Electronic Supplementary Material (ESI) for Environmental Science: Water Research & Technology.

Supplementary Information

Enhanced-Electrocoagulation Process for Natural Organic Matter Removal from Surface Drinking Water Sources: Coagulant Dose Control & Organic Matter Characteristics

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- Number of Fig: 3 (Fig. S1 to Fig. S3)
- Number of Tables: *3* (tables *S1* to *S3*)
- Number of Appendixes: 2 (Appendix I and Appendix II)

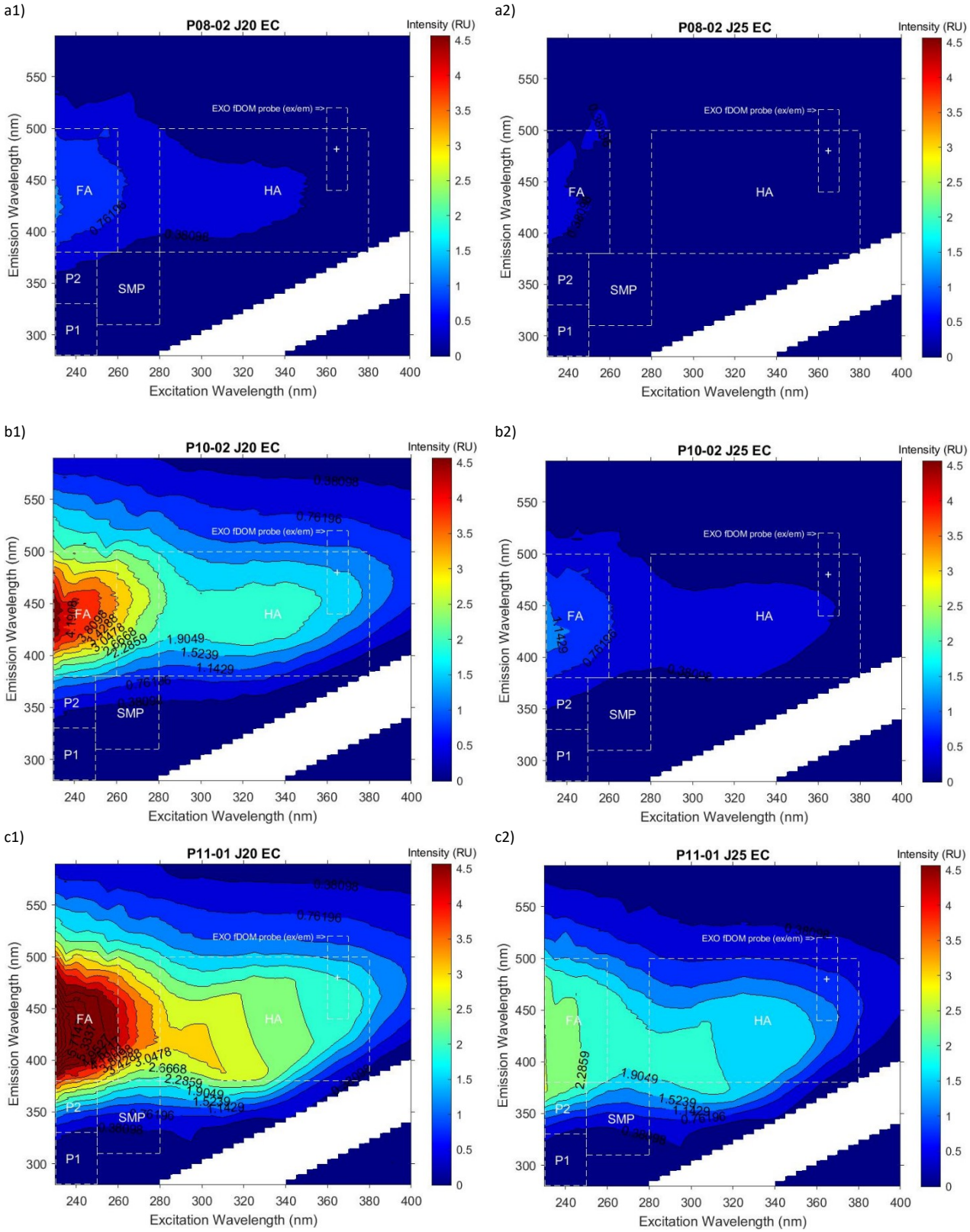


Fig. S1a Visualized *EEM* fluorescence spectra of (1) raw water sample, (2) a treated water sample, before and following *En-EC* in a) Murray River (*P08-02*), b) Myponga River (*P10-02*) and c) Middle River (*P11-01*) samples

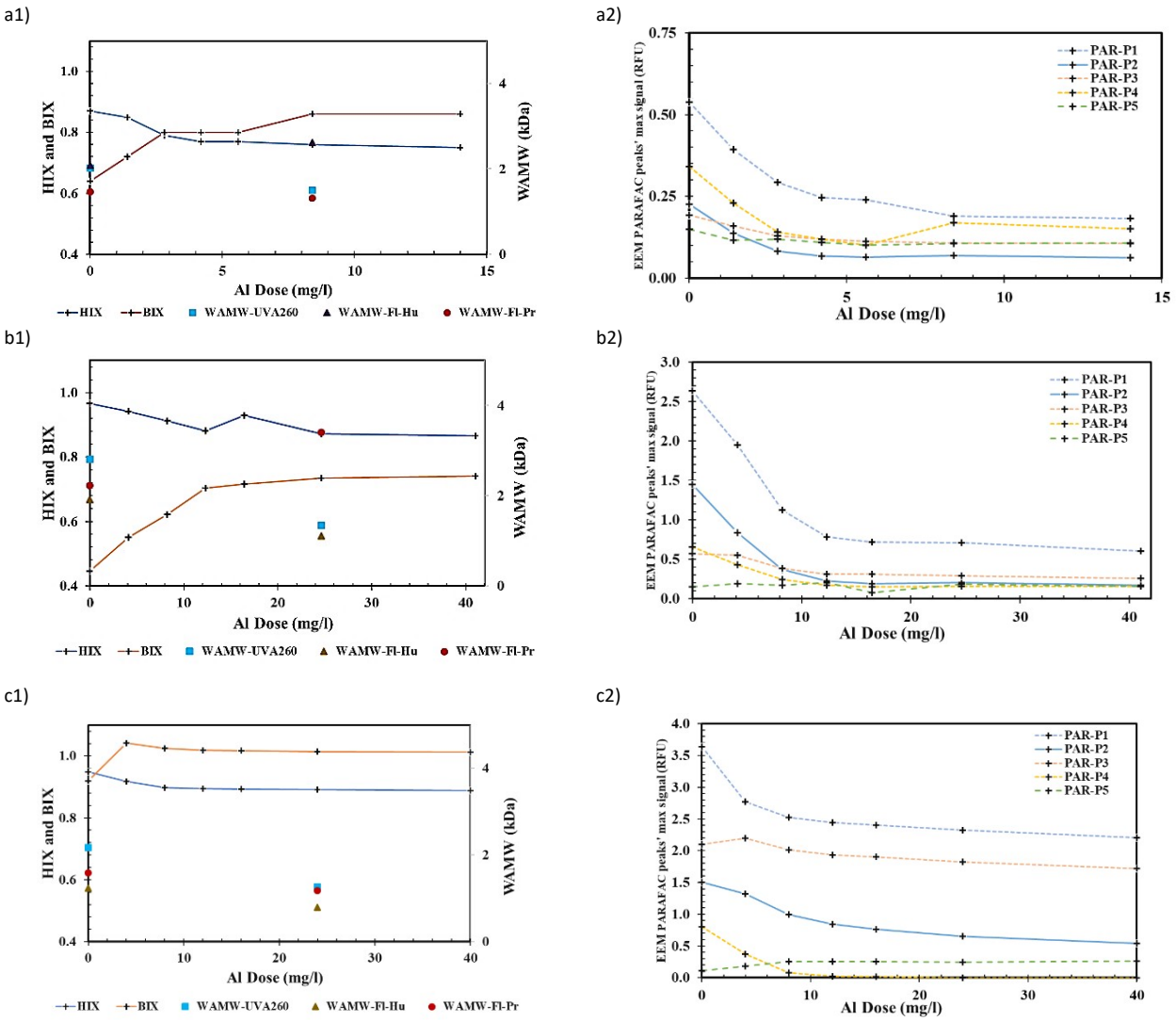


Fig. S1b *fEEM* based indices obtained through (1) *FRI* technique and (2) *PARAFAC* technique before and following *En-EC* in a) Murray River (*P08-02*), b) Myponga River (*P10-02*) and c) Middle River (*P11-01*) samples

