

TN02 - Water Neutrality Strategy

Site: Land North of East Street, Rusper
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1.0 Introduction

- 1.1 This Water Neutrality Statement (WNS) has been produced by Motion on behalf of their client, Devine Homes PLC. It supports the planning application for 18 residential dwellings on the Land North of East Street, Rusper, West Sussex. The layout and location of the proposed development can be seen in **Appendix A** and **Appendix B**, respectively.
- 1.2 Following the issue of Natural England's (NE's) Position Statement on water neutrality within the Sussex North Water Supply Zone (SNWSZ), all new, reserved matters and Section 73 planning applications for development within Horsham District are required to demonstrate that they can be water neutral. NE's Position Statement can be found in full within **Appendix C**.
- 1.3 The SNWSZ covers part of the Horsham District, as well as parts of the neighbouring Chichester, Arun and Crawley Districts. A plan showing the SNWSZ area can be found in **Appendix D**.
- 1.4 This WNS will set out the following:
 - ▶ The existing site's water demand;
 - ▶ The changes in water demand as a result of the proposed residential development;
 - ▶ Possible water use reduction measures, such as water efficient fixtures and fittings;
 - ▶ Measures required to offset any remaining deficit following the above, and;
 - ▶ Whether water neutrality has been achieved within the SNWSZ.

2.0 Baseline Mains Water Usage

- 2.1 The proposed development site is located to the north of East Street, Rusper, West Sussex. Rusper is a rural village positioned approximately 3.9km northeast of Horsham and 3.7km west of Crawley.
- 2.2 The site is currently undeveloped grassland, with mature trees and hedges on the East Street frontage. The north and east boundary is marked by post and rail fencing that separates it from surrounding land.
- 2.3 Because the site is greenfield and has no agricultural or other formal land use associated with it that consumes mains water, the baseline water usage for the site is zero.

3.0 Development Proposals and Population

- 3.1 The proposed development is for 18 residential dwellings plus parking, access and landscaping. The proposed development will include a mix of two-bed, three-bed and four-bed dwellings, with a mix of affordable and open-market units. The housing mix is as per the accommodation schedule in **Appendix A**, but is also summarised in Table 3.1, below.

Table 3.1 - Proposed Housing Mix

| Open Market | |
|---------------------|--------------|
| Unit Type | No. of Units |
| 2-Bed | 4 |
| 3-Bed | 6 |
| 4-Bed | 2 |
| Total: | 12 |
| Affordable | |
| Unit Type | No. of Units |
| 2-Bed | 3 |
| 3-Bed | 3 |
| Total: | 6 |
| Grand Total: | 18 |

- 3.2 The occupancy levels for the development have been drawn from 2011 local census data (as recommended by HDC in their water neutrality methodology guidance) and this is summarised in Table 3.2, below.

Table 3.2 – Average district occupancy levels per dwelling size

| Housing Type | One-bed | Two-bed | Three-bed | Four-bed |
|-------------------------|---------|---------|-----------|----------|
| Census Occupancy | 1.32 | 1.88 | 2.47 | 2.86 |

- 3.3 The housing mix of the development, with the population of the units applied to the housing mix, can be seen in Table 3.3, below, to understand what the total census-based population of the development will be.

Table 3.3 – Development Housing Mix and Population

| Houses (all types, open market and affordable) | | | |
|------------------------------------------------|--------------|----------------------------------|------------------------|
| Bedrooms | No. of Units | Census-Based Population Per Unit | Development Population |
| Two-Bed | 7 | 1.88 | 13.16 |
| Three-Bed | 9 | 2.47 | 22.23 |
| Four-Bed | 2 | 2.86 | 5.72 |
| Total: | 18 | N/A | 41.11 |

4.0 Additional Demand

- 4.1 The development proposals and development population outlined above have been assessed to determine the total water consumption and increase in water demand that the development will represent.
- 4.2 Building Regulations Part G sets out that 'Reasonable provision must be made by the installation of fittings and fixed appliances that use water efficiently for the prevention of undue consumption of water'. Part G of the current Building Regulations recommends that all developments achieve a 'water efficient' consumption of 125 litres per person per day.

- 4.3 However, Strategic Policy 9 (Water Neutrality) of HDC's Regulation 19 Local Plan lists the emerging plans and policies concerning new developments. It is stated within the Regulation 19 Local Plan that sites within the SNWSZ should adopt a water efficiency target of 85 litres of mains supplied water per person per day.
- 4.4 Therefore, it is proposed that the new dwellings will achieve a water efficiency of less than 85 litres per person per day of mains water to be in accordance with HDC's Regulation 19 Local Plan. This will be achieved using water efficient fixtures and fittings that reduce the overall consumption of wholesome water.
- 4.5 A water calculation in accordance with Buildings Regulations Part G has been carried out, which confirms that the proposed development can achieve a water consumption of 84.85 litres per person per day, which includes an allowance of five litres per person per day for external water usage.
- 4.6 A copy of the Part G calculation is summarised in Table 4.1, below.

Table 4.1 – Part G Calculation of Proposed Water Usage Per Person

| Fixture/Fitting | Capacity/ Flow Rate | Units | Total Water Usage (l/p/day) |
|--------------------------|------------------------|----------------------|-----------------------------------|
| WC (full flush) | 4 | litres | 5.84 |
| WC (part flush) | 2 | litres | 5.92 |
| Taps (Excluding Kitchen) | 2.7 | litres/second | 5.85 |
| Bath | 130 | litres | 14.30 |
| Shower | 6 | litres/second | 26.22 |
| Kitchen Taps | 4 | litres/second | 12.12 |
| Washing Machine | 6.43 | litres/kg | 13.50 |
| Dishwasher | 0.99 | litres/place setting | 3.56 |
| Total | | | 87.31 |
| Normalisation Factor | | | 0.91 |
| Total | | | 79.45 |
| External Water Use | | | 5 |
| Total | | | 84.45 |

- 4.7 Using the Part G water consumption figure of 84.45 litres per person per day and the development population of 41.11 it is estimated that the overall domestic water usage of the proposed development will be **3,471.74 litres/day**.
- 4.8 A copy of the indicative fixtures and fittings that can achieve the above water consumption can be found in **Appendix E**. Details of the final specification of fixtures and fittings installed on the development can be secured by condition.

5.0 Offsetting Measures

- 5.1 To ensure the development can demonstrate water neutrality in accordance with the NE Position Statement a total of 3,471.74 litres/day must be offset.
- 5.2 The client is proposing to offset the remaining mains water usage of the development by purchasing credits from a suitable bespoke offsetting scheme. This will either be credits from a scheme at Slade Farm, Rogate or credits in the Sussex North Water Certification Scheme (SNWCS). The schemes are outlined in detail below.

Slade Farm Offsetting Scheme

- 5.3 The proposal is to offset the development's water demand against a scheme at Slade Farm, Rogate (near Petersfield). Slade Farm is in the Districts of Chichester and the South Downs National Park and details of the offsetting scheme is explained below.
- 5.4 The client is proposing to offset the water demand of the development against Slade Farm, which has historically drawn mains water from the SNWSZ.
- 5.5 Slade farm is a mix of arable farming, as well as the production of vegetables and beef (livestock) farming. The mains (wholesome) water use on Slade Farm is currently for the farmhouse, plus drinking water for livestock and the spraying of crops
- 5.6 It is proposed to install a borehole at Slade Farm to reduce mains water use. Water from the borehole will be used to replace mains water currently used for wash down of machinery, spraying of crops and other agricultural activities. In addition, with appropriate treatment, the water could be used for animal drinking water.
- 5.7 Meter readings have been supplied for Slade Farm. The meter readings supplied are for one of several meters across the Farm/property, which also has a number of un-metered supplies, thus the total water use on the farm is much greater than the supplied meter readings portray. However, for now, this WNS will focus on the recorded and metered water use on Slade Farm.
- 5.8 The meter readings can be seen in **Appendix F**, but the mains water use they indicate are summarized in Table 5.1, below.

Table 5.1 – Slade Farm Meter Readings

| Reading No. | Start Date | End Date | Start Read | End Read | Total Use |
|--------------------|------------|------------|---------------------|---------------------|---------------------------|
| 1 | 08/2022 | 08/2023 | 2,705m ³ | 4,410m ³ | 1,705m ³ |
| 2 | 08/2023 | 08/2024 | 4,410m ³ | 8,267m ³ | 3,857m ³ |
| Total Days: | | 730 | | Total Use: | 5,562m³ |

- 5.9 The total mains (wholesome) water use on Slade Farm is 5,562m³ over a two-year (730-day) period. This equates to 7.62m³/day, or 7,619 litres/day.
- 5.10 A water-supplying borehole was drilled on Slade Farm, and this was completed in January 2025. Details of this borehole and the description of strata encountered can be found in the BGS borehole log in **Appendix G**. Water arising from this borehole will be used to supplant wholesome water currently used for the farm's operational activities, which were discussed above, which will return at least 7.62m³/day, or 7,619 litres/day back to the SNWSZ.
- 5.11 This mains water saving is being allocated as a system of credits for the use of developments that represent an increase in mains water demand within the SNWSZ so that they can be 'water neutral' within the SNWSZ.
- 5.12 The proposed development's mains water requirement of 3,421.91 litres/day has been allocated against the mains water saving in the SNWSZ of 7,619 litres/day made by the borehole on Slade Farm, thus making the development water neutral.
- 5.13 The borehole's abstraction is to be limited to 20m³, or 20,000-litres a day.
- 5.14 A Groundwater Prognosis Report has been completed to confirm that the abstraction of water from the borehole will not take water from the Arun Valley habitat sites, or otherwise impact on their integrity, even very indirectly, including from any river catchment that serves the Arun Valley basin.

- 5.15 The Groundwater Prognosis Report, produced by RPS, can be seen in **Appendix H** and Paragraph 1.6.17 of the report states the following:

"There is no mechanism for the Slade Farm abstraction to have a direct groundwater impact on the Hardham Basin or Arun Valley Protected Sites, given the distance from those sites and their hydraulic separation by the Sandgate Formation. Thus, the abstraction borehole will not take water directly from the Arun Valley habitat sites.

The proposed abstraction will not have a measurable effect on water levels or flow within the upper reaches of the River Rother, given the small size of the abstraction, the storage capacity of the Hythe Formation, hydraulic separation afforded by the Sandgate Formation and position of the borehole within the catchment. Thus, the abstraction borehole will not take water indirectly from the Arun Valley habitat sites, via flow reduction or reduced level within the Rother itself."

- 5.16 To further investigate the long-term viability of a borehole at Slade Farm, a borehole pumping test and analysis was provided by B. A. Hydro Solutions on 3rd February 2025. The pumping test and analysis report can be found in **Appendix I** of this report, which states that the pump test demonstrated:

- ▶ There was a very small drawdown with a consistent sustainable flow rate of 3m³/hour.
- ▶ The abstraction rates were maintained very close to a constant rate throughout the pump test.
- ▶ The water levels within the borehole reached equilibrium, and steady state conditions were achieved.
- ▶ The test showed there to be no signs of interference from other abstractors.
- ▶ The Transmissivity of the ground penetrated by the borehole is high, as reflected by the small drawdown during test pumping.
- ▶ The water quality is good and in line with what would be expected from the aquifer locally.
- ▶ The borehole represents a reliable and sustainable source of potable quality groundwater.

Offsetting the Proposed Development

- 5.17 The applicant has an agreement with Slade Farm to be able to use water savings arising from implementation of the borehole to offset against mains water demand from its forthcoming developments. The total credits available are 7,619, as per the currently metred water consumption at Slade Farm, as proved by the water bills in **Appendix F**. As described above, the actual water use at Slade Farm far exceeds the level indicated by this one metered supply. Through further evidence demonstrating the agricultural water usage and demand on the farm, it is expected that the number of credits available will increase up to 20,000 litres/day, which is the proposed yield of the borehole. As further metered reading of water use come forward from Slade Farm, it will be possible to expand the full number of credits up to 20,000 litres/day, which is the maximum proposed yield of the borehole.
- 5.18 The proposed development will have an average daily water requirement of 3,471.74 litres, which requires 3,472 credits to offset.
- 5.19 The availability of the current credit allocation is shown in Table 5.2, below. As can be seen, the development at East Street, Rusper, is currently the only scheme with credits allocated against the borehole at Slade Farm.

Table 5.2 - Credits Available to Devine Homes and Allocation to Date

| Development | Litres/Credits |
|-------------------------------------------|----------------|
| East Street, Rusper | 3,472 |
| TBC | TBC |
| TBC | TBC |
| Total Credits Currently Allocated: | 3,472 |
| Total Credits Currently Available: | 7,619 |
| Credits Remaining | 4,147 |

- 5.20 Therefore, the proposed development can be fully offset using the proposed offsetting solution at Slade Farm and no further offsetting measures are needed. This allows the proposed development on the Land North of East Street, Rusper, to fully achieve water neutrality and satisfy NE's requirements, as well as those of HDC's Regulation 19 Local Plan.

SNWCS Scheme

- 5.21 In addition, the site meets the SNWCS access definition, as set out in the most recent SNWCS guidance (**Appendix J**), because it is allocated for development in the Horsham Local Plan.
- 5.22 The table on the next page summarises the criteria that will be used by the Council to assess eligibility for SNWCS (as set out in the Council's Guidance) and demonstrates how the development meets these criteria.

Table 5.3 – Application Prioritisation for SNWCS access

| Prioritisation Criteria | Comment |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Criteria 1: Whether the application is affected by the C G Fry court decision. Applications that are affected may receive greater weighting. | Not applicable. |
| Criteria 2: Whether the application is a local authority 'corporate priority', which includes schemes in council plans or those approved by the council's political leadership. These will be given greater weighting. | The application is for a development allocated within the post-submission Horsham Local Plan (Policy HA15), and as such, meets the SNWCS Access Definition. |
| Criteria 3: The extent to which water efficiency measures have been included in the application to maximise on-site water savings and minimise offsetting requirement. Applications that minimise their on-site water use will be given greater weighting. | As set out in the Water Neutrality Statement which accompanies the application, on-site water efficiency measures will be included to reduce usage to 84.45 l/p/day, helping to minimise the offsetting requirement from 4,457.2 litres per day based on standard usage (110l/p/d) to 3,421.91 litres per day. |
| Criteria 4 (residential applications only): Whether the application is policy compliant in the delivery of affordable housing units. Applications delivering 100% affordable schemes made by registered or approved affordable housing providers will be given greater weighting. | The development provides a policy compliant level of affordable housing (including 6 on-site units, and a financial contribution to cover the remaining requirement). As such the proposal accord with the requirements of HDPF Policy 16. |
| Criteria 5 (non-residential applications only): Whether the application provides community services or other infrastructure supporting development*. These applications will be given a greater weighting. | Not applicable. |

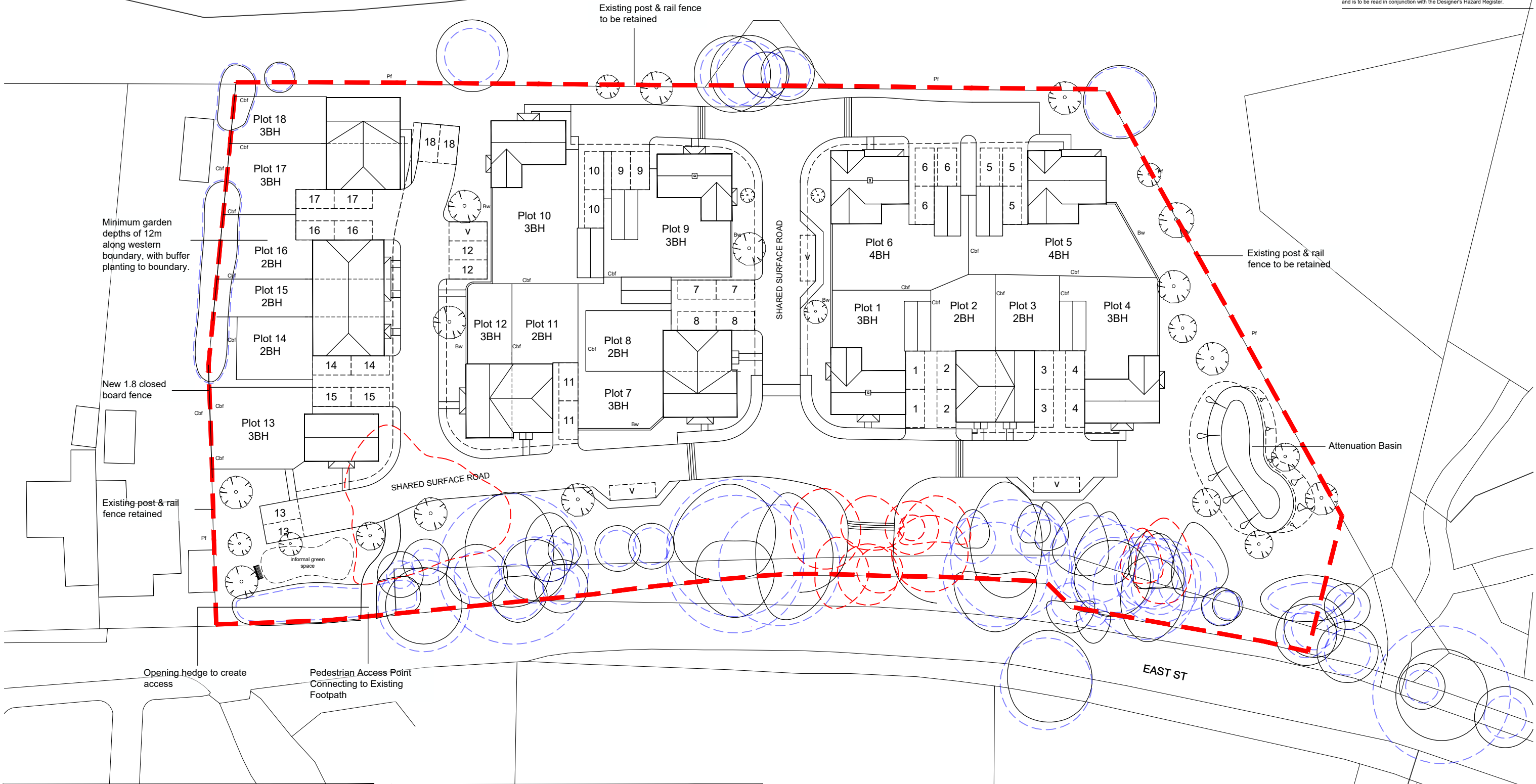
- 5.23 Therefore, as an alternative to the bespoke offsetting solution at Slade Farm, the development could also be made water neutral using SNWCS credits. As above, the development will have a average daily water requirement of 3,471.74 litres, so would require 3,472 SNWCS credits to offset.

6.0 Summary and Conclusions

- 6.1 This Technical Note sets out the water usage strategy for the proposed development at Land North East Street, Rusper. The proposal is to incorporate water efficient fixtures and fittings to the proposed dwellings to minimise the mains water demand of the proposed development. This allows the water use per person, per day, to be less than 85 litres, which is in accordance with the requirements of HDC's Regulation 19 Local Plan.
- 6.2 Following the incorporation of the water efficient fixtures and fittings, the proposed development represents an increase in water demand over the existing situation by 3,471.74 litres/day.
- 6.3 The increase in mains water consumption arising from the development can be offset via one of two measures:
- ▶ Securing an allocation of 3,472 credits through SNWCS, for which the development is eligible by virtue of being an allocation in the emerging plan.
 - ▶ Delivery of the offsetting solution at Slade Farm, Rogate.
- 6.4 The development has therefore been demonstrated to be water neutral and thus complies with the Council's Local Plan and the requirements of Natural England's Position Statement.

Appendix A

Proposed Development Layout



| Accommodation Schedule | | | |
|--------------------------------|---------------------|---------------------------|-----------------|
| SITE (outlined in RED) - 0.9Ha | | | |
| Affordable | Approx. Area | | 6 dwellings |
| 3 no. 2Bed | 79.0m ² | (850ft ²) | 2-Bedroom House |
| 3 no. 3Bed | 98.2m ² | (1057ft ²) | 3-Bedroom House |
| Open Market | Approx. Area | | 12 dwellings |
| 2 no. 2Bed | 79.0m ² | (850ft ²) | 2-Bedroom House |
| 2 no. 2Bed | 79.6m ² | (857ft ²) | 2-Bedroom House |
| 2 no. 3Bed | 98.2m ² | (1057ft ²) | 3-Bedroom House |
| 4 no. 3Bed | 112.6m ² | (1,212ft ²) | 3-Bedroom House |
| 2 no. 4Bed | 137.1m ² | (1,476ft ²) | 4-Bedroom House |
| Grand Total: | 1731m ² | (18, 637ft ²) | 18 Dwellings |

| KEY | |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | Site Boundary |
| | 1.8m Close board fence |
| | 1.8m Brick wall |
| | Existing post & rail fence |
| | Trees to be removed |
| | RPAs |
| Car Parking; | 2 spaces per 2 bedroom dwelling 2 spaces per semi-detached 3 bedroom dwelling 2 spaces plus a garage per detached 3 bedroom dwelling 3 spaces plus a garage per 4 bedroom dwelling 4 visitor spaces |
| Cycle Parking; | 2 spaces per dwelling within garages, or rear garden stores |
| Refuse Storage; | Within rear gardens to be brought to property fronts on collection days only |

Client's Name
Devine Homes

Job Title
East Street, Rusper

Drawing Title
Site Layout

Scale
1:500 @ A3

Drawn
GP

Checked
PA

Date
26.11.24

Job No
7522

Drawing No
PL-03

Rev
G

APPROVAL

| Rev | Date | Revision Details | Dr | Ch |
|-----|----------|-------------------------------------|----|----|
| G | 15.08.25 | Updated layout, Plot 5 handed | GP | PA |
| F | 14.08.25 | Updated layout to Client Comments | GP | PA |
| E | 23.07.25 | Updated layout to Planners comments | GP | PA |
| D | 15.07.25 | Updated layout to Planners comments | GP | PA |
| C | 20.02.25 | Planning Application | GP | PA |
| B | 30.01.25 | Updated to include consultant input | GP | PA |
| A | 08.01.25 | Updated to client's comments | GP | PA |

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Appendix B

Site Location Plan



Proposed Development
Location

Rusperho
Gill

Normanhurst
Cottage

THE DRIVE

Thatched
Barn Cottage

Rusper

Education Facility

PW

PO

COOKS MEAD
COOKS MDW

STEEPS HILL

HORSHAM ROAD

HMORE LA

LEE

Appendix C

Natural England's Position Statement



Natural England's Position Statement for Applications within the Sussex North Water Supply Zone

September 2021 – Interim Approach

Please take the following as Natural England's substantive advice for all applications which fall within Sussex North's Water Supply Zone.

Sussex North Water Supply Zone

Arun Valley SPA, SAC and Ramsar Site- Sussex North Water Supply Zone

The Sussex North Water Supply Zone includes supplies from a groundwater abstraction which cannot, with certainty, conclude no adverse effect on the integrity of;

- Arun Valley Special Area Conservation (SAC)
- Arun Valley Special Protection Area (SPA)
- Arun Valley Ramsar Site.

As it cannot be concluded that the existing abstraction within Sussex North Water Supply Zone is not having an impact on the Arun Valley site, we advise that developments within this zone must not add to this impact. This is required by recent caselaw, [Case C-323/17 People over wind and Sweetman. Ruling of CJEU](#) (often referred to as sweetman II) and Coöperatie Mobilisation for the Environment and Vereniging Leefmilieu Case C-293/17 (often referred to as the Dutch Nitrogen cases).

Between them these cases require Plans and Projects affecting sites where an existing adverse effect is known (i.e. the site is failing its conservation objectives), to demonstrate certainty that they will not contribute further to the existing adverse effect or go through to the latter stages of the Regulations (no alternatives IROPI etc).

Developments within Sussex North must therefore must not add to this impact and one way of achieving this is to demonstrate water neutrality.

In addition, the Gatwick Sub regional Water Cycle Study concluded that water neutrality is required for Sussex North to enable sufficient water to be available to the region.

The definition of water neutrality is the use of water in the supply area before the development is the same or lower after the development is in place.

Strategic approach

Natural England has advised that this matter should be resolved in partnership through Local Plans across the affected authorities, where policy and assessment can be agreed and secured to ensure water use is offset for all new developments within Sussex North. To achieve this Natural England is working in partnership with all the relevant authorities to secure water neutrality collectively through a water neutrality strategy.

