**ROY BENSON**



OAKFIELD, COOLHAM ROAD, COOLHAM,
HORSHAM, RH13 8QE

# Drainage Strategy

October 2026

eas ltd
Environmental Assessment Services Ltd

# REPORT DATA SHEET

| Requirement | Data |
|---|---|
| Report Reference | 943/MME/Oakfield/Drainage |
| Date | October 2026 |
| Client | Roy Benson |
| Report type | Drainage Strategy |
| Purpose | Planning |
| Revisions | - |
| Prepared by | Xanthe Lyford BSc (Hons)<br><br>Signed<br>[redacted] |
| Approved by | Eur Ing Malcolm McKemey BSc (Hons), CEng, Cenv, MICE, MCIWEM, MIEnvSc<br><br>Signed<br>[redacted] |

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**Drainage Strategy**

October 2026

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**Drainage Strategy**

October 2026

## 1. BACKGROUND, EXISTING SITE & PROPOSED DEVELOPMENT

1.1 The site comprises the farmyard and several agricultural buildings and a residential chalet with associated concrete driveway in Coolham Road. The site lies approximately 2 km south of Coolham, and 12 km southwest of Horsham. The site area is approximately 0.31 ha. The Ordnance Survey (OS) map reference for the site is TQ 11461 20627. See Figure 1 in Appendix A for the site location plan and Figure 2 for the site as existing.

1.2 It is proposed to redevelop the site for residential use comprising erection of three detached dwellings, one two-storey, three-bedroom dwelling to the north of the site and two single-storey three-bedroom dwellings to the east and southwest of the site, each with car ports and associated access driveways. See Figure 3 in Appendix A for the proposed development plans.

## 2. GEOLOGY & HYDROGEOLOGICAL CONSIDERATIONS

2.1 According to the British Geological Survey (available online), the site lies partially upon Weald Clay Formation – Mudstone, and partially upon Weald Clay Formation – Sandstone. The Department for Environment, Food and Rural Affairs (Defra) online mapping (MAGIC) shows the site to lie partially upon Unproductive Strata (Weald Clay Formation - Mudstone), and partially upon a Secondary A Aquifer (Weald Clay Formation - Sandstone). The site has a groundwater vulnerability rated as high but is not within a groundwater Source Protection Zone (SPZ).

2.2 According to the Environment Agency's (EA) online Flood map for planning, the site lies within Flood Zone 1 (low risk of flooding from rivers and/or the sea). The site is not shown to be at risk from fluvial flooding in the 2070-2125 modelled scenario. The site does not lie within 500 m of a watercourse classified as a main river by the EA. The site is not shown to be at risk of flooding from surface water in the 1 in 30 year, 1 in 100-years and 1 in 1000-years scenarios. Groundwater and reservoir flooding are considered unlikely at this location. See Appendix B for the flood maps for planning.

## 3 EXISTING SITE DRAINAGE

3.1 The site was visited on the 27 October 2026.

3.2 The site and existing residence currently drains its surface water via discharging directly to a land drain pipe that runs along the western boundary of the site into

the stream that runs eastwards along the northern boundary of the site and under Coolham Road and is part of the River Adur catchment.

3.3 There is no public foul sewer at the site or in Coolham Road. The foul sewage from the existing house drains into a sewage treatment plant located in the northeast corner of the site, with the treated effluent discharging into the drainage ditch in Coolham Road which flows north to join the aforementioned stream. See Appendix E for photographs of the watercourse/ditch and Appendix F for the Southern Water sewer plans for the site area.

## 4 SOIL PERMEABILITY

4.1 Weald Clay Formation has variable-poor permeability as demonstrated by the fact that the existing dwelling drains its surface water by discharging into a field drain then into the unnamed stream that lies to the north of the site (part of the River Adur catchment), and the presence of pooling surface water onsite. To confirm, this infiltration test was conducted in accordance with Bre 365 on the 27 October 2026. The infiltration testing was done during the winter months when the ground was saturated and after a period of heavy rainfall. Two trial pits were dug: one in the western section of the site, in front of the open barn and one in the eastern section of the site to the west of the sewage treatment plant., both, to a depth of 1 m. The soil in the holes showed a layer of topsoil over a weathered yellow clay sub-soil leading to a blue-grey clay sub-soil. The holes were dug during a period of heavy rain which filled the holes with water, up to the topsoil-clay interface. The holes were already filled with water due to the heavy rainfall overnight and no fall in the depth was measured during the monitoring periods (depth measurements were taken every 10 minutes). See Figure 5 for the infiltration testing trial pit locations. Infiltration testing carried out at the site confirmed that surface water drainage to soakaway would not be practicable at this site. See Figure 5 in appendix A for the trial pit locations, Figure 6 for the trial pit logs and Appendix E for photographs of the infiltration sites and existing drainage.

## 5 SURFACE WATER DRAINAGE OPTIONS

5.1 There is a general requirement that new drainage systems should be sustainable (SuDS) and that flow leaving the site should not exceed the Greenfield flow rate, including both surface water and treated sewage effluent.

5.2 The area of impermeable surface at the site will be increased by the area of the roofs of the proposed dwellings and car ports.

5.3 The proposed development will have an impermeable surface area of 547 $m^2$, comprising the roof of the proposed dwellings and car ports; the use of permeable surfacing in the driveways and water buttes on the drainpipe downpipes for use in irrigation will reduce the surface area to be drained and make the development more sustainable.

5.4 The Greenfield runoff rate for the site has been calculated using the UK SuDS tools. The results are shown in See Appendix C and summarised in Table 5.1 below:

TABLE 5.1
GREENFIELD RUNOFF RATES

| Return period | Flow rates (l/s) |
|---|---|
| Qbar | 2.7 |
| 1 in 1 year | 2.3 |
| 1 in 2 year | 4.4 |
| 1 in 10 year | 6.3 |
| 1 in 30 year | 6.3 |
| 1 in 100 year | 8.8 |
| 1 in 200 year | 10.3 |

5.5 The current non-statutory guidance indicates that the maximum discharge permitted to leave the site from the drained area post development should not exceed the 1 in 1 year return period flow rate (2.3 l/s), or as near as practicable. Flow controlled vortex valves or orifices exist that can control the flow to as low as 2 l/s (any lower and the orifice is liable to silting and blocking). This will reduce the flow to a suitable rate so as not to overload the local surface water drainage system and help to reduce the impact on local watercourses. See Appendix C for the HR Greenfield Flow Rate tool data.

5.6 According to the SuDS manual, UK runoff from the development shall be discharged to the following final destinations, to the maximum extent practicable, in accordance with the below hierarchy:

- *priority 1: collected for non-potable use*
- *priority 2: infiltrated to ground*
- *priority 3: discharged to an above ground surface water body*
- *priority 4: discharged to a surface water sewer, or another piped surface water drainage system*
- *priority 5: discharged to a combined sewer*

*(priority 1 is the highest priority and priority 5 is the lowest.)*

5.7 Rainwater harvesting in the form of water butts for garden watering should be included in the plans for the dwelling - *collection for the non-potable use*, this will reduce the volume of runoff from the roofs of the dwelling. The inclusion of permeable surfacing in the driveways and the areas of lawn and natural planting will allow some of the surface water to *infiltrate to the ground*, reducing the runoff from non-permeable surfaces making the development more sustainable in line with the SuDS hierarchy.

5.8 Discharge to soakaway requires suitably permeable ground. The soil at the site (Weald Clay Formation) has insufficient permeability for soakaway drainage, as confirmed by the use of direct discharge for the disposal of surface water at the existing dwelling and the infiltration testing conducted onsite. This method of surface water drainage has not been considered further.

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5.9 The alternative method for the disposal of surface water is to drain to attenuation storage where the excess surface water is stored in a pond, swale or underground attenuation storage crate and released at the greenfield 1 in 1-year rate to a watercourse, or surface water sewer. In this case a suitable watercourse/stream lies along the northern site boundary and discharges in the Adur catchment. This is the most practicable method of disposing of surface water onsite in line with the SuDS hierarchy and is the current method of draining the surface water from the existing dwelling.

5.10 It is proposed to drain the surface water from the developed site to an underground crate attenuation storage unit (modular, lightweight plastic subterranean unit, wrapped in an impermeable geomembrane) overspilling via a vortex valve (limiting the flow to 2.3 l/s) into the existing field drain, then into the watercourse/stream to the north of the site, which flows east under Coolham Road via a culvert to join the River Adur catchment. This is the preferred method of disposal of surface water from the developed site, in line with the SuDS hierarchy. The use of permeable surfacing in the driveways, and water butts on the drainpipe down pipes for use in watering the gardens, will further reduce the runoff from the site.

5.11 A suitable area to locate an attenuation storage unit would be in the lawn area to the north of Plot 1, draining via the existing drainage pipe to the ditch that runs along the northern boundary of the site and discharges into the drainage stream to the north. The attenuation crate would need to accept any surface water runoff from the roofs of the proposed dwellings and car ports. See Figure 3 in Appendix A for the drainage design.