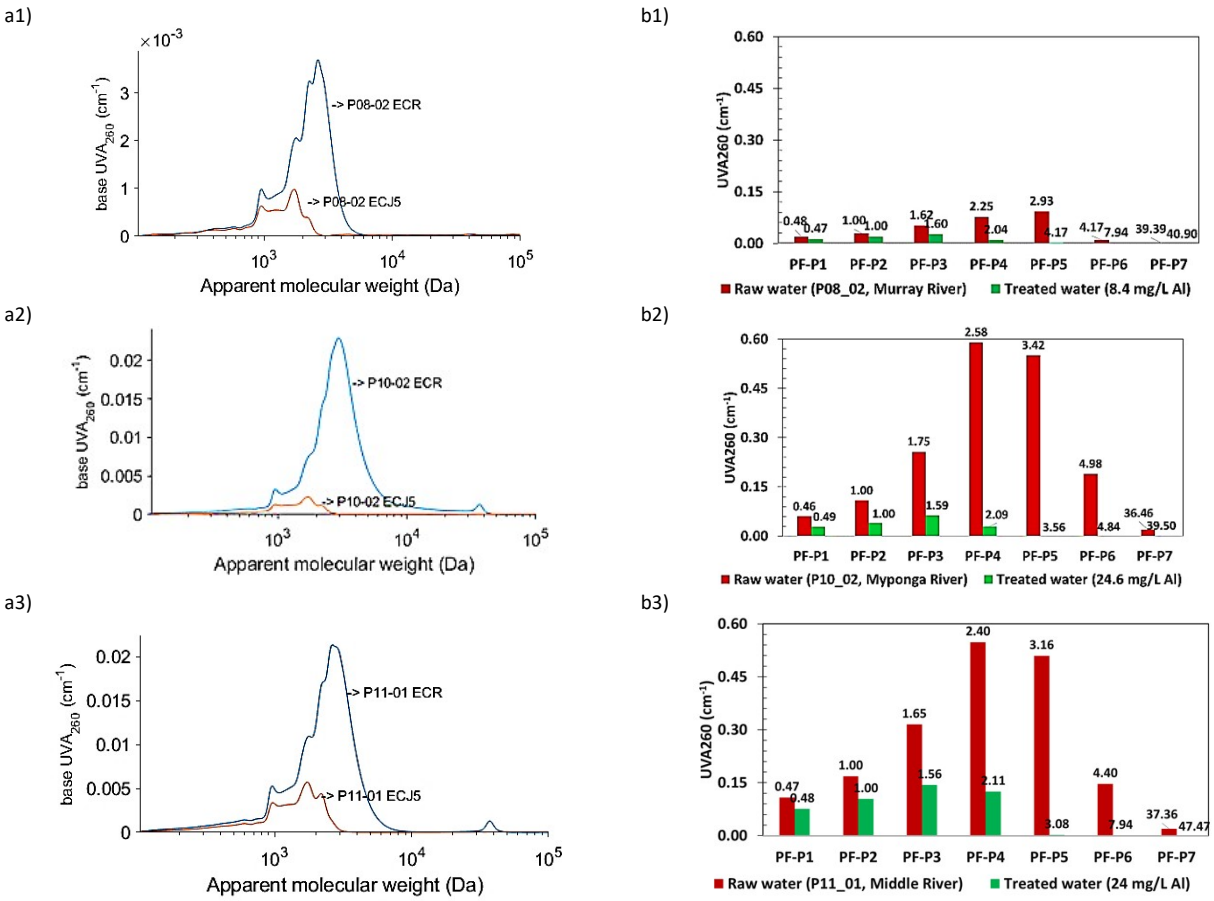


Fig. S2a The (1) *HPSEC-UVA$_{260}$* based *AMW* profile before and following *En-EC*, (2) the *HPSEC-UVA$_{260}$* based indices obtained through Peak-Fitting technique before and following *En-EC* in a) Murray River (*P08-02*), b) Myponga River (P10-02) and c) Middle River (*P11-01*) samples.
* The peak centres (*kDa*) are mentioned as labels to the columns

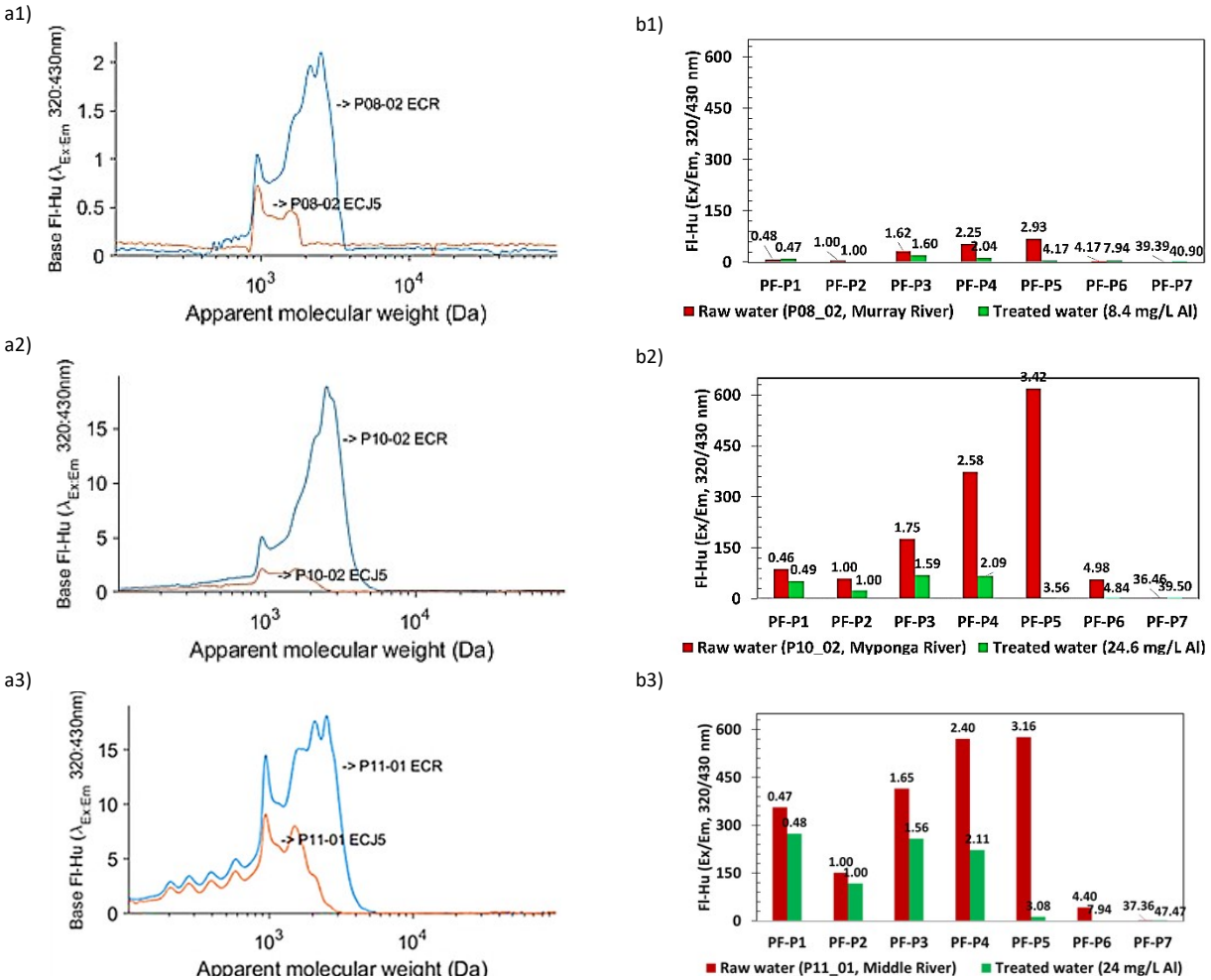


Fig. S2b The (1) *HPSEC-Fl-Hu* based *AMW* profile before and following *En-EC*, (2) the *HPSEC-Fl-Hu* based indices obtained through Peak-Fitting technique before and following *En-EC* in a) Murray River (*P08-02*), b) Myponga River (P10-02) and c) Middle River (*P11-01*) samples.
* The peak centres (*kDa*) are mentioned as labels to the columns