Whilst the strategy is evolving, Natural England advises that decisions on planning applications should await its completion. However, if there are applications which a planning authority deems critical to proceed in the absence of the strategy, then Natural England advises that any application needs to demonstrate water neutrality. We have provided the following agreed interim approach for demonstrating water neutrality;

Minimising water use of new builds.

- Complete a water budget (based on occupancy)
- All new builds to demonstrate that they can achieve strict water targets (e.g., 85L/pp/day*)

This can be achieved by measures such as:

- Grey water recycling (advantage of being reliable in hot dry weather);
- Rainwater harvesting;
- Water efficient fixings (such as shower aerators) to demonstrably reduce demand-this would need to be suitably certain.

In addition, water offsetting is required

- One way to achieve this is retrofitting of council owned properties/commercial buildings-located within Sussex North. Examples include:
 - Grey water recycling- (for example there are clear opportunities for commercial properties).
 - Rainwater harvesting of commercial settings;
 - Installation of water reduction fittings in Council-owned buildings.

These measures need to be implemented until such time as a more sustainable water supply has been secured.

It will also need to be ensured that measures are not already proposed (for example in Southern Water's Management Plan) to avoid double-counting.

Any mitigation must be suitably certain in order to comply with the Habitats Regulations and Caselaw.

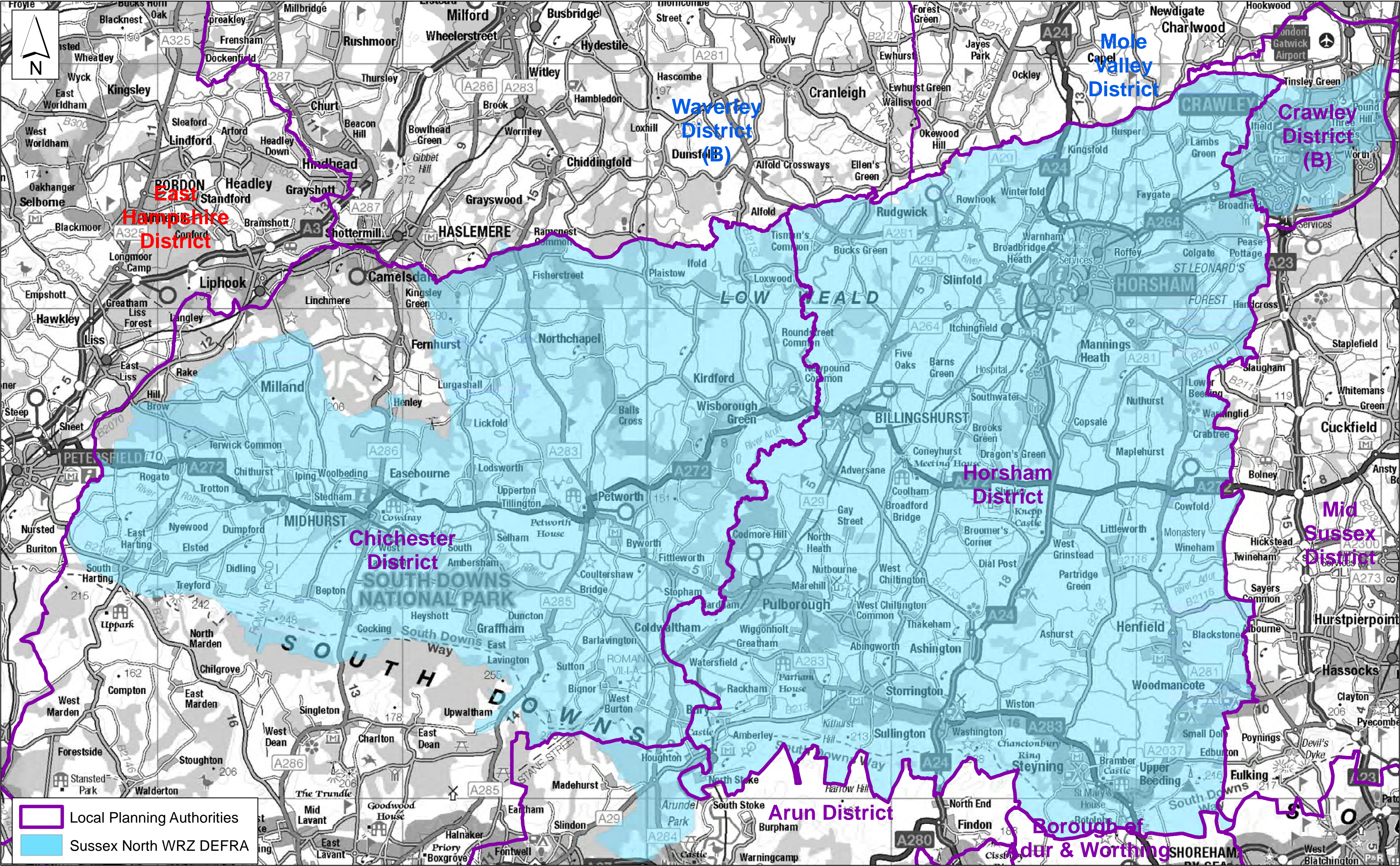
If the application cannot demonstrate, through an appropriate assessment, the required water neutrality, we advise that it is either revised to achieve this in line with the above or awaits completion of the strategic approach.

The securing of water neutrality is a matter which needs to be resolved at a strategic level and Natural England is working with the relevant authorities and the water company to achieve this. In light of this, Natural England will not be engaging with individual planning applications whilst the strategy is evolving.

***This this is the reasonably achievable figure with the above measures based on the early data from the strategic solution and may be subject to change as the strategic solution evolves.**

Appendix D





Sussex North Water Supply Zone Map





Appendix E

Proposed Fixtures and Fittings

Fixtures and Fittings - Part G Specifications

| Item | Capacity/Flow rate | Overview |
|---------------------|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Toilet (Dual Flush) | 4/2 litres | <p>The Gap</p>  <p>HOME / PRODUCTS / TOILETS / TOILET CISTERNS</p> <p>THE GAP REF: A34173C000</p> <p>Dual flush 4/2L WC cistern with bottom inlet for compact back to wall Rimless toilet</p> <p>DIMENSIONS: 355 x 140 x 405 mm (LENGTH, WIDTH, HEIGHT)</p> <p>PRODUCT FACTSHEET (PDF) VIEW ALL DIMENSIONS</p> <p>00 - WHITE</p> <p>WHERE TO BUY</p> <p>RRP (VAT included) £ 385.76</p> |
| Basin Tap | 2.7 litres/minute | <p>Joseph Miles</p>  <ul style="list-style-type: none"> Available variations: Mono mono tap, Mono tap. Suitable for deck mounted installation. Flexible tap, extended. Hot connection: 1/2 inch BSP. Suitable for low water pressure systems. Requires a minimum 0.2 bar water pressure system. Refer to the technical diagram for the complete technical dimensions. Features of Mono Mono Tap. Weight: 1.100kg. Height: 110.5mm. Hot / Cold (mm): <p>Spout reach: 78mm.</p> <p>Base to spout: 60.7mm.</p> <p>Flow rate: 2.7 Litres/Minute @ 0.2 bar.</p> <p>Available options tap:</p> <ul style="list-style-type: none"> Weight: 1.25kg. Height: 140mm. Spout reach: 38.3. Base to spout: 62.7mm. Flow rate: 3.0 Litres/Minute @ 0.2 bar. <p>Tap</p> <p>Pipe Center: 70 / 90.3 mm</p> |
| Bath | 130 litres | <p>Ideal Standard</p> <p>Simplicity Water Saving Steel bath 170cm x 70cm (130 Litres)</p> <p>EB0000111 Simplicity water saving 170cm x 70cm standard gauge steel bath with chrome plated grips, 2 tapholes and anti-slip* (only 130 Litres)</p> <p>OVERVIEW</p> <p>Simplicity 170cm water saving 130 Litre steel bath</p> <ul style="list-style-type: none"> Domestic and commercial use Anti-Slip* 130cm and 160cm vertical 1/2 tapholes Chromium plated handgrips Water saving 130 Litres Standard gauge steel <p>Finishes:</p> <p>White (12)</p>  |
| Shower | 6 litres/minute | <p>Triton</p> <p>Overview</p> <p>Triton T802 8.5kW Fast-Fit Eco Electric Shower - ECO00082FF</p> <p>Triton Eco range offers the exceptional performance you expect of a Triton shower, but with a focus on water efficiency. With a maximum flow rate of 9 litres per minute, the T802 Fast-Fit is the ultimate space-saving shower, packed with installation-friendly features including cable and water entry options from all possible directions. The unit comes supplied with a matching adjustable shower rail and multifunction handset.</p> <p>Features</p> <ul style="list-style-type: none"> Finish: White Max Flow Rate: 9 Litres Temperature Control: Stainless Power Rating: 8.5 kW Shower Fit: Terminal for left & right cabling Shower Fit: A 180° fully reversible swivel water inlet that accommodates water connection from either the left or right hand side Push-Button Start/Stop Low-Pressure Indicator Power On Indicator Rush Clean Shower Head – 5 spray patterns Maximum Running Pressure: 1 Flow: 3 Bar @ 0.1/min Maximum Static Pressure: 10 Bar Approvals: IP44, CE, BS Watermark 2 Year Guarantee  <p>Triton T802 8.5kW Fast-Fit Eco Electric Shower</p> <p>£201.54</p> |

| Kitchen Sink | 4 litres/minute | <p>Tap with flow regulator - Affinity by Moores</p>  <p>Utility</p> <p>Chrome utility lever sink mixer tap</p> <p>Tap Height: 380mm Order code: 805 56</p> <p>Flow Regulator:</p>  <ul style="list-style-type: none"> Tap trial type flow limiters are suitable for most British basin, pillar taps, basin and sink mixers. Operating pressure range – Min. 1.0 bar Max. 6.0 bar. All flow limiters accurate +/- 10%. Flow limiting flow straighteners aerates the water for a softer non-splashing flow. Flow limiting flow straighteners can be easily retro fitted in tap spout (dependent on tap/mixer model). <table border="1"> <thead> <tr> <th>Colour</th><th>Flow Rate limited to</th><th>Order Code</th></tr> </thead> <tbody> <tr> <td>Pink</td><td>1 litre per minute</td><td>806 37</td></tr> <tr> <td>Olive</td><td>2 litres per minute</td><td>806 38</td></tr> <tr> <td>Brown</td><td>3 litres per minute</td><td>806 39</td></tr> <tr> <td>Grey</td><td>4 litres per minute</td><td>806 40</td></tr> <tr> <td>Yellow</td><td>5 litres per minute</td><td>806 41</td></tr> <tr> <td>Black</td><td>6 litres per minute</td><td>806 42</td></tr> </tbody> </table> | Colour | Flow Rate limited to | Order Code | Pink | 1 litre per minute | 806 37 | Olive | 2 litres per minute | 806 38 | Brown | 3 litres per minute | 806 39 | Grey | 4 litres per minute | 806 40 | Yellow | 5 litres per minute | 806 41 | Black | 6 litres per minute | 806 42 |
|--------------|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|----------------------|------------|------|--------------------|--------|-------|---------------------|--------|-------|---------------------|--------|------|---------------------|--------|--------|---------------------|--------|-------|---------------------|--------|
| Colour | Flow Rate limited to | Order Code | | | | | | | | | | | | | | | | | | | | | |
| Pink | 1 litre per minute | 806 37 | | | | | | | | | | | | | | | | | | | | | |
| Olive | 2 litres per minute | 806 38 | | | | | | | | | | | | | | | | | | | | | |
| Brown | 3 litres per minute | 806 39 | | | | | | | | | | | | | | | | | | | | | |
| Grey | 4 litres per minute | 806 40 | | | | | | | | | | | | | | | | | | | | | |
| Yellow | 5 litres per minute | 806 41 | | | | | | | | | | | | | | | | | | | | | |
| Black | 6 litres per minute | 806 42 | | | | | | | | | | | | | | | | | | | | | |

Appendix F

Water Bills from Slade Farm

business stream

A SCOTTISH WATER COMPANY



business-stream.co.uk

0330 123 2000 *8255*

If you have an emergency, please contact your:

Water wholesaler: Southern Water

Visit business-stream.co.uk/wholesaler

Customer reference / invoice no

2745828 / 31

Invoice / tax point date: 17 August 2022

Supply address: SLADE FARM, SLADE LANE,
PETERSFIELD, GU31 5BN

Supply point ID: 301942772XW1X

Our VAT number: 945 8508 85

Page 1 of 4

BSM-NEW | 000402 | Page 1 of 2 | BILLS | 000402

W A DAVEY & SONS LTD

SLADE FARM

ROGATE

PETERSFIELD

GU31 5BN

Your water services invoice

23 May - 15 August 2022 (84 days, average £10.20 per day)

YOUR ACCOUNT SUMMARY

| | |
|------------------------------|----------------|
| Your previous balance | £403.37 |
| Payments received | £403.37 CREDIT |
| Your balance brought forward | £0.00 |

YOUR CHARGES THIS PERIOD (see page 2 for details)

| | |
|---------------------------|---------|
| Water services charges | £857.00 |
| VAT | £0.00 |
| Total charges this period | £857.00 |



We look forward to receiving your payment of £857.00

For ways to pay see page 3 →

2022/23 charges

You can find more
information on our charges
and ways to save water and
money on our website.

Visit business-stream.co.uk

How much water are you using?

If you'd like to reduce the volume of water you're using, check out our
water saving tips on our website. You'll also be able to find advice on our
website business-stream.co.uk

paid BMS 8/8/22

A

Actual meter read

This invoice is based on an actual
read. To ensure the accuracy of
future bills, you can submit your own
readings, as long as it's safe to
access your meter, on
[business-stream.co.uk/
meter-reading](http://business-stream.co.uk/meter-reading). If your water is not
provided by us, we will receive reads
from your other supplier.

Your charges in detail

Meter number / meter size: 9314562 / 15mm

| Water charges | | | Units | Rate | VAT | Charge |
|---------------------------|-----------------------|--------------------|--------------------|------|-----|---------|
| Fixed water charge | | | | | | |
| Yearly fee £121.11 | 24 Jul 23 - 14 Sep 23 | 53 days | 0.330902 | Z | | £17.54 |
| Volumetric water charge | | | | | | |
| Actual reading | 23 Aug 23 | 4410 | | | | |
| Estimated reading | 24 Jul 23 | 4053 | | | | |
| = volume used this period | | | 357 m ³ | | | |
| Customer reading | 15 Sep 23 | 4504 | | | | |
| Actual reading | 23 Aug 23 | 4410 | | | | |
| = volume used this period | | | 94 m ³ | | | |
| Charges | 24 Jul 23 - 22 Aug 23 | 357 m ³ | 1.8248 | Z | | £651.45 |
| Charges | 23 Aug 23 - 14 Sep 23 | 94 m ³ | 1.8248 | Z | | £171.53 |
| Total water charges | | | | | | £840.52 |

| | |
|---------------------------|---------|
| Subtotal | £840.52 |
| VAT | £0.00 |
| Total charges this period | £840.52 |

This is a fee for the use of the water pipes and premises.

This is a charge for the water you've used. The meter. The charge is based on your consumption of water. business-useful-info

Most of the charges are for the water supply (0)

Customer reference / invoice number: 2745828 / 6289543

Invoice / tax point date: 26 October 2024

Your charges in detail

Meter number / meter size: 9314562 / 15mm

| Water charges | | Units | Rate | VAT | Charge |
|--------------------|-----------------------|---------|----------|-----|--------|
| Fixed water charge | | | | | |
| Yearly fee £80.37 | 24 Jul 24 - 25 Oct 24 | 94 days | 0.220192 | Z | £20.70 |

This is a fee for the upkeep of pipes and pumps that supply premises.

| Volumetric water charge | | | | | |
|---------------------------|-----------------------|---------------------|--------|---|-----------|
| Actual reading | 29 Aug 24 | 8267 | | | |
| Estimated reading | 24 Jul 24 | 5901 | | | |
| = volume used this period | | 2366 m ³ | | | |
| Estimated reading | 26 Oct 24 | 8484 | | | |
| Actual reading | 29 Aug 24 | 8267 | | | |
| = volume used this period | | 217 m ³ | | | |
| Charges | 24 Jul 24 - 28 Aug 24 | 2366 m ³ | 2.0995 | Z | £4,967.42 |
| Charges | 29 Aug 24 - 25 Oct 24 | 217 m ³ | 2.0995 | Z | £455.59 |
| Total water charges | | | | | £5,443.71 |

This is a charge for the amount you've used, as recorded by your meter. The rate you are charged is based on your location and your consumption.

| | |
|---------------------------|-----------|
| Subtotal | £5,443.71 |
| Total charges this period | £5,443.71 |

reference / invoice no: 2745828 / 31

Invoice / tax point date: 17 August 2022

Your charges in detail

Meter number / meter size: 9314562 ARAD 15mm

Water charges

| | | Units | Rate | VAT | Charge |
|--------------------------------|-----------------------|-----------------------|----------|-----|----------------|
| Fixed water charge | | | | | |
| Yearly fee £51.61 | 23 May 22 - 14 Aug 22 | 84 days | 0.141397 | Z | £11.88 |
| Volumetric water charge | | | | | |
| Actual reading | 15 Aug 22 | 2705 | | | |
| Estimated reading | 23 May 22 | 2158 | | | |
| =Volume used this period | | 547.00 m ³ | | | |
| Charges | 23 May 22 - 15 Aug 22 | 547.00 m ³ | 1.545000 | Z | £845.12 |
| Total water charges | | | | | £857.00 |

Subtotal

£857.00

VAT

£0.00

Total charges this period

£857.00



Bas
con
on f

A yearly fee
pumps that

The charge f
used, measu

VAT on our ch
Most of our se
standard rate
See business-

Appendix G

BGS Borehole Record

Borehole record form



British
Geological Survey
NATURAL ENVIRONMENT RESEARCH COUNCIL



Environment
Agency

Water Resources Act 1991 (as amended by the Water Act 2003)

A Site details

Borehole drilled for _____

Location _____

NGR (ten digits) _____ Please attach site plan

Ground level (if known) _____ metres Above Ordnance Datum

Drilling company _____

Date drilling commenced _____ (DD/MM/YYYY) Completed _____ (DD/MM/YYYY)

B Construction details

Borehole datum (if not ground level) _____ metres (m). Please tick if this is above ☐ or below ☐ ground level.
(point from which all measurements of depth are taken, for example, flange, edge of chamber)

Borehole drilled diameter _____ mm from _____ to _____ m/depth
 _____ mm from _____ to _____ m/depth
 _____ mm from _____ to _____ m/depth
 _____ mm from _____ to _____ m/depth

Casing material _____ diameter _____ mm from _____ to _____ m/depth
and type (for example, if plain steel, plastic slotted). Please record permanent casing details, not temporary casing.

Casing material _____ diameter _____ mm from _____ to _____ m/depth

Casing material _____ diameter _____ mm from _____ to _____ m/depth

Casing material _____ diameter _____ mm from _____ to _____ m/depth

Grouting details _____

Water struck at 1. _____ m (depth below datum – mbd) 2. _____ m (mbd)
 3. _____ m (mbd) 4. _____ m (mbd)

C Test pumping summary (Please supply full details on form WR39)

Test pumping datum _____ m. Please tick if this is above ☐ or below ☐ ground level.
(if different from borehole datum)

Pump suction depth _____ mbd

Water level (start of test) _____ mbd

Water level (end of test) _____ mbd

Type of test (for example, bailer, step, constant rate)

Pumping rate _____ m³/hour ☐ or litres/second ☐. Please tick as appropriate.
 for _____ days, _____ hours, _____ mins

Recovery to _____ mbd in _____ days, _____ hours, _____ mins
(from end of pumping)

Date(s) of measurements Pump started _____ (DD/MM/YYYY)

Pump stopped _____ (DD/MM/YYYY)

Please supply chemical analysis if available. If you have included this please tick this box ☐

| Geological classification (BGS only) | Description of strata | Thickness m | Depth (to base of strata) m |
|-----------------------------------------|-------------------------------------------------------------------------|----------------|--------------------------------------|
| | (continue on separate page if necessary) | | |
| | Other comments (for example, gas encountered, saline water intercepted) | | |

E Completing this form

How long did it take you to fill in this form? _____

| For Official use only | | | |
|----------------------------|----------------------|----------------------|----------------------|
| Date received (DD/MM/YYYY) | File | Consent number | BGS reference number |
| <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| Accession number | Wellmaster number | SOBI number | NGR |
| <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| LIC NO | Purpose | EA reference number | |
| <input type="text"/> | <input type="text"/> | | <input type="text"/> |
| Copy number | Entered by | | |
| <input type="text"/> | <input type="text"/> | | |

F The Data Protection Act 1998

The Environment Agency will process the information you provide so that we can:

- deal with your application;
- make sure you keep to the conditions of any consent; and
- process renewals.

The Environment Agency will pass the information provided on this form to the British Geological Survey, in accordance with Section 198 of the Water Resources Act 1991, which states that any person drilling a well or borehole more than fifty feet below the surface, shall notify the British Geological Survey of this and provide them with the information as requested on this form.

We may also process or release the information to:

- offer you documents or services relating to environmental matters;
- consult the public, public organisations and other organisations (for example, the Health and Safety Executive, local authorities, the emergency services, the Department for Environment, Food and Rural Affairs) on environmental issues;
- carry out research and development work on environmental issues;
- prevent anyone from breaking environmental law, investigate cases where environmental law may have been broken, and take any action that is needed;
- assess whether customers are satisfied with our service, and to improve our service; and
- respond to requests for information under the Freedom of Information Act 2000 and the Environmental Information Regulations 2004 (if the Data Protection Act allows).

We may pass the information on to our agents or representatives to do these things for us.

The British Geological Survey will use the information you provide to assist in its geological mapping programme and other research activities.

The British Geological Survey will process, or release, the information to:

- offer you documents or services relating to environmental matters;
- consult the public, public organisations and other organisations (for example, the Health and Safety Executive, local authorities, the emergency services, the Department for Environment, Food and Rural Affairs) on environmental issues;
- carry out research and development work on environmental issues;
- assess whether customers are satisfied with our service, and to improve our service; and
- respond to requests for information under the Freedom of Information Act 2000 and the Environmental Information Regulations 2004 (if the Data Protection Act allows).

We may pass the information on to our agents or representatives to do these things for us.

- We will also publish the information on our website; and
- provide the technical details of the borehole (for example, the depth, geology and water levels) to others. This will not include information about ownership of the borehole.

Appendix H

Borehole Prognosis Report

GROUNDWATER PROGNOSIS REPORT

Slade Farm, Petersfield



ENV20987
V1R2

22 April 2023

Document status

| Version | Revision | Authored by | Reviewed by | Approved by | Review date |
|---------|----------|--------------------------------|--------------|--------------|-------------|
| V1 | R1 | Bryn Kearsey | Adrian Green | | [Date] |
| V1 | R2 | Bryn Kearsey & Evie Skevington | Adrian Green | Adrian Green | 02/05/24 |

Approval for issue

Dr Adrian Green

BSc, PhD, FGS

2 May 2024

File Name

240502 794-ENV-GDE-20987 Slade Farm Borehole Prognosis_v1r2 issue

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Prepared for:

Devine Homes

Contents

| | | |
|----------|---------------------------------------------------------------------------------|----------|
| 1 | GROUNDWATER PROGNOSIS | 1 |
| 1.1 | Introduction..... | 1 |
| 1.2 | Methodology..... | 2 |
| 1.3 | Hydrology and topography | 2 |
| 1.4 | Geology and Hydrogeology..... | 2 |
| | Geological setting..... | 2 |
| 1.5 | Hydrogeology | 5 |
| | Aquifer units & WFD groundwater bodies..... | 5 |
| | Local hydrogeological setting..... | 5 |
| | Local borehole records..... | 5 |
| | Source protection zones | 7 |
| 1.6 | Regulatory framework | 8 |
| | Abstraction licensing | 8 |
| | Requirements of water neutrality in relation to groundwater and boreholes | 9 |
| 1.7 | Further borehole considerations | 15 |
| | Abstraction source design..... | 15 |
| | Impacts on other groundwater users and source protection zones | 15 |
| 1.8 | Conclusions..... | 15 |

Tables

| | |
|------------------------------------------------------|---|
| Table 1. Geological Sequence and Aquifer Status..... | 4 |
|------------------------------------------------------|---|

Appendices

Appendix A: BGS Borehole Records

1 GROUNDWATER PROGNOSIS

1.1 Introduction

- 1.1.1 RPS have been commissioned by Devine Homes to undertake a desk-based feasibility assessment for a proposed groundwater source at Slade Farm, Slade Lane, Petersfield (hereinafter referred to as the Site). A supply of 7-20m³ per day potable water is being sought for the purposes of livestock watering and washing down. That new groundwater source of supply is required to meet the requirements of Water Neutrality that is being applied in the Southern Waters Northern Supply Zone given the perceived impact of their groundwater abstraction on various protected sites situated in the lower reaches of the river Arun, near Pulborough.
- 1.1.2 The groundwater supply borehole can be located anywhere with the landownership boundary of Slade Farm shown in *Figure 1*. However, it would be preferable for the borehole to be situated in the immediate area surrounding the main farm buildings shown in yellow in *Figure 1*.

