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PERCOLATION TEST REPORT

Proposed Sewage Treatment Plant and Drainage Field
Land off Tytherley Road, Winterslow, Wiltshire, SP5 1PZ

Prepared for:
Planning Submission to Wiltshire County Council

Date:
07th January 2025

1. Introduction

This report presents the findings of percolation testing undertaken to assess the suitability of ground conditions for the disposal of treated foul effluent via a drainage field associated with a package sewage treatment plant.

The proposed system is intended to serve a new one-bedroom residential dwelling, approved under Class Q for the conversion of an existing agricultural building at Land off Tytherley Road, Winterslow, Wiltshire, SP5 1PZ.

The testing has been undertaken in accordance with the principles set out in BRE Digest 365 and with reference to Approved Document H of the Building Regulations, which are commonly relied upon by Wiltshire County Council when assessing proposals for non-mains foul drainage.

2. Site Description

The site lies within a rural agricultural setting to the south-east of Winterslow, Wiltshire. The surrounding land is predominantly open countryside, with no connection to the public foul sewer available within a reasonable distance.

The proposed drainage field is located downslope of the converted building and aligned longitudinally to follow the natural fall of the land.

3. Trial Pit Locations and Details

Two trial pits were excavated along the proposed drainage field alignment on 4 January 2025.

- Pit dimensions: approximately 300 mm x 300 mm
- Depth: approximately 600 mm
- Pit spacing: approximately 10 metres
- Change in elevation: approximately 500 mm fall from Pit 1 to Pit 2

Trial Pit 1

- Topsoil to approximately 300 mm
- Underlying strata: chalk

Trial Pit 2

- Topsoil to approximately 400–450 mm
 - Underlying strata: chalk
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4. Ground Conditions

Both trial pits revealed shallow topsoil overlying chalk bedrock. No standing water or evidence of groundwater ingress was observed during excavation or testing.

The ground conditions were considered representative of the proposed drainage field area.

5. Test Conditions

- Date of testing: 5 January 2025
- Weather: Clear and calm
- Air temperature: Approximately 8°C
- Ground conditions: Not frozen

These conditions were considered suitable for undertaking percolation testing.

6. Percolation Test Methodology

Percolation testing was undertaken broadly in accordance with BRE Digest 365.

Each trial pit was pre-soaked with water for a period of four hours to simulate saturated ground conditions. Following pre-soaking, each pit was filled with water and the time taken for the water level to fall by 225 mm was recorded.

This procedure was repeated three times in each pit, and the results averaged to derive representative percolation values.

Percolation values (Vp) have been calculated using the formula:

$$V_p \text{ (seconds/mm)} = \text{Average time (seconds)} \div 225 \text{ mm}$$

7. Test Results

Percolation Test Results

Trial Pit	Test No.	Time (minutes)	Time (seconds)
Pit 1	Test 1	52	3,120
Pit 1	Test 2	54	3,240
Pit 1	Test 3	55	3,300
Pit 1 – Average	—	53.7	3,220
Pit 2	Test 1	41	2,460
Pit 2	Test 2	44	2,640
Pit 2	Test 3	45	2,700
Pit 2 – Average	—	43.3	2,600

Calculated Percolation Values

Trial Pit	Average Time (seconds)	Percolation Value (s/mm)
Pit 1	3,220	14.3
Pit 2	2,600	11.6

8. Assessment and Interpretation

The percolation values obtained are considered representative of the ground conditions across the proposed drainage field area.

The underlying chalk strata exhibits sufficient permeability to allow the controlled infiltration of treated effluent from a package sewage treatment plant. No groundwater ingress was recorded during testing.

Guidance within BRE Digest 365 and Approved Document H indicates that drainage fields are suitable where percolation values demonstrate adequate infiltration and where no adverse ground conditions are present. Results of this nature are commonly accepted by Wiltshire County Council in chalk geology, subject to appropriate drainage field sizing and compliance with manufacturer's requirements.

9. Conclusion

Based on the percolation testing undertaken, it is concluded that:

- The site is suitable in principle for the disposal of treated foul effluent
- Ground conditions are consistent across the proposed drainage field area
- Percolation rates are acceptable for a package sewage treatment plant
- The proposed foul drainage strategy accords with BRE Digest 365 and Approved Document H

The proposed foul drainage arrangement is therefore considered acceptable, subject to detailed design and installation.

10. Non-Mains Drainage Justification

The site is not served by the public foul sewer network, and connection to mains drainage is not reasonably practicable due to distance and cost.

In accordance with national guidance and local planning practice, a package sewage treatment plant with drainage field represents the most appropriate and sustainable foul drainage solution for the development.

The proposed arrangement follows the accepted hierarchy of drainage options and is consistent with foul drainage solutions previously approved by Wiltshire County Council for similar rural Class Q developments.