5.12 The NPPF states:

*"Applications which could affect drainage on or around the site should incorporate sustainable drainage systems to control the flow rates and reduce volumes of runoff, and which are proportionate to the nature and scale of the proposal. These should provide multifunctional benefits wherever possible facilitating improvements in water quality and biodiversity."*

5.13 The use of permeable surfacing, and the inclusion of water butts on the drainpipe downpipes for use in garden watering, will reduce the runoff from the site. Rain gardens are another possible sustainable landscaping feature that combine functional benefits with the structural and aesthetic advantages to the development. They would intercept, slow, and filter stormwater runoff and increase the biodiversity by improving the quality of the surface water exiting the site.

5.14 A suitable sized attenuation storage unit for the residences would be 10 m x 8 m x 1 m deep as calculated by the MasterDrain drainage network model. The surface water runoff from the roofs of the buildings will be drained into an attenuation crate located in the proposed permeable paved drive area to the south of the Plot 3. The proposed drainage layout is shown in Figure 3 in Appendix A, Appendix D for the output from the drainage design model and Appendix E for photographs of the existing drainage, and stream.

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## 5.15 Design Storm

The surface water drainage system has been designed for the 30-year return period event plus a 35% allowance for climate change and tested for surcharge for the 1 in 100-year return period event (1% Annual Exceedance Probability) plus a 45% allowance for climate change. See Appendix A, Figure 3 for the proposed drainage design and Appendix D for pipe and chamber layout and sizing of the soakaway from the MasterDrain model.

## 5.16 Drainage Design Model

The attenuation crate is an underground, modular plastic matrix wrapped in an impermeable geomembrane, used to collect and store excess surface water and release it via a flow controlled vortex valve at the greenfield 1 in 1-year flow rate or as near as practicable (in this case 2.3 l/s – any lower and the valve/orifice is liable to silting and blocking), into the watercourse/stream that lies along the northern site boundary via the existing field drain that runs along the eastern boundary of the site. The geomembrane will protect the groundwater from any seepage from the surface water runoff. The chosen location is in the permeable paved drive area to the south of Plot 3. See Figure 3 in Appendix A for the suggested drainage arrangement. The attenuation storage unit has been sized at 10 m x 8 m x 1 m deep.

The drainage arrangement has been designed using the MasterDrain network drainage model.

## 5.16 Hydrological Data

Hydrological data for the site as used in the MasterDrain model is given in Appendix D.

## 5.17 Extreme Event

An extreme event, which overwhelmed the drainage system, would likely result in water flowing north across the surface of the ground with the topography of the land towards the existing stream.

# 6. PROPOSED FOUL DRAINAGE

6.1 It is proposed to drain the foul sewage from the proposed dwellings on site to the existing Tricel Novo UK30 Gravity sewage treatment plant, located in the northwest corner of the site and discharging the treated effluent into the drainage ditch that runs along the side of Coolham Road to join the stream to the north of the site, as with the existing scenario. This treatment plant has a capacity of 30 people so would be a suitable size to provide for the requirements of the residents of the three proposed dwellings. See Appendix F for the Southern Water Sewer plans for the site, Figure 3 in Appendix A for the suggested drainage layout and Appendix E for photographs of the sewage treatment plant, the ditch and stream.

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## 7. DRAINAGE DESIGN SUMMARY

7.1 The surface water chamber sizes, invert levels and pipe sizes from the MasterDrain model are summarised in Table 7.1 below:

TABLE 7.1
SURFACE WATER CHAMBERS

| No. | Dia (mm) | Cover level (mAOD) | Invert level (mAOD) | Pipe dia (mm) |
|---|---|---|---|---|
| SW1 | 450 | 26.86 | 26.36 | 100 |
| SW2 | 450 | 26.00 | 25.50 | 100 |
| SW3 | 450 | 25.00 | 24.50 | 100 |
| SW4 (vortex valve 2.3 l/s) | 600 | 25.89 | 23.50 | 150 |
| Attenuation | - | 25.89 | 24.00 | 150 |

7.2 The foul sewage chamber sizes, invert levels and pipe sizes are given in Table 7.2 below:

TABLE 7.2
FOUL SEWAGE CHAMBERS

| No. | Dia (mm) | Cover level (mAOD) | Invert level (mAOD) | Pipe dia out (mm) |
|---|---|---|---|---|
| FW1 | 450 | 24.85 | 24.35 | 100 |
| FW2 | 450 | 24.85 | 23.85 | 100 |
| FW3 | 450 | 27.39 | 26.39 | 100 |
| FW4 | 450 | 26.47 | 26.27 | 100 |
| STP | - | 26.87 | 23.35 | 150 |

## 8 OPERATION AND MAINTENANCE OF THE SYSTEM

8.1 The drainage system will generally require minimal operational input once construction has been completed. However, it will require some regular maintenance.

8.2 Items requiring maintenance will include:

- Chambers (including any flow control devices) will require regular removal of any debris likely to obstruct and checking for any structural damage to the chamber or cover. Cleaning requires removing sediment, silt, and obstructions, using high-pressure water jets or manual clearing. Ensure covers are secure and airtight to prevent odour, rodent, or water ingress. Maintenance should be carried out annually at the time of year after most leaf fall has occurred.

- Any gullies, pipes and channels will need regular removal of accumulated debris and silt. Annual cleaning, initially (or 3-6 months

for high-debris areas) to remove leaves, sediment, and litter, to prevent blockages, odours, and flooding. Preventative measures like silt traps or drain guards will aid maintenance.

- The permeable surfacing will require regular cleaning to prevent clogging and ensure drainage, typically involving annual inspections, brushing to remove debris, and vacuuming or pressure washing to clear joints of moss and debris and ensure the permeability is maintained.

- The attenuation crate will need annual inspections and cleaning of inlet and outlet pipes and vortex valve to remove accumulated silt, debris and pollutants, prevent clogging and to check for and repair any structural issues.

- The sewage treatment plant will require annual maintenance from a specialist contractor.

## 9. SUMMARY OF CONCLUSIONS

9.1 The site comprises the farmyard and several agricultural buildings and a residential chalet with associated concrete driveway in Coolham Road. The site lies approximately 2 km south of Coolham, and 12 km southwest of Horsham. See Figure 1 in Appendix A for the site location plan and Figure 2 for the site as existing.

9.2 It is proposed to redevelop the site for residential use comprising erection of three detached dwellings, one two-storey, three-bedroom dwelling to the north of the site and two single-storey three-bedroom dwellings to the east and southwest of the site, each with car ports and associated access driveways. See Figure 3 in Appendix A for the proposed development plans.

9.3 According to the British Geological Survey (available online), the site lies partially upon Weald Clay Formation – Mudstone, and partially upon Weald Clay Formation – Sandstone. The Department for Environment, Food and Rural Affairs (Defra) online mapping (MAGIC) shows the site to lie partially upon Unproductive Strata (Weald Clay Formation - Mudstone), and partially upon Secondary A Aquifer (Weald Clay Formation - Sandstone), which has a groundwater vulnerability rated as high. The site does not lie within a groundwater Source Protection Zone (SPZ).

9.4 According to the Environment Agency's (EA) online Flood map for planning, the site lies within Flood Zone 1 (low risk of flooding from rivers and/or the sea). The site is not shown to be at risk from fluvial flooding in the 2070-2125 modelled scenario. The site does not lie within 500 m of a watercourse classified as a main river by the EA. The site is not shown to be at risk for flooding from surface water in the 1 in 30 year, 1 in 100-years and 1 in 1000-years scenarios. Groundwater and reservoir flooding are considered unlikely at this location. See Appendix B for the flood maps for planning.

9.5 The proposed development includes permeable surfacing in the new driveways and water butts on the drainpipe downpipes. These SuDS measures will help

reduce the amount of surface water leaving the site and keep the impact of the development on flood risk elsewhere to a minimum, making the development more sustainable in line with the SuDS hierarchy.

9.6 The preferred method for the disposal of surface water is drainage to an attenuation crate. The attenuation storage unit is to be located in the permeable paved drive area to the south of Plot 3 and discharging through a 2.3 l/s flow control device via the existing field drain that runs along the western boundary of the site to the existing stream on the northern site boundary (flowing east to join the River Adur catchment). A suitable sized attenuation storage unit would be 10 m x 8 m x 1 m deep. This is the preferred method for the disposal of surface water in line with the SuDS hierarchy. See figure 4 in Appendix A for the drainage design and Appendix D for the drainage calculations from MasterDrain.

9.7 An extreme event overtopping the system would likely follow the topography of the land and flow north towards the existing watercourse/drainage ditch.

9.8 As there is no mains sewer at the site, it is proposed to drain the foul sewage from the dwelling into the existing Tricel Novo UK30 Gravity sewage treatment plant, with the treated effluent discharging into the existing drainage ditch that runs along the site of Coolham Road and flows north to join the aforementioned stream, as with the existing scenario. This has a capacity of 30 persons, so is of an adequate size to serve the proposed residents of the three new dwellings. See Appendix F for the Southern Water sewer plans, Figure 3 in Appendix A for the drainage design and Appendix D for the MasterDrain drainage design calculation data.