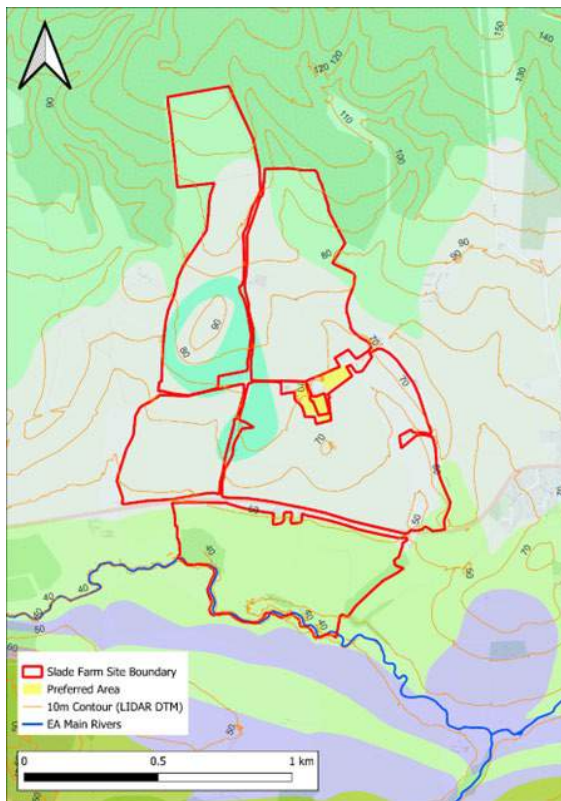


Figure 1. Site boundary, topography and hydrology

- 1.1.3 This groundwater prognosis shall evaluate the feasibility of a groundwater solution for the proposed development, given the ownership boundary of the Site; the local hydrogeological setting of the Site and EA abstraction licensing policy for the catchment.
- 1.1.4 The Slade Farm borehole is being proposed as a part of a water offsetting exercise to meet water neutrality for another development within the Northern Supply Zone that requires planning authorisation. This report shall therefore consider the policy of the Local Authority with respect to borehole solution for meeting water neutrality. Whilst Slade Farm is located within the bounds of Chichester District Council (CDC), the tied development is located within the catchment of Horsham District Council (HDC) and it is therefore the policy of HDC that has been used for this review. It is noted that of all the LA affected by water neutrality, HDC provide the most comprehensive guidance with regards to hydrogeological assessment in relation to borehole solutions.

1.2 Methodology

1.2.1 This groundwater prognosis is principally a desk-based assessment, that has considered the following data sources:

- British Geological Society (BGS) online [Geology Viewer](#).
- [BGS 1:50,000 Map Series](#):
 - [Sheet 300: Alresford – Solid and Drift \(BGS, 1999\)](#).
 - [Sheet 301: Haslemere – Solid and Drift \(BGS, 1981\)](#).
 - [Sheet 316: Fareham – Solid and Drift \(BGS, 1998\)](#).
 - [Sheet 317 & 332: - Chichester and Bognor – Solid and Drift \(BGS, 1996\)](#).
- [The BGS Lexicon of Named Rock Units](#).
- [The physical properties of major aquifers in England and Wales. British Geological Survey Hydrogeology Group Technical Report WD/97/34. Environment Agency R&D Publication 8. \(Allen et al. 1997\).](#)
- [The physical properties of minor aquifers in England and Wales. British Geological Survey Hydrogeology Group, Technical Report WD/00/04 \(Jones et al., 2000\).](#)
- [BGS Hydrogeological Map 6: South Downs and Adjacent Parts of The Weald \(1:100,000 Scale\).](#)
- [Baseline groundwater chemistry: the Lower Greensand aquifer of South East England, BGS Open Report OR/21/011 \(Mallin, D. and Smedley, P.L. 2021\)](#)
- [Defra Magic Map online platform](#).
- [Arun and Western Streams Abstraction Licensing Strategy \(Environment Agency, 2022\)](#)

1.3 Hydrology and topography

1.3.1 The farm buildings sit in the centre of the site at an elevation of c. 70 meters Above Ordnance Datum (mAOD). The wider site boundary stretches from the river Rother to the south at c. 40 mAOD rising to c. 126 mAOD in the north, on the southern side of Combe Hill.

1.3.2 The site is situated in the catchment of the river Rother, which flows from west to east along the southern boundary of the Site. No other surface water features are recorded across the majority of the site other than a small area of springs and ponds near the banks of the Rother. Surface water features at the site form part of the [Western Rother Durford](#) Water Framework Directive (WFD) Water Body (WFD Ref. GB107041012800), which is recorded as having **moderate** WFD ecological status.

1.4 Geology and Hydrogeology

Geological setting

1.4.1 The geological setting for the Site has been determined from a review of BGS data and is summarised in *Table 1* and shown in *Figure 2*.

File Path: Q:\1 - Team Folders\WATER SCIENCES\02. Business Development & Marketing\11. Water Neutrality\Sussex North Water Supply Zone GIS\Sussex North Water Supply Zone.aprx

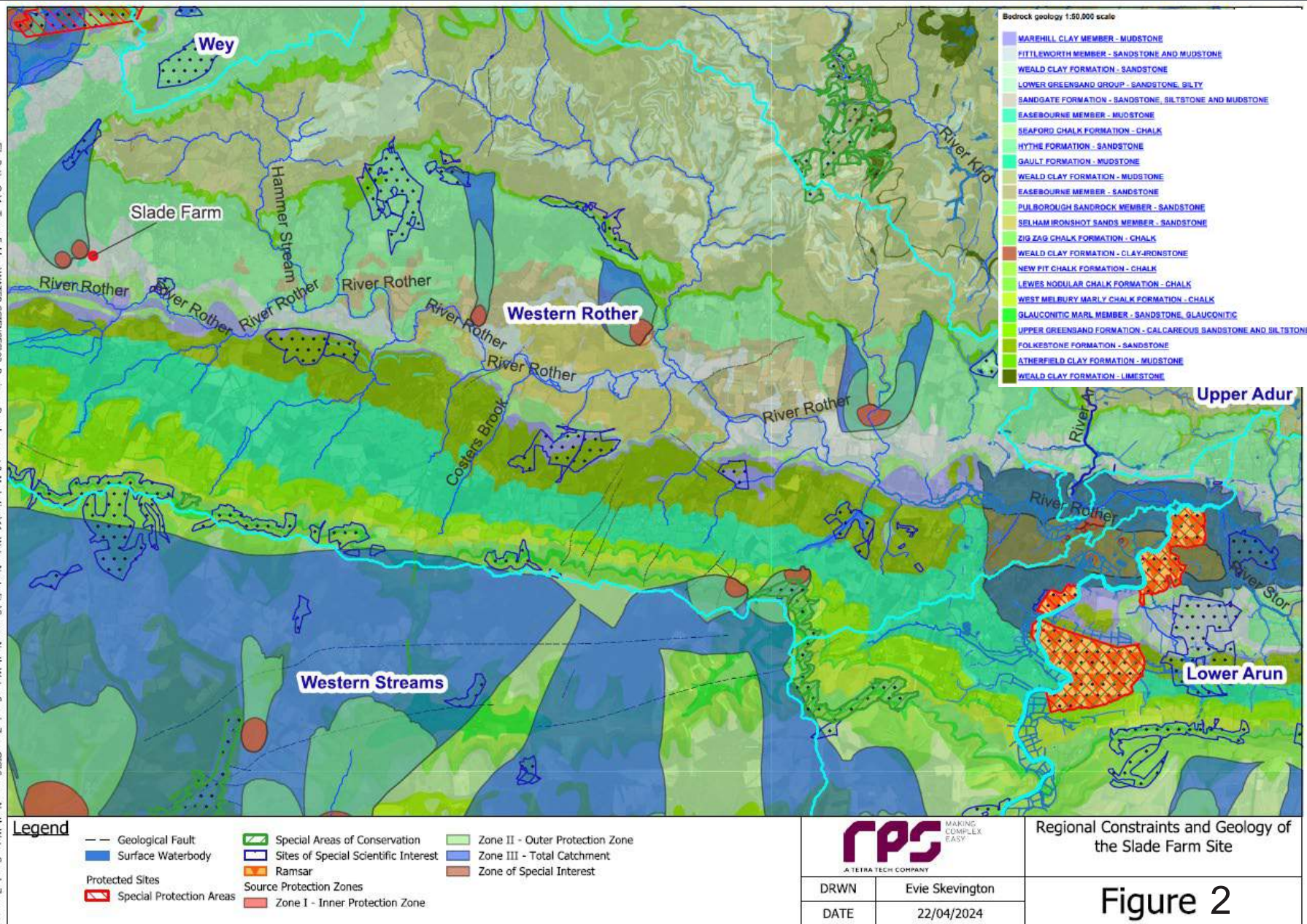


Table 1. Geological Sequence and Aquifer Status

| Period | Group | Formation | Lithological Description | Thickness (m) | EA Aquifer Designation |
|----------------------|-----------------------|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|----------------------------|
| QUATERNARY | Superficial Deposits | Head | Poorly sorted, poorly stratified, angular rock debris and/or clayey hillwash and soil creep, that mantle hillslopes. | 0 to 2m | Secondary Undifferentiated |
| | | Peat | An un lithified heterogeneous mixture of a wide range of plant debris. | | Secondary A |
| | | Alluvium | Unconsolidated clay, silt, sand and gravel deposited by a river, stream or other body of running water. | | Secondary A |
| | | River Terrace Deposits | Alluvium forming one of a series of level surfaces in a stream or river valley, produced as the dissected remnants of earlier abandoned floodplains. Sand and gravel, locally with lenses of silt, clay or peat. | | Secondary A |
| CRETACEOUS (Bedrock) | Lower Greensand Group | Folkstone Formation | Medium to coarse grained, well sorted sandstones with cross bedding. | 0.5-80m | Principal |
| | | Sandgate Formation | Fine sands, silts and silty clays, commonly glauconitic; some sands limonitic or calcareous; some soft sandstones. | 50 to 100m | Secondary A |
| | | Hythe Formation | Mainly fine- to medium-grained, sparsely glauconitic sands, sandstones and silts, locally pebbly, with calcareous or siliceous cement in beds or lenses in some areas. Some clay interbeds, including Fuller's Earth. | 10 to 92 m | Principal |
| | | Atherfield Clay Formation | Generally massive yellowish brown to pale grey sandy mudstone throughout most of its outcrop, with an impersistent phosphatic pebble bed with vertebrate bones, gritty sandstone or very shelly sandy mudstone with glauconite, at the base. | 10 to 22m | Unproductive Strata |
| | Wealden Group | Weald Clay Formation | Dark grey thinly-bedded mudstones (shales) and mudstones with subordinate siltstones, fine- to medium-grained sandstones, including calcareous sandstone. | 47+ m | Unproductive Strata |

**Geological formations shaded grey are within the local sequence but are not present at the site. The Atherfield Clay and Weald Clay formations may be present at depth and the Folkstone Formation may be found to overly these deposits or be found in close proximity to the Site.*

- 1.4.2 The geology in the vicinity of the Site is dominated by Cretaceous bedrock and overlying Quaternary superficial deposits.
- 1.4.3 Head deposits, consisting of poorly sorted angular debris are present across the site, particularly in valleys. Towards the southern end of the site, below 50 mAOD, superficial deposits include alluvium and corresponding river terrace deposits with a small area of peat near the riverbank at 40 mAOD.
- 1.4.4 Bedrock geology across the Site consists of calcareous sands of the Lower Greensand Group that dip to the south, as part of the southern limb of the Wealden Anticline. The sands, silts and clays of the Sandgate Formation is the dominant unit across the site. The sands and sandstones of the Hythe Formation Sandstone, part of the Hythe Formation, underly the Sandgate Formation and outcrop at the far northern end of the site above 80 mAOD. Bedrock at the site dips consistently to the south at 4 degrees. The Atherfield Clay Formation is located at depth and underlies the Hythe Formation.

1.5 Hydrogeology

Aquifer units & WFD groundwater bodies

- 1.5.1 The superficial deposits identified are not considered to be viable aquifer units given their limited extent and mixed nature across the Site.
- 1.5.2 The Sandgate Formation is designated as a Secondary A aquifer by the EA. Secondary A aquifers comprise permeable layers that can support local water supplies and may provide a source of baseflow to local rivers and watercourses. However, the permeability of the Sandgate Formation is often low, with the Rogate Beds which cover most of the site generally considered an aquitard. The Pulborough Rock, which outcrops towards the southern end of the site can act as a locally important aquifer. The Sandgate Formation is typically considered to be a low productivity geological unit that separates the more productive aquifer units of the underlying Hythe Formation and overlying Folkstone Formation.
- 1.5.3 The Sandgate Formation on the Site is underlain by sands and sandstones of the Hythe Formation which are designated a Principal aquifer. Principal aquifers are of national importance in terms of water supply, that are important for supporting river flow and water dependent wetlands. Groundwater flow in the Hythe Formation is through both intergranular porosity and fractures. Permeability in the Hythe Formation generally decreases with depth as grain size decreases towards the underlying low permeability clays of the Atherfield Clay Formation. Designation as a principal aquifer suggests that significant yields should be achievable from a borehole installed in the Hythe Formation.
- 1.5.4 The clays of the underlying Atherfield Clay Formation and Weald Clay Formation are designated 'unproductive strata' (i.e. non-aquifers) that form the base to the overlying aquifer units.
- 1.5.5 The Site is located on the [Lower Greensand Arun & Western Streams](#) Water Body WFD Groundwater Body (WFD Ref. GB40701G503100) which is recorded as having a **poor** overall status in relation to diffuse source nutrient impacts from agriculture and rural land management.

Local hydrogeological setting

- 1.5.6 The Hythe Formation Principal aquifer is recharged by rainfall that infiltrates into the ground, principally where it is exposed at the ground surface to the north of the Site. Where the Hythe Formation aquifer is concealed beneath the Sandgate Formation vertical recharge from above will be reduced, given the low permeability of that unit which will likely act as a confining layer.
- 1.5.7 Rest water levels in nearby boreholes completed in the Hythe Formation imply that groundwater in the Hythe Formation is confined by the Sandgate Formation, with water levels sitting a few meters above the contact with the Sandgate Formation. The potential for generating artesian groundwater pressures (i.e. groundwater level above ground level) within the Hythe Formation is therefore a possibility.

Local borehole records

- 1.5.8 The location of BGS Geindex Onshore borehole records that have been reviewed are summarised in *Figure 3*, with their corresponding geological logs provided in *Appendix A*.
- 1.5.9 The location of a decommissioned abstraction borehole owned by Southern Water has been supplied by the client and is also shown in *Figure 3*. It is understood that Southern Water are considering recommissioning the borehole for abstraction, presumably to reduce the demand on the Hardham boreholes that are resulting in the perceived impact on the Arun Valley protected sites and driving the move to water neutrality. The presence of former production borehole of Southern Water, attest to the high productivity of the Hythe Formation on the Site.

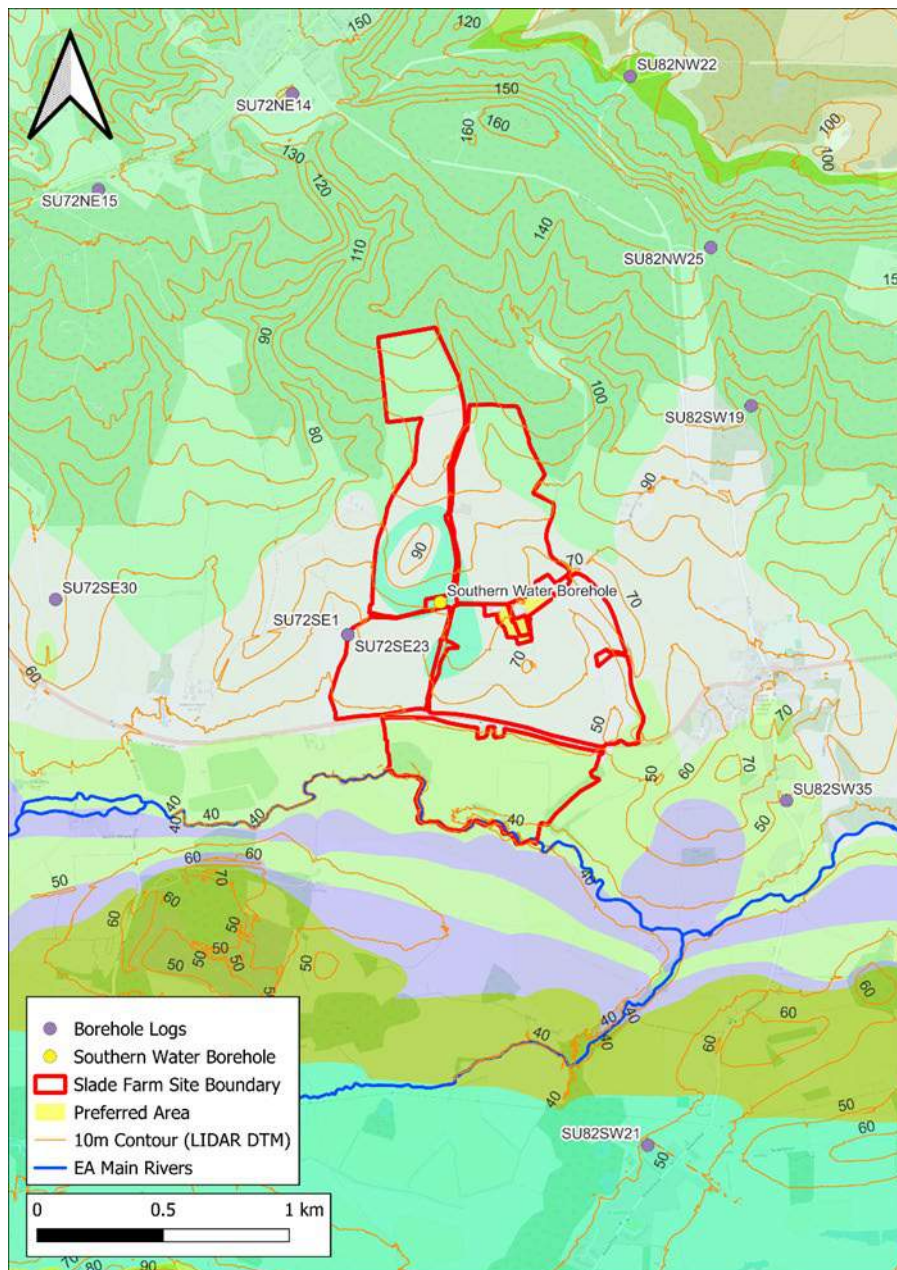


Figure 3. Local borehole records (taken from BGS Geoindex Onshore)

- 1.5.10 The borehole records confirm that abstraction boreholes have been successfully drilled into the Hythe Formation aquifer in the local area:
- SU72SE1 was drilled to a depth of 96.01 mBGL in 1972 with an accompanying observation well (SU72SE23) drilled to 59.74 mBGL.
 - The Hythe Formation is inferred to have been encountered at a depth of 15.24 mBGL.
 - Rest groundwater level is recorded as 5.26 mBGL (54.48 mAOD), 9.37 meters above the top of the Hythe Formation.
- 1.5.11 A pumping test was conducted with a pumping rate of 35 l/s for a period of 14 hours, although more detailed records of this test were not found.
- 1.5.12 The location of the Southern Water abstraction borehole is not included in the BGS Geoindex and no borehole records for that groundwater source were found.

Source protection zones

- 1.5.13 Groundwater source protection zones (SPZs) are defined to protect strategically important groundwater supply sources. SPZs have been defined for the decommissioned Southern Water abstraction borehole and for SU71SE1/SE23 to the west of the site, as shown in *Figure 4*. It is noted that the preferred area for a borehole at Slade Farm sits just outside of the identified SPZs. Given the sensitivity of public water abstraction boreholes and the potential for significant pumping induced drawdowns to occur, it is recommended that any borehole on Slade Farm is situated outside of the SPZ with greatest lateral separation (i.e. to the east) should Southern Water recommission the borehole.