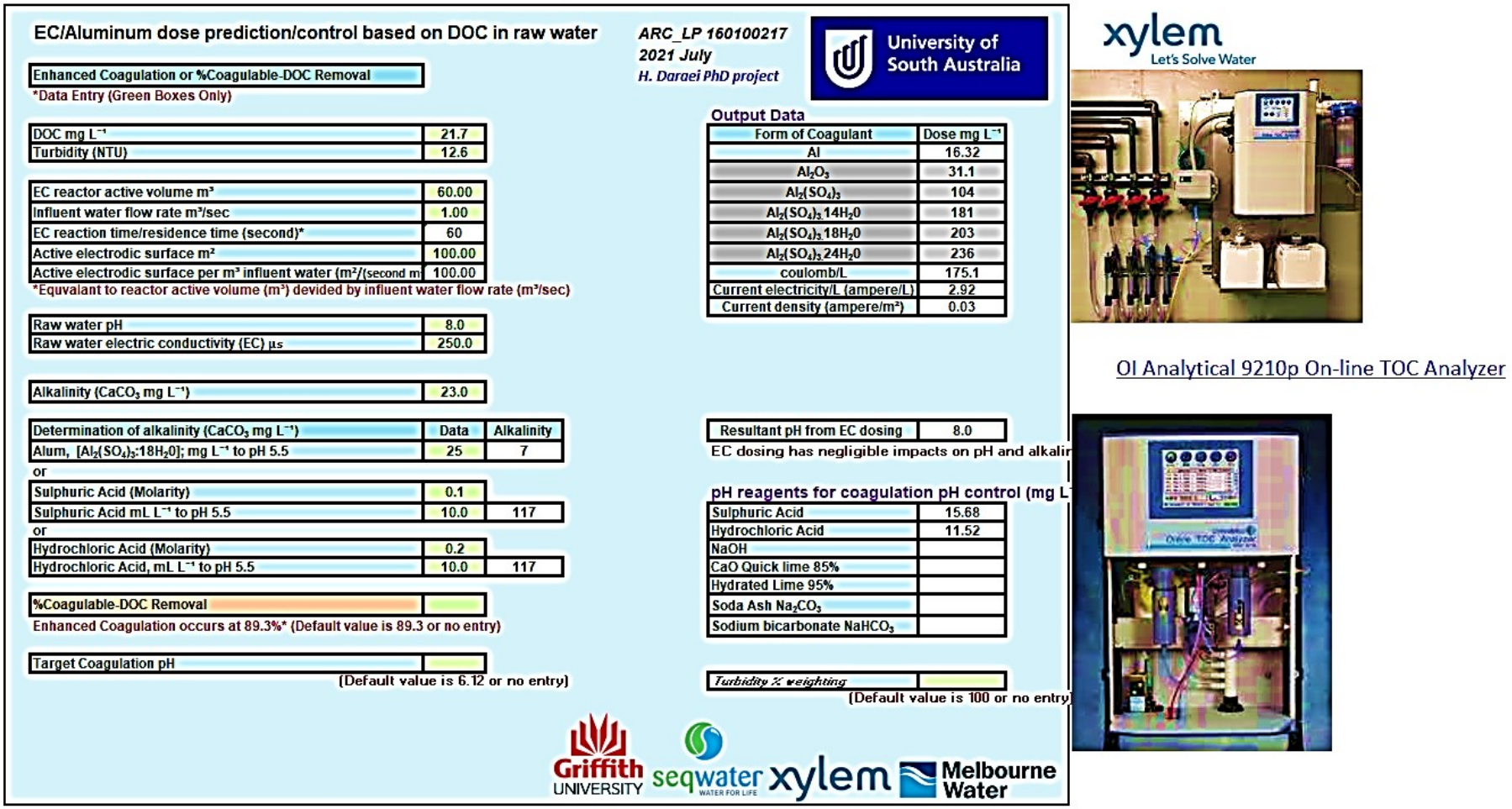


Fig. S3 A screenshot of the *WTC-DOC-ECoag* software

Table S1 The data are available in the corresponding excel file which is submitted as supplementary information

Table S2a *fEEM* data-based indices for Murray River sample

	Raw sample	*Treated with Al dose (mg L^{-1}) of:*						*Ratio*[1]
		1.4	**2.8**	**4.2**	**5.6**	**8.4**	**14**	
P1*	**5.20**	5.23	7.22	8.10	6.90	**9.05**	8.25	**0.6**
P2	**18.25**	18.54	19.83	20.51	19.97	**20.40**	20.74	**0.9**
FA	**48.28**	47.89	44.44	42.65	43.87	**44.10**	43.14	**1.1**
SMP	**9.27**	9.92	11.27	11.80	11.80	**10.91**	12.03	**0.8**
HA	**19.00**	18.41	17.25	16.94	17.46	**15.54**	15.84	**1.2**
HIX[2]	**0.89**	0.87	0.83	0.81	0.81	**0.80**	0.80	**1.1**
BIX[3]	**0.64**	0.72	0.80	0.80	0.80	**0.86**	0.86	**0.7**
Peak T[4]	**0.11**	0.08	0.07	0.07	0.05	**0.06**	0.07	**2.0**
Peak A[5]	**0.83**	0.56	0.40	0.33	0.31	**0.30**	0.29	**2.8**
Peak M[6]	**0.47**	0.35	0.25	0.22	0.21	**0.21**	0.19	**2.3**
Peak C[7]	**0.50**	0.37	0.28	0.23	0.23	**0.22**	0.20	**2.3**
A:T[8]	**7.66**	7.18	5.08	4.49	5.11	**5.23**	4.44	**1.5**
C:A[9]	**0.51**	0.56	0.58	0.60	0.58	**0.60**	0.63	**0.8**
C:M[10]	**1.21**	1.16	1.14	1.03	1.05	**1.00**	1.06	**1.2**
C:T[11]	**3.87**	3.99	2.96	2.70	2.94	**3.13**	2.81	**1.2**
NI[12]	**1.00**	1.00	1.00	1.00	1.00	**1.00**	1.00	**1.0**
EXO EXO fDOM[13]	**0.27**	0.18	0.12	0.10	0.10	**0.09**	0.08	**3.1**
PAR_P1[14]	**0.28**	0.20	0.15	0.12	0.12	**0.09**	0.09	**3.1**
PAR_P2	**0.21**	0.13	0.08	0.06	0.06	**0.07**	0.06	**2.9**
PAR_P3	**0.10**	0.10	0.09	0.09	0.09	**0.07**	0.08	**1.4**
PAR_P4	**0.23**	0.17	0.11	0.09	0.09	**0.09**	0.07	**2.6**
PAR_P5	**0.39**	0.26	0.17	0.14	0.12	**0.16**	0.15	**2.4**

*Weighted average percentage values for P1, P2, FA, SMP and HA indices.

[1]Ratio of the fluorescence index value in the raw sample to a sample treated with >= EnD. [2]Humification index (HIX_250nm): An indicator of humic substance content or extent of humification [1]; [3]Biological index (BIX): An indicator of autotrophic productivity where >1 values correspond to recently produced DOM of autochthonous origin [2]); [4]Peak T: An indicator of tryptophan like portion of protein like compounds; [5]Peak A: An indicator of humic Like compounds.; [6]Peak M: An indicator of marine humic Like compounds; [7]Peak C: An indicator of Humic Like compounds [3].[8]Peaks ratios (A:T): Indicator of the amount of humic-like (recalcitrant) vs. fresh_like (labile) fluorescence [4]); [9]Peaks ratio (C:A): An indication of the amount of humic-like vs. fulvic-like compounds; [10]Peaks ratio (C:M): An indication of the amount of diagenetically altered (blue_shifted) fluorescence in a sample [5, 6]; [11]Peaks ratios (C:T): Indicator of the amount of humic-like (recalcitrant) vs. fresh_like (labile) fluorescence [4]); [12]New index: Proposed to be an indicator for humification; [13]EEM_fDOM: Is the normalized signal collected from benchtop machine output EEM spectra at the same ex-em paired wavelength which the EEM_EXO_fDOM probe use.[14]Peak 1: The decomposed (identified) EEM peak (component) area in the studied samples EEM spectra using PARFAC approach.