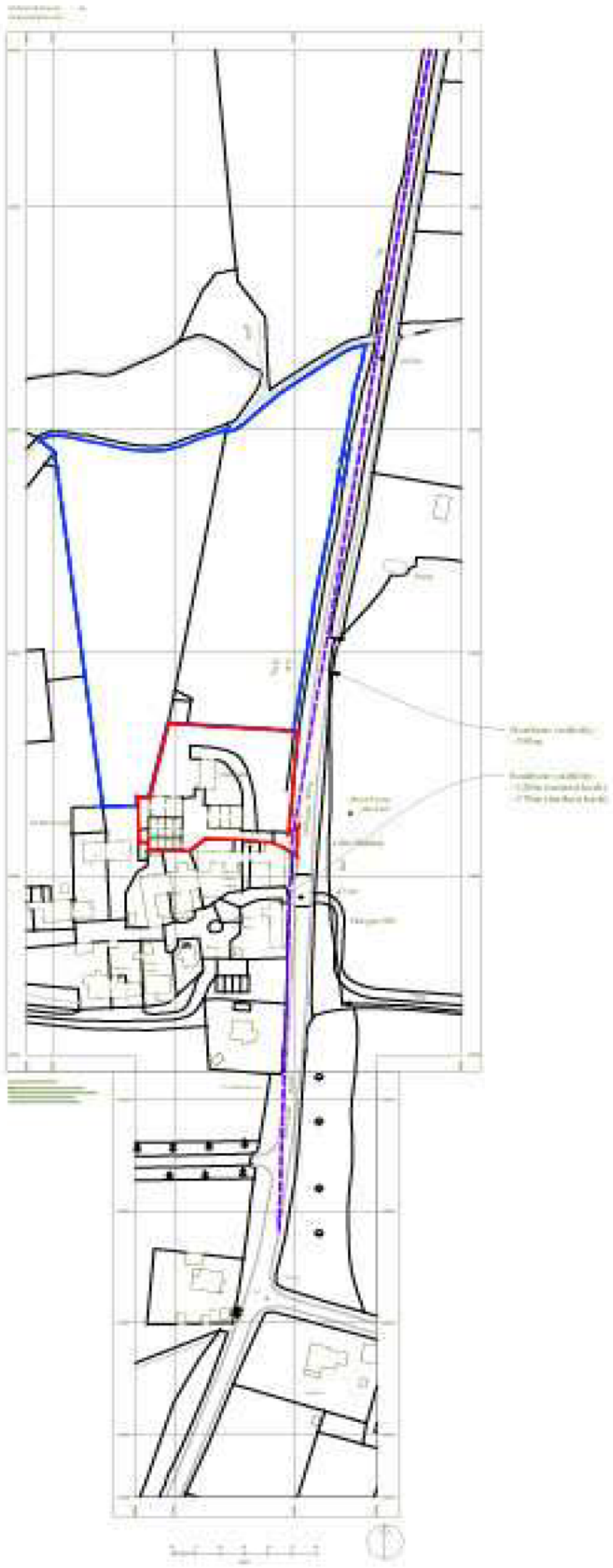
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# APPENDIX A:

Figure 1: Site Location
Figure 2: Site as Existing
Figure 3: Proposed Development
Figure 4: Suggested Drainage Arrangement
Figure 5: Percolation Testing Locations
Figure 6: Trial Pit Logs

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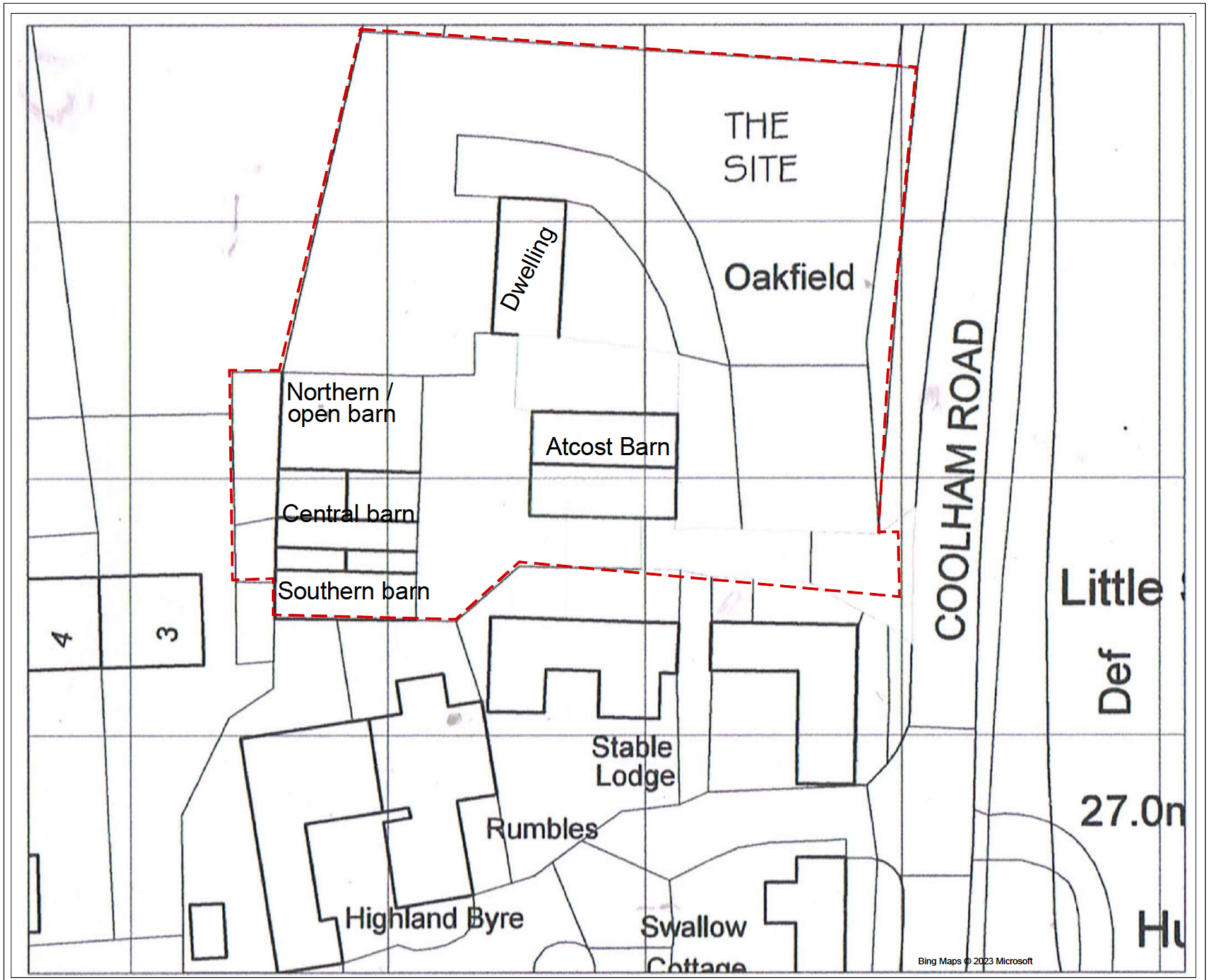


OAKFIELD

Coolham Road, Coolham, Horsham, RH13 8QE

**Figure 1: Site Location**

October 2026




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Coolham Road, Coolham, Horsham, RH13 8QE

**Figure 2: Existing Site Layout**

October 2026




OAKFIELD

Coolham Road, Coolham, Horsham, RH13 8QE

Figure 3: Proposed Development

October 2025




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| | |
|---|---|
| Job No. | 2601OA |
| Submission | PLANNING |
| Scale @ A3 | 1:200 |
| Drawing No. | 2601OA_003 |
| Drawn By | MD |
| Checked By | BK |
| Drawn On | 07.09.2026 |
| Issued On | 07.09.2026 |
| Phase | Proposed |
| Drawing | Block Plan |
| Revision No. | |