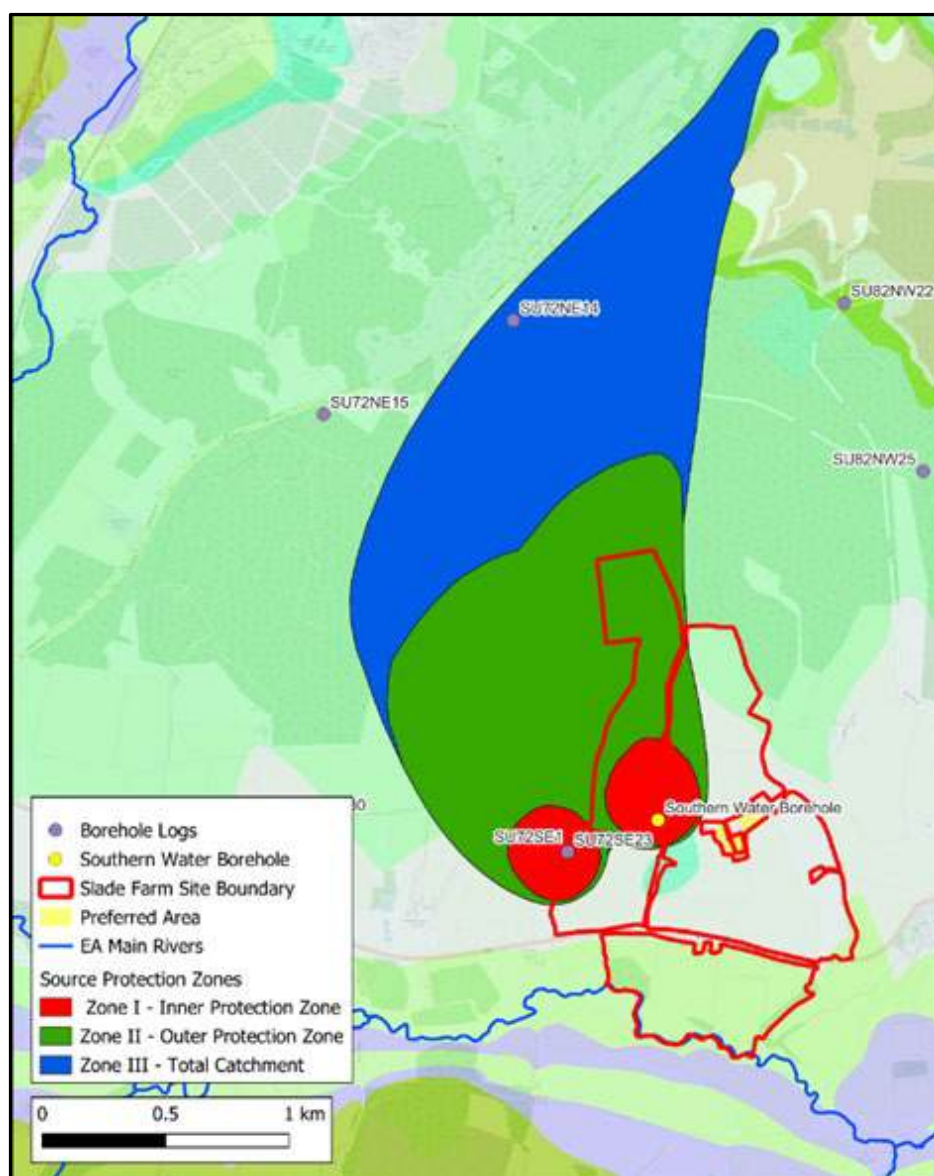


Figure 4. Source Protection Zones near Slade Farm

1.6 Regulatory framework

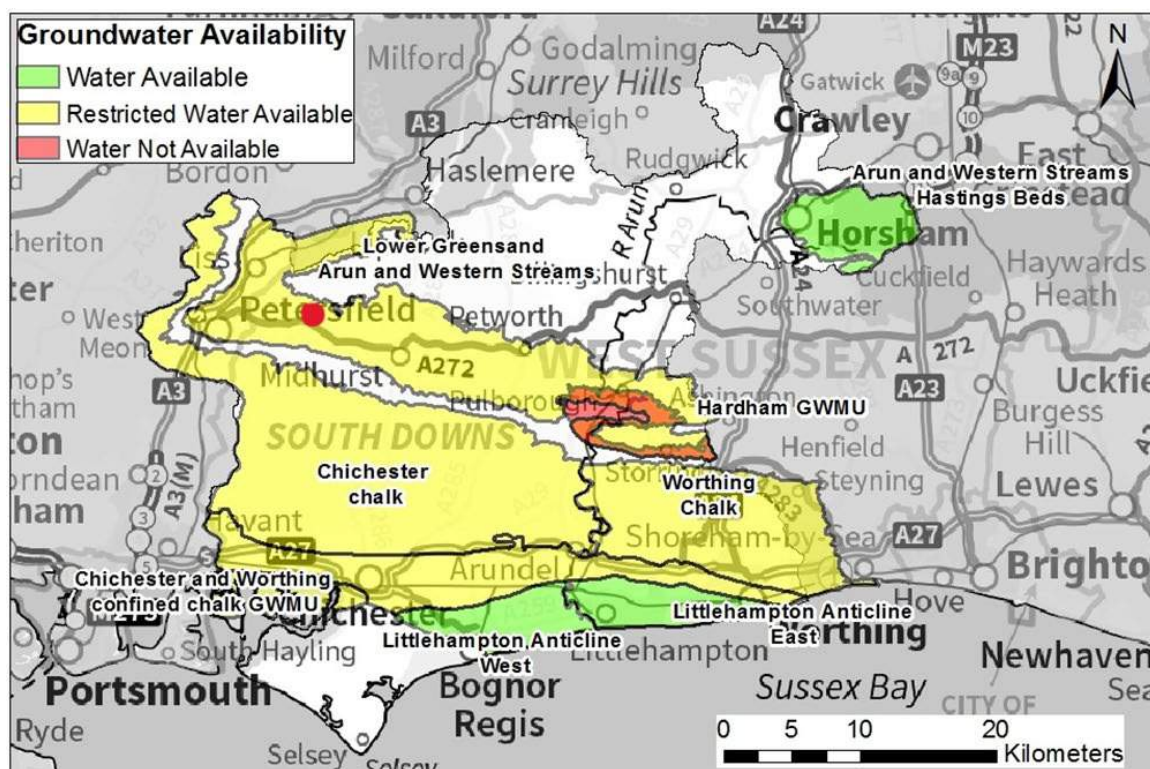
Abstraction licensing

Proposed groundwater abstraction below 20 m³/day

- 1.6.1 It is understood that no more than 20 m³/day of water is required from the borehole to be constructed at Slade Farm. If the forecasted demand for any proposed abstraction borehole is below 20 m³/day an [abstraction licence](#) is **not** required from the Environment Agency (EA), nor is a Groundwater Investigation Consent (GIC) required to investigate the aquifer suitability as a source of supply.
- 1.6.2 A borehole drilled for general agricultural purpose at Slade Farm, would not require planning permission.
- 1.6.3 If multiple boreholes were proposed as an offset to the proposed Development, the EA are likely to seek assurances that these abstractions do not in effect represent a single combined abstraction that exceeds 20 m³/day which would require licensing.

Proposed groundwater abstraction above 20 m³/day

- 1.6.4 An abstraction that exceeds 20 m³/day (single abstraction point or combined) would require an abstraction licence from the EA.
- 1.6.5 As shown in *Figure 5*, the groundwater availability status for the Lower Greensand Arun and Western Streams groundwater body is 'restricted water available for licensing' in the [Arun and Western Streams Abstraction Licensing Strategy \(ALS\)](#) (EA, 2022). This availability status means that the groundwater unit balance undertaken by the EA shows that more water is currently licensed than the calculated amount available. However, the situation is sustainable because either: recent actual abstractions are lower than the amount available; or management options are in place to deal with the known impacts,
- 1.6.6 In restricted groundwater units no new consumptive licences will be granted, although there is the possibility the EA is investigating possibilities for reducing fully licensed risks. Water may be available if you can 'buy' the entitlement to abstract water from an existing licence holder. This is known as licence trading. This position was confirmed through consultation by Alison Mathews of the EA, who drafted the Abstraction Licensing Strategy (ALS).



pertaining to groundwater solutions for offsetting water demands is given overleaf. It should be noted that this guidance would appear to have been written from the perspective of using an borehole private borehole constructed on or near the a proposed development rather than boreholes on untied properties or businesses which, as in this case, can be located a significant distance from both the new development **and** the Aran valley protected sites.

“Will the Council accept boreholes as a means of achieving water neutrality?”

Private boreholes are capable of providing a suitable source of water (potable and non-potable) to achieve water neutrality, however a significant level of survey work will be required to support any proposal, both before any planning permission is granted and before first occupation of any property. This is because any measures proposed to achieve water neutrality must be certain and secure to avoid any risk of impact on the designated sites. The following guidance has been prepared in consultation with the Environment Agency and Natural England:

- For applications proposing a borehole to abstract more than 20m³ per day to serve a development, an abstraction licence from the EA will be required (Apply for a water abstraction or impounding licence - GOV.UK (www.gov.uk)). Before an application for an abstraction licence is made, any developer must apply to the EA for a Groundwater Investigation Consent (Apply for consent to investigate a groundwater source - GOV.UK (www.gov.uk))
- Evidence of an approved abstraction licence, or a valid licence application, must be provided with the planning application. It can take up to a year to go through the Groundwater Investigation Consent and Abstraction Licensing process and so early interaction with EA for large developments proposing to use a borehole is important.
- For applications proposing a borehole that would abstract less than 20m³ per day, an abstraction licence is not needed from the EA. In such cases the information below must be submitted with the planning application.

In all cases, planning applications that propose a borehole will need to provide a Hydrogeology Report (or equivalent) prepared by a suitably qualified professional (eg a qualified Hydrogeologist (M.SC level)). The Report will need to clearly cover the following matters:

Groundwater Resources

1. The location of the proposed borehole and the aquifer into which it is to be sunk. NB EA advice presumes against abstraction within the Hardham Basin (Folkstone Beds) and Chichester and Worthing Chalk, and where a borehole into the Lower Greensand Arun and Western Streams could reduce flows in the River Rother ([click here to see map](#) or view the EA's [Arun and Western Streams abstraction licensing strategy \(ALS\) on GOV.UK](#))
2. Whether any geological links exists from the borehole location and the Arun Valley basin, ie confirm that the abstraction of water from the borehole will not also take water from the Arun Valley habitat sites, or otherwise impact on their integrity, even very indirectly, including from any river catchment that serves the Arun Valley basin
3. Whether the borehole location will impact on any nearby SSSI's and their impact zones, or any other ecological features
4. A hydrogeological assessment of water yield from the borehole is necessary in all cases, commenting on risk of dry periods to ensure continuous year-round supply. Given locational variations in yield supply even in productive aquifers, evidence must be from a test borehole sunk onsite to demonstrate that the site can yield sufficient water in the driest months of the year (June to September), and that this yield will be reliable year-on-year. EA advice is that there is limited evidence that Weald Clay is capable of providing reliable yields, albeit some limestone and sandstone bands may be capable of supplying sufficient water for smaller schemes. Boreholes sunk into the Weald Clay will likely therefore not be supported unless there is clear evidence of a reliable year-on-year yield sufficient to serve the development proposal.” (Horsham District Council, 2023)

- 1.6.12 The two key issues that require addressing are points 1 & 2 given in the Groundwater Resources section above.
- 1.6.13 Point 1 indicates there is a presumption against an “*abstraction within the Hardham Basin (Folkestone Beds)*” and “*where a borehole into the Lower Greensand Arun and Western Streams could reduce flows in the River Rother*”. However, it must be noted that this position is based on “*EA advice*” which appears to reflect the local EA licensing position for abstractions above 20m³/day (as shown in Figure 5) as opposed to specific position with respect to borehole solutions for Water Neutrality. Nevertheless that position has been considered further.
- 1.6.14 Point 2 states that an applicant must “*confirm that the abstraction of water from the borehole will not also take water from the Arun Valley habitat sites, or otherwise impact on their integrity, even very indirectly, including from any river catchment that serves the Arun Valley basin*”.

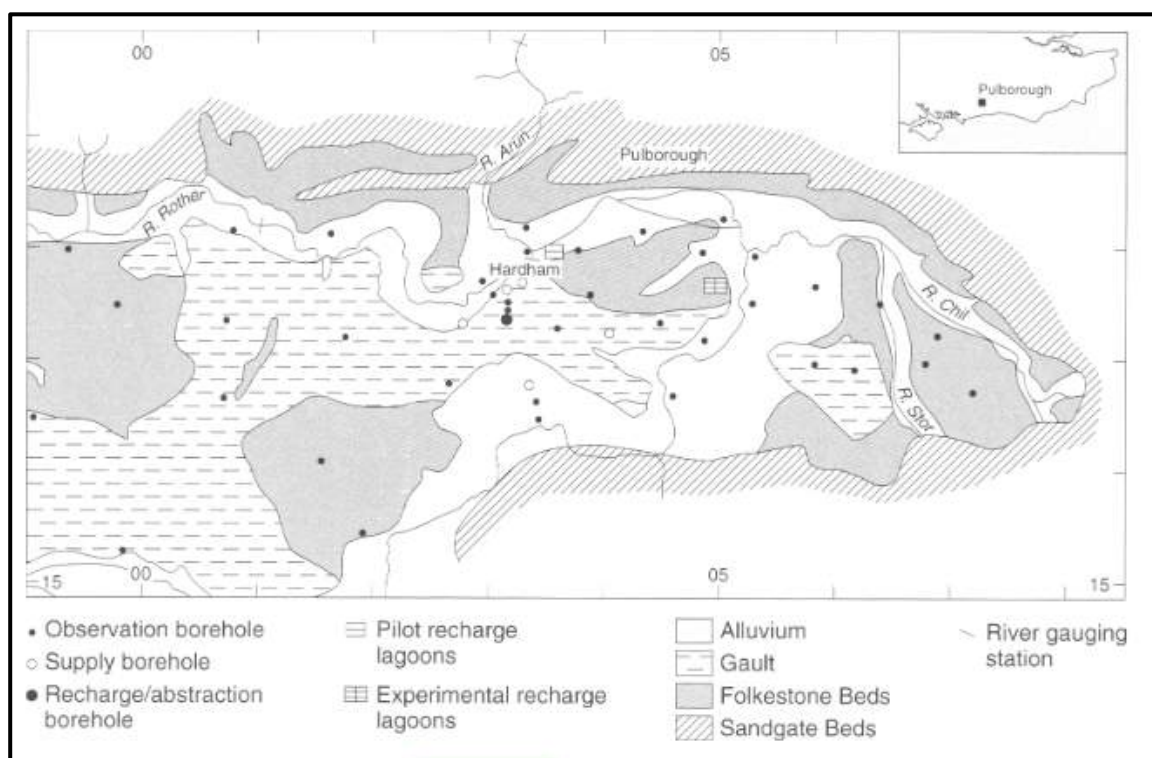


Figure 6. Location and geology of the Hardham Basin (taken from Headworth, 2004)

- 1.6.15 Within the EA’s Arun and Western Streams ALS, the Hardham Groundwater Management Unit GWMU is stated to comprise “*the area of the Hardham Basin where the Folkestone Beds aquifer is at the surface. It also includes the area where the Folkestone Beds are buried by overlying deposits*”. The extent of the Hardham basin is presented in Figure 6 and includes the EA’s (GWMU) shown in Figure 5.
- 1.6.16 From a preliminary hydrogeological review, the following observation can be made:
- The proposed borehole at Slade Farm is situated in the upper reaches of the Rother Catchment, near Petersfield, more than 24km upstream of the from the Arun Valley Protected Sites.
 - The proposed borehole is located a significant distance outside of the Hardham Basin and **will not** abstract groundwater directly from the Folkestone Formation that directly support the Arun Valley Protected Sites in the Hardham Basin.

- The proposed borehole at Slade Farm would draw groundwater from the Hythe Formation and that aquifer unit is **hydraulically separated** from both overlying Folkstone Formation Principal aquifer **and** the River Rother (& its tributaries) by the significant thickness of the Sandgate Formation aquitard present in the area around Slade Farm.
- The small size of the proposed abstraction and significant storage capacity expected for the Hythe Formation, will minimise direct impacts at distance around the Slade Farm borehole.

1.6.17 Based on these observations it is can reasonably be concluded:

- There is no mechanism for the Slade Farm abstraction to have a direct groundwater impact on the Hardham Basin or Arun Valley Protected Sites, given the distance from those sites and their hydraulic separation by the Sandgate Formation. Thus, the abstraction borehole will not take water directly from the Arun Valley habitat sites.
- The proposed abstraction will not have a measurable effect on water levels or flow within the upper reaches of the River Rother, given the small size of the abstraction, the storage capacity of the Hythe Formation, hydraulic separation afforded by the Sandgate Formation and position of the borehole within the catchment. Thus, the abstraction borehole will not take water indirectly from the Arun Valley habitat sites, via flow reduction or reduced level within the Rother itself.
- By reducing the Mains water usage at Slade Farm, situated more than 24km from the Arun Valley Protected Sites, a net benefit will result for those protected sites and offsetting will meet the objectives of water neutrality.

1.6.18 Point 4 requires a hydrogeological assessment of long-term groundwater yield. Given the abstraction would intercept groundwater in the Hythe Formation aquifer that has historically been utilised for public water supply abstraction (as indicated by the definition of SPZs), yields and yield reliability is not considered an issue at this location given the small size of the proposed abstraction. This is evidenced by the neighbouring Southern Water Borehole's 0.7km to the west.

1.6.19 Guidance provided by HDC on groundwater quality for groundwater supply sources is given below. This guidance is written assuming the borehole will provide the potable water supply to the proposed development affected by water neutrality.

“Groundwater quality

The quality and safety of private water supplies is controlled by in England by the Private Water Supplies (England) Regulations 2016 (as amended), and is regulated by the Council’s Environmental Health team.

The risks of pollution to a drinking water supply vary with the properties of the underlying soils and rock. The Environment Agency use source protection zones (SPZs) to identify areas close to drinking water sources to apply controls on some activities which could cause pollution. For large supplies, such as water company abstractions, these SPZs are created on a bespoke basis using groundwater modelling. However, all groundwater sources used for human consumption without a bespoke SPZ have at least a 50m radius SPZ centred on the borehole.

When considering the potential creation of a new SPZ it is important to understand the implications for existing activities which may fall within the zone. Further information on SPZs and relevant activities is available in [The Environment Agency’s approach to groundwater protection](#).

To support your planning application you will need to provide:

1. A water quality assessment from the test borehole detailing the quality of the water abstracted and the measures to ensure potable water quality will be secured, including:
2. Detail on what type of treatment will be installed on the supply with information clearly indicating that it is appropriate for the amount of water being used and the contaminants found.
3. Detail on the proposed sampling and testing regime, undertaken in accordance with Private Water Supplies (England) Regulations 2016 (as amended) (or subsequent superseding equivalent), and taking into account the likely contaminants, as detailed above, along with detail on how any failure of any samples will be investigated and managed.
4. Detail on the maintenance, servicing and cleaning of the tanks, water treatment equipment, pumps, all pipework etc for the lifetime of the development along with regularity of servicing/maintenance and clarification what steps will be taken in the event of equipment failure to ensure continuity of supply.
5. Arrangements for keeping written records of all sampling, results of analysis, inspection, cleaning, and maintenance.
6. A list of all properties, including their land uses and activities, that fall within 50m of your borehole(s) and which could have the potential to cause pollution, a list of all the activities that would need to be restricted within the zone, and how occupiers will be notified of these restrictions in the event permission is granted. Please annotate the affected properties on a map of the local area alongside the location of your new borehole(s) and the extent of the SPZ.

Please be aware that conditions to secure long-term management, maintenance and monitoring of the private water supply will be required if planning permission is granted.”
(Horsham District Council, 2023)

- 1.6.21 Although water quality within the Hythe formation aquifer can be expected to be good, the Slade Farm borehole would only be seeking to use the abstracted groundwater for stock watering and general agricultural purposes. As such, the water will not be used for human consumption and no detailed water quality assessment should be required at this stage. However, water quality testing and screening would be required to show it is fit for purpose and any prior treatment systems designed.

1.7 Further borehole considerations

Abstraction source design

- 1.7.1 The Hythe Formation aquifer should be targeted by any borehole constructed on Slade Farm to maximise borehole yield and yield reliability.
- 1.7.2 Based on nearby borehole records it is likely that the contact between the Sandgate Formation aquitard and Hythe Formation aquifer is at c. 41 mAOD. A borehole should be drilled around the farm buildings would be more than 30 meters deep to intercept that aquifer unit. Given the potential reinstatement of the nearby Southern Water borehole, a deeper installation into the Hythe Formation is recommended to mitigate for any potential future pumping related drawdown. A borehole of between 50 to 75m depth is therefore recommended. The Sandgate Formation should be cased out using solid casing, with a long section of slotted well casing installed across the Hythe Formation.
- 1.7.3 It may be possible to obtain records from Southern Water on their nearby decommissioned abstraction borehole to better understand local groundwater levels in the Hythe Formation and inform local borehole design.

Impacts on other groundwater users and source protection zones

- 1.7.4 Proximity to the Southern Water borehole that may be reinstated and its SPZ does present some issues for a groundwater abstraction at Slade Farm. Most notably
- It is recommended that the distance between the Slade Farm borehole and defined SPZs is be maximised when selecting the final location of the borehole.
 - The location of the Slade Form borehole must be outside the defined SPZs, preferably to the east thereof, towards the eastern site boundary.
- If Southern Water do intend to recommission their boreholes, the Slade Farm borehole could be affected by pumping induced drawdowns resulting from that large public water supply abstraction. A deeper borehole, that provides scope to lower the pump should therefore be considered. Calculations should be undertaken to inform borehole depth and pump installation depth if pumping test data and the desired pumping rate of Southern Water can be determined.
- Prior liaison with Southern Water is therefore prudent.
- 1.7.5 It is also recommended that a water features survey is undertaken to identify all groundwater users within c. 1km of the proposed Slade Farm borehole. These pre-existing abstractors represent protected rights that should not be adversely impacted by any new abstraction at Slade Farm.

1.8 Conclusions

- 1.8.1 A desk-based assessment of likely viability of a proposed groundwater solution to Water Neutrality “offsetting” borehole at Slade Farm, Petersfield has been undertaken. Based upon this assessment the following conclusions have been drawn:

- A groundwater source at Slade Farm for meeting the water usage requirements of 7-20m³ per day of the dairy business would be feasible.
- The Hythe Formation aquifer should be targeted.
- The proposed solution aligns with the environmental regulations and local authority policies; as the total abstraction volume will not exceed 20m³ per day, an abstraction licence will not be required from the Environment Agency.
- Hydrogeological interpretation of the geological site setting indicates the potential for impact on groundwater in the Folkstone Formation aquifer and baseflow to the upper reaches of the River Rother by an abstraction in the Hythe beds at Slade Farm would be negligible. Subsequently the abstraction poses negligible risk to the Arun Valley Protected Sites.
- Technical specifications of the groundwater supply should permit an optimal drilling depth of the screened section of 50-75m BGL to intercept the Hythe Formation. This future-proofs the supply against potential pumping related drawdowns associated with the recommissioning of the Southern Water boreholes to the West. Additionally, the borehole design must consider the protected water rights of the preexisting abstractions and associated source protection zones to the west.
- Further collaboration and communication with stakeholders including Southern Water and local authorities is recommended to address concerns relating to viability of the proposed abstraction as a water offset to development.
- Further hydrogeological investigation of the borehole may be required following installation to identify potential impacts on existing groundwater users and sensitive receptors.

1.8.2 In summary, the groundwater prognosis report concludes that establishing a borehole at Slade Farm represents a viable and environmentally responsible solution to meet the needs of a proposed development requiring water offset whilst ensuring regulatory compliance and minimising impacts on the hydrogeological environment.



Appendix A

BGS BOREHOLE RECORDS



**NGRC
BOREHOLE RECORDS
ADJUSTMENT FORM**

QUARTER SHEET SU 72 SE

BH REGISTRATION NUMBER 23 - 34

RECORDS ENTERED AND HELD BY WALLINGFORD

BH REGISTRATION NUMBER(S)



GEORGE STOW CO. LTD.

Waterworks Engineers

READING ROAD - HENLEY-on-THAMES. OXON.

RECORD OF WELL (SHAFT OR BOREHOLE)

DATE COMPLETED 17.8.73

SU 7906 2396

SU. 72 SE.

All depths to be measured below Ground Level

Work carried out for Sussex River Authority

Locality (Exact Site) Rogate G.R. ~~79 790243~~ SU 7906 2396 County Sussex 20 NE/E

Level of Ground Surface above Sea Level (O.D.) c. 185 ft.

Depth of Shaft ft. ins. Diameter ft. ins.
(196 ft) (152.4 mm)

Depth of Bore 60 metres ins. Diameter: At Top 6 ins. At Bottom 6 ins.

Details of Permanent Lining Tubes

| Diameter | Length Inserted | | | | |
|--------------------|-----------------|-----|-------|-----|---------|
| (304.8 mm) 12 ins. | 152m | ft. | Plain | ft. | Slotted |
| (152.4 mm) 6 ins. | | | " | | " |
| | | | " | | " |
| | | | " | | " |
| | | | " | | " |
| | | | " | | " |
| | | | " | | " |
| | | | " | | " |

Water Struck at depth of (in ft.)

Rest Level of Water below Ground Level ft. ins.

Yield on Hours test. Pumping Gallons per Date

Pump Water level ft. ins. below Ground Level.