Table S2b *fEEM* data-based indices for Myponga River sample

	Raw sample	*Treated with Al dose (mg L^{-1}) at:*						*Ratio*[1]
		4.1	**8.2**	**12.3**	**16.4**	**24.6**	***41.1***	
P1*[*]	**1.08**	3.52	4.74	7.62	3.54	**6.65**	7.00	**0.6**
P2	**11.67**	15.85	17.74	19.80	20.64	**19.92**	20.30	**0.8**
FA	**56.67**	49.88	47.10	43.42	46.21	**43.47**	43.03	**1.2**
SMP	**5.82**	7.44	9.02	10.23	9.28	**10.49**	10.54	**0.8**
HA	**24.77**	23.31	21.39	18.94	20.33	**19.48**	19.12	**1.1**
HIX[2]	**0.97**	0.94	0.91	0.88	0.93	**0.87**	0.87	**1.1**
BIX[3]	**0.45**	0.55	0.62	0.70	0.72	**0.74**	0.74	**0.7**
Peak T[4]	**0.20**	0.23	0.19	0.18	0.15	**0.17**	0.13	**2.1**
Peak A[5]	**3.51**	2.36	1.30	0.90	0.82	**0.82**	0.69	**3.8**
Peak M[6]	**1.85**	1.44	0.86	0.61	0.57	**0.54**	0.48	**3.2**
Peak C[7]	**2.25**	1.69	0.98	0.71	0.64	**0.63**	0.54	**3.1**
A:T[8]	**17.23**	10.09	6.57	4.75	6.28	**5.23**	4.84	**1.8**
C:A[9]	**0.61**	0.67	0.70	0.69	0.69	**0.68**	0.69	**0.9**
C:M[10]	**1.82**	1.59	1.41	1.29	1.27	**1.30**	1.25	**1.1**
C:T[11]	**10.59**	6.77	4.61	3.28	4.31	**3.55**	3.34	**1.6**
NI[12]	**4.00**	2.62	1.59	1.15	1.06	**1.06**	1.00	**3.5**
EEM EXO fDOM[13]	**1.53**	0.99	0.49	0.32	0.28	**0.29**	0.24	**3.8**
PAR_P1[14]	**1.65**	1.20	0.65	0.45	0.40	**0.41**	0.34	**4.1**
PAR_P2	**1.32**	0.74	0.32	0.19	0.16	**0.17**	0.15	**7.6**
PAR_P3	**0.23**	0.34	0.26	0.24	0.23	**0.23**	0.20	**1.0**
PAR_P4	**0.97**	0.68	0.40	0.26	0.26	**0.23**	0.20	**4.2**
PAR_P5	**0.94**	0.62	0.34	0.24	0.20	**0.22**	0.20	**4.3**

*Weighted average percentage values for P1, P2, FA, SMP and HA indices.

[1]Ratio of the fluorescence index value in the raw sample to a sample treated with >= EnD. [2]Humification index (HIX_250nm): An indicator of humic substance content or extent of humification [1]; [3]Biological index (BIX): An indicator of autotrophic productivity where >1 values correspond to recently produced DOM of autochthonous origin [2]); [4]Peak T: An indicator of tryptophan like portion of protein like compounds; [5]Peak A: An indicator of humic Like compounds.; [6]Peak M: An indicator of marine humic Like compounds; [7]Peak C: An indicator of Humic Like compounds [3].[8]Peaks ratios (A:T): Indicator of the amount of humic-like (recalcitrant) vs. fresh_like (labile) fluorescence [4]); [9]Peaks ratio (C:A): An indication of the amount of humic-like vs. fulvic-like compounds; [10]Peaks ratio (C:M): An indication of the amount of diagenetically altered (blue_shifted) fluorescence in a sample [5, 6]; [11]Peaks ratios (C:T): Indicator of the amount of humic-like (recalcitrant) vs. fresh_like (labile) fluorescence [4]); [12]New index: Proposed to be an indicator for humification; [13]EEM_fDOM: Is the normalized signal collected from benchtop machine output EEM spectra at the same ex-em paired wavelength which the EEM_EXO_fDOM probe use.[14]Peak 1: The decomposed (identified) EEM peak (component) area in the studied samples EEM spectra using PARFAC approach.

Table S2c *fEEM* data-based indices for Middle River sample

	Raw sample	*Treated with Al dose (mg L^{-1}) of:*						*Ratio*[1]
		4	**8**	**12**	**16**	**24**	**40**	
P1*	**1.52**	2.28	2.55	2.61	2.84	**2.99**	3.27	**0.8**
P2	**20.62**	23.75	24.82	25.39	25.30	**25.82**	25.46	**0.9**
FA	**54.12**	46.96	43.92	42.38	42.43	**40.97**	40.58	**1.1**
SMP	**6.84**	9.16	10.34	10.80	10.83	**11.18**	11.40	**0.8**
HA	**16.90**	17.85	18.37	18.81	18.60	**19.03**	19.30	**0.9**
HIX[2]	**0.95**	0.92	0.90	0.89	0.89	**0.89**	0.89	**1.0**
BIX[3]	**0.92**	1.04	1.02	1.02	1.02	**1.01**	1.01	**1.0**
Peak T[4]	**0.56**	0.59	0.60	0.59	0.56	**0.57**	0.55	**1.0**
Peak A[5]	**4.65**	3.12	2.52	2.35	2.31	**2.22**	2.15	**1.4**
Peak M[6]	**3.24**	2.58	2.22	2.11	2.09	**2.02**	1.96	**1.3**
Peak C[7]	**2.74**	2.18	1.98	1.92	1.91	**1.87**	1.85	**1.2**
A:T[8]	**9.47**	5.49	4.60	4.35	4.26	**4.29**	4.27	**1.3**
C:A[9]	**0.52**	0.67	0.76	0.79	0.80	**0.82**	0.86	**0.8**
C:M[10]	**0.85**	0.83	0.89	0.90	0.91	**0.92**	0.93	**0.9**
C:T[11]	**4.96**	3.65	3.50	3.44	3.42	**3.53**	3.65	**1.0**
NI[12]	**5.21**	3.36	2.65	2.46	2.40	**2.29**	2.21	**1.5**
EEM EXO fDOM[13]	**1.88**	1.52	1.18	1.03	0.96	**0.87**	0.76	**1.8**
PAR_P1[14]	**2.19**	1.93	1.75	1.64	1.57	**1.45**	1.27	**1.5**
PAR_P2	**1.27**	1.02	0.72	0.60	0.54	**0.46**	0.40	**2.8**
PAR_P3	**1.80**	2.34	2.22	2.11	2.04	**1.91**	1.72	**0.9**
PAR_P4	**0.89**	-0.14	-0.18	-0.10	-0.01	**0.12**	0.32	**7.6**
PAR_P5	**1.07**	0.55	0.25	0.19	0.18	**0.15**	0.14	**7.1**

*Weighted average percentage values for P1, P2, FA, SMP and HA indices.

[1]Ratio of the fluorescence index value in the raw sample to a sample treated with >= EnD. [2]Humification index (HIX_250nm): An indicator of humic substance content or extent of humification [1]; [3]Biological index (BIX): An indicator of autotrophic productivity where >1 values correspond to recently produced DOM of autochthonous origin [2]); [4]Peak T: An indicator of tryptophan like portion of protein like compounds; [5]Peak A: An indicator of humic Like compounds.; [6]Peak M: An indicator of marine humic Like compounds; [7]Peak C: An indicator of Humic Like compounds [3].[8]Peaks ratios (A:T): Indicator of the amount of humic-like (recalcitrant) vs. fresh_like (labile) fluorescence [4]); [9]Peaks ratio (C:A): An indication of the amount of humic-like vs. fulvic-like compounds; [10]Peaks ratio (C:M): An indication of the amount of diagenetically altered (blue_shifted) fluorescence in a sample [5, 6]; [11]Peaks ratios (C:T): Indicator of the amount of humic-like (recalcitrant) vs. fresh_like (labile) fluorescence [4]); [12]New index: Proposed to be an indicator for humification; [13]EEM_EXO_fDOM: Is the normalized signal collected from benchtop machine output EEM spectra at the same ex-em paired wavelength which the EXO_fDOM probe use.[14]Peak 1: The decomposed (identified) EEM peak (component) area in the studied samples EEM spectra using PARFAC approach.