N
Indicative: 0°

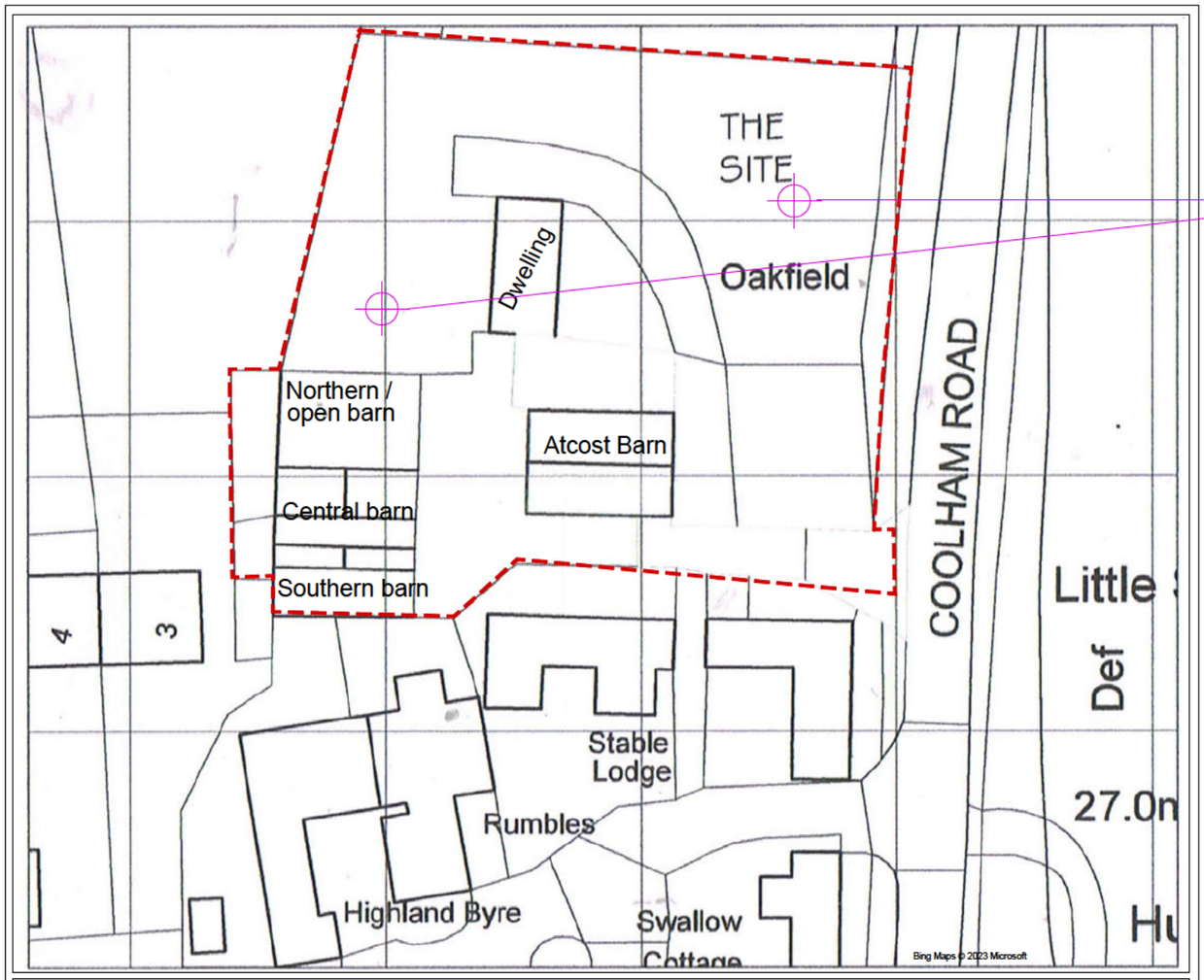
1m @ 1:
50
100
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500
1250

# OAKFIELD

## Coolham Road, Coolham, Horsham, West Sussex, RH13 8QE

Figure 4: Drainage Design

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OAKFIELD

Coolham Road, Coolham, Horsham, RH13 8QE

Figure 5: Percolation Testing Locations

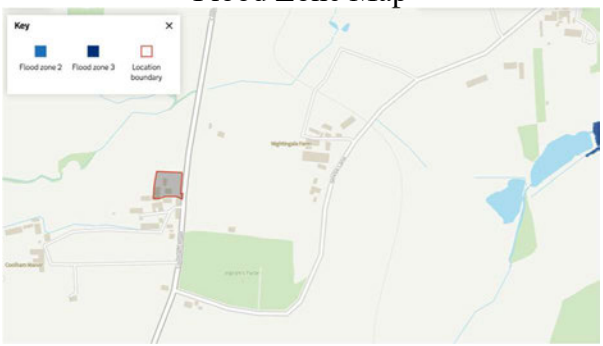
October 2026

# APPENDIX B:

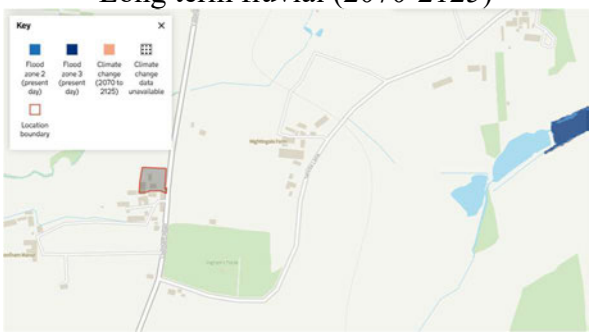
# ENVIRONMENT AGENCY FLOOD MAPS FOR PLANNING

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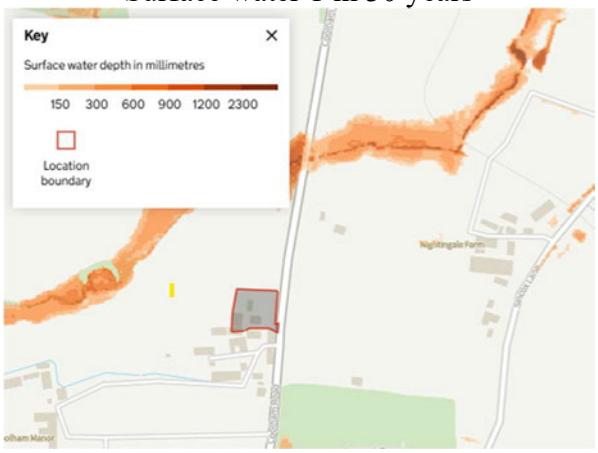
## Flood Zone Map




## Long term fluvial (2070-2125)




## Surface water 1 in 30 years




## Surface water 1 in 100 years

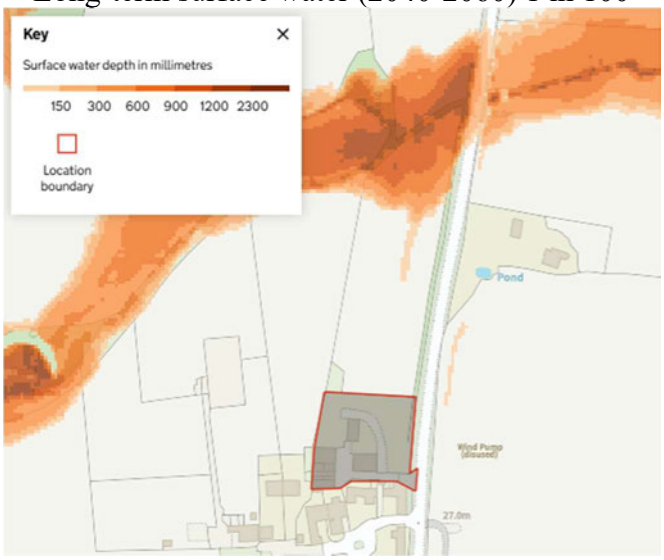



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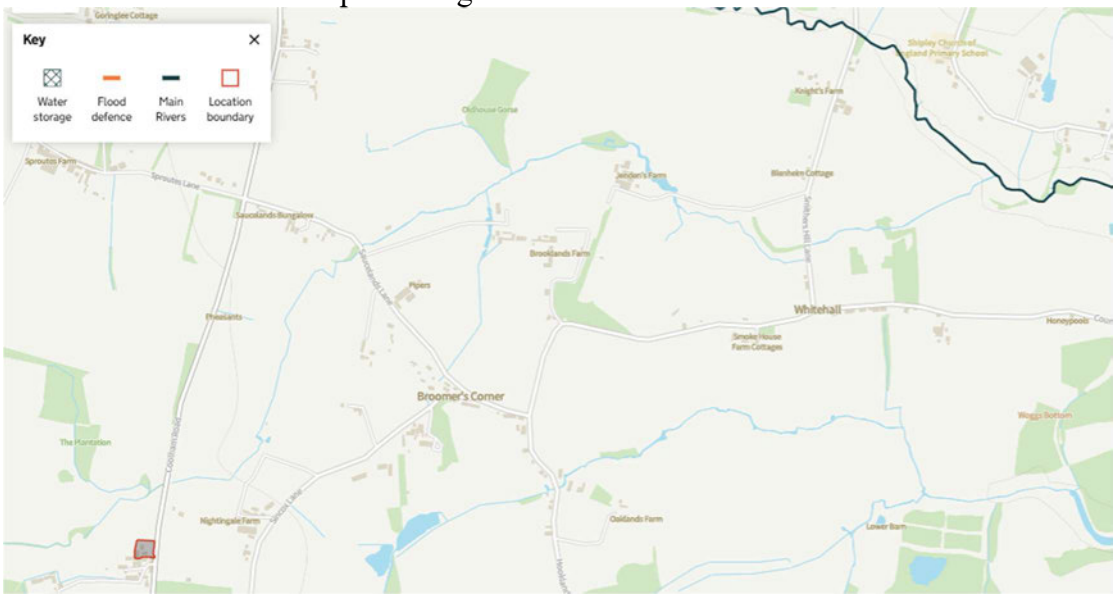
Surface water 1 in 1000 years




Long-term surface water (2040-2060) 1 in 100




Map showing nearest main watercourses




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# APPENDIX C:

# HR WALLINGFORD GREENFIELD FLOW RATES

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# Greenfield runoff rate estimation tool

www.uksuds.com | Greenfield runoff rate estimation tool (https://www.uksuds.com/)

