

Detecting UVT-reducing Trade Wastes for maintenance of UV disinfection efficiency the easy way!

Felicity Roddick

Emeritus Professor | RMIT University



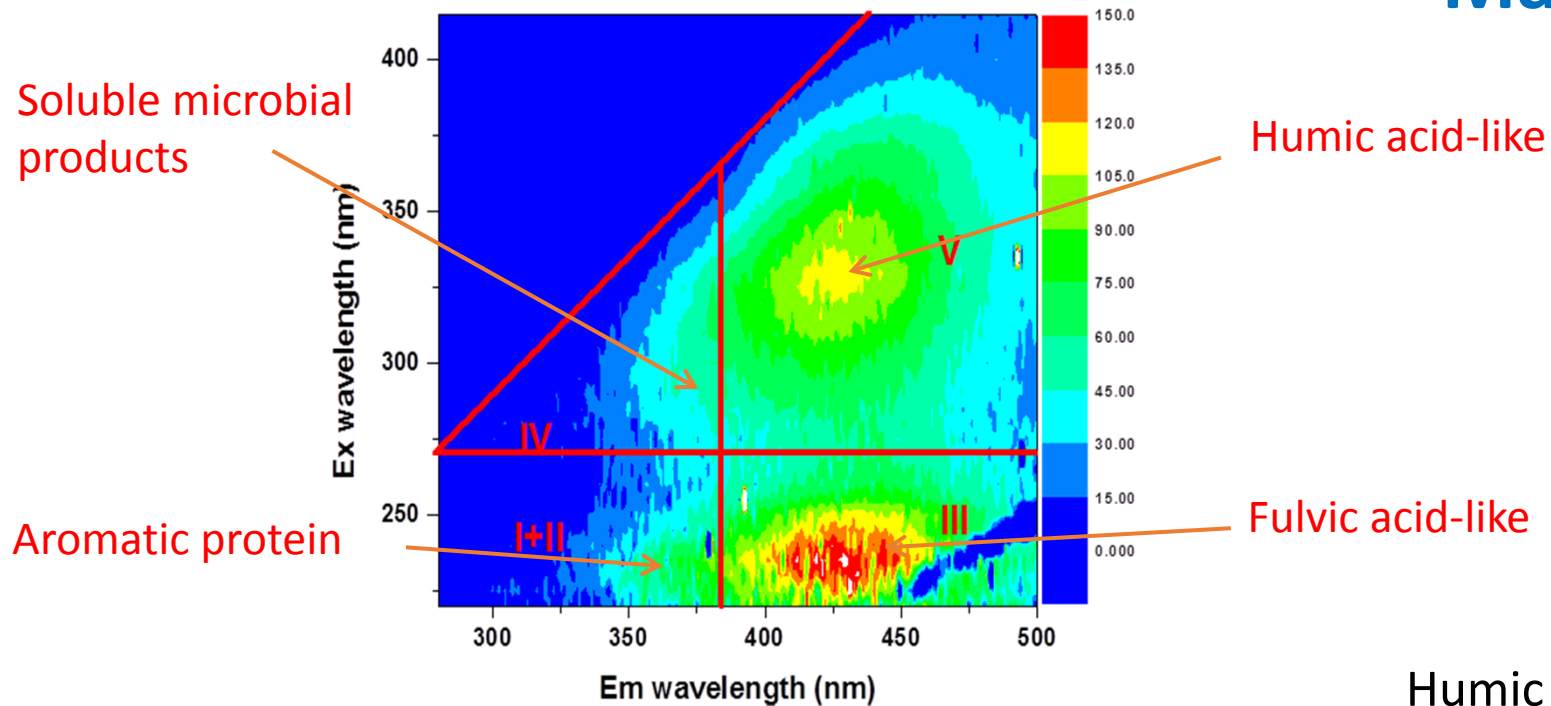
What we achieved

Some Trade Wastes contain elevated non-biodegradable organic matter which reduces the UVT of secondary effluent to below the validated range for effective UV disinfection

Time-consuming biodegradation tests may be required to check each Trade Waste

We determined **strong relationships (R^2 up to 0.95)** between the fluorescence intensity of humic acid-like organic substances in Trade Wastes and UVT of the resultant secondary effluent

Fluorescent Excitation Emission Matrix Spectrum



Humic acid-like substances consistently appeared in influent and secondary effluent

Expected Impact

Will enable

- **Efficient and effective UV disinfection**
- Monitoring of humics in STP influents
 - allow diversion before or after treatment and before UV disinfection
- More accurate pricing of Trade Waste treatment
- Reduction of risk of treated water to health and environment from reuse or release to environment



Collaboration

Collaboration with South East Water, Barwon Water and Coliban Water
Critical to the success of this project!

Our partners contributed via:

- Collection and delivery of samples (3 times)
- Information, documentation re their Trade Wastes and treatment processes
- Feedback on presentations and reports at the 3 PAC meetings
- Financial support

This work drew on data from limited number of samples from 3 STPs with different processes, numbers and types of Trade Wastes

- See poster for further details

To fast-track this innovative tool, further work is required to confirm the relationship, to validate it at more STPs, and trial it.....

Collaboration and financial support from extant and other partners is required