Stormwater Quality Improvement Device Evaluation Protocol (SQIDEP)

VERIFICATION CERTIFICATE

Applicant Information

Applicant Name	**SPEL Stormwater Pty Ltd**
Applicant Address	**130 Sandstone Pl, Parkinson QLD, 4115**
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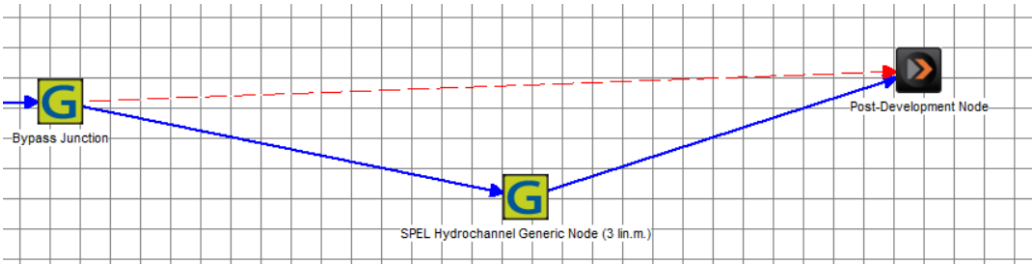
Verified Technology	**SPEL Hydrochannel**
Issue Date	22nd June 2021
Reviewed Documents	• University of the Sunshine Coast, Stormwater Research Group, Evaluation of Treatment Performance of SPEL Hydrochannel at Sippy Down, Final report May 2018 • Dr Darren Drapper, R. Biggins, SPEL Stormwater, Field Monitoring of a SPEL Hydrochannel at University of Sunshine Coast 90 Sippy Downs Dr, Sippy Downs QLD 4556, SQIDEP Supporting Information, Issue 1, 19th March 2021. • Dr Darren Drapper, R. Biggins, B. Jedras, SPEL Stormwater, Field Monitoring of a SPEL Hydrochannel at University of Sunshine Coast 90 Sippy Downs Dr, Sippy Downs QLD 4556, SQIDEP Supporting Information, Issue 2, 23rd March 2020. • Drapper Environmental Consultants, USC SPELBasin & Hydrochannel Sample Collection Procedure • SPEL Hydrochannel setup (device and sampling) (digital video) • Chain of Custody documentation and Results certificates for the duration of the monitoring periods • Statutory Declaration made by Dr Darren Drapper confirming role in monitoring data, maintaining field equipment, co-ordinating sample collection, identifying qualifying events and calibration of monitoring equipment

Technology Information

Applicant's Verified Performance Claims	Total Suspended Solids (TSS) 88 % Total Phosphorus (TP) 69 % Total Nitrogen (TN) 67 % Total Petroleum Hydrocarbons 0 %
Maintenance performed during monitoring	Maintenance procedures undertaken during the monitoring period included cleaning of the sedimentation chamber once every 12 months. The filter bag was also checked once every 12 months but was not replaced.
Verified method to model in MUSIC	• The submitted, calibrated MUSIC model provides a method of modelling the technology with 1 Generic node as per the image below, with a bypass flowrate equivalent to 0.5L/s/lin.m of Hydrochannel;



• The input criteria for the node is;
  ○ Generic node

High Flow Bypass	0.5 L/s/lin.m	
Total Suspended Solids	Input = 1000 mg/L	Output = 120 mg/L
Total Phosphorus	Input = 5 mg/L	Output = 1.55 mg/L
Total Nitrogen	Input = 50 mg/L	Output = 16.5 mg/L

Conditions	The limitations of the acceptance of these claims include: • The results are for a road based catchment. The results lie within acceptable inflow limits for this type of catchment and based on the analysis are found to be acceptable. This does not necessarily relate to other catchment types, though it is noted that hard stand catchments will behave similarly. Cleaner, roof catchments may not achieve the same pollutant reduction targets. • The results are for a hydraulic loading rate up to 0.5 L/s per metre module. Should the hydraulic load rate exceed this, the results would be expected to decline in line with excessive loading on the device. • The results are reliant on the maintenance of the device being consistent with the manufacturers guidelines and those that are contained in the report.

	• The Hydrochannel media is estimated to have an effective life of 1 year. It is suggested that a 12 month maintenance cycle include replacement of the media. • Performance is contingent upon the installation being similar to that shown in this trial. Alternative installations may result in different outcomes.

Independent Reviewers	Mr Andrew Allan, Afflux Consulting Mr Damian McCann, Australian Wetlands Consulting

Accepted by Governance Panel	17th June 2021
Accepted by Stormwater Australia Board	22nd June 2021