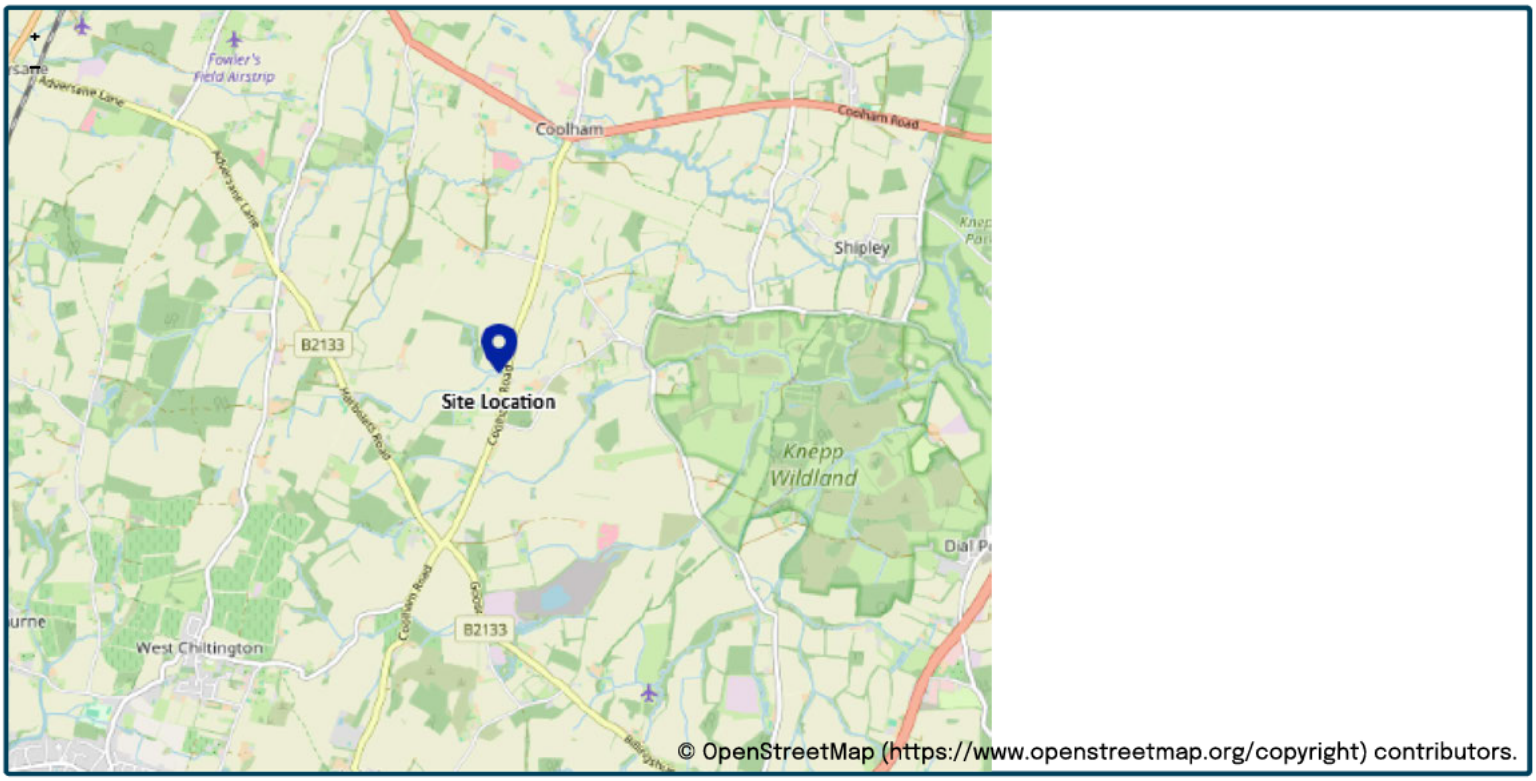
This is an estimation of the greenfield runoff rates that are used to meet normal best practice criteria in line with Environment Agency guidance "Rainfall runoff management for developments", SC030219 (2013), the SuDS Manual C753 (CIRIA, 2015) and the non-statutory standards for SuDS (Defra, 2015). This information on greenfield runoff rates may be the basis for setting consents for the drainage of surface water runoff from sites.

## Project details

| | |
|---|---|
| **Date** | 20/10/2026 |
| **Calculated by** | Eas Ltd |
| **Reference** | 943 |
| **Model version** | 2.2.3 |

## Location

| | |
|---|---|
| **Site name** | Oak Field |
| **Site location** | Coolham |




| | |
|---|---|
| **Site easting (British National Grid)** | 511479 |
| **Site northing (British National Grid)** | 120640 |

## Site details

| | |
|---|---|
| **Total site area (ha)** | 0.31 ha |

# Greenfield runoff

## Method

| | |
|---|---|
| **Method** | FEH statistical (2025) |

## FEH statistical (2025)

| | My value | | Map value | |
|---|---|---|---|---|
| **SAAR9120 (mm)** | 844 | mm | | |
| **BFIHOST19scaled** | 0.258 | | | |
| **QMed-QBar conversion** | 1.136 | | 1.136 | |
| **QMed (l/s)** | 2.4 | l/s | | |
| **QBar (FEH statistical 2025) (l/s)** | 2.7 | l/s | | |

## Growth curve factors

| | My value | Map value |
|---|---|---|
| **Hydrological region** | 7 | 7 |
| **1 year growth factor** | 0.85 | |
| **2 year growth factor** | 0.88 | |
| **10 year growth factor** | 1.62 | |
| **30 year growth factor** | 2.3 | |
| **100 year growth factor** | 3.19 | |
| **200 year growth factor** | 3.74 | |

## Results

| | | |
|---|---|---|
| **Method** | FEH statistical (2025) | |
| **Flow rate 1 year (l/s)** | 2.3 | l/s |
| **Flow rate 2 year (l/s)** | 2.4 | l/s |
| **Flow rate 10 years (l/s)** | 4.4 | l/s |
| **Flow rate 30 years (l/s)** | 6.3 | l/s |
| **Flow rate 100 years (l/s)** | 8.8 | l/s |
| **Flow rate 200 years (l/s)** | 10.3 | l/s |

Please note runoff estimation is subject to significant uncertainty. Results are therefore normally reported to only 1 decimal place. Where 2 decimal places are provided, this does not indicate accuracy to this level, it has been adopted to prevent 'zero' figures from being reported. Outputs less than 0.01 l/s are reported as 0.01 l/s.

### Disclaimer

This report was produced using the Greenfield runoff rate estimation tool (2.2.3) developed by HR Wallingford and available at uksuds.com (https://www.uksuds.com/). The use of this tool is subject to the UK SuDS terms and conditions and licence agreement, which can both be found at uksuds.com/terms-conditions (https://www.uksuds.com/terms-conditions). The outputs from this tool have been used to estimate Greenfield runoff rates. The use of these results is the responsibility of the users of this tool. No liability will be accepted by HR Wallingford, the Environment Agency, Centre for Ecology and Hydrology, Wallingford Hydrosolutions or any other organisation for the use of these data in the design or operational characteristics of any drainage scheme.

# APPENDIX D:

# OUTPUT FROM DRAINAGE DESIGN SOFTWARE AND DRAINAGE FIELD INFILTRATION CALCULATIONS

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MasterDrain SW

| | |
|---|---|
| Job No. | 943 |
| Sheet no. | 1 |
| Date | 28/10/26 |
| Project | OAKFIELD |
| By | XL |
| Checked | |
| Reviewed | |

Title: **Surcharge calcs (Sized at 30 yrs storm) for OAKFIELD.SW CCF = 45%**

Free flowing outlet — PEAK hydrograph values printed — Mean rain intens. 210.00 mm/hr — Peak rain intens. 823.20 mm/hr
Return period = 100 yrs — Storm duration = 15 mins — Storm profile = Summer — Sample period = 7.5 secs.
Climate change factor = 45 — No offline storage — Using FEH data

| Entry No. | SECT. No. | | MANHOLE REF | PIPE CAPACITY l/s | RATE FLOW l/s | PIPE SIZE mm | CHAMBER DIAM/LxW mm | INVERT LEVEL m | WATER LEVEL m | GRND LEVEL m | SURCHARGE fract. | SURCHARGE Depth | EXCESS FLOW l/s | FLOODED VOL m³ | DRAINED AREA (m²) x FACTOR | STATUS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | I | 1.01 | SW1 | 17.6 | 17.4 | 100 | 450 | 26.36 | 26.46 | 26.86 | 0.99 | 0.10 | 0.00 | 0.000 | 176 | OK |
| 2 | B | 2.01 | SW2 | 16.9 | 17.0 | 100 | 450 | 25.50 | 25.60 | 26.00 | 1.01 | 0.10 | 0.10 | 0.000 | 172 | Surch. |
| 3 | B | 3.01 | SW3 | 42.1 | 17.0 | 150 | 600 | 24.50 | 24.56 | 25.00 | 0.40 | 0.06 | 0.00 | 0.000 | 172 | OK |
| 4 | I | 1.02 | ATT | 30.6 | 51.4 | 150 | 2000 | 24.00 | 24.20 | 25.89 | 1.68 | 0.20 | 20.81 | 0.000 | 520 | Surch. |
| 5 | I | 1.03 | SW4‡ | 17418.8 | 51.4 | 1500 | 600 | 23.50 | 23.52 | 25.89 | 0.00 | 0.02 | 0.00 | 0.000 | 520 | OK |