Time of Recovery

Headings. Depth below Ground Level

Directions and Lengths

Remarks Observation borehole only - no test

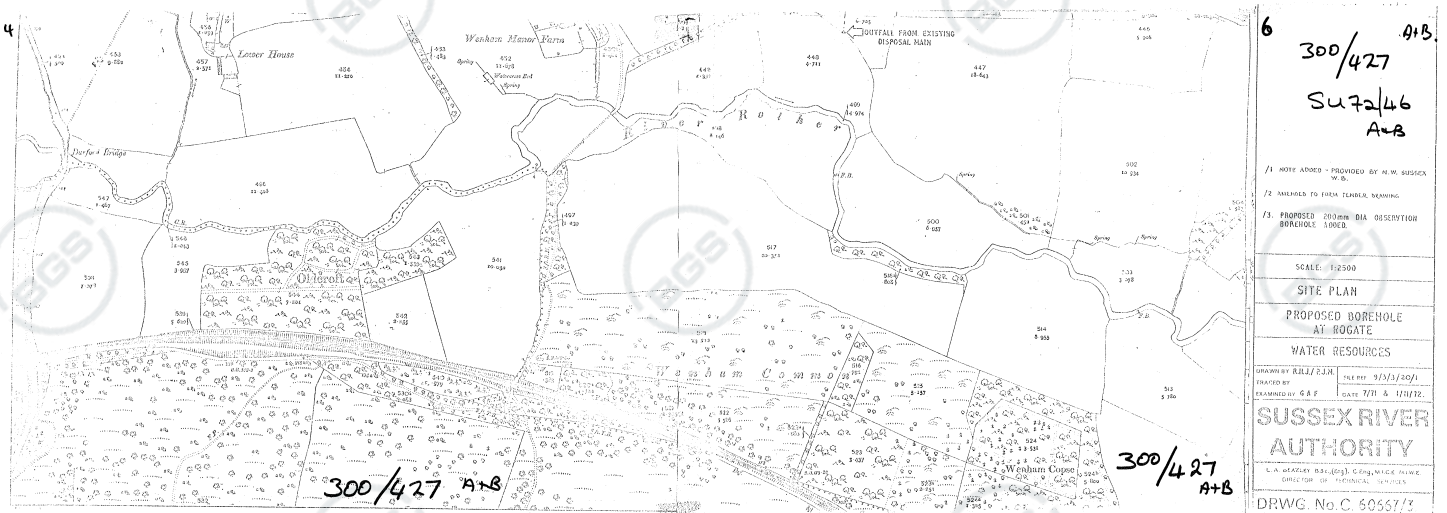
Sited by O on Sussex 20 NE/E

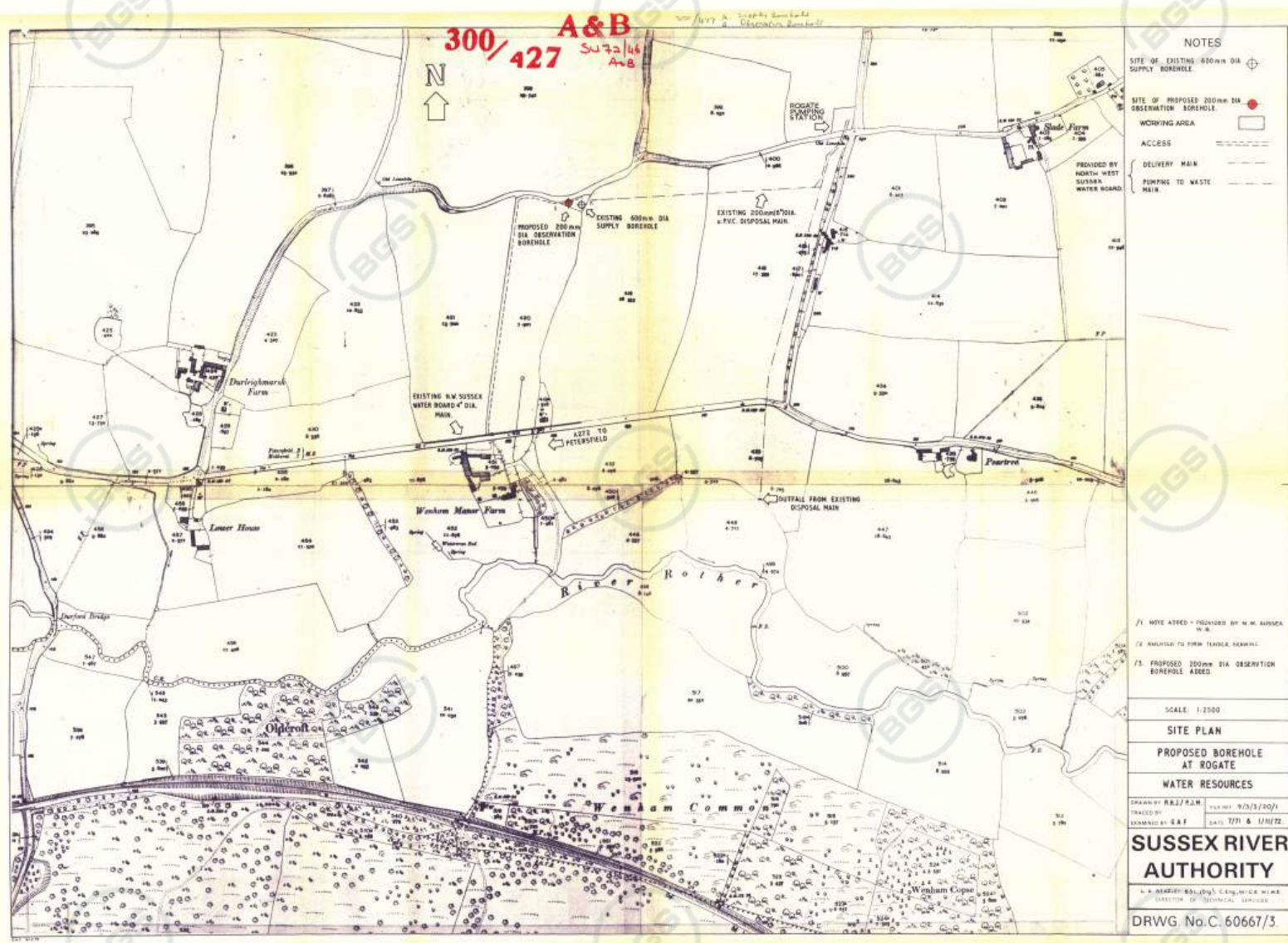
See back for Strata Record.

300/427

DETAILS OF STRATA

Contact BGS: ngdc@bgs.ac.uk







RECORD of WELL or BORING

at (house or farm) **Clayton Court** Hill Brow
Town, Village, &c. **Liss Rogate P. Rogate** County **Sussex** **XX N.E.** Six-inch map
Exact site (unless a tracing from a map is supplied, give distance and direction from parish church, cross-roads, or other object shown on maps). **South-east corner of the cross roads London-Portsmouth and Rogate-Liss.** Popular name of sheet **69**
Surface level of ground. **475** ft. above Ordnance Datum. Well or Bore commenced at **0** ft. below surface level of ground.
Sunk **290** ft. diameter **6** in. Bored **290** ft. diameter of boring: at top **6** in., at bottom **4 1/2** in.
Details of lining tubes (internal diameters preferred). **6" I.D. surface to 219'0"**
4 1/2" I.D. perforated tubes from 216'0" to 287'0"
Water struck at depths of (feet) **215' to 225' and at about 270'**
Rest-level of water below top of well or bore **204** ft. Pumping level **204** ft. Time of recovery **500** hours.
Suction at **226** ft. depth. Yield: (i) on test **500** galls. per hour, (ii) normal **500** galls. per hour
Quality (attach copy of analysis if available).
Made by **Duke & Ockenden Ltd.** for Mr. **T.L. Van Norden** Date of boring **May 1938**
Information from **Duke & Ockenden Ltd., Artesian Well Engineers, London and Littlehampton.**

| (For Survey use only). GEOLOGICAL CLASSIFICATION. | NATURE OF STRATA. (and any additional remarks) | THICKNESS. | | DEPTH. | |
|---------------------------------------------------------|---------------------------------------------------|------------|---------|--------|---------|
| | | Feet. | Inches. | Feet. | Inches. |
| Hythe Beds | Sand | 4 | 0 | 4 | 0 |
| | Sandstone | 8 | | 12 | 0 |
| | Sand and Sandstone | 48 | | 60 | 0 |
| | Sandstone | 10 | | 80 | 0 |
| | Sand and Clay | 21 | | 101 | 0 |
| | Yellow Sand and Sandstone | 49 | | 150 | 0 |
| | Yellow Sand and Clay | 25 | | 175 | 0 |
| | Yellow Sand | 5 | | 180 | 0 |
| | Sand and Clay | 31 | | 215 | 0 |
| | Sand (Grey) | 10 | | 225 | 0 |
| | White Sand and Clay | 4 | | 229 | 0 |
| | Sand and Clay | 31 | | 260 | 0 |
| | Green Sandy Clay | 19 | | 279 | 0 |
| | Blue Sandy Clay | 11 | | 290 | 0 |
| Atherfield Clay | | | | | |

| Analysis | Grs. per gall. |
|----------------------|----------------|
| Total solids | 13.0 |
| Chlorine | 1.15 |
| Ammonia | Absent |
| Albuminoid Ammonia | Absent |
| Nitrogen as Nitrites | Absent |
| " " Nitrates | 0.73 |
| Total hardness | 3.6 |

O.D. 485'. In use for garden. No details of yield available
Automatic electric pump. Hants 53 NW (E)
Owner Mr. T.L. Van Norden, Clayton Court, Hythe, Hants (London)
(In Sussex). I did by visiting. On T.B. 16.4.44

Data Bank

GEOLOGICAL SURVEY AND MUSEUM,
SOUTH KENSINGTON,
LONDON, S.W.7.

For Survey use only.

| Date received. | G.S.M. | M. of H. notified. | Site marked on 1" map. |
|----------------|--------|--------------------|------------------------|
| 6/58 | 6839 | | |

(24738C) Wt 28030/295 5.000 11.20
H. J. F. 1.4 Grs

300/69. ~~Clayton Court~~, Hill Brow, Rogate

~~Icknield House~~

Surface +485. Lining tubes: 219 x 6 in from surface; 71 x 4½ in from

216 down (perforated). Water struck at +270 to +260 and +c.215. R.W.L. +281.

Suction +259. Yield 500 g.p.h. Hardness: total 51. Anal. Dando, May 1938.

Electric pump. Apr. 1941.

| | | | | |
|----|-----|-----|-----|-----|
| H | ... | ... | 260 | 260 |
| AC | ... | ... | 30 | 290 |

| | | | | | |
|--------------------|---------------------------|----|---|-----|---|
| Hythe Beds | Sand | 4 | 0 | 4 | 0 |
| | Sandstone | 8 | | 12 | 0 |
| | Sand and Sandstone | 48 | | 60 | 0 |
| | Sandstone | 10 | | 80 | 0 |
| | Sand and Clay | 21 | | 101 | 0 |
| | Yellow Sand and Sandstone | 49 | | 150 | 0 |
| | Yellow Sand and Clay | 25 | | 175 | 0 |
| | Yellow Sand | 5 | | 180 | 0 |
| | Sand and Clay | 35 | | 215 | 0 |
| | Sand (Grey) | 10 | | 225 | 0 |
| | White Sand and Clay | 4 | | 229 | 0 |
| Atherfield Clay | Sand and Clay | 31 | | 260 | 0 |
| | Green Sandy Clay | 19 | | 279 | 0 |
| | Blue Sandy Clay | 11 | | 290 | 0 |

8/6/58

5/11/68



Su 7884 2611

RECORD of WELL or BORING

300

Survey No. 300
1° N.S. 300
1° O.S. 9

at (house or farm) Clayton Court Hill Brow
Town, Village, &c. Liss Rogate P. Rogate County Sussex XI N.E. Six-inch map
Exact site (unless a tracing from a map is supplied, give distance and direction from parish church, cross-roads, or other object shown on maps): South-east corner of the cross roads London-Portsmouth and Rogate-Liss. Popular Edition sheet 69 of one-inch map. Square

Surface level of ground 475 ft. above Ordnance Datum. Well or Bore commenced at 0 ft. below surface level of ground.
Sunk 290 ft., diameter 6 in., at top 6 in., at bottom 4 1/2 in.
Details of lining tubes (internal diameters preferred) 6" I.D. surface to 219'0" 4 1/2" I.D. perforated tubes from 216'0" to 287'0" Su 72/31

Water struck at depths of (feet) 215' to 225' and at about 270'

Rest-level of water below top of well or bore 204 ft. Pumping level 226 ft. Time of recovery 500 hours.
Suction at 226 ft. depth. Yield: (i) on test 500 galls. per hour (ii) normal 500 galls. per hour

Quality (attach copy of analysis if available)

Made by Duke & Ockenden Ltd. for Mr. T.L. Van Norden Date of boring May 1938
Information from Duke & Ockenden Ltd., Artesian Well Engineers, London and Littlehampton.

| (For Survey use only). GEOLOGICAL CLASSIFICATION. | NATURE OF STRATA. (and any additional remarks) | THICKNESS. | | DEPTH. | |
|---------------------------------------------------------|---------------------------------------------------|------------|---------|--------|---------|
| | | Feet. | Inches. | Feet. | Inches. |
| Hythe Beds | Sand | 4 | 0 | 4 | 0 |
| | Sandstone | 8 | | 12 | 0 |
| | Sand and Sandstone | 48 | | 60 | 0 |
| | Sandstone | 20 | | 80 | 0 |
| | Sand and Clay | 21 | | 101 | 0 |
| | Yellow Sand and Sandstone | 49 | | 150 | 0 |
| | Yellow Sand and Clay | 25 | | 175 | 0 |
| | Yellow Sand | 5 | | 180 | 0 |
| | Sand and Clay | 35 | | 215 | 0 |
| | Sand (Grey) | 10 | | 225 | 0 |
| | White Sand and Clay | 4 | | 229 | 0 |
| | Sand and Clay | 31 | | 260 | 0 |
| Atherfield Clay | Green Sandy Clay | 19 | | 279 | 0 |
| | Blue Sandy Clay | 11 | | 290 | 0 |

| Analysis | | Grs. per gall. |
|----------------------|--------|--------------------|
| Total solids | 13.0 | 185 ppm |
| Chlorine | 1.15 | 16.4 |
| Ammonia | Absent | |
| Albuminoid Ammonia | Absent | |
| Nitrogen as Nitrites | Absent | |
| " " Nitrates | 0.73 | |
| Total hardness | 3.6 | = 5.14 per 100,000 |

8/6/38
O.D. 485'. In use for garden. No details of yield available
Automatic electric pump. Hants 53 NW (E)
Owner Mr. T. L. Van Norden, Clayton Court, Hythe, Hants (Hants). I did by visiting. On 7.12.16.4.41

8/1/68
This site is now called "Atherfield House"
(Information received from Thames Water Authority)
Data Bank 3/7/75

For Survey use only.

| Date received | G.S.M. | M. of H. notified | Site marked on 1" map. |
|---------------|--------|-------------------|------------------------|
| 6/38 | 6855 | | |

GEOLOGICAL SURVEY AND MUSEUM,
SOUTH KENSINGTON,
LONDON, S.W. 7.

(24738C) Wt 26930/295 5.000 11/36
H, J, R & L, L



SU 7807 2573

BOREHOLE SECTION

SU 72 NE 15
(143) 300
March 19th 1925
38

BORED & COMPLETED BY THE GRAND AUTOLIFT & GILL LTD., SOUTH

BORED FOR- H. Harvey Esq.,
Westdown Cottage,
Hindhead, Surrey.

P: Regate
20 NE/E

DISTRICT- Petersfield IN THE COUNTY OF- Hants

POSITION OF BOREHOLE- At upper Purse Field, Dunford Wood, Regate,
3 miles N.E. of Petersfield. Surrey

MAPS- 6" Ordnance Hants 55 S.W.
1" Geo. New, Hants 500 O.D. OF BORE: 430

WATER LEVEL BELOW SURFACE- 197 feet YIELD OF WATER- 240 gallons
per hour.

TUBING REMAINING IN BOREHOLE - 240' 6" of 5" top 1' 6" above
surface

| LITHATA | THICKNESS | | DEPTH | |
|-----------------------------------------|-----------|------|-------|------|
| | Ft. | Ins. | Ft. | Ins. |
| Red Sand, Pit 3' 0"..... | 21 | 0 | 21 | 0 |
| Sand & hard layers of Sandstone..... | 98 | 0 | 119 | 0 |
| Hard Sand..... | 121 | 0 | 240 | 0 |
| Total depth of boring | 240 | 0 | 240 | 0 |

the
to lower S.B.
hearse +
H.
88 ft.

17
1/2

GENERAL REMARKS

Water was struck at 216 feet and rose to 197 feet.
15' x 4" Ashford Sand Strainer with 30' of 4" plain
tubing inserted.
Some trouble with the sand was overcome by using
thesctrainers.

BORING FINISHED- 22nd October 1924

THE GRAND AUTOLIFT & GILL LTD.,

Signature

Faulwood House, nr. Petersfield. Pat. & Co. gave about 400 gallons in
first 2-3 hours pumping, 1 hen fails. Discard except for very occasional use
The Harvey, owner, thinks failure occurred after Clayton House well was
sunk. O.D. 430. Sited by rising on Hants. S 3 S W (E)
At 13. 16. 4. 4)

Our Ref. S.B.4/30
Our Order No. 1544.21/7/24

LI/AMP.

Data Bank



300/38 Fullwood House, Rogate. (Disused)

SU72/32

Surface +430. Lining tubes: 240 $\frac{1}{2}$ x 5 in from 1 $\frac{1}{2}$ above; 30 x 4 in from
195 down; sand screen 15 x 4 from 225 down. Water struck at +214. R.W.L.

+233. Yield 240 g.p.h. LeGrand, Oct. 1924.

Yield 400 g.p.h. fails after 2-3 h. I/c engine. Apr. 1941.

| H | ... | ... | 240 | 240 |
|---------------------------|------------------|---------------------------------|---------------|-----------|
| GEOLOGICAL CLASSIFICATION | NATURE OF STRATA | | THICKNESS ft. | DEPTH ft. |
| Mythe | 240' | Red Sand | 21 | 21 |
| Beeds. | | Sand & hard layers of Sandstone | 98 | 119 |
| | | Hard sand. | 121 | 240 |

pp. L.P. Thomas
4-7-66



Su 7807 2573

March 19th 1925

BOREHOLE SECTION

BORED & COMMUNICATED BY LE GRAND SUTCLIFF & GELL LTD., SOUTH

BORED FOR- H. Harvey Esq.,
Westdown Cottage,
Hindhead, Surrey.

P: Royal SU 72/32
20 NE/E

DISTRICT- Petersfield IN THE COUNTY OF- Hants

POSITION OF BORING- At Upper Furze Field, Durford Wood, *Rogati*,
3 miles N.E. of Petersfield. *Surrey*

MAPS- 6" Ordnance Hants 53 S.W.
1" Geo. New, Hants 300 O.D. OF SITE: 430

WATER LEVEL BELOW SURFACE- 197 feet YIELD OF WATER- 240 gallons
per hour.

TUBING REMAINING IN BOREHOLE - 240' 6" of 5" top 1' 6" above
surface

| STRATA | THICKNESS | | DEPTH | |
|-----------------------------------------|-----------|------|-------|------|
| | Ft. | Ins. | Ft. | Ins. |
| Red Sand, Pit 3' 0"..... | 21 | 0 | 21 | 0 |
| Sand & hard layers of Sandstone..... | 98 | 0 | 119 | 0 |
| Hard Sand..... | 121 | 0 | 240 | 0 |
| Total depth of boring | 240 | 0 | 240 | 0 |

*Hydr
Beds lower E.B.
ferruginous
Scale
285.42
1 ft
4 1/2 ft*

GENERAL REMARKS

Water was struck at 216 feet and rose to 197 feet.
15' x 4" Ashford Sand Strainer with 30' of 4" plain
tubing inserted.
Some trouble with the sand was overcome by using
these strainers.

BORING FINISHED- 22nd October 1924

LE GRAND SUTCLIFF & GELL LTD.,

Signature

*Fullwood House, nr. Petersfield. Petrologues. Gives about 400 gallons in
first 2-3 hours pumping, 1 then fails. Discussed except for very occasional use
Mr. Harvey, since. Hints further occurred after Clayton House well was
sunk. O.D. 430. Sited by rising on Hants. 53 SW (E)
A.B. 16.4.4)*

Our Ref. S.B.4/30
Our Order No. 1344.21/7/24

LI/AMP.

Data Bank



SU 72 SE / 1

N. 14134

GEORGE STOW CO. LTD.

Waterworks Engineers

READING ROAD - HENLEY-on-THAMES. OXON.

RECORD OF WELL (SHAFT OR BOREHOLE)

DATE COMPLETED June, 1972

N.G.R. SU 72 SE (14062396)

All depths to be measured below Ground Level

SOUTHERN WATER AUTHORITY

Work carried out for SUSSEX RIVER and WATER DIVISION.

Locality (Exact Site) G.R. SU79062396 Rogate, Sussex

Sussex 20 NE/E

Level of Ground Surface above Sea Level (O.D.) c. 57 m.

Depth of Shaft m.

Diameter mm.

Depth of Bore 96 (315 ft) m.

Diameter: At Top 600 (24 inch) mm. At Bottom 380 (15 inch) mm.

Details of Permanent Lining Tubes

| Character | Length Inserted | Top At | above Ground Level |
|------------------|--------------------|-------------------|--------------------|
| 1. 600 mm. Plain | 2. 380 mm. Slotted | 3. m below | 4. m below |
| 600 (105 ft) | - | - | - |
| 380 (32 ft) | 64 (210 ft) | 22m below (72 ft) | - |
| " | " | " | " |
| " | " | " | " |
| " | " | " | " |
| " | " | " | " |

Water Struck at depth of (in m.) (17 ft. 3 ins)

Level of Water below Ground Level 5.26 m.

Field on 14 Hours test. Pumping 35 litres per sec. Date 1.6.72

Temp Water level 22.60 m. below Ground Level.

Time of Recovery See extended pumping test carried out by Sussex River Authority themselves.

Remarks Stainless steel screen tubes with gravel pack from 22m to 26m

(72 ft. to 315 ft)

Situated on 6 maps. Sussex 20 NE/E by

See back for Strata Record.

222/14.17

SU72SE/1
N.G.R. 7906.2396

BOREHOLE NO. 3 - ROGATE

STRATA LOG

EDL

ASSIST

ATION

DRIFT

Head

Substrate

Base

Top

Bottom

Top

Bottom

Top

Bottom

Top

Bottom

Top

Bottom

Top

Bottom

Top

Bottom

Top

Bottom

Top

Bottom

Top

Bottom

Top

Bottom

Top

Bottom

Top

Bottom

Top

Bottom

Top

Bottom

Top

Bottom

Top

Bottom

Top

Bottom

Description

Thickness (feet) (m) Depth (feet) (m)

| | | | | |
|------------------------------------------------------------------------------------------------------|----|------|-----|-------|
| Topsoil | 2 | 0.60 | 2 | 0.60 |
| Sandy loam | 2 | 0.60 | 4 | 1.20 |
| Orange brown clayey sandstone | 4 | 1.21 | 8 | 2.41 |
| Sandy ironstone | 4 | 1.21 | 12 | 3.62 |
| Fine-grained brownish/yellow loamy sand | 8 | 2.43 | 20 | 6.07 |
| Fine-grained reddish/brown loamy sand with quartz pebbles | 5 | 1.52 | 25 | 7.62 |
| Fine-grained orange/yellow ferruginous sand | 15 | 4.57 | 40 | 12.19 |
| Fine-grained yellow speckled sand | 5 | 1.52 | 45 | 13.71 |
| Fine-grained brownish/yellow ferruginous sand | 3 | 0.91 | 48 | 14.63 |
| Hard grey crystalline sandstone | 2 | 0.60 | 50 | 15.24 |
| Hard brownish/buff crystalline sandstone speckled with glauconite | 2 | 0.60 | 52 | 15.84 |
| Fine-grained reddish brown loamy sand | 3 | 1.91 | 55 | 16.76 |
| Hard grey to brown crystalline sandstone ironstone | 5 | 1.52 | 60 | 18.28 |
| Soft light brown loamy sand with ironstone and shell fragments | 5 | 1.52 | 65 | 19.81 |
| Fine-grained brownish yellow ferruginous sand with sandstone fragments | 10 | 3.04 | 75 | 22.86 |
| Ironstone | 5 | 1.52 | 80 | 24.38 |
| Fine-grained yellow speckled | 5 | 1.52 | 85 | 25.90 |
| Fine-grained green clayey sand | 18 | 3.96 | 98 | 29.57 |
| Hard fine-grained orange/buff iron stained sandstone speckled with glauconite | 12 | 3.65 | 110 | 33.52 |
| Fine-grained buff silty sand | 5 | 1.52 | 115 | 35.05 |
| Hard fine-grained buff speckled cherty sandstone | 10 | 3.04 | 125 | 38.10 |
| Fine grained buff silty sand | 5 | 1.52 | 130 | 39.62 |
| Hard very fine-grained white cherty sandstone speckled with glauconite and occasional pyrite nodules | 15 | 4.57 | 145 | 44.19 |
| Hard fine grained orange buff sandstone speckled with glauconite | 5 | 1.52 | 150 | 45.72 |
| Ironstone | 1 | 0.30 | 151 | 46.02 |
| Hard fine-grained white/buff sandstone | 19 | 5.79 | 170 | 51.81 |
| Ironstone | 5 | 1.52 | 175 | 53.34 |
| Hard fine grained white/buff sandstone speckled with glauconite | 25 | 7.62 | 200 | 60.96 |
| Fine grained buff sand with glauconite grains | 10 | 3.04 | 210 | 64.00 |
| Hard fine grained buff sandstone speckled with glauconite | 20 | 6.09 | 230 | 70.10 |
| Very fine-grained grey sandstone | 5 | 1.52 | 235 | 71.62 |
| Hard grey sandy mudstone with sandstone fragments | 15 | 4.57 | 250 | 76.20 |
| Soft very fine grained grey sandstone | 10 | 3.04 | 260 | 79.24 |

Description of strata (Cul. 30) SU72SE 11

Soft grey silty sandstone with pyrites nodules and carbonised wood
Very fine-grained grey silty sand with glauconite grains and pyrites
Fine-grained silty sand with pyrites lignite and carbonised wood
Very fine-grained bluish-grey compact silty sand.
Bluish-grey clayey sand
Bluish-grey sandy silt
Sticky grey silty clay

| Thickness (feet)(m) | | Depth (feet)(metres) | |
|------------------------|------|-------------------------|-------|
| 5 | 1.52 | 265 | 80.77 |
| 5 | 1.52 | 270 | 82.29 |
| 5 | 1.52 | 275 | 83.82 |
| 10 | 3.04 | 285 | 86.86 |
| 15 | 4.57 | 300 | 91.44 |
| 10 | 3.04 | 310 | 94.48 |
| 5 | 1.52 | 315 | 96.01 |
| | | 315 | 96.01 |

No site map?

