of the identified components and their corresponded components in previous studies from the OpenFluor database

| | Ex. wavelength (nm) | Em. wavelength (nm) | Similarity score | previous study | Component type |
|----|---------------------------|---------------------------|---------------------|---------------------------|---------------------------------------|
| C1 | 248,324 | 412 | 0.96 | (Graeber, et al., 2012) | Terrestrial humic |
| C2 | 244,376 | 482 | 0.99 | (Shutova, et al., 2014) | Terrestrial humic, Higher aromaticity |
| C3 | 300 | 406 | 0.98 | (Walker, et al., 2009) | Microbial humic |
| C4 | 356 | 436 | 0.97 | (Osburn, et al., 2016) | Terrestrial humic, lower aromaticity |
| C5 | 240,272 | 322 | 0.99 | (Kothawala, et al., 2014) | Protein-like |