

Nutrient Neutrality Assessment Report

Proposed Development: Land between Long Craggs and Bower House, Church Street, Bowerchalke Salisbury (River Avon SAC Catchment)

Application Number: PL/2026/01754

Total Annual Phosphorus Load to Mitigate: 0.05 kg TP/yr

1. Summary

This assessment evaluates the phosphorus impact of a proposed single dwelling on land between Long Craggs and Bower House, Church Street, Bowerchalke Salisbury within the River Avon SAC catchment. Using the Natural England River Avon SAC Nutrient Neutrality Calculator (v03.01.6), the development produces a residual phosphorus load of **0.05 kg TP per year**.

This low figure is achieved through:

- A high-performance **package treatment plant** with a certified **0.2 mg/L TP effluent standard** (Marsh MI Phos-Lite)
- A **SuDS treatment train** including permeable paving, a soakaway, and a bioretention cell.
- A shift from horticultural land to a mix of residential.

The methodology follows Natural England guidance in full. The remaining 0.05 kg TP/yr must be mitigated through an approved off-site or on-site scheme.

2. Full Nutrient Neutrality Assessment Report

The nutrient neutrality assessment demonstrates that the proposed development generates a small residual phosphorus load of **0.03 kg TP/yr** after SuDS treatment and land-use adjustments. This report outlines the methodology, inputs, and justification for all assumptions.

Site Description

- Location: SP5 5BE
- Catchment: Avon Hampshire
- Site area: 0.06 ha
- Current land use: Horticulture
- Future land use: 0.06 ha residential
- Soil: Freely draining
- Rainfall: 800–850 mm
- NVZ: Yes

Methodology

The assessment follows Natural England's five-stage approach:

1. Wastewater loading

2. Current land-use export
3. Future land-use export
4. SuDS phosphorus removal
5. Final nutrient budget with 20% buffer

Conclusion

The development cannot achieve full neutrality on-site but has reduced its phosphorus load to a minimal level. The remaining 0.05 kg TP/yr must be mitigated.

3. Technical Appendix

SuDS

Feature	Area (ha)	Flow (%)	Removal (%)
Permeable driveway	0.01	75	60
Soakaway	0.01	95	70
Bioretention	0.02	95	70

A2. Drainage Strategy

Overview

The drainage strategy ensures that all surface water is managed sustainably, routed through SuDS features, and discharged via infiltration.

Surface Water Flow Path

1. Rainfall lands on the dwelling roof.
2. Water is collected via gutters and downpipes.
3. Water flows onto the permeable driveway for initial infiltration.
4. Excess water enters the soakaway for deeper infiltration.
5. During heavy rainfall, water is conveyed to the bioretention cell.
6. Final discharge occurs via infiltration to ground.

Exceedance Flow Management

- Overland flow routes direct water away from the dwelling.
- Landscaped areas provide safe temporary storage.
- No surface water leaves the site boundary.

Maintenance Responsibilities

- Annual inspection of permeable driveway

- Soakaway sediment removal every 3–5 years
 - Bioretention vegetation maintenance twice yearly
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SuDS Treatment Train Diagram

Residential plot layout including house, garden, driveway, and SuDS features arranged within the site boundary.

Surface water from the dwelling roof is collected via gutters and directed toward the permeable driveway. From here, water infiltrates through the permeable surface into the sub base, where initial phosphorus removal occurs.

Excess water flows into a soakaway, providing further infiltration and phosphorus adsorption. During heavier rainfall, water is conveyed to a bioretention cell, where engineered soil media and vegetation remove additional phosphorus before infiltration to ground.

Exceedance flows follow controlled overland routes away from the dwelling and toward landscaped areas.

Roof → Gutter → Permeable Driveway → Soakaway → Bioretention Cell → Infiltration to Ground

A3. Mitigation Options

To offset **0.05 kg TP/yr**, viable options include:

- Commitment to purchase of River Avon nutrient credits
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A4. Statement of Compliance

This assessment follows Natural England's statutory methodology and uses only approved calculator outputs.

Manufacturer Evidence for the PTP

The proposed Package Treatment Plant incorporates a tertiary phosphorus-removal module capable of achieving **0.2 mg/L TP** effluent concentration.

[MI-Nutrient-Neutrality-technical-document.pdf](#)

Evidence Summary

- Manufacturer testing demonstrates TP effluent concentrations between **0.1–0.3 mg/L**.
 - Phosphate-binding media provides long-term adsorption capacity.
 - System is compliant with EN12566-3 and suitable for nutrient neutrality applications.
 - Maintenance schedule ensures consistent performance.
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