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**
Phone Number	**+61 1300 773 500**
Email	**sales@spel.com.au**
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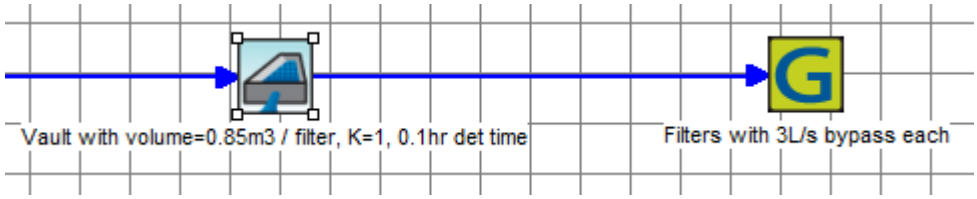
Verified Technology	**SPELFilter**
Issue Date	**23 December 2022**
Reviewed Documents	• SPEL Body of Evidence application submission (Prepared by Drapper Environmental Consultants) • Statutory Declaration by Drapper Environmental Consultants • Hydrographs of compliant and partially compliant events at the Hilton Foods site showing inflow, outflow, rainfall and samples collected (42 items) • Sample collection and/or reset emails/site records at the Hilton Foods site (50 items) • Laboratory Chain of Custody forms, Quality Control reports, QC Compliance Reviews & Certificates of Analysis • Subsequent hydrograph plots for Hilton Foods site that included monitored outflow rates (and summary table of results) – (37 items), 17 October 2022.

Technology Information

Applicant's Verified Performance Claims	Treatable flow rate = 3 L/s per filter cartridge Total Suspended Solids (TSS) 85 % Total Phosphorus (TP) 74 % Total Nitrogen (TN) 59 % Total Petroleum Hydrocarbons 0 % Gross Pollutants 0 %

Maintenance performed during monitoring	None over 13 months

Verified method to model in MUSIC	Modelling a SPELFilter in MUSIC is as follows: 1. Use a detention basin node to represent the vault (with modified 'K' values and nominal detention time set to the treatment flow rate of the cartridges) 2. Use a generic node with the monitored pollutant reduction values and have a high flow bypass of 3 L/s per cartridge.  ● The input criteria for the node is; 1. Use a detention basin node to represent the vault ● with modified 'K' values with K=1 ● use size of 1m^2 per cartridge and 0.85m extended detention depth ● adopt a nominal detention time of 0.1 hours (plus or minus 10%). 2. Use a generic node with: ● a high flow bypass of 3 L/s per cartridge ● pollutant reductions of 85% for TSS ● pollutant reductions of 74% for TP ● pollutant reductions of 59% for TN. When entering the data into MUSIC the detention basin surface area and high flow bypass rate of the generic node is factored up depending on the number of filter cartridges proposed. All other values listed above remain the same (note: the *Notional Detention Time* is adjusted by changing the *Low Flow Pipe Diameter*).

Conditions	The limitations of the acceptance of these claims include: ● Pit insert "Stormsacks" (for coarse material capture) are used for inlets upstream of the SPELFilter installation to ensure longevity of the filters ● Regular inspection & maintenance should be performed in accordance with the Manufacturer's Maintenance Plans.

Independent Reviewers	Dr Robin Allison Dr Ricky Kwan

Accepted by Governance Panel	22 December 2022
Accepted by Stormwater Australia Board	23 December 2022