This description of strata received from
Southern Water Authority (S.R. & W.D.)
w/c letter dated 7/10/75.



GEORGE STOW CO. LTD.

Waterworks Engineers

READING ROAD - HENLEY-on-THAMES. OXON.

RECORD OF WELL (SHAFT OR BOREHOLE)

DATE COMPLETED June, 1972

SU 7906 2396

N. 14134
Su 72/46A
427
A
N.G.R. SU 72 SE (79062396)

All depths to be measured below Ground Level

SOUTHERN WATER AUTHORITY

Work carried out for SUSSEX RIVER and WATER DIVISION (B/H No. 3)

Locality (Exact Site) G.R. SU79062396 Rogate, Sussex Sussex 20 NE/E

Level of Ground Surface above Sea Level (O.D.) m.

Depth of Shaft m. (315 ft) Diameter mm. (24 inch) (15 inch)
Depth of Bore 96 m. Diameter: At Top 600 mm. At Bottom 380 mm.

Details of Permanent Lining Tubes

| Diameter | mm. | Length Inserted | | Top At | above Ground Level |
|-----------------|-----|-----------------|------------|--------|--------------------|
| | | m. | Plains | | |
| Stainless steel | 600 | 32 (105 ft) | - | " | " |
| | 380 | 10 (33 ft) | 64 (20 ft) | " | 22m below (72 ft) |
| | | | | " | " |
| | | | | " | " |
| | | | | " | " |

Water Struck at depth of (in m.) (17 ft. 3 ins)

Rest Level of Water below Ground Level 5.26 m.

Yield on 14 Hours test. Pumping 35 litres per sec. Date 1.6.72
Days (74 ft. 2 ins)

Pump Water level 22.60 m. below Ground Level.

Time of Recovery See extended pumping test carried out by Sussex River Authority themselves.

Remarks Stainless steel screen tubes with gravel pack from 22m to 96m (72 ft. to 315 ft)

Sited by on 6" map. Sussex 20 NE/E

See back for Strata Record.

EA 496

DEPT. OF THE ARMY
NATURE OF THE CASE
and any additional information

[illegible]

300/427 A

SU72/46A

BOREHOLE NO. 3 - ROGATE

STRATA LOG

GEOL.

CLASSIFICATION

Description

| Thickness (feet)(m) | Depth (feet)(m) |
|------------------------|--------------------|
| 2 0.60 | 2 0.60 |
| 2 0.60 | 4 1.21 |
| 4 1.21 | 8 2.43 |
| 4 1.21 | 12 3.65 |
| 8 2.43 | 20 6.09 |
| 5 1.52 | 25 7.62 |
| 15 4.57 | 40 12.19 |
| 5 1.52 | 45 13.71 |
| 3 0.91 | 48 14.63 |
| 2 0.60 | 50 15.24 |
| 2 0.60 | 52 15.84 |
| 3 1.91 | 55 16.76 |
| 5 1.52 | 60 18.28 |
| 5 1.52 | 65 19.81 |
| 10 3.04 | 75 22.86 |
| 5 1.52 | 80 24.38 |
| 5 1.52 | 85 25.90 |
| 18 3.96 | 98 29.87 |
| 12 3.65 | 110 33.52 |
| 5 1.52 | 115 35.05 |
| 10 3.04 | 125 38.10 |
| 5 1.52 | 130 39.62 |
| 15 4.57 | 145 44.19 |
| 5 1.52 | 150 45.72 |
| 1 0.30 | 151 46.02 |
| 19 5.79 | 170 51.81 |
| 5 1.52 | 175 53.34 |
| 25 7.62 | 200 60.96 |
| 10 3.04 | 210 64.00 |
| 20 6.09 | 230 70.10 |
| 5 1.52 | 235 71.62 |
| 15 4.57 | 250 76.20 |
| 10 3.04 | 260 79.24 |

DRIFT

LOWER GREEN SAND

Topsoil
Sandy loam
Orange brown clayey sandstone
Sandy ironstone
Fine-grained brownish/yellow loamy sand
Fine-grained reddish/brown loamy sand with quartz pebbles
Fine-grained orange/yellow ferruginous sand
Fine-grained yellow speckled sand
Fine-grained brownish/yellow ferruginous sand
Hard grey crystalline sandstone
Hard brownish/buff crystalline sandstone speckled with glauconite
Fine-grained reddish brown loamy sand
Hard grey to brown crystalline sandstone ironstone
Soft light brown loamy sand with ironstone and shell fragments
Fine-grained brownish yellow ferruginous sand with sandstone fragments
Ironstone
Fine-grained yellow speckled
Fine-grained green clayey sand
Hard fine-grained orange/buff iron stained sandstone speckled with glauconite
Fine-grained buff silty sand
Hard fine-grained buff speckled cherty sandstone
Fine grained buff silty sand
Hard very fine-grained white cherty sandstone speckled with glauconite and occasional pyrite nodules
Hard fine grained orange buff sandstone speckled with glauconite
Ironstone
Hard fine-grained white/buff sandstone
Ironstone
Hard fine grained white/buff sandstone speckled with glauconite
Fine grained buff sand with glauconite grains
Hard fine grained buff sandstone speckled with glauconite
Very fine-grained grey sandstone
Hard grey sandy mudstone with sandstone gragments
Soft very fine grained grey sandstone

Geol.
LASSA-
LOCATION

Description of strata (Part 1).

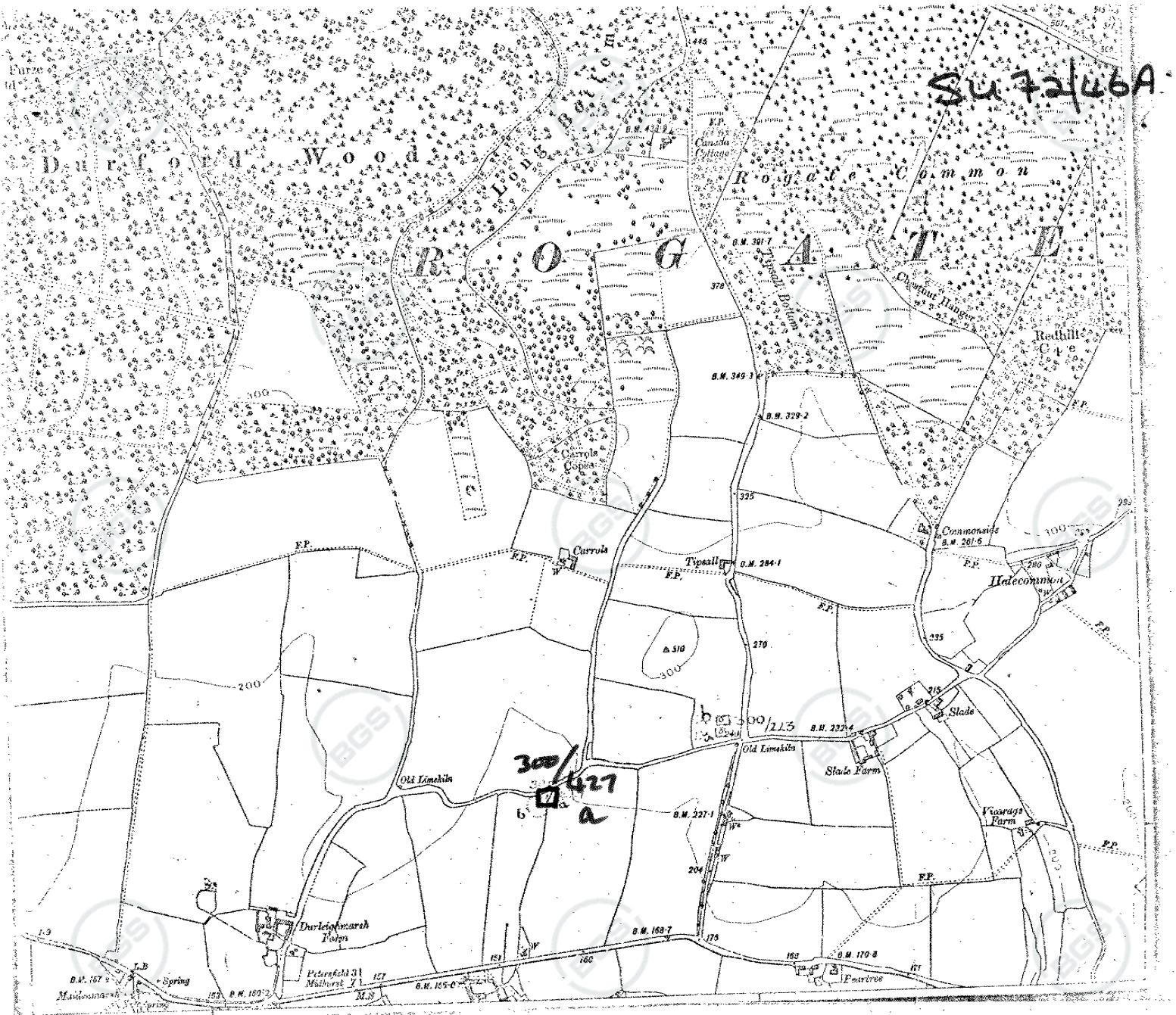
300/427 A.
SU72/46A.

Soft grey silty sandstone with pyrites nodules and carbonised wood
Very fine-grained grey silty sand with glauconite grains and pyrites
Fine-grained silty sand with pyrites lignite and carbonised wood
Very fine-grained bluish-grey compact silty sand.
Bluish-grey clayey sand
Bluish-grey sandy silt
Sticky grey silty clay

| Thickness (feet)(m) | | Depth (feet)(metres) | |
|------------------------|------|-------------------------|-------|
| 5 | 1.52 | 265 | 80.77 |
| 5 | 1.52 | 270 | 82.29 |
| 5 | 1.52 | 275 | 83.82 |
| 10 | 3.04 | 285 | 86.86 |
| 15 | 4.57 | 300 | 91.44 |
| 10 | 3.04 | 310 | 94.48 |
| 5 | 1.52 | 315 | 96.01 |
| | | 315 | 96.01 |

B.Y.
3/46

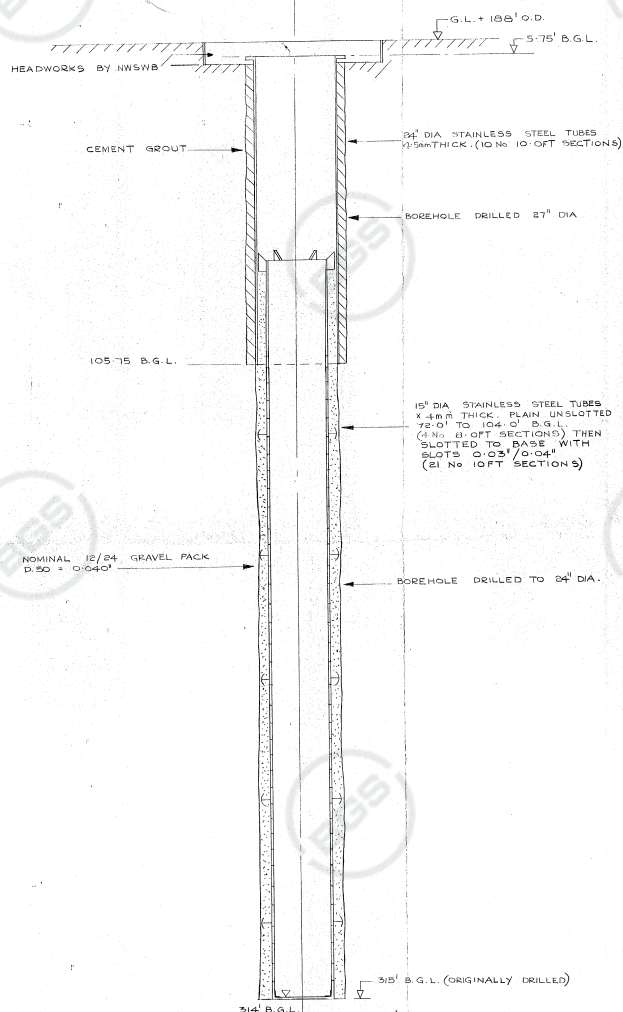
This description of strata received from
Southern Water Authority (S.R. & W.D.)
w/c letter dated 7/10/75.





Su72/46A

300/427 A



NOTES

SCALE :- 1" TO 20 FT.

CONSTRUCTION DETAILS.

ROGATE BOREHOLE.

WATER RESOURCES.

DRAWN BY P. J. M.

FILE REF. 9/3/20/1

TRACED BY P. J. M.

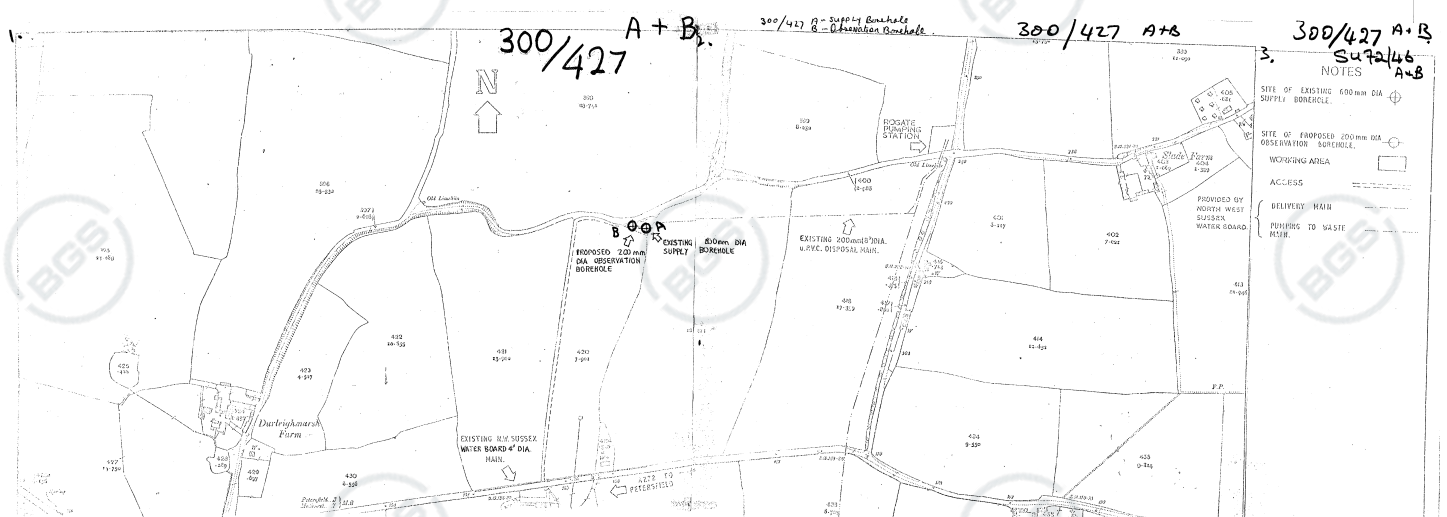
DATE 17/8/72

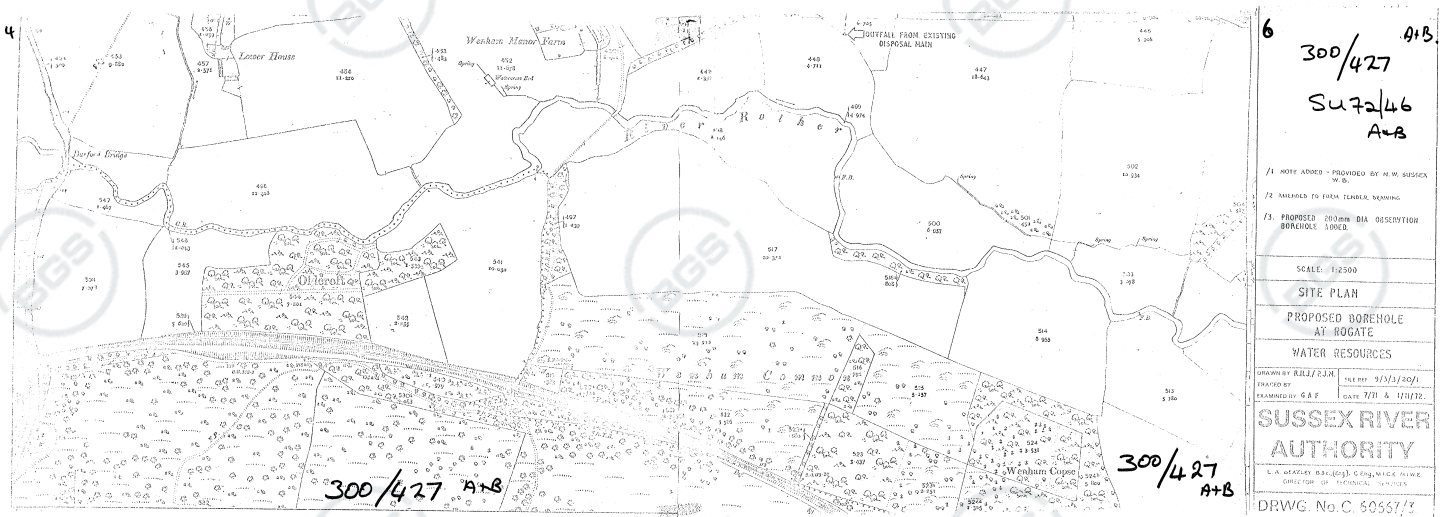
EXAMINED BY G. A. F.

**SUSSEX RIVER
AUTHORITY**

L. A. DEARLEY BSc. (Eng), C. Eng, MICE, MIMMEE.
DIRECTOR OF TECHNICAL SERVICES

DRWG. No. C. 60719.





6

300/427 A+B

SU72/46 A+B

1/1 NOTE ADDED - PROVIDED BY M.W. SUSSEX W.D.

2/2 ADDED TO FIELD TENDER, NAMING

3/3 PROPOSED BOREHOLE DIA. OBSERVATION BOREHOLE 10003

SCALE: 1:2500

SITE PLAN

PROPOSED BOREHOLE AT ROGATE

WATER RESOURCES

DRAWN BY RLL/SJR

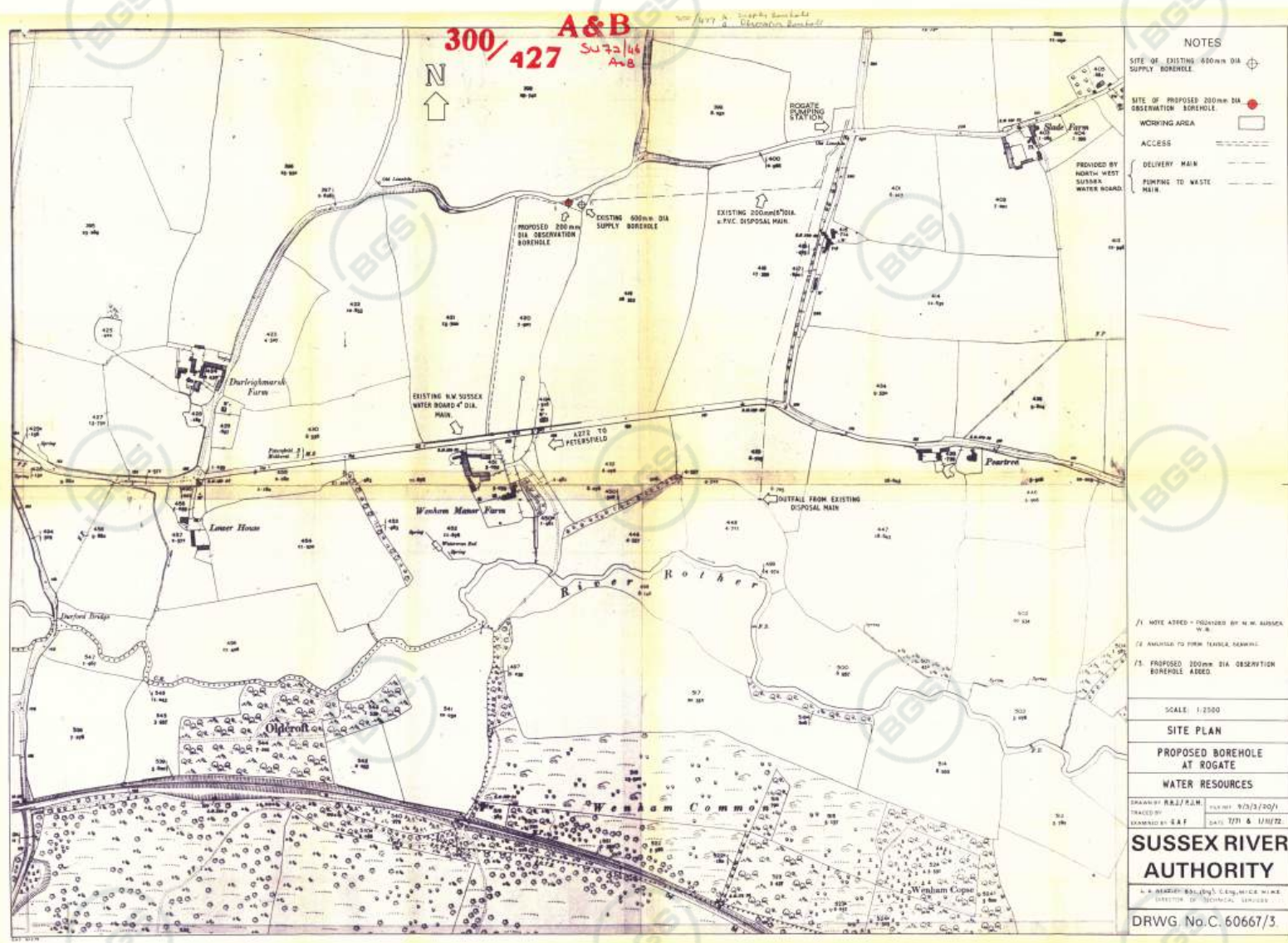
TRACED BY GAF

DATE 7/11 & 11/12

SUSSEX RIVER AUTHORITY

G.A. GILLMAN BSc (Hons), C.Eng, NICE NAME DIRECTOR OF TECHNICAL SERVICES

DRWG. No. C. 60557/3





**NGRC
BOREHOLE RECORDS
ADJUSTMENT FORM**

QUARTER SHEET SU 72 SE

BH REGISTRATION NUMBER 23 - 34

RECORDS ENTERED AND HELD BY WALLINGFORD

BH REGISTRATION NUMBER(S)



| WATER RESOURCES BOARD WELL RECORD | | W.R.B. REF. No. <u>SU 72/47</u> |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------------------------------|
| SHEET 1 | | R.A. LICENCE No. |
| 1. WELL IDENTITY | | NATIONAL GRID REFERENCE <u>SU 779 241</u> |
| Well at <u>WESTMARK FARM</u> | | I.G.S. REF. No. |
| <u>Dunford</u> <u>BERKSFORD</u> | | RIVER AUTHORITY |
| Town | | HYDROMETRIC AREA |
| County | | SUB-CATCHMENT |
| Owner of well | | |
| Well made by | | Date of sinking |
| Information from <u>W.D.U.</u> | | Date received |
| 2. WELL DESCRIPTION | | |
| Level of ground surface m. If well top is not at above* m. above sea level (O.D.) ft. ground level how far below ft. | | |
| Shaft m. deep; Diameter at top mm; at bottom mm. ft. in. | | |
| Bore m. deep; Diameter at top mm; at bottom mm. ft. in. | | |
| Details of headings | | |
| DETAILS OF PERMANENT LINING TUBES | | |
| Length m.; Diam. mm; Slotted m.; Diam. mm; Top m. above* surface Plain ft. in. ft. in. ft. below | | |
| Length m.; Diam. mm; Slotted m.; Diam. mm; Top m. above* surface Plain ft. in. ft. in. ft. below | | |
| Length m.; Diam. mm; Slotted m.; Diam. mm; Top m. above* surface Plain ft. in. ft. in. ft. below | | |
| Details of well screen | | |
| DETAILS OF REST WATER LEVELS DURING CONSTRUCTION | | |
| Water struck at depths of below well top | | |
| Rest level of water m. above* O.D.* m. deep. Date ft. below well top when bore ft. | | |
| Rest level of water m. above* O.D.* m. deep. Date ft. below well top when bore ft. | | |
| Rest level of water m. above* O.D.* m. deep. Date on completion of bore ft. below well top when bore ft. | | |
| Method of drilling | | |
| Brief details of well development e.g. acid treatment etc. | | |

* delete as applicable

(18127/1)

[illegible]



IGS 771

Institute of Geological Sciences
RECORD OF SHAFT OR BOREHOLE

6-in or 1:10 000 Map Registration No.