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| | | | |
|---|---|---|---|
| Job No. 943 | | | |
| Sheet no. 2 | | | |
| Date 28/10/26 | | | |
| Project OAKFIELD | By XL | Checked | Reviewed |
| Title Surcharge calcs (Sized at 30 yrs storm) for OAKFIELD.SW CCF = 45% | | | |

MasterDrain SW

## Notes

### *Printout headings*

1) Entry no - position in file
2) Section no - pipe identifier
3) Manhole ref - Manhole identifier
4) Pipe cap - full bore capacity of that pipe
5) Rate of flow - calculated flow rate (l/s) ‡ = flow restrictor.
6) Pipe diam - outlet pipe diameter (mm)
7) Chamber diam - chamber diam. at base of MH
8) Invert level - invert level of manhole
9) Water level - calculated peak water level.
10) Grnd level - ground / cover level
11) Surch. fract - calc.flow/pipe capacity
12) Surch. depth - surcharge level above soffit
13) Overflow - surcharged flow rate (l/s)
14) Flooded vol - volume of water above cover
15) Upstrm Vol - upstream pipe vol to previous manhole(s)
16) Status - OK - outlet not surcharged
17) Status - Surcharged - outlet surcharged
18) Status - Warning - water level within 299mm of cover level
19) Status - Flooded - cover over-topped
20) § against diameter indicates throttle pipe used.

### *Title box*

Hydrograph data

1) Ret. period - that used to calculate profile
2) Duration - length of storm (mins)
3) Profile - either Winter (75%) or Summer (50%)

### *Flow restrictors*

Manhole reference - SW4

Restrictor flowrate - 2 l/s

### *Flood volumes*

Check that the upstream storage of the manhole is adequate to take the flood volume - see Upstrm Vol above.

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|---|---|---|---|---|---|
| 943 | 3 | 28/10/26 | XL | | |

MasterDrain SW

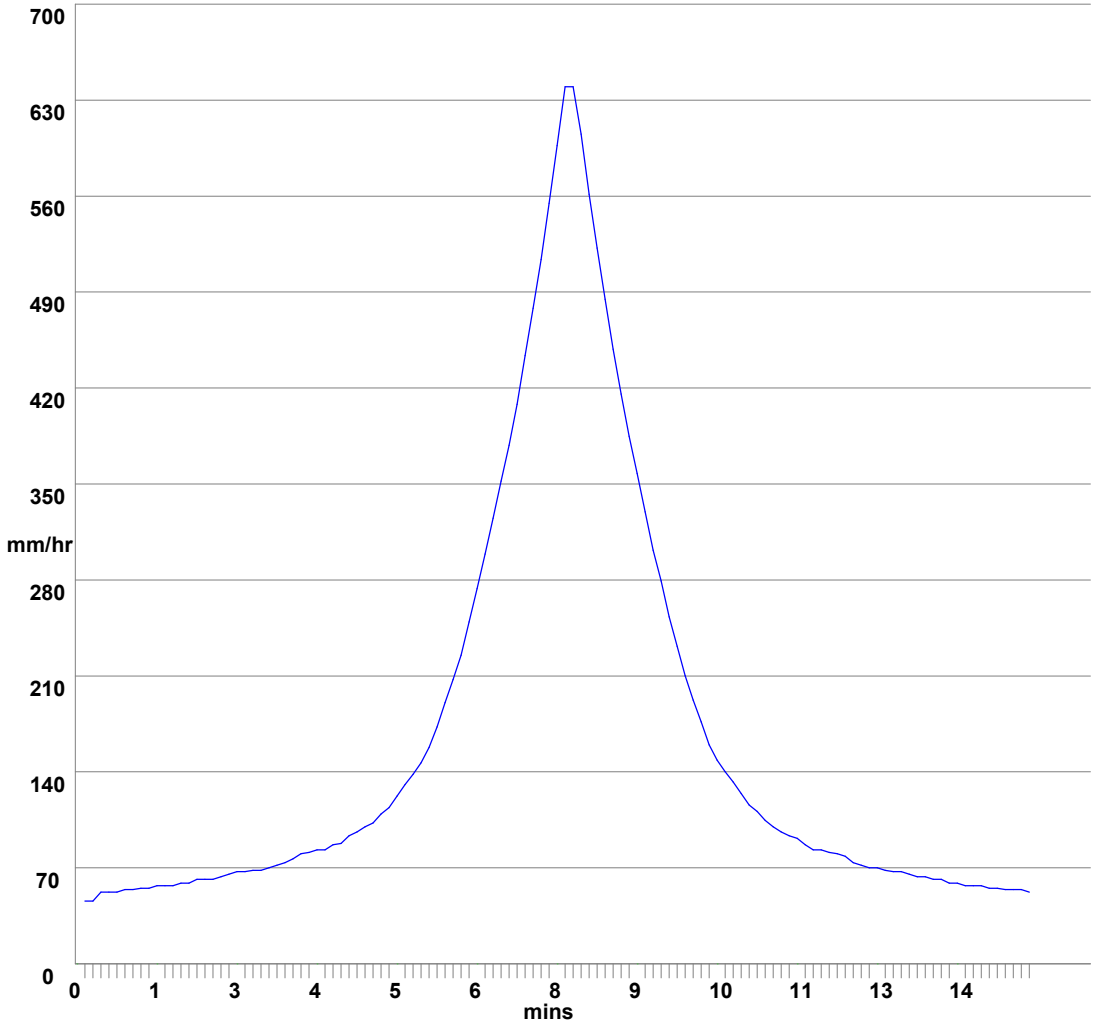
Project OAKFIELD

Title Surcharge calcs (Sized at 30 yrs storm) for OAKFIELD.SW CCF = 45%

| Time mins | Rain mm/hr | Time mins | Rain mm/hr | Time mins | Rain mm/hr |
|---|---|---|---|---|---|
| 0:08 | 48.91 | 5:08 | 139.75 | 10:08 | 150.23 |
| 0:15 | 48.91 | 5:15 | 148.49 | 10:15 | 141.50 |
| 0:22 | 55.90 | 5:22 | 157.22 | 10:22 | 132.77 |
| 0:30 | 55.90 | 5:30 | 169.45 | 10:30 | 124.03 |
| 0:38 | 55.90 | 5:38 | 185.17 | 10:38 | 118.79 |
| 0:45 | 57.65 | 5:45 | 204.39 | 10:45 | 111.80 |
| 0:52 | 57.65 | 5:52 | 221.86 | 10:52 | 106.56 |
| 1:00 | 59.40 | 6:00 | 241.07 | 11:00 | 103.07 |
| 1:08 | 59.40 | 6:08 | 267.28 | 11:08 | 99.57 |
| 1:15 | 61.14 | 6:15 | 293.48 | 11:15 | 97.83 |
| 1:22 | 61.14 | 6:22 | 319.69 | 11:22 | 92.59 |
| 1:30 | 61.14 | 6:30 | 347.64 | 11:30 | 89.09 |
| 1:38 | 62.89 | 6:38 | 377.33 | 11:38 | 89.09 |
| 1:45 | 62.89 | 6:45 | 405.28 | 11:45 | 87.35 |
| 1:52 | 66.38 | 6:52 | 436.73 | 11:52 | 85.60 |
| 2:00 | 66.38 | 7:00 | 475.16 | 12:00 | 83.85 |
| 2:08 | 66.38 | 7:08 | 511.85 | 12:08 | 78.61 |
| 2:15 | 68.13 | 7:15 | 550.28 | 12:15 | 76.86 |
| 2:22 | 69.88 | 7:22 | 593.95 | 12:22 | 75.12 |
| 2:30 | 71.62 | 7:30 | 639.37 | 12:30 | 75.12 |
| 2:38 | 71.62 | 7:38 | 684.79 | 12:38 | 73.37 |
| 2:45 | 73.37 | 7:45 | 684.79 | 12:45 | 71.62 |
| 2:52 | 73.37 | 7:52 | 648.11 | 12:52 | 71.62 |
| 3:00 | 75.12 | 8:00 | 600.94 | 13:00 | 69.88 |
| 3:08 | 76.86 | 8:08 | 559.01 | 13:08 | 68.13 |
| 3:15 | 78.61 | 8:15 | 518.83 | 13:15 | 68.13 |
| 3:22 | 82.11 | 8:22 | 480.40 | 13:22 | 66.38 |
| 3:30 | 85.60 | 8:30 | 445.46 | 13:30 | 66.38 |
| 3:38 | 87.35 | 8:38 | 412.27 | 13:38 | 62.89 |
| 3:45 | 89.09 | 8:45 | 382.57 | 13:45 | 62.89 |
| 3:52 | 89.09 | 8:52 | 352.88 | 13:52 | 61.14 |
| 4:00 | 92.59 | 9:00 | 323.18 | 14:00 | 61.14 |
| 4:08 | 94.33 | 9:08 | 298.72 | 14:08 | 61.14 |
| 4:15 | 99.57 | 9:15 | 270.77 | 14:15 | 59.40 |
| 4:22 | 103.07 | 9:22 | 248.06 | 14:22 | 59.40 |
| 4:30 | 106.56 | 9:30 | 225.35 | 14:30 | 57.65 |
| 4:38 | 110.06 | 9:38 | 206.14 | 14:38 | 57.65 |
| 4:45 | 117.04 | 9:45 | 188.67 | 14:45 | 57.65 |
| 4:52 | 122.28 | 9:52 | 171.20 | 14:52 | 55.90 |
| 5:00 | 131.02 | 10:00 | 158.97 | 15:00 | 55.90 |

