Revised Water Neutrality Statement

Planning Ref: DC/24/1890
Discharge Ref: DISC/25/0111

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1. Introduction

This updated Water Neutrality Statement (WNS) supports application DC/24/1890, for a domestic pool located within the Sussex North Water Supply Zone (SNWSZ). The proposed outdoor swimming pool measures 30 feet by 10 feet (approximately 9.14m × 3.05m = 27.9m²). This document provides a full breakdown of water use and mitigation to demonstrate net zero increase in water consumption in accordance with guidance from Natural England and Horsham District Council.

2. Structured Water Use Calculation

2.1 Existing Water Use

There is currently no water use associated with this pool infrastructure.
Existing usage: 0 m³/year

2.2 Proposed Water Use

Use Category	**Annual Volume (m³)**	**Source/Assumption**
Initial fill volume	38.3 m³	
Evaporation Loss	3.35	Based on average seasonal use, UK climate data, and partially covered pool. Figure derived from industry calculators and supported by manufacturer data.
Poolside Maintenance	0.25	Water used for rinsing surrounding surfaces, brushes, and occasional top-up; calculated using typical manual cleaning needs.
Total	**41.9** m³	

2.3 Mitigation Measures

a) Initial Fill

- Volume: 38.3 m³

- Method: Fully tankered from outside the SNWSZ
- **Impact: 0 m³/year from SNWSZ — invoice supplied**

b) Passive Rainwater Harvesting – Pool Cover

- Cover: Abriblue Banc Surf slatted cover (NF P90-308/NF EN 17645 compliant)
- Surface Area: 27.9m²
- Local Rainfall (Horsham): 850mm/year
- Efficiency: 60% (due to slat gaps and runoff losses)
- Annual Harvested Volume:
  → 27.9 × 0.85 × 0.6 = 14.24 m³/year

c) Rainwater Butt – Cleaning Use

- Capacity: 250 litres (0.25 m³)
- Collection Area: 4m² (plant room roof)
- Efficiency: 80%
- Annual yield per refill: 4 × 0.85 × 0.8 = 2.72 m³/year (theoretical)
- Actual use capped by storage: 0.25 m³ × 10 refills/year = 2.5 m³/year

Mitigation Measure	**Volume (m³/year)**
Pool Cover Rainwater Reuse	14.24
Water Butt (cleaning use only)	2.5
Total	**16.74**

2.4 Final Calculation

Element	**Volume (m³/year)**
Proposed Water Use	41.9
Tankered in water	38.3
On-Site Rainwater Harvesting	16.74
Net Impact	+13.14
Net increase in water use	**0**

3. Supporting Measures (Not Required for Mitigation)

- Robotic cleaner**:** Closed-loop system, zero water use
- Cartridge filtration: No backwashing loss
- Condensate recovery and frost protection: Not included due to lack of measurable contribution
- Initial fill excluded from calculations, as it's externally sourced

4. Appendix

Water Use Breakdown and Evaporation Loss Calculation

Evaporation Loss Calculation – Methodology

To estimate the annual water loss due to evaporation from the swimming pool, a standard UK-based climatic model has been used. This method follows a conservative approach:

1. Base Evaporation Rate (Uncovered Pool)

- Average weekly evaporation during UK swimming season (May–September): 27 mm/week (0.027 m)
- Duration of swimming season: 20 weeks
- Total seasonal evaporation depth: $0.027\text{m/week} \times 20\text{weeks} = 0.54\text{m/year}$

2. Pool Surface Area

- Pool dimensions: 9.14 m × 3.05 m = 27.9 m²

3. Annual Evaporation Volume (Uncovered Pool)

- $27.9\text{m}^2 \times 0.54\text{m} = 15.07\text{m}^3\text{/year}$

4. Adjusted for Pool Cover Efficiency

- Abriblue Banc Surf slatted cover reduces evaporation by up to 85%
- Adjusted annual evaporation volume:

- $15.07\text{m}^3\text{/year} \times (1 - 0.85) = 2.26\text{m}^3\text{/year}$

Cleaning & Maintenance Water Use Calculation

- Robotic cleaner: Closed-loop system, zero water use
- Poolside cleaning (manual): 10 litres per cleaning
- Frequency: May to September (typical UK swimming season, 22 weeks)
- Total Water Use: 10 litres × 22 = 220 litres/year = 0.22 m³/year
- Rounded up (per Natural England guidance): 0.25 m³/year

Final Conservative Estimate Used

To allow for:

- Occasional uncovered periods
- Real-world variability in cover efficiency
- Microclimate conditions (e.g. wind, temperature fluctuations)

Final annual evaporation figure used: 3.35 m^3/year