Table S3a *HPSEC-UVA$_{260}$* data-based indices for Murray River, Myponga River and Middle River samples

	Murray River			**Myponga River**			**Middle River**		
	Raw	*Treated*	***Ratio[1]***	*Raw*	*Treated*	***Ratio[1]***	*Raw*	*Treated*	***Ratio[1]***
WAMW[2]	*2.02*	*1.50*	***1.3***	*2.81*	*1.34*	***2.1***	*2.17*	*1.27*	***1.7***
PF-P1	*0.0191*	*0.0126*	***1.5***	*0.0594*	*0.0274*	***2.2***	*0.1081*	*0.0756*	***1.4***
PF-P2	*0.0295*	*0.0199*	***1.5***	*0.1079*	*0.0409*	***2.6***	*0.1685*	*0.1040*	***1.6***
PF-P3	*0.0518*	*0.0261*	***2.0***	*0.2569*	*0.0622*	***4.1***	*0.3150*	*0.1433*	***2.2***
PF-P4	*0.0765*	*0.0093*	***8.2***	*0.5902*	*0.0298*	***19.8***	*0.5483*	*0.1250*	***4.4***
PF-P5	*0.0922*	*0.0013*	***72.7***	*0.5505*	*0.0001*	***9875***	*0.5095*	*0.0021*	***244***
PF-P6	*0.0098*	*0.0009*	***10.8***	*0.1893*	*0.0012*	***156***	*0.1467*	*0.0002*	***668***
PF-P7	*0.0007*	*0.0009*	***0.8***	*0.0200*	*0.0008*	***26.3***	*0.0191*	*0.0013*	***14.2***

Table S3b *HPSEC-Fl-Hu* data-based indices for Murray River, Myponga River and Middle River samples

	Murray River			**Myponga River**			**Middle River**		
	Raw	*Treated*	***Ratio[1]***	*Raw*	*Treated*	***Ratio[1]***	*Raw*	*Treated*	***Ratio[1]***
WAMW[2]	2.0	1.9	**1.1**	2.4	1.1	**2.3**	1.2	0.8	**1.6**
PF-P1	7.3	10.1	**0.7**	86.8	51.5	**1.7**	355.9	273.9	**1.3**
PF-P2	5.3	0.8	**6.8**	58.7	25.5	**2.3**	150.6	117.5	**1.3**
PF-P3	31.7	20.1	**1.6**	175.4	68.8	**2.6**	414.6	258.2	**1.6**
PF-P4	53.2	12.9	**4.1**	373.0	66.9	**5.6**	571.0	222.1	**2.6**
PF-P5	68.9	5.1	**13.6**	618.9	3.5	**178.2**	576.1	12.5	**46.0**
PF-P6	3.6	5.2	**0.7**	57.6	2.2	**26.6**	42.3	1.7	**25.7**
PF-P7	1.6	2.6	**0.6**	3.1	2.3	**1.4**	1.7	2.1	**0.8**

Appendix 1

The EEM fluorescence data were pre-processed, including removing/smoothing Raman scattering, converting to Raman units, and limiting inner filter effects. The EEM spectra were standardized to Raman units (normalized to the integral of the Raman signal between 390 and 410 nm in emission at a fixed excitation of 350 nm) using Milli-Q water sample EEM spectra which are collected the same day as the samples.[7] The EEM data were then normalized to prevent the impact of DOM content variation on the output model.

The PARAFAC analyses of the fluorescence data were performed using 'decomposition routines for Emission-Excitation Matrices' (*drEEM Version_0.6.5*, which is developed by Murphy*, et al.* (2013)) MATLAB software's toolbox. Several PARAFAC models (2- to 7-component PARAFAC models) were developed by analysing all EEM fluorescence measurements (n=200) of the raw and treated water samples collected from 3 EC and 17 CC jar tests as well as several other surface water sources' samples collected between Oct 2018 to Feb 2022. No outlier data were identified/excluded in the dataset using outlier tests and leverage plots (see Fig. A1.1). The 5-component model was selected on the basis of several criteria in turn. Fig. A1.2 shows that the addition of 6th and more fluorescence components has no noticeable impact on fitting error of PARAFAC models. In addition, the result of split validation technique, suggested by Murphy*, et al.* (2013) (which is performed using 'split-validation' function in drEEM toolbox) indicated 'Validated for all comparisons as Overall Result' in the case of six splits validation test trials of the 5-components model (where this was unsuccessful for models with larger number of components). The results of the comparison between validation datasets obtained through different combinations of the dataset splits are presented in Fig A1.3a&b.

The potential sources and functions of the identified PARAFAC component in the 5-component (hereafter referred to as fluorophores PAR-C1 to PAR-C5) PARAFAC model (Fig. A1.4) are presented in Table A1.1. These are attained through comparisons of the PARAFAC fluorescence components which are identified in the current study to the components reported in the literature. The comparison was performed using an online spectral library referred to as OpenFluor database[9,10] This showed that all components have been previously identified/reported frequently as DOM components (Tucker congruence coefficient ≥ 0.95 on both the excitation and emission spectra, OpenFluor references in Table A1.1). As summarised in Table A1.1, humic-like components PAR-C1, PAR-C2 and PAR-C4 are among the most common fluorophores found in freshwaters (large number of matches in OpenFluor database library, Table A1.1) and are associated with high-molecular-weight and aromatic compounds of terrestrial origin[11]. PAR-C3 and PAR-C5 components are classified as microbial protein-like components related to the production of DOM within aquatic ecosystems (see Table A1.1).

Table A1.1 Interpretation of the EEM fluorescent components identified through PARAFAC analysis

Component	Peak position ($\lambda_{ex}/\lambda_{em}$)	% Contribution to the model	No. matches in OpenFluor ($(TCC_{ex} > 0.95$ and $(TCC_{em} > 0.95$)	Traditional Classification	Possible source (Previous attributions	ID in OpenFluor	References (Top matches)	Common components in between models (Our model => Ref model)	Sample studied in the reference
PAR_P1	**325/424**	**48**	**68**	Peak A/Peak C	Humic-like Terrestrial delivered OM	44	Shutova, *et al.* (2014)	1=>2; 2=>1; 3=>3; 4=>4;	Raw and treated water of Capalaba WTP (QLD) South Maclean WTP (QLD); Grahamstown WTP (NSW); Gresford WTP (NSW) Yarra Glen WTP (VIC) are collected between October 2011 and September 2012
PAR_P2	**370/487**	**23**	**90**	Peak A/Peak C	Humic-like Terrestrial delivered OM	692	Osburn, *et al.* (2017)	1=>2; 2=>1; 3=>4; 4=>3; 5=>5;	Arctic lakes located in three clusters across south-west (SW) Greenland
PAR_P3	**305/379.5**	**14**	**23**	Peak T	Protein-like Microbial delivered	2617	Groeneveld, *et al.* (2020)	1=>2; 2=>3; 3=>4; 4=>1; 5=>5;	20 lakes, three peats and seven streams and rivers throughout Sweden are collected between 28 August and 6 September 2016
PAR_P4	**325/423**	**13**	**35**	Peak A/Peak C	Humic-like Processed OM	7	Graeber, *et al.* (2012)	1=>1; 2=>2; 3=>5; 4=>4; 5=>7;	Central European headwater streams
PAR_P5	**270/314**	**2**	**64**	Peak T	Protein-like Microbial delivered	58	Walker, *et al.* (2009)	1=>1; 2=>3; 3=>4; 4=>2; 5=>5;	Coastal Canadian Arctic surface waters
						14	Lambert, *et al.* (2016)	1=>1; 2=>2; 3=>3; 4=>4;	Zambezi River samples are collected during wet season 2012 (1 February to 5 May, n = 40), wet season 2013 (6 January to 21 March, n = 41), and dry season 2013 (15 October to 28 November, n = 24;
						3630	Wang, *et al.* (2020)	1=>1; 2=>2; 3=>3; 4=>4;	314 surface water samples are collected from 111 New York Lakes over the 2018 and 2019
						4353	Wauthy, *et al.* (2018)	1=>1; 2=>2; 3=>4; 4=>3; 5=>5;	356 freshwaters samples from 253 ponds are located in the regions span over a wide geographic area, covering around 200 degrees of longitude (from Alaska to Russia) and 30 degrees of latitude (from Subarctic to High Arctic) during the summer periods from 2002 to 2016.
						464	Peleato, *et al.* (2016) 464	1=>1; 2=>2; 3=>4; 4=>3;	The Otonabee River, Peterborough, Ontario