SU 82 NW / 22

Name and Number of Shaft or Borehole

HARTING DOWN (NO 19)

For whom made SOUTHERN WATER AUTHORITY

Town or Village Rogate County W. Sussex

Exact site (reference to a fixed point on 1-in or 1:50 000 Map:

400m NE of Combet Hill

Purpose for which made Observation Borehole

Ground level at shaft relative to O.D. C. 101 m. If not ground level give O.D. of beginning of shaft bore

Made by BB Drilling Ltd

Date of sinking Dec 1983

Information from

Examined by D.E. Highley

Specimen Numbers and Additional Notes

Western Rother Boreholes. Phase IV

Core samples available only from 36.00 - 38.45 m

Small 'composite' bag samples taken every 2m.

| Geological Classification | Description of Strata | Thickness metres | Depth metres |
|---------------------------|------------------------------------------------------------------------------|------------------|--------------|
| Hythe Beds | <u>SANDSTONE</u> : fine-grained, loose yellowish-brown. Clayey between 4-5m. | 12 | |
| | <u>SANDSTONE</u> : fine-grained, loose, dark-grey. Clayey between 18-20m. | 14 | 12 |
| | <u>Core Loss</u> | 2 | 26 |
| | <u>SANDSTONE</u> : fine-grained, loose, becoming lighter grey. | 4 | 28 |
| | <u>MUDSTONE</u> : dark grey, very silty, becoming reddish brown | 4 | 32 |
| | | | |
| Atherfield clay | | | |

Time and Number of Shaft or Borehole:

6-in or 1:10 000 Map Registration No.

Page

SU 82 NW/2

HARTING DOWN NO 19

National Grid Reference

SU 8018 2618

2

[illegible]



EASTERN LS SOUTHERN EA
STATION REF. 244343007 HARTING DOWN

DATUM M(OD) 10/7/29

DEPTH M 38.50

NAT GRID REF. SU82NW

Hythe Beds

| DATE | LEVEL | FLAG | DATE | LEVEL | FLAG | DATE | LEVEL | FLAG | DATE | LEVEL | FLAG |
|-------------|-------|------|-------------|-------|------|-------------|-------|------|-------------|-------|------|
| 25 JAN 1984 | 96.93 | | 3 JAN 1986 | 97.16 | | 3 NOV 1987 | 97.27 | | 13 MAY 1994 | 98.59 | |
| 16 MAR 1984 | 97.61 | | 4 MAR 1986 | 98.19 | | 3 FEB 1988 | 99.19 | | 16 JUN 1994 | 98.19 | |
| 15 MAY 1984 | 97.91 | | 12 MAY 1986 | 98.19 | | 11 APR 1988 | 98.57 | | 21 JUL 1994 | 97.70 | |
| 13 JUL 1984 | 97.44 | | 2 JUL 1986 | 97.84 | | 2 JUN 1988 | 97.95 | | 17 AUG 1994 | 97.37 | |
| 28 SEP 1984 | 96.93 | | 2 SEP 1986 | 97.30 | | 19 DEC 1988 | 96.97 | | 23 SEP 1994 | 97.30 | |
| 4 DEC 1984 | 96.76 | | 4 NOV 1986 | 96.95 | | 29 DEC 1993 | 97.70 | | 20 OCT 1994 | 97.27 | |
| 5 FEB 1985 | 97.67 | | 6 JAN 1987 | 97.75 | | 24 JAN 1994 | 99.27 | | 31 MAR 1995 | 99.05 | |
| 3 APR 1985 | 97.88 | | 3 MAR 1987 | 97.69 | | 24 FEB 1994 | 99.27 | | 5 MAY 1995 | 98.25 | |
| 4 JUN 1985 | 97.97 | | 6 MAY 1987 | 98.59 | | 10 MAR 1994 | 98.86 | | | | |
| 3 SEP 1985 | 97.40 | | 2 JUL 1987 | 97.72 | | 21 MAR 1994 | 98.69 | | | | |
| 5 NOV 1985 | 97.13 | | 8 SEP 1987 | 97.19 | | 18 APR 1994 | 99.14 | | | | |

SU 61/62

*** END OF REPORT ***

END OF LISTING OF FILE (NRA,BR110912168R0310(1,N,1) FOR USER (NRA AT 1995/11/09_12:37:03

END OF BATCH (NRA) SHIPPED AT 1995/11/09 12:37:04



**NGRC
BOREHOLE RECORDS
ADJUSTMENT FORM**

QUARTER SHEET SU 82 NW.

BH REGISTRATION NUMBER 24-27

RECORDS ENTERED AND HELD BY WALLINGFORD

BH REGISTRATION NUMBER(S)



| WATER RESOURCES BOARD WELL RECORD | | SHEET 1 | |
|-------------------------------------------------------------------------------------------------------------------------|--|------------------------------------|----------|
| | | W.R.B. REF. No. | SU 82/51 |
| | | R.A. LICENCE No. | |
| 1. WELL IDENTITY | | NATIONAL GRID REFERENCE SU 805 255 | |
| Well at FYNING COMMON | | I.G.S. REF. No. | |
| Town | | RIVER AUTHORITY | |
| County | | HYDROMETRIC AREA | |
| Owner of well | | SUB-CATCHMENT | |
| Well made by | | Date of sinking | |
| Information from W.D.U. | | Date received | |
| 2. WELL DESCRIPTION | | | |
| Level of ground surface m. If well top is not at above* m. above sea level (O.D.) ft. ground level how far below ft. | | | |
| Shaft m. deep; Diameter at top mm. ; at bottom mm. ft. ; in. ; in. | | | |
| Bore m. deep; Diameter at top mm. ; at bottom mm. ft. ; in. ; in. | | | |
| Details of headings | | | |
| DETAILS OF PERMANENT LINING TUBES | | | |
| Length m. ; Diam. mm. ; Length m. ; Diam. mm. ; Top m. above* surface Plain ft. ; in. ; Slotted ft. ; in. ; below | | | |
| Length m. ; Diam. mm. ; Length m. ; Diam. mm. ; Top m. above* surface Plain ft. ; in. ; Slotted ft. ; in. ; below | | | |
| Length m. ; Diam. mm. ; Length m. ; Diam. mm. ; Top m. above* surface Plain ft. ; in. ; Slotted ft. ; in. ; below | | | |
| Details of well screen | | | |
| DETAILS OF REST WATER LEVELS DURING CONSTRUCTION | | | |
| Water struck at depths of below well top | | | |
| Rest level of water m. above* O.D.* m. deep. Date ft. below well top when bore ft. | | | |
| Rest level of water m. above* O.D.* m. deep. Date ft. below well top when bore ft. | | | |
| Rest level of water m. above* O.D.* m. deep. Date on completion of bore ft. below well top when bore ft. | | | |
| Method of drilling | | | |
| Brief details of well development e.g. acid treatment etc. | | | |

* delete as applicable

(18127/1)

[illegible]



300/240 Rogate Lodge, Rogate. (Disused)

SU 82 SW 119

Surface +287. Shaft 137; rest bore. Lining tubes: $14\frac{1}{4}$ x 6 in from
(87.47m)
126 $\frac{3}{4}$ down; $24\frac{1}{4}$ x $4\frac{1}{2}$ in from 133 $\frac{3}{4}$ down (perforated 140 to 158); sand screen
140 to 158. Water struck at +154. R.W.L. +154. Suction +130 $\frac{3}{4}$. Yield 750
g.p.h. (8 h. test). Dando, July 1946.

SU 8066 2487

Sand entered. Before 1958.

H

...

298

298

GEOLOGICAL
CLASSIFICATION

NATURE OF STRATA

THICKNESS
ft.

DEPTH
ft.

Hydr. Beds.

Sand.

No thickness given.

pp. J. Day



300/240 Rogate Lodge, Rogate. (Disused)

SU82/20

Surface +287. Shaft 137; rest bore. Lining tubes: $14\frac{1}{4}$ x 6 in from 126 $\frac{3}{4}$ down; $24\frac{1}{4}$ x $4\frac{1}{2}$ in from 133 $\frac{3}{4}$ down (perforated 140 to 158); sand screen 140 to 158. Water struck at +154. R.W.L. +154. Suction +130 $\frac{3}{4}$. Yield 750 g.p.h. (8 h. test). Dando, July 1946.

Sand entered. Before 1958.

| GEOLOGICAL CLASSIFICATION | NATURE OF STRATA | THICKNESS ft. | DEPTH ft. |
|---------------------------|------------------|---------------------|--------------|
| Hythe Beds. | Sand. | No thickness given. | |
| pp. J. Day | | | |



1063 Wt. 22438/0384 10x 7/45 (51) F.&S.

RECORD OF WELL (SHAFT OR BORE)

(For Survey use only) N41S.
1 inch dia. Registered No.

300

240

At ROGATE LODGE

Town or Village ROGATE

County SUSSEX

Six-inch quarter sheet XXI. NW/W

For Mr. Al Wyndham

(Mr. Gee)

Exact site of well 80 yds E.N.E. of House

SU8066 2487

Level of ground surface +284
above sea level (O.D.) 310 approx ft.

If well-top is not at ground level, state how far ...

above;
below:

SHAFT 137 ft.; diameter ... ft. Details of headings.

5482/20

BORE 161 ft.; diameter of bore: at top 6 ins.; at bottom 4 1/2 ins. Lengths, diameters, perforations, etc., of lining tubes 6" I.D. from 126' 8" to 141' 0" 4 1/2" I.D. from 133' 9" to 158' Expanded Joint at 133' 9". Perforated & gauze cored from 140 to 158.

Water struck at depths. below well top, of (feet) from 133' 0"

Rest-level of water 133 ft. above well-top. Suction at 156 1/4 ft. Yield on 8 hours' pumping, 750 gal. per hour with depression to ? ft. below well-top, Capacity of pump 750 g.p.h. Recovery to rest level in ... mins. hours Date of measurements July 1946 Date of well July 1946

Quality of water (attach copy of analysis if available)

Well made by Duke & Ockenden 18

Information from ditto DUR. & OCKENDEN, LTD

Additional notes in space overleaf.

(For Survey use only)
GEOLOGICAL
CLASSIFICATION

NATURE OF STRATA

THICKNESS

DEPTH

Feet

Ins.

Feet

Ins.

If measurements start below ground surface, e.g., from bottom of an existing shaft, state how far

2GS (Hydro)
beds

Sand.

Visited and sited by O on Hawk 53 SE/W.
O.D. + 284.

Desired, pumping equipment still in position.
According to gardener (H. Collins) there was 3' 6" of water
in well some years ago (autumn). Well went out
of use because water level low & sand clogged
suction. MP. 23.4.58.

Data Bank

Continued over leaf

GEOLOGICAL SURVEY AND MUSEUM,
SOUTH KENSINGTON,
LONDON, S.W.7.

Date
received

20/2/47.

Correspond-
ence File No.

1" N.S. Map
No.

1" O.S. Map
No.

300.

Site marked (use symbol)
on 1" Map on 6" Map

3

3

1053 716 44400/0364 1054 1/49 (31) P. 45.

RECORD OF WELL (SHAFT OR BORE)

At HYEWOOD BRICK & TILE CO.

Town or Village ROGATE

County SUSSEX Six-inch quarter sheet, XX S.E. - E

For Mr. W.T. LAMB & SON LTD.

Exact site of well 150 yds. N.W. of Ragatz station

Attach a tracing from
a map, or a sketch-
map, if possible.

Level of ground surface above sea-level (O.D.) 54.25 178 ft.

If well-top is not at ground level, state how far ... { above;
... { below: _____ ft.

SHAFT 46. ft.; diameter 3 ft. Details of headings

BORE to 79 ft.; diameter of bore: at top 6" ins.; at bottom 4 1/2" ins. Lengths, diameters, perforations, etc., of lining tubes 6" I.D. Surface surface to 68'

4 1/2" Sand Screen 65' 7" to 79'

Water struck at depths. below well top, of (feet) from 46'

Rest-level of water 29 1/2 ft. ^{above}_{below} well-top. Suction at 73 1/4 ft. Yield on 8 ^{hours'}_{days} pumping, 585 gal.

per hour with depression to _____ ft. below well-top, Capacity of pump 600 g.p.h. Recovery to _____

rest level in _____ mins.
_____ hours Date of measurements Dec 1948 Date of well Dec 1948.

Quality of water (attach copy of analysis if available)

Well made by Duke & Ockenden Ltd

Information from **DUKE & ÖCKENDEN, LTD** LONDON AND LITTLEHAMPTON

Additional notes in space overleaf.

[illegible]

1063 Wt. 22438/0384 10M 7/45 (51) F.&S.

RECORD OF WELL (SHAFT OR BORE)

(For Survey use only) N.2348
2 1/2-inch Map Registered No.

At HYEWOOD BRICK & TILE CO.

Town or Village ROGARE

County SUSSEX Six-inch quarter sheet, XX 3.E.-E

For Mr. W.T. LAMB & SON LTD.

Exact site of well 150 yds N.W. of Roquette station

Su 8024 2192

Attach a tracing from a map, or a sketch-map, if possible.

Level of ground surface
above sea-level (O.D.) app. 178. ft.

If well-top is not at ground level, state how far ...

$$\begin{cases} \text{above;} \\ \text{below;} \end{cases}$$

{above; SU 82
{below; 14

SHAFT 46. ft.; diameter 3 ft. Details of headings

BORE to 79 ft.; diameter of bore: at top 6" ins.; at bottom 4 1/2" ins. Lengths, diameters, perforations, etc., of lining tubes 6" I.D. Surface surface to 68'

4 1/2" Sand Screen 65' 7" to 79'

Water struck at depths, below well top, of (feet) from 46'

Rest-level of water 29 1/2 ft. ^{above}/_{below} well-top. Suction at 73 1/4 ft. Yield on 8 ^{hours}/_{days} pumping, 585 gal.

per hour with depression to _____ ft. below well-top, Capacity of pump 600 g.p.h. Recovery to _____

rest level in _____ mins.
_____ hours Date of measurements Dec 1948 Date of well Dec 1948Quality of water (*attach copy of analysis if available*)

Well made by Duke & Ockenden Ltd

Information from **DUKE & OCKENDEN, LTD** LONDON AND LITTLEHAMPTON

Additional notes in space overleaf.

[illegible]

GEOLOGICAL SURVEY AND MUSEUM,
 SOUTH KENSINGTON,
 LONDON, S.W.7.

Date
received
8.2.49

Correspondence File No.

1" N.S. Map
No.

316

1" O.S. Map
No.

| Site marked (use symbol: | |
|--------------------------|-----------|
| on 1" Map | on 6" Map |

①

①

Contact BGS: ngdc@bgs.ac.uk



**NGRC
BOREHOLE RECORDS
ADJUSTMENT FORM**

QUARTER SHEET SU 82 SW

BH REGISTRATION NUMBER 35-39

RECORDS ENTERED AND HELD BY WALLINGFORD

BH REGISTRATION NUMBER(S)



| WATER RESOURCES BOARD WELL RECORD | | SHEET 1 | | W.R.B. REF. No. | SU 82 / 52 | | |
|------------------------------------------------------------|--|------------------------------------|--|------------------------------|------------|-------------------|--|
| | | | | R.A. LICENCE No. | | | |
| 1. WELL IDENTITY | | NATIONAL GRID REFERENCE SU 808 233 | | | | | |
| Well at | | GLEBE COTTAGE ROWGATE | | I.G.S. REF. No. | | | |
| Town | | | | RIVER AUTHORITY | | | |
| County | | | | HYDROMETRIC AREA | | | |
| Owner of well | | | | SUB-CATCHMENT | | | |
| Well made by | | | | Date of sinking | | | |
| Information from | | W.D.U. | | Date received | | | |
| 2. WELL DESCRIPTION | | | | | | | |
| Level of ground surface | | m. | | If well top is not at above* | | m. | |
| above sea level (O.D.) | | ft. | | ground level how far below | | ft. | |
| Shaft | | m. deep; Diameter at top | | mm. ; at bottom | | mm. | |
| | | ft. ; | | in. ; | | in. | |
| Bore | | m. deep; Diameter at top | | mm. ; at bottom | | mm. | |
| | | ft. ; | | in. ; | | in. | |
| Details of headings | | | | | | | |
| DETAILS OF PERMANENT LINING TUBES | | | | | | | |
| Length | | m. ; Diam. | | mm. ; Slotted | | m. ; Diam. | |
| Plain | | ft. ; | | in. ; | | ft. ; | |
| | | | | | | Top | |
| | | | | | | m. above* surface | |
| | | | | | | ft. below | |
| Length | | m. ; Diam. | | mm. ; Slotted | | m. ; Diam. | |
| Plain | | ft. ; | | in. ; | | ft. ; | |
| | | | | | | Top | |
| | | | | | | m. above* surface | |
| | | | | | | ft. below | |
| Details of well screen | | | | | | | |
| DETAILS OF REST WATER LEVELS DURING CONSTRUCTION | | | | | | | |
| Water struck at depths of | | | | | | below well top | |
| Rest level of water | | m. above* 0.D.* | | m. deep. | | Date | |
| | | ft. below well top when bore | | ft. | | | |
| Rest level of water | | m. above* 0.D.* | | m. deep. | | Date | |
| | | ft. below well top when bore | | ft. | | | |
| Rest level of water on completion of bore | | m. above* 0.D.* | | m. deep. | | Date | |
| | | ft. below well top when bore | | ft. | | | |
| Method of drilling | | | | | | | |
| Brief details of well development e.g. acid treatment etc. | | | | | | | |

* delete as applicable

(18127/1)

[illegible]

Appendix I

Pump Test and Analysis



Luke Eldridge
Devine Homes PLC
St Michael's House
111 Bell Street
Reigate
RH2 7LF

3rd February 2025

SUBJECT: SLADE FARM BOREHOLE PUMP TESTING AND ANALYSIS
PROJECT NO: 24250922

Dear Luke,

This report details the pump test conducted at the Slade Farm borehole on 16th January 2025, following the completion of drilling.

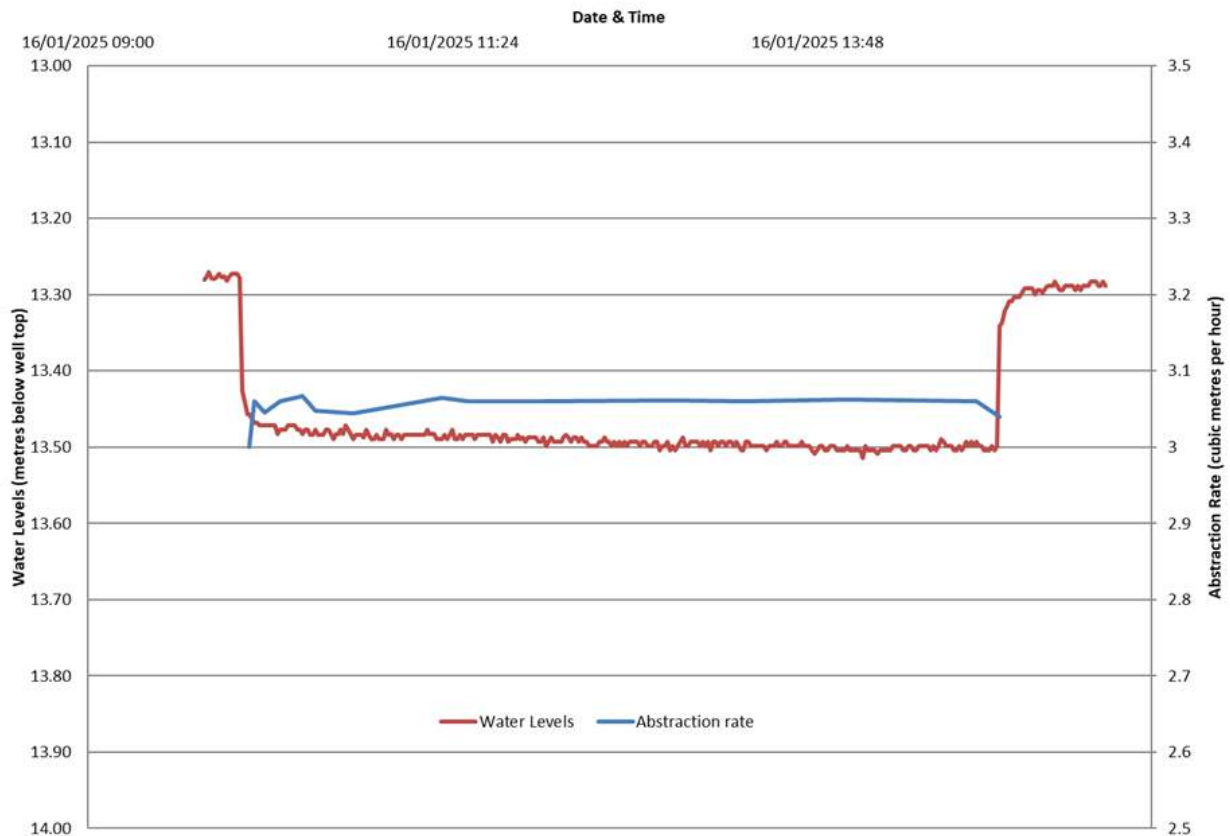
The borehole was drilled to a depth of 56.30 metres below well top, with a 4.5 inch internal diameter (ID) PVC casing and screen. The drilling contractor, George Osbourne, used his own pump for clearance pumping and left it in place at approximately 21 metres below well top, which facilitated the pump test by B. A. Hydro Solutions Limited (BAHS). The pump test was conducted by Rich Baker of BAHS.

Prior to the pump test, a flow meter was installed on the discharge line from the borehole. A data logger was programmed to record water levels every minute, and it was installed at 20 metres below well top. A barometric logger was also placed next to the borehole to measure atmospheric pressure for compensation. The rest water level was measured at 13.28 metres below well top at 10:00 am. The pump test was conducted to comply with BS EN ISO 22282-4:2012.

The pump test began at 10:00 hours, with the pump operating at full capacity. Flow meter readings and water levels were recorded at regular intervals. The water level dropped initially but quickly stabilised. The farmer requested that a bacteria analysis be undertaken when the water quality samples were taken, in addition to the physical and chemical analysis already planned. A water sample was taken after four hours of pumping, during which time more than 12 cubic metres of water was abstracted. The sample was dispatched to the BAHS laboratory for analysis (see following certificate).

The drawdown was very small, measuring 22cm, with a consistent flow rate of 3.0 m³/hr. At 15:00 hours, the water level had stabilised at 13.50 metres below well top. The pump was then turned off and the recovery of the water level was measured. The borehole recovered quickly and then slowed, full recovery was achieved within 40

minutes. The following graph shows the change in water levels over the course of the pump test and recovery.



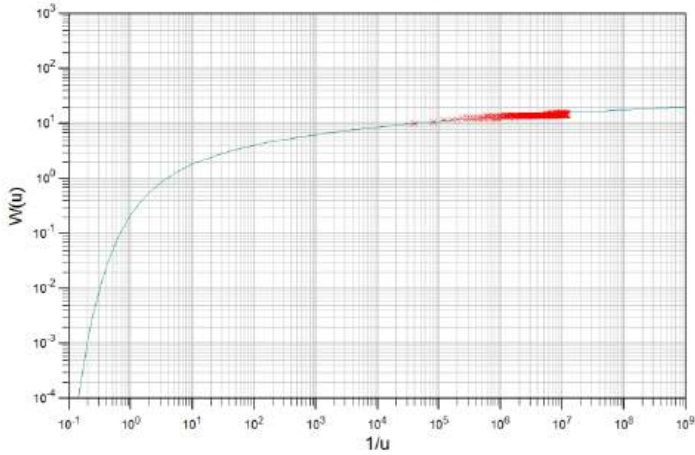
Following the recovery measurements, the flow meter and logger were removed, and the data was downloaded and checked. The data from both loggers was confirmed to be good. The pump was then pulled out of the borehole and all the testing equipment was packed away. The borehole was then covered with a flange plate top-hat. The site was demobilised at 16:30.