Hydrograph profile derived from data in the Flood Studies Report

Return period= 100 yrs  Duration= 15 mins  Profile - summer



MasterDrain SW

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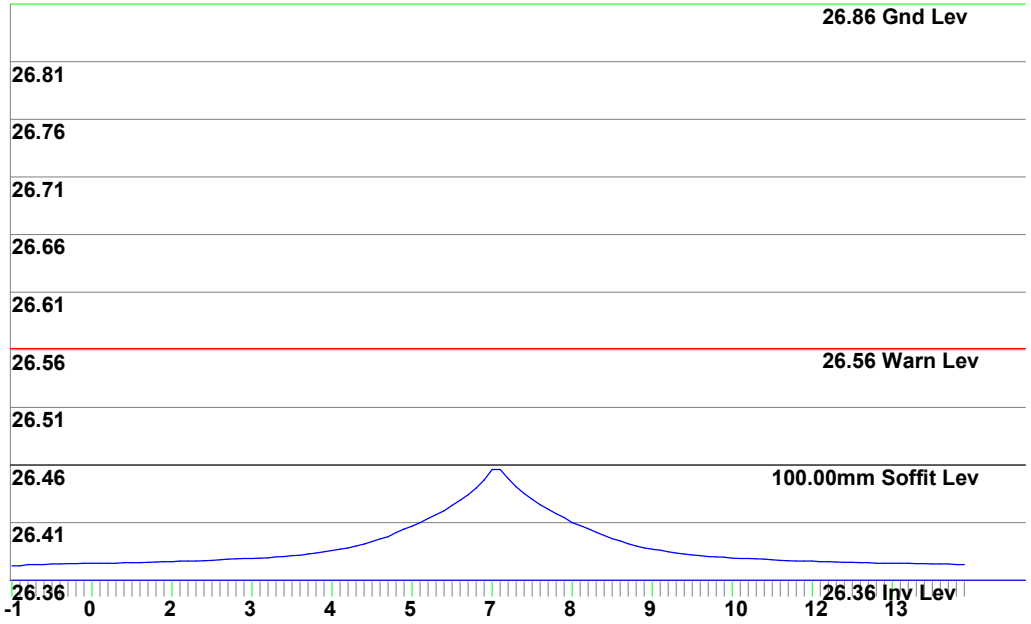
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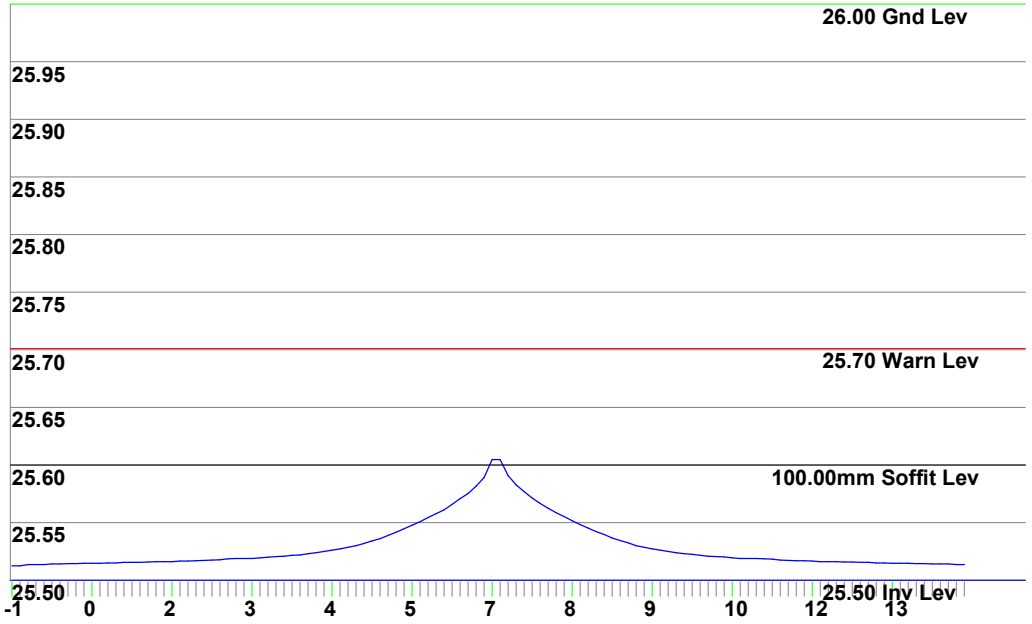
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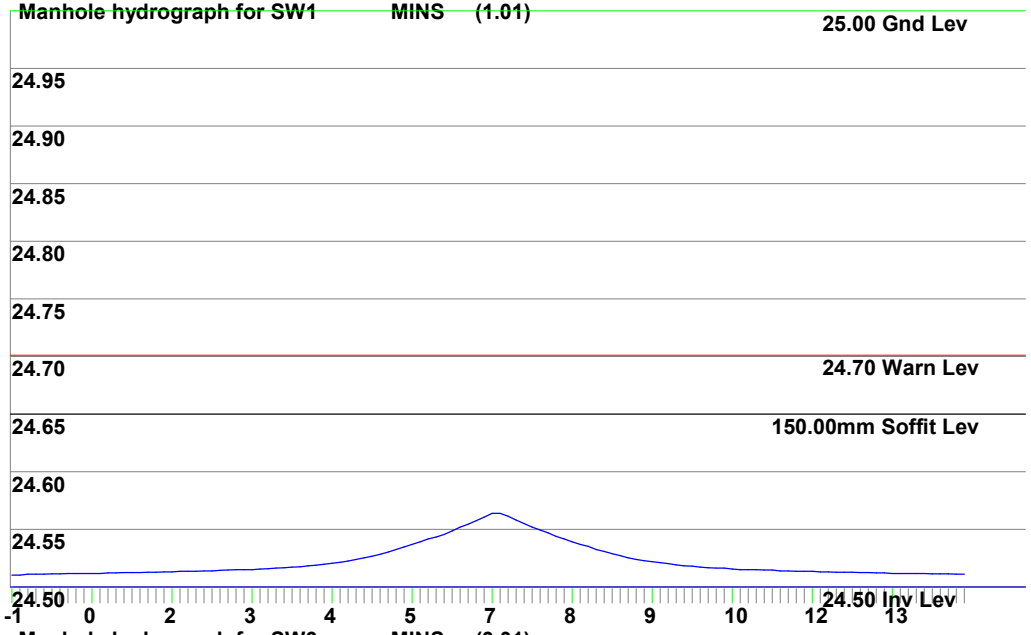
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| 943 | 4 | 28/10/26 | XL | | |