*The components with red text are identified with Tucker congruence coefficient < 0.95 on the excitation or/and emission spectra

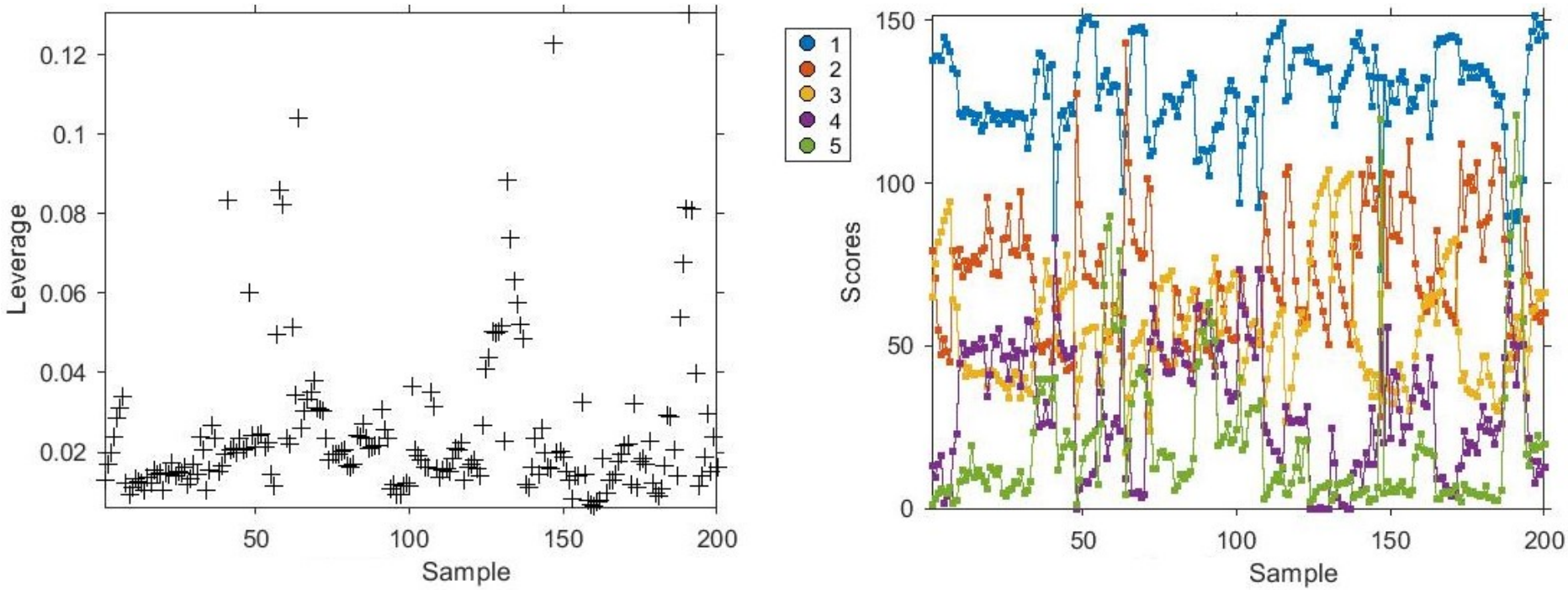


Fig. A1.1 Leverage and score graph of the 5-component mode for all studied samples

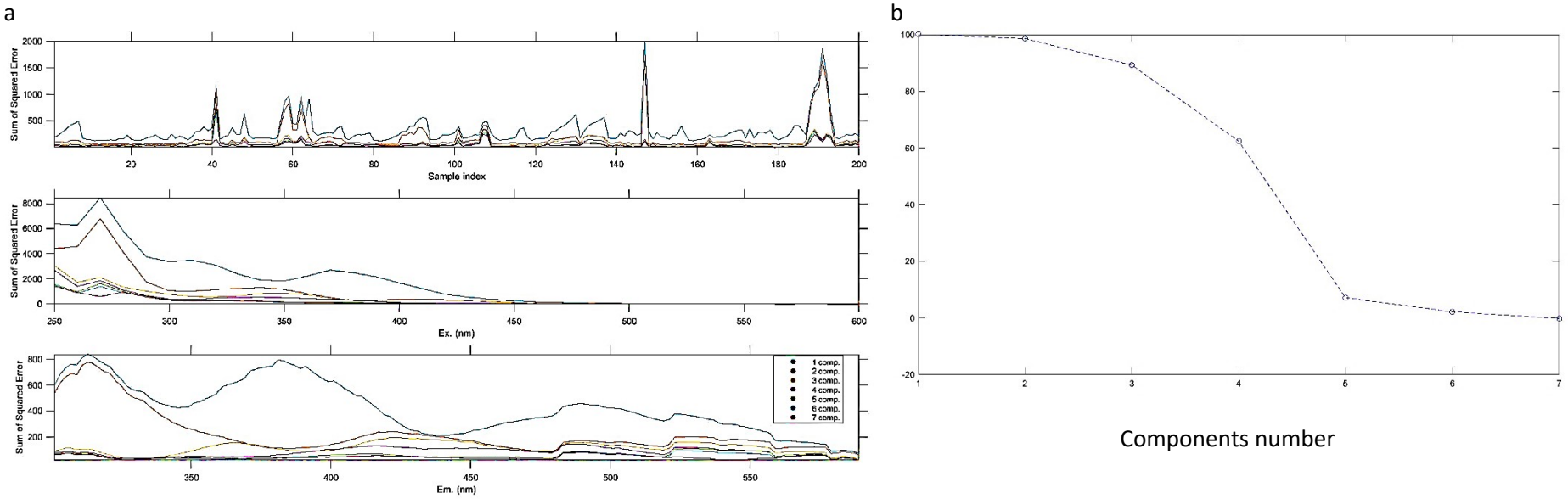


Fig. A1.2 Fitting error in PARAFAC models with increasing number of fluorescence components (in the 1-component to 7-component models) in a) the range of studied ex/em wavelengths & samples and **b)** overall studied range of samples and ex/em wavelengths (accumulative error)

