

THE CHARACTER OF INDUSTRIAL STORMWATER POLLUTANTS

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ABSTRACT

The characteristics of Stormwater are unlike other industrial waters. Stormwater flows can go from zero to cubic meters per second in an instant. The range of contaminants that can be entrained in stormwater is also unlike other industrial waste streams. These variable concentrations and speciation of the contaminants make them difficult to treat in a cost-effective manner. In addition, high pollutant loads can create operational challenges in meeting regulatory requirements.

Guidance documents for the design of stormwater treatment devices [e.g. Auckland Council's GD01] are typically based on the usual stormwater characteristics from urban landscapes i.e. residential or commercial land use. As such, these guidance documents may not address the unique characteristics of the stormwater pollution resulting from the processes and operation of an industrial activity.

Industrial sites often face stricter environmental requirements and discharge controls due to the potential risks. Furthermore, there will likely be requirements for on-site monitoring, so the industrial stormwater treatment designs require site specific measures to address these unique characteristics of industrial stormwater pollution.

This paper will discuss the characteristics of industrial stormwater through a series of New Zealand case studies. It will include examples of how site characteristics influenced the design of the final stormwater treatment solutions.

KEYWORDS

Industrial Stormwater, Monitoring, Contaminant Characterisation, ANZECC, Case Study, Pollution

PRESENTER PROFILE

Troy Brockbank (Te Rarawa, Ngāti Hine, Ngāpuhi) is a civil engineer and the Design Manager with Stormwater360 New Zealand. He has over 10 years professional experience in the stormwater industry across engineering consultancies, civil contractors & suppliers. He has developed specialist skills in investigation, design, manufacture, construction, and project management of stormwater management devices for public and private developments.

He has developed a real passion and ability for water sensitive design, in particular solutions to protect and restore the quality of waterways and the environment.

He considers himself an intermediary, having the advantage of seeing aspects from both an engineering and a Te Ao Māori world view. He is passionate about the widespread adoption of a holistic culturally enhanced water sensitive design approach and will continue working towards raising awareness as a leader in this field both nationally and internationally.