The water sample collected was sent to the BAHS laboratory for analysis. The water quality analysis indicated that the water was of good quality, with no parameters exceeding drinking water standards. The laboratory results showed the water to be of moderate hardness with a pH of 6.36. The water was odourless and had a low turbidity. The laboratory results also indicated no presence of microbiological contamination at the time of testing.

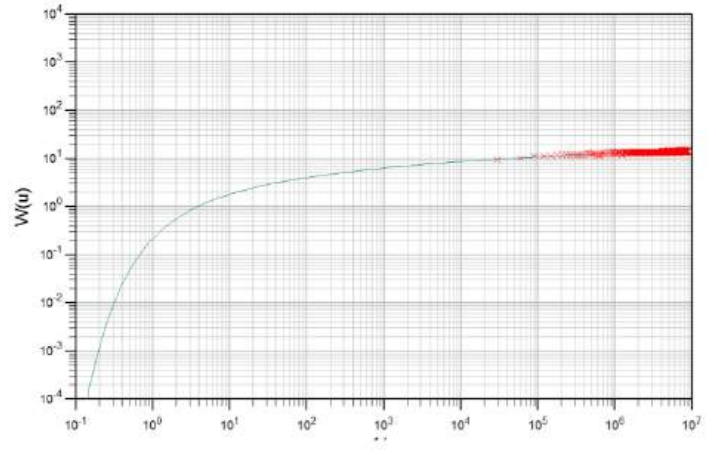
The pump test demonstrated:

- A very small drawdown with a consistent sustainable flow rate of 3 m³/hour.
- The abstraction rates were maintained very close to a constant rate throughout the test.
- The water levels reached equilibrium, and steady state conditions were achieved.
- The test showed there to be no signs of interference from other abstractors.
- The pump test data was analysed as summarised below (see following graphs):
 - Analysis of the drawdown data using the Theis approximations for confined and unconfined aquifers generated a Transmissivity value of 372.01 m²/day and 357.03 m²/day respectively.
 - Analysis of the drawdown data using the Cooper-Jacob approximation generated a Transmissivity value of 556.739 m²/day.
 - Analysis of the drawdown data using the Hantush approximation for confined aquifers generated a Transmissivity value of 511.09 m²/day
 - Analysis of the drawdown data using the Neuman approximation for confined aquifers generated a Transmissivity value of 187.74 m²/day
 - Analysis of the recovery data using the Theis Recovery approximation generated a Transmissivity value range of 483 m²/day.
- The Transmissivity of the ground penetrated by the borehole is high, as reflected by the small drawdown during test pumping.
- The specific yield of the borehole being 13 m³/hour/metre drawdown.
- The water quality is good and in line with what would be expected from the aquifer locally.
- The borehole represents a reliable and sustainable source of potable quality groundwater.

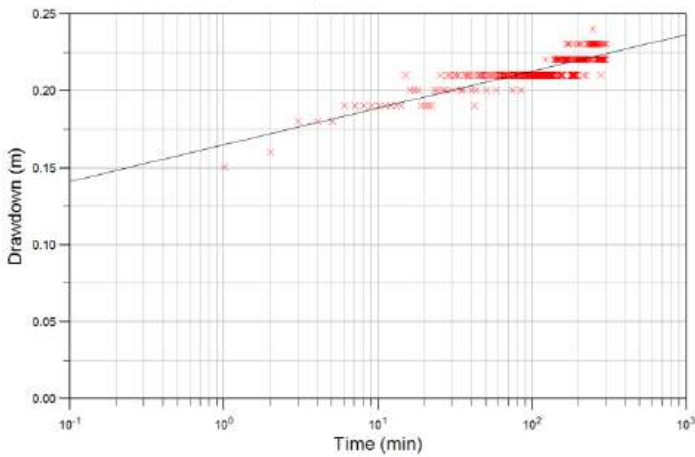
Theis (Confined)



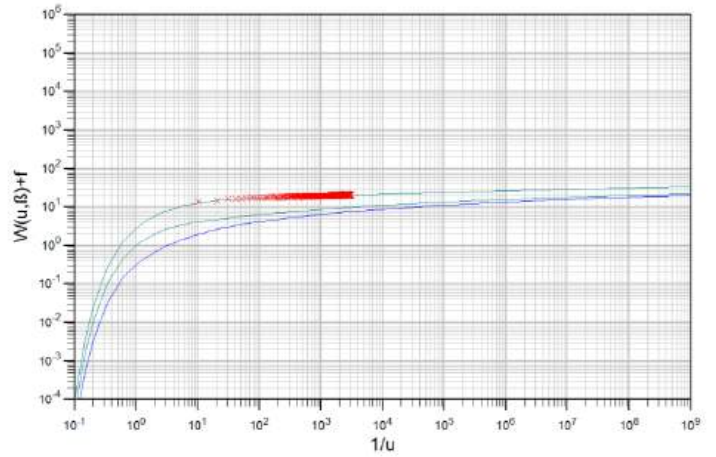
Theis (Unconfined)



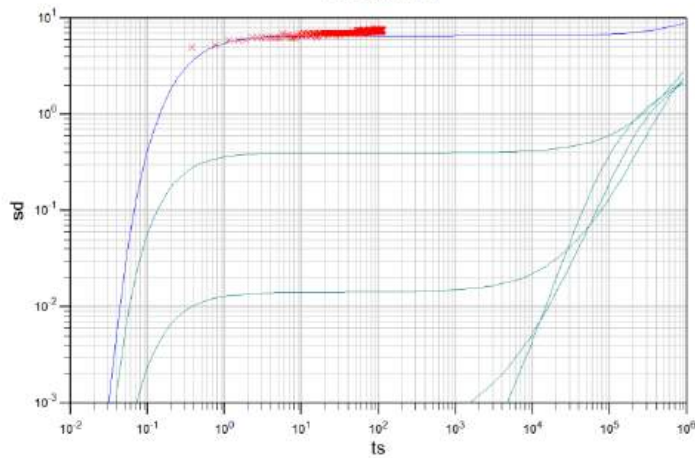
Cooper and Jacob



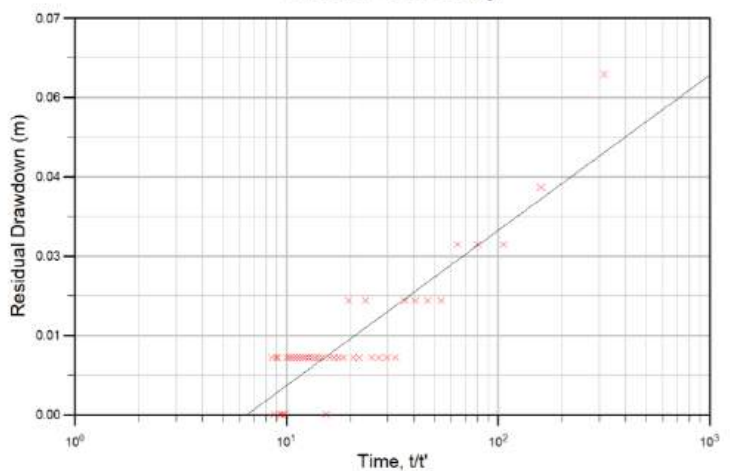
Hantush



Neuman



Theis Recovery



In conclusion, at the time of testing, the pump test at Slade Farm demonstrated that the borehole is capable of providing a reliable and sustainable source of groundwater at a flow rate of at least 3 m³/hour with minimal drawdown. The water quality is considered to be good and suitable for the intended purpose, with no parameters elevated above drinking water standards.

Yours sincerely,



Tim Baker
Principal Hydrogeologist
B. A. Hydro Solutions Limited

B. A. Hydro Solutions Ltd.
3 & 4 The Sidings
Shepreth
Herts
SG8 6PZ
Telephone: +44 1763 26 27 26
Email: info@bahsltd.com
Web: www.bahsltd.com

LABORATORY REPORT - Page 1 of 2

| | | | |
|---------|---------------------------------------------------------------------------------|-----------------|------------|
| Client: | Devine Homes PLC St Michael's House 111 Bell Street Reigate RH2 7LF | Certificate No: | 24250922-1 |
| | | Order No: | - |
| | | Date Reported: | 23/01/2025 |
| | | Site Name: | Slade Farm |
| | | Sample Desc: | - |

| Test | Results | Limit | Units | Comment | Sample Details |
|-------------------------|---------|-------|-------|---------|---------------------------|
| Alkalinity | 39 | - | mg/l | | |
| Aluminium | <20.00 | 200 | µg/l | | |
| Ammonium | <0.020 | 0.5 | mg/l | | Sampling Date: 16/01/2025 |
| Arsenic | <2.00 | 10 | µg/l | | Sampling Time: - |
| Boron | <50.00 | 1000 | µg/l | | Date Received: 17/01/2025 |
| Cadmium | <0.20 | 5 | µg/l | | Date Tested: 17/01/2025 |
| Calcium | 31.20 | - | mg/l | | |
| Chloride | 22.30 | 250 | mg/l | | |
| Chromium | <30.00 | 50 | µg/l | | |
| Copper | <100.00 | 2000 | µg/l | | |
| Cyanide | <10.00 | 50 | µg/l | | |
| Fluoride | <100.00 | 1500 | ug/l | | |
| Dissolved Iron (Fe II) | <10.00 | - | µg/l | | |
| Total Iron (FeII+FeIII) | 142 | 200 | µg/l | | |
| Lead | <1.00 | 10 | µg/l | | |
| Magnesium | 2.92 | - | mg/l | | |
| Manganese | 7 | 50 | µg/l | | |
| Nitrate | <22.00 | 50 | mg/l | | |
| Nitrite | <50.00 | 500 | µg/l | | |
| Nitrite/Nitrate | <0.46 | ≤1 | - | | |
| Phosphate | <0.15 | - | mg/l | | |
| Potassium | 6.94 | - | mg/l | | |
| Sodium | 11 | 200 | mg/l | | |
| Sulphate | <40.00 | 250 | mg/l | | |
| Sulphide | <0.1 | - | mg/l | | |
| Zinc | 0.073 | - | mg/l | | |

Disclaimers:

The results provided are not UKAS accredited and can only be used for non-regulatory purposes

* Denotes concentrations above UK drinking water standards

Denotes results which must be treated with caution due to sampling, transit or storage issues prior to delivery to laboratory

</> Denotes concentration found within sample below/above the equipment's detection level

→ Indicates test has been repeated due to uncertainty or testing issues

\$ Indicates sample was tested outside of the stability period, validity of results may be affected

All analytical quality control associated with these results was satisfactory, details are available on request

B. A. Hydro Solutions Limited - 3 & 4 The Sidings - Station Road - Shepreth - Herts - SG8 6PZ - Tel: 444 1763 26 27 26 - Web: bahsltd.com

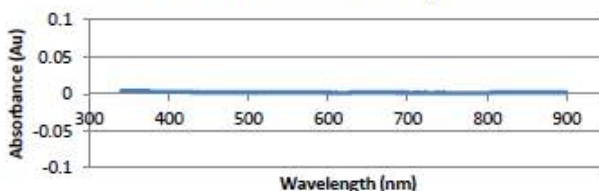
B. A. Hydro Solutions Ltd.
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Shepreth
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Telephone: +44 1763 26 27 26
Email: info@bahsltd.com
Web: www.bahsltd.com

LABORATORY REPORT - Page 2 of 2

| | | | |
|---------|---------------------------------------------------------------------------------|-----------------|------------|
| Client: | Devine Homes PLC St Michael's House 111 Bell Street Reigate RH2 7LF | Certificate No: | 24250922-1 |
| | | Order No: | - |
| | | Date Reported: | 23/01/2025 |
| | | Site Name: | Slade Farm |
| | | Sample Desc: | - |

| Test | Results | Limit | Units | Comment | Sample Details |
|-------------------------------------|-----------|--------------------|------------|----------|---------------------------|
| Electrical Conductivity | 275 | 2500 | µS/cm | | |
| Calcium Hardness | 78 | - | mg/l | | |
| Total Hardness as CaCO ₃ | 90 | - | mg/l | moderate | Sampling Date: 16/01/2025 |
| Magnesium Hardness | 12 | - | mg/l | | Sampling Time: - |
| pH | 6.36 | 6.5-9.5 | pH units | | Date Received: 17/01/2025 |
| Total Dissolved Solids | 177 | - | mg/l | | Date Tested: 17/01/2025 |
| Turbidity | 0.42 | 4 | NTU | | |
| Colour | <1 | 20 | mg/l Pt/Co | | |
| Odour (Qualitative) | Odourless | - | - | | |
| E.coli | 0 | 0 | cfu/100ml | | |
| Total Coliforms | 0 | 0 | cfu/100ml | | |
| Enterococci | 0 | 0 | cfu/100ml | | |
| Pseudomonas spp. | 0 | - | cfu/100ml | | |
| TVC 3 at 22°C | >300 | no abnormal change | cfu/ml | | |
| TVC 2 at 37°C | >300 | | cfu/ml | | |

Absorbance vs. Wavelength



Patrycja Malinowska
Laboratory Manager

Disclaimers:

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Denotes results which must be treated with caution due to sampling, transit or storage issues prior to delivery to laboratory

</> Denotes concentration found within sample below/above the equipment's detection level

↔ Indicates test has been repeated due to uncertainty or testing issues

\$ Indicates sample was tested outside of the stability period, validity of results may be affected

All analytical quality control associated with these results was satisfactory, details are available on request

B. A. Hydro Solutions Limited - 3 & 4 The Sidings - Station Road - Shepreth - Herts - SG8 6PZ - Tel: +44 1763 26 27 26 - Web: bahsltd.com

Appendix J

SNWCS Applicant User Guide

SNWCS Applicant User Guide

July 2025

This document provides guidance to applicants seeking to use the Sussex North Water Certification Scheme (SNWCS), formerly the Sussex North Offsetting Water Scheme (SNOWS), to meet the water neutrality requirements for their development imposed by [Natural England's Water Neutrality Position Statement](#). It provides an overview of which developments can request SNWCS certification and how these will be prioritised, how to apply for SNWCS certification, information requirements for planning applications and SNWCS applications, how the SNWCS process works and associated deadlines, and the one-off cost for SNWCS certification.

Further information and guidance about SNWCS is available via the [SNWCS web page](#). You can also contact the SNWCS team via SNWCS@horsham.gov.uk.

This guidance relates only to the SNWCS application process. If you have any queries related to the planning application process and water neutrality, we recommend that you refer to [FAQs on Horsham District Council's website](#) and/or contact your local planning department directly.

Contents

| | |
|-------------------------------------------------------------|---|
| Applications eligible to access SNWCS..... | 2 |
| Outline planning applications..... | 2 |
| When to apply for SNWCS certification | 3 |
| SNWCS information to submit with planning applications..... | 3 |
| SNWCS application process and deadlines | 3 |
| SNWCS certification charge | 4 |
| Money laundering checks – information to be provided | 5 |
| Application prioritisation for SNWCS access | 5 |

Applications eligible to access SNWCS

Our definition for the applications that are eligible to access SNWCS is provided below.

If your application meets this definition, you are open to requesting SNWCS certification during the planning application process.

If your application does not meet this definition, you cannot request SNWCS certification and will need to find an alternative solution to meet your application's water neutrality requirements.

If you are unsure whether your application meets the SNWCS eligibility criteria, please contact the local authority Development Management team relevant to your application, who will be able to provide you with further advice.

Applications submitted via West Sussex County Council's (WSCC) Regulation 3 process (for infrastructure related development) will follow a different SNWCS process offering secured access. If your application will be submitted as Regulation 3, please discuss SNWCS access with the Development Management team at WSCC.

SNWCS eligibility criteria

Applicants will be able to request Sussex North Water Certification Scheme (SNWCS) certification for their development's water offsetting needs, unless it is:

1. Development where the principle is not in accordance with:
 - a) an adopted or a post-submission local plan; or
 - b) a made or post-examination neighbourhood plan

All of the documents/sites referred to in a) & b) above have informed the preparation of Southern Water's Water Resources Management Plan 2024 calculations of water demand.

Non-qualifying development includes:

- housing development outside settlement boundaries on unallocated sites;
- employment development on unallocated sites and/or outside of existing employment sites (unless supported by economic planning policies); or
- development not otherwise accepted in-principle by way of specific development plan policies – such policies include:
 - retirement and specialist care,
 - gypsy and traveller sites,
 - tourism,
 - and some minerals and waste development

and/or

2. Development permitted by virtue of the Town and Country Planning (General Permitted Development) (England) Order 2015 (or as subsequently amended) (GPDO) *

** Excluding applications submitted to SNWCS for development by a local authority (as defined in Schedule 2, Part 12 of the GPDO)*

Outline planning applications

Applications will only be allocated to available capacity in SNWCS following Full or Reserved Matters approval. Applications will not be allocated to available SNWCS capacity following approval of Outline planning applications.

Outline sites intending to use SNWCS will need to request access at the Outline application stage, as long as they meet the [SNWCS eligibility criteria](#), but SNWCS capacity will not be allocated until Reserved Matters applications linked to the Outline application are submitted.

When to apply for SNWCS certification

Currently, you can only request access to SNWCS at the planning application stage by indicating in your Water Neutrality Statement that you wish to access SNWCS to cover your application's planned water use. Your application must meet the [SNWCS eligibility criteria](#).

Once the SNWCS team is consulted with your application by the relevant local authority Development Management team, we will contact you directly to discuss your SNWCS access.

SNWCS information to submit with planning applications

Any information to support your SNWCS application should be included in the Water Neutrality Statement (WNS) submitted with your planning application. Any requirements listed below are in addition to any requirements set by the relevant Development Management team for information to be included in any WNS.

You will need to provide a value in litres per day (l/d) for the planned water use of the application, which includes all internal and external water use. The SNWCS team will round this value up to the nearest litre for SNWCS certification. This will allow us to determine the SNWCS allocation you require and your one-off cost for SNWCS certification. Development Management case officers will not consult SNWCS until these planned water use figures are finalised.

We will also require the contact details, at least a contact name and e-mail address, of the person we should contact to initiate the SNWCS application process.

To support the prioritisation of your application for SNWCS access, you should also make the information below readily available for SNWCS your WNS. Further details can be found in the [application prioritisation](#) section of this guide.

- The water efficiency achieved on-site for your development (in litres per person per day for residential applications and BREEAM WAT01 category credits for non-residential applications, where possible).
- The policy compliance of any affordable housing element of the proposal, including delivery of affordable housing or a financial contribution towards affordable housing (where applicable) (*for residential applications only*).
- If your application provides community services or other infrastructure supporting development (*for non-residential applications only*).

SNWCS application process and deadlines

The SNWCS application process works in the following way:

1. A planning application is submitted to the relevant local authority Development Management (DM) team, including a Water Neutrality Statement (WNS) that indicates an intention to use SNWCS to cover the application's planned water use. To support the SNWCS application process, the WNS should include the information identified in the [previous section](#) of this guide.
2. Your DM case officer will assess and validate the information submitted in your application and WNS. Once the case officer is satisfied with the water neutrality information submitted, they will

prepare an Appropriate Assessment (AA) as part of the Habitats Regulations requirements. The case officer will consult Natural England and SNWCS with the AA.

3. Once SNWCS receives the consultation from the relevant DM team, we will log the application details into our central SNWCS register. We will then score your application using our [prioritisation system](#). This score will determine your application's place in our prioritisation queue. We will assess whether your application can secure SNWCS certification depending on the current capacity within SNWCS.
4. If your application can access SNWCS, we will write to you setting out our access offer and we will advise your DM case officer that your application is able to access SNWCS. If your application cannot access SNWCS at the current time, we will write to you and your DM case officer to advise. Your application will remain in the prioritisation queue as long as the planning application remains live and should the access availability position change, we will notify you and your DM case officer.
5. Our offer letter for SNWCS access will include the SNWCS allocation required for your application (your on-site water usage in litres per day) and the one-off cost for SNWCS certification. The letter will set out the next steps of the application process and our terms & conditions will be included. The letter will also detail the documentation you will be required to send to SNWCS to comply with money laundering checks (see also the [money laundering information for SNWCS applications](#) section below). You are required to confirm your acceptance of the terms set out to secure your access to SNWCS – we must receive this within **14 days** of the date of the offer letter, otherwise your access request will be forfeited, and your access allocation will be offered to another application.
6. Once you have confirmed your SNWCS access, we will send you a letter to confirm your access. This will include an invoice for the payment for your SNWCS certification charge, which will be a one-off payment for your application's certification. This invoice must only be paid after you have received planning permission for your application.
7. The confirmation letter will also advise that you must secure your planning permission within **6 months** from the date of confirming your SNWCS access. If this time limit is approaching and you have not secured your permission, we recommend you speak to your DM case officer to liaise with the SNWCS team. However, in most cases, if you have not secured planning permission within 6 months, your access request will be forfeited, and your access allocation will be offered to another application.
8. Once you have secured planning permission for your application, you must pay the invoice for your SNWCS certification charge within **12 weeks**. Failure to pay the invoice in time risks your access request being forfeited and your access allocation offered to another application.
9. After we receive the payment for your SNWCS certification, we will send you a Final SNWCS Certificate which will indicate that your application can be constructed in line with Habitats Regulations requirements. You can use this final certificate to discharge the SNWCS (or SNOWS) obligations of a water neutrality condition on a planning permission.

SNWCS certification charge

To secure access to SNWCS to meet your application's planned water use, you will need to pay a one-off SNWCS certification charge, calculated at £0.80 (80p) per litre per day for the planned water use of the development.

For example, for an application for a single dwelling constructed with a water efficiency standard of 85 litres per person per day, at an average occupancy rate of 2.5, the total cost for SNWCS certification would be a one-off payment of £170.

| | | | | | | |
|------------------------------|---|-----------|---|----------------|---|-------------------|
| Water use per person per day | x | Occupancy | x | Cost per litre | = | Total cost |
| 85 | x | 2.5 | x | 0.80 | = | £170.00 |

Money laundering checks – information to be provided

As part of your SNWCS application, you will need to provide the information below prior to or at the same time as paying your SNWCS certification charge invoice to enable us to carry out necessary money laundering checks, unless you have previously used SNWCS in the last 5 years. We recommend providing this information to us as soon as possible in the SNWCS application process to minimise any delays. This information can be sent to us, or we can be reached for further queries, via SNWCS@horsham.gov.uk. We strongly recommend sending any personal or sensitive information to us in an encrypted format. For further information about how we use your information, please refer to [Horsham DC's Strategic Planning Privacy Notice](#).

- **Public sector body:** Signed, written instructions on headed paper.
- **Non-public sector business:** We will undertake our own checks but may request further information from you if necessary.
- **Individual:** Identification/s showing your name, permanent address, and date and place of birth, for example a passport, driving licence, utility bill etc.

Application prioritisation for SNWCS access

Below is a summary of the criteria that will be used as part of the SNWCS application prioritisation scoring.

- **Criteria 1:** Whether the application is affected by the *C G Fry* court decision. Applications that are affected may receive greater weighting.
- **Criteria 2:** Whether the application is a local authority 'corporate priority', which includes schemes in council plans or those approved by the council's political leadership. These will be given greater weighting.
- **Criteria 3:** The extent to which water efficiency measures have been included in the application to maximise on-site water savings and minimise on-site water usage. Applications that minimise their on-site water use will be given greater weighting.
- **Criteria 4 (residential applications only):** Whether the application is delivering affordable housing units, or where applicable a financial contribution towards affordable housing. Applications delivering 100% affordable schemes made by registered or approved affordable housing providers will be given greatest weighting. Applications must deliver affordable housing units, or make a financial contribution towards affordable housing, to achieve any weighting.
- **Criteria 5 (non-residential applications only):** Whether the application provides community services or other infrastructure supporting development*. These applications will be given a greater weighting.

** Applications exclusively or primarily providing development essential for community services or contributing to the construction of essential infrastructure, such as educational facilities, medical facilities, community facilities, or minerals & waste development.*