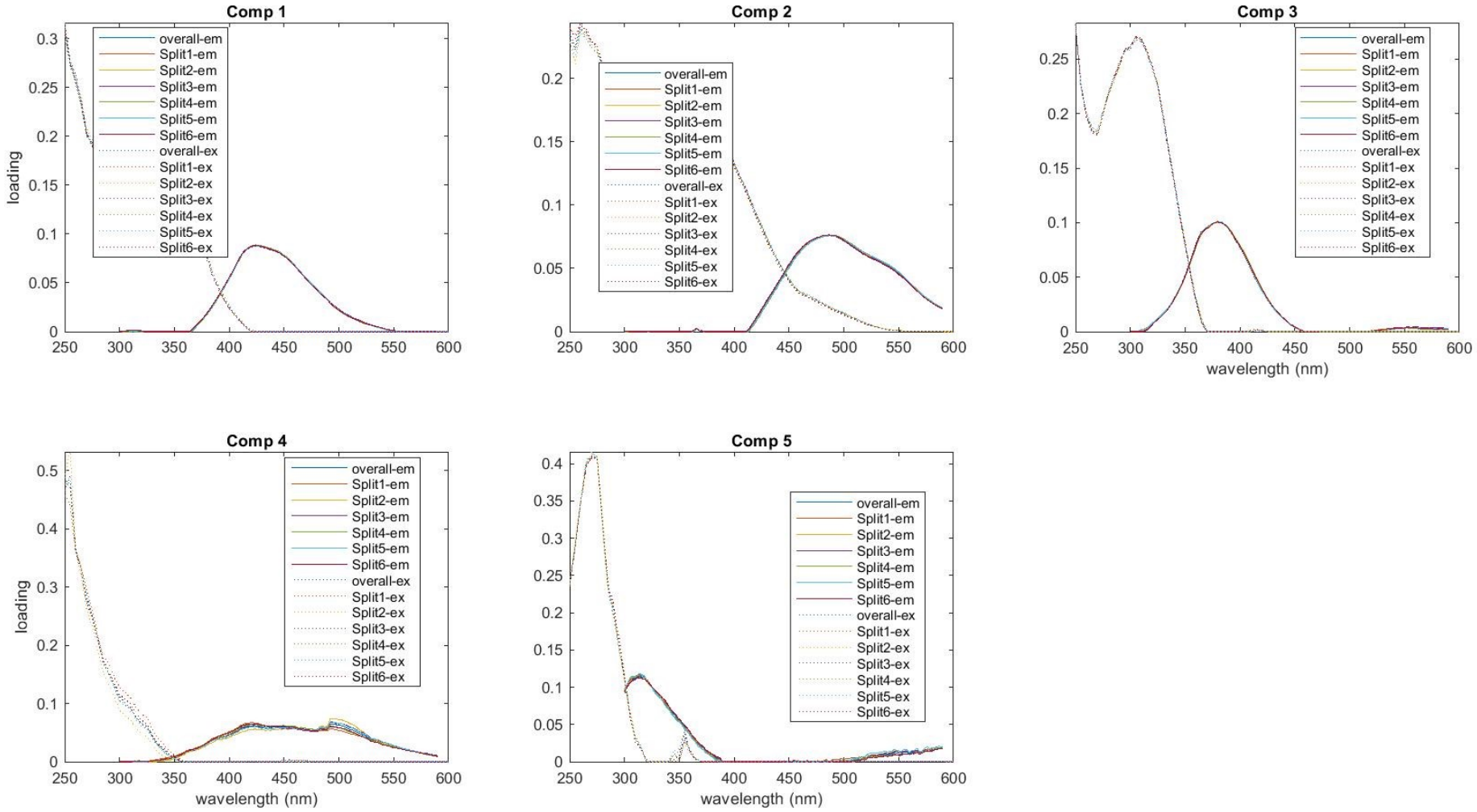


Fig. A1.3a Comparison of the dataset's in six splits for each identified fluorescence components. This indicating similarity of the identified components in all six splits datasets.

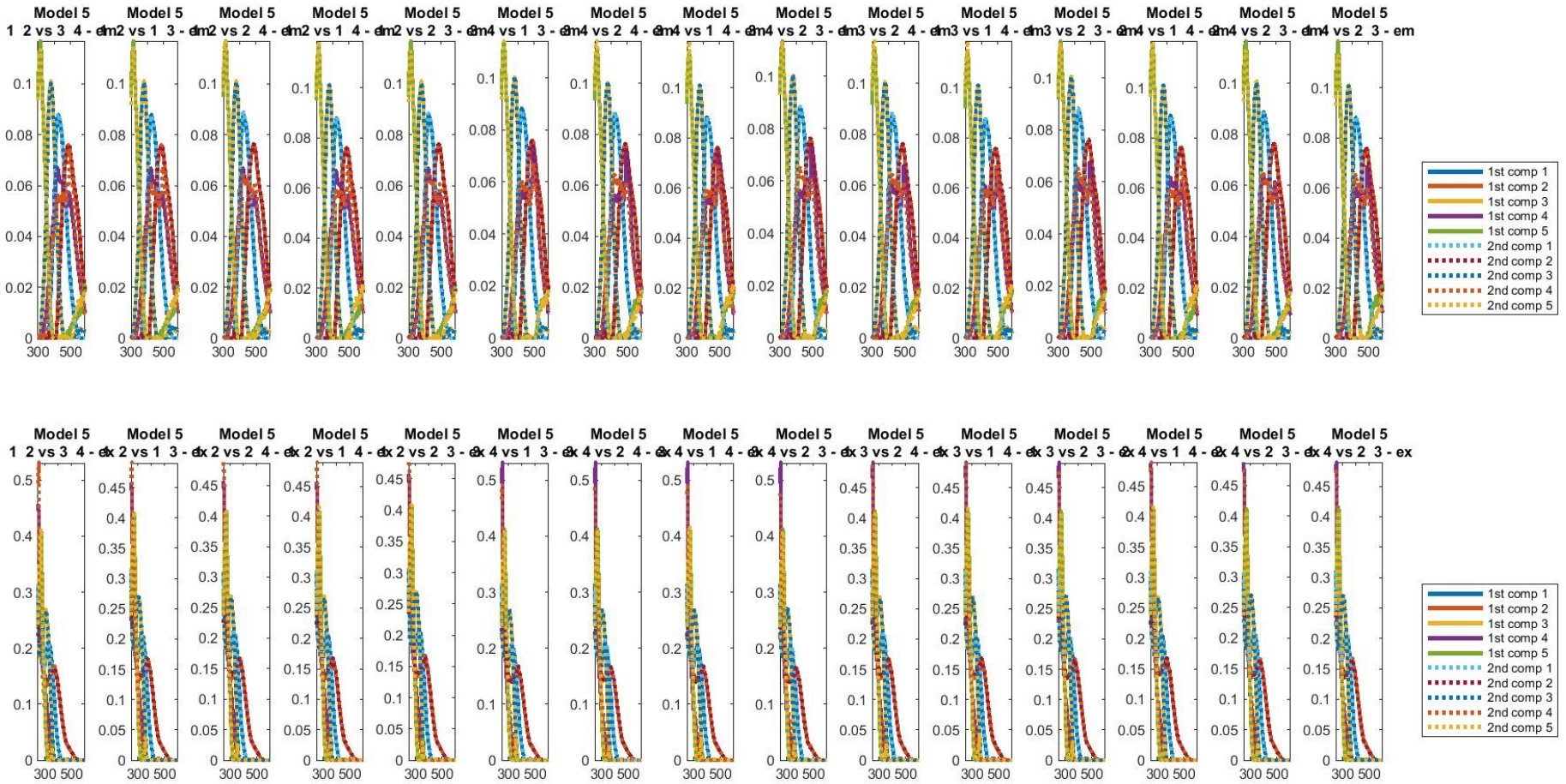
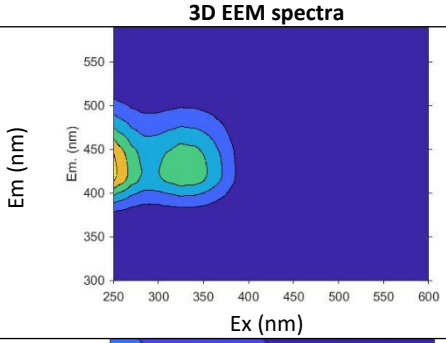
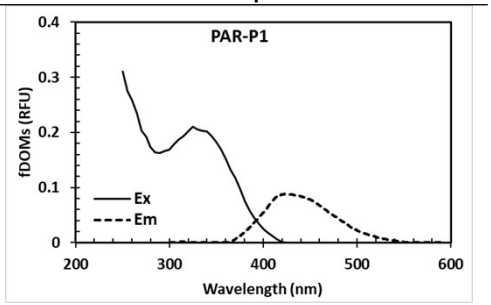
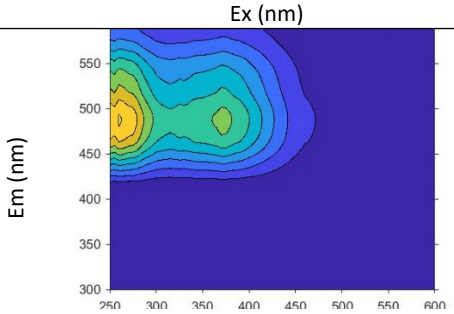
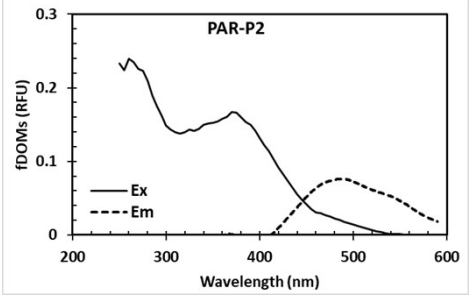
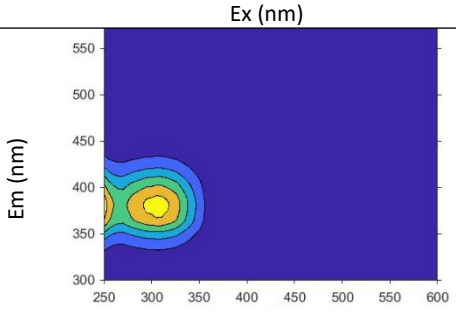
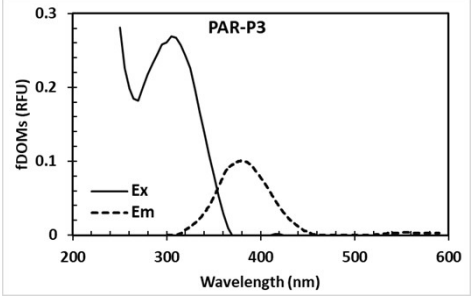
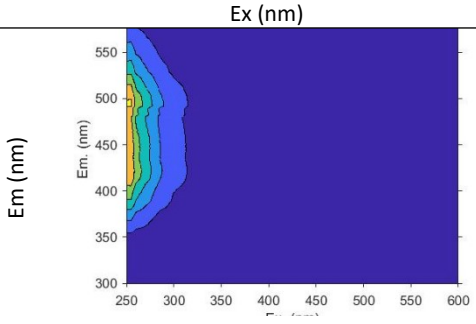
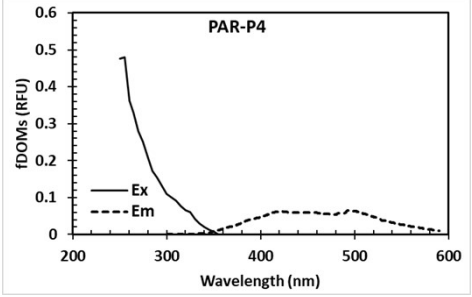
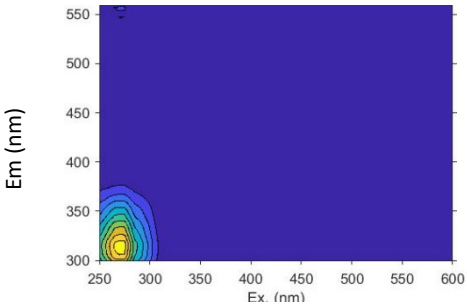
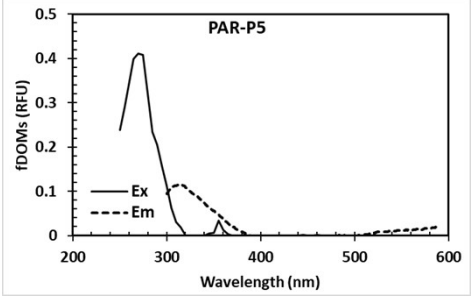