11. Photographic Record

Trial Pit 1





Trial Pit 2







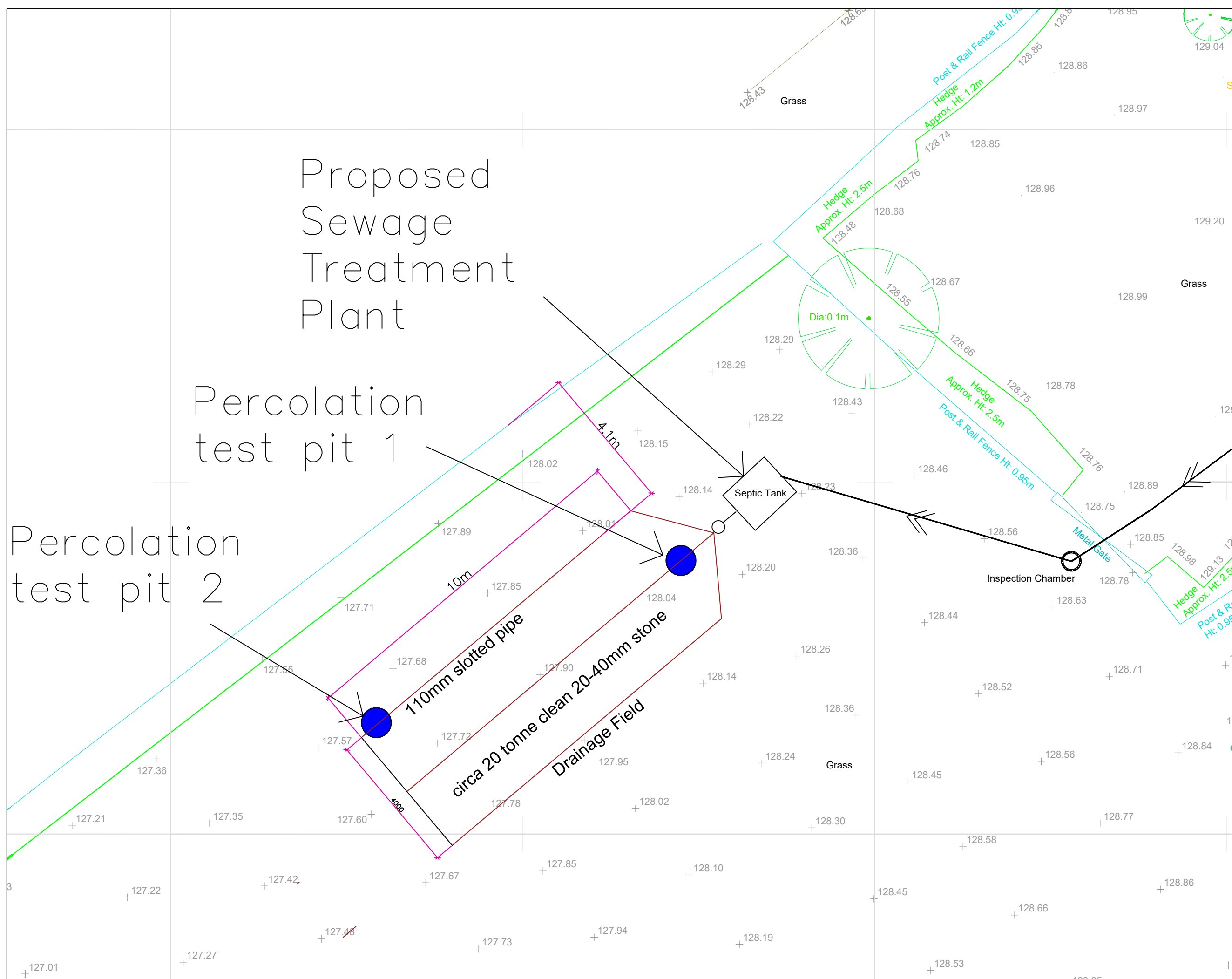
Final Notes

This report has been prepared to support the planning application. The installation of the sewage treatment plant and drainage field will be undertaken in full accordance with the approved details, the manufacturer's recommendations, and the requirements of the Building Regulations.

Appendix A – Site Plan

Drainage layout plan showing the location of:

- Proposed sewage treatment plant
 - Drainage field
 - Trial pits
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NOTES:

1. This drawing has been produced to support a planning application and should not be used for any other purpose

Scale Bar (1:200)

Rev	Amendment	Date
B		
A		

Client & Project Address:

Land Off Tytherley Road,
Winterslow, Wilts.
SP5 1PZ

Project Description:

Proposed STP

Drawing Title:

Proposed Plan

Scale:

1:100 at A3

Drawing Ref:

0996/Pr/01

Rev:

C