Fig. A1.3b Comparison of the emission fluorescence signal in 30 combinations of the splits for each identified fluorescence components. This indicating similarity of the identified components in all six combinations.

Fig. A1.1 3D Contour plots and 2D diagram of the five fluorescence EEM components identified

EEM components	3D EEM spectra	2D EEM spectra
PAR_P1		
PAR_P2		
PAR_P3		
PAR_P4		
PAR_P5		

5-component models exhibiting no atypical spectral features[8]

Appendix 2 Precision of Techniques [Coefficient of Variation (CV)]

The precisions of water quality analyses and treatment techniques were determined using two water samples collected separately from the same water sources (Murray and Myponga rivers). These had contrasting water qualities *i.e.* Murray River sample having high turbidity but low in DOM content and Myponga River sample with high in DOM content but low turbidity (see Table A2.1). Determination of CV values of water quality analyses are presented in Table A2.2a for Myponga samples) and in Table A2.2b for Murray River. The CV values for the treatment techniques (EC and CC) are presented in Table A2.3.

Table A2.1 Raw water quality parameters of samples used for determination of co-efficient of variation (CV) data

WQ parameters	Murray River	Myponga River
pH	7.38	7.10
Conductivity (µS cm^{-1})	255	633
Turbidity (NTU)	87.0	8.7
A_{254} (m^{-1})	22	93.6
True colour (HU)	58	182

**DOC-specific A_{254}* (*L mg^{-1} m^{-1}*); **Corrected *fDOM$_s$* (*RFU*) for *turbidity*, *temperature* and *pH* (***and for *inner filter* effect [*IFE*]) impacts using a mathematical model-based approach which has developed by us recently (not published yet).

Table A2.2a Co-efficient of variation (CV) values of water quality analyses performed in triplicate, for Myponga River raw and treated (EC and CC) water samples

	Myponga River water sample – Raw sample and Jar 1 treated sample																	
	Raw sample (R)						**EC treated sample (EC T)**						**CC treated sample (CC T)**					
	R1	**R2**	**R3**	**M**	**SD**	**CV**	**EC T_1**	**EC T_2**	**EC T_3**	**M**	**SD**	**CV**	**CC T_1**	**CC T_2**	**CC T_3**	**M**	**SD**	**CV**
A_{254}	1.026	1.044	1.036	1.035	0.007	**0.7**	0.128	0.126	0.124	0.126	0.002	**1.3**	0.133	0.138	0.138	0.136	0.002	**1.7**
True colour (HU)	189	204	206	199.7	7.65	**3.8**	11	11	11	11.2	0.00	**0.0**	10	10	11	10.5	0.61	**5.8**
Tur. (NTU)	8.8	8.6	8.6	8.7	0.1	**1.1**	2.5	2.2	2.0	2.2	0.2	**9.2**	2.7	2.2	2.4	2.4	0.2	**8.4**
pH	6.89	7.17	7.24	7.10	0.15	**2.1**	6.89	6.81	6.87	6.86	0.03	**0.5**	6.15	6.12	6.12	6.13	0.01	**0.2**
Cond. (µS cm^{-1})	632	633	633	633	0.5	**0.1**	-	-	-	-	-	**-**	-	-	-	-	-	**-**

R: Raw water sample, T: Treated water sample from Jar test 1 sample.

Table A2.2b Co-efficient of variation (CV) values of water quality analyses performed in triplicate for Murray River raw and treated (EC and CC) water samples

	Murray River water sample - Raw sample and Jar 1 treated sample																	
	Raw sample (R)						**EC treated sample (EC T)**						**CC treated sample (CC T)**					
	R1	**R2**	**R3**	**M**	**SD**	**CV**	**EC T_1**	**EC T_2**	**EC T_3**	**M**	**SD**	**CV**	**CC T_1**	**CC T_2**	**CC T_3**	**M**	**SD**	**CV**
A_{254}	0.221	0.224	0.214	0.220	0.004	**1.9**	0.065	0.065	0.066	0.065	>0.001	**0.7**	0.052	0.052	0.051	0.052	>0.001	**0.9**
True colour (HU)	45	53	40	46.0	5.55	**12.1**	6	7	7	6.7	0.61	**9.1**	4	5	5	5.0	0.35	**7.1**
Tur. (NTU)	86.7	87.8	86.6	87.0	0.5	**0.6**	4.5	3.9	5.9	4.8	0.8	**17.6**	3.0	3.6	1.7	2.8	0.8	**28.7**
pH	7.36	7.38	7.40	7.38	0.02	**0.2**	7.07	7.07	7.13	7.09	0.03	**0.4**	6.24	6.31	6.39	6.31	0.06	**1.0**
Cond. (µS cm^{-1})	255	255	255	255	<1.0	**<1.0**	-	-	-	-	-	**-**	239	239	239	239	>1	**>1.0**

R: Raw water sample, T: Treated water sample from Jar test 1 sample.

Table A2.3 Determination of co-efficient of variation (CV) values for standard jar and electro jar techniques, using Myponga River and Murray River water samples (performed in triplicate)

	Myponga River water sample													**Murray River water sample**											
	EC							**CC**						**EC**							**CC**					
	Raw	**EJ1**	**EJ2**	**EJ3**	**M**	**SD**	**CV**	**J1**	**J2**	**J3**	**M**	**SD**	**CV**	**Raw**	**EJ1**	**EJ2**	**EJ3**	**M**	**SD**	**CV**	**J1**	**J2**	**J3**	**M**	**SD**	**CV**
A_{254} (cm^{-1})	1.035	0.126	0.134	0.134	0.131	0.004	**2.9**	0.136	0.137	0.138	0.137	0.001	**0.6**	0.220	0.065	0.066	0.077	0.069	0.005	**7.8**	0.052	0.051	0.051	0.051	<0.001	**0.9**
True colour (HU)	199	11	13	10	11.5	0.93	**8.1**	10	10	10	10.0	0.35	**3.5**	46	4	7	5	5.50	0.93	**17.0**	5.2	4.5	5.2	5.00	0.35	**7.0**

EC: Electro-coagulation; CC: Chemical coagulation; J: Jar test, EJ: electro jar test

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