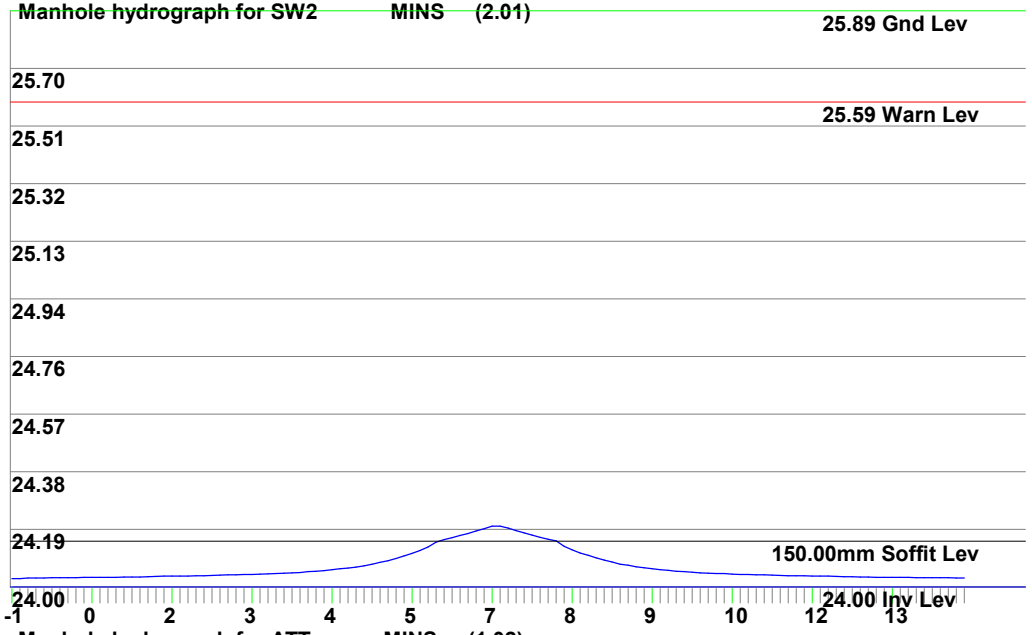
Project OAKFIELD

Title Surcharge calcs (Sized at 30 yrs storm) for OAKFIELD.SW CCF = 45%



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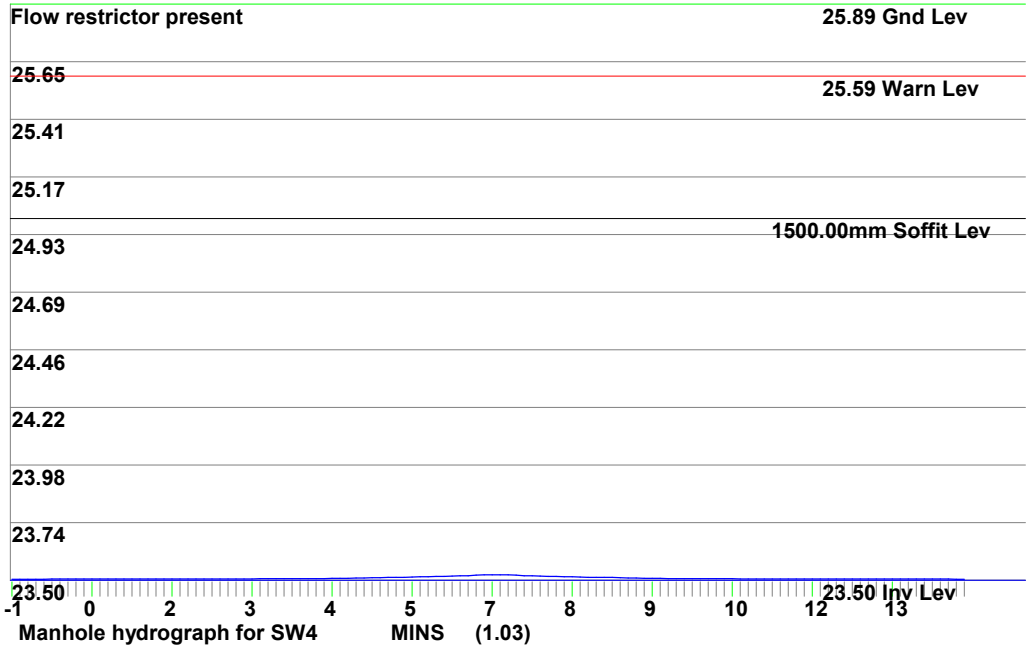
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| Project | By | Checked | Reviewed |
|---|---|---|---|
| OAKFIELD | XL | | |

Title: **Surcharge calcs (Sized at 30 yrs storm) for OAKFIELD.SW CCF = 45%**

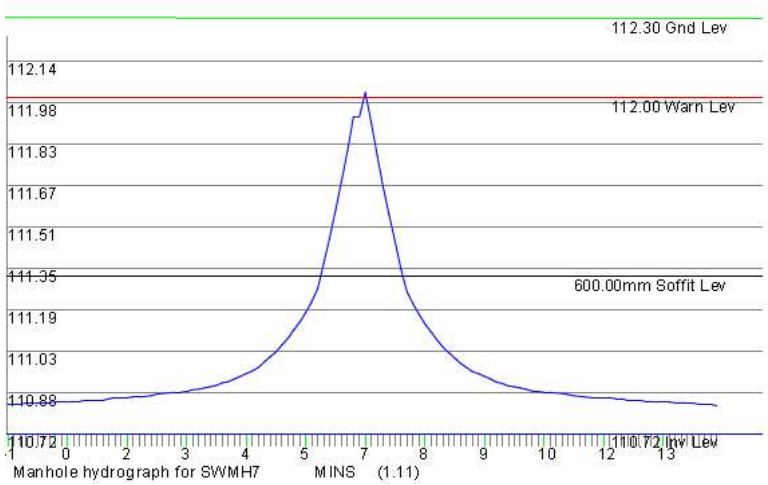


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| Sheet no. 6 | | | |
| Date 28/10/26 | | | |
| Project OAKFIELD | By XL | Checked | Reviewed |
| Title Surcharge calcs (Sized at 30 yrs storm) for OAKFIELD.SW CCF = 45% | | | |




1) Ground / cover level

2) Warning level - in this case, set at 300mm below cover level.

3) Soffit level of outflow pipe.

4) Invert level of chamber.

**Notes**

a) Lower section of the graph shows the water depth filling the channel. Channel is assumed to be a full pipe diameter in depth.

b) Upper section of the graph shows the water depth filling the chamber. Chamber has a greater width/diameter than the channel, so increases in depth are proportionally less.

c) The top of the graph clips the warning level and would be marked thus on the printout.

d) In many cases the invert of the offline storage is required to enter at the channel soffit level, meaning that the pipe will still surcharge but flooding risk reduced.

e) The diagram above is a general one and is not part of the current calculation.

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| Project | By | Checked | Reviewed |
|---|---|---|---|
| Oakfield | XL | | |

Title: **Hydrograph storage analysis (Winter profile) for COOLHAM**

Data:-

FEH Hydrology:-

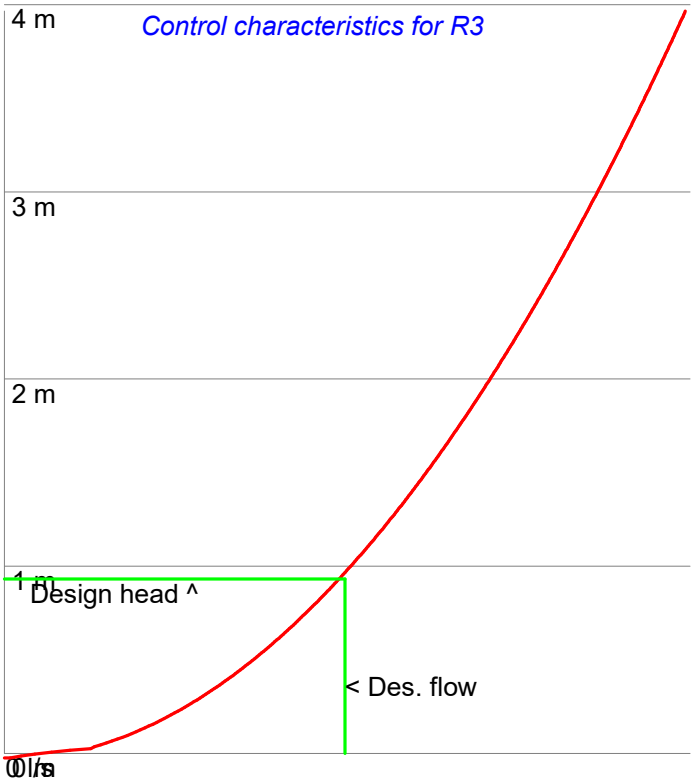
Location = COOLHAM  Grid reference = TQ1222
c = 0.0278  d1 = 0.3823  d2 = 0.3149
d3 = 0.3428  e = 0.3148  f = 2.4747
Return period = 100  Climate change = 35%

Percentage runoff = 95.0% (manual setting)

Imperv. area = 547 m²  Pervious area = 0 m²
Total area = 547 m²  Equiv area = 520 m² (Tot. area x % runoff).
Total runoff = 139.0 m³  Discharge rate = 2.300 l/s

Design Head = 1.0m  Peak flow = 2.31 l/s
Control device = R3  Orifice diam = 42.4 mm
Max. calc. depth = 1.01 m  Available depth = 0.0 m³
Mean discharge = 2.52 l/s

Available system storage = 0.00 m³ under a system plane at the design head level.
Offline storage = 0.0 m³
Total storage = 80.0 m³  Peak input flow =6.43 l/s




| Head (m) | Flow (l/s) | Head (m) | Flow (l/s) |
|---|---|---|---|
| 0.01 | 0.04 | 2.01 | 3.26 |
| 0.05 | 0.44 | 2.05 | 3.29 |
| 0.10 | 0.73 | 2.10 | 3.33 |
| 0.15 | 0.89 | 2.15 | 3.37 |
| 0.20 | 1.03 | 2.20 | 3.41 |
| 0.25 | 1.15 | 2.25 | 3.45 |
| 0.30 | 1.26 | 2.30 | 3.49 |
| 0.35 | 1.36 | 2.35 | 3.53 |
| 0.40 | 1.45 | 2.40 | 3.56 |
| 0.45 | 1.54 | 2.45 | 3.60 |
| 0.50 | 1.63 | 2.50 | 3.64 |
| 0.55 | 1.71 | 2.55 | 3.67 |
| 0.60 | 1.78 | 2.60 | 3.71 |
| 0.65 | 1.85 | 2.65 | 3.74 |
| 0.70 | 1.92 | 2.70 | 3.78 |
| 0.75 | 1.99 | 2.75 | 3.81 |
| 0.80 | 2.06 | 2.80 | 3.85 |
| 0.85 | 2.12 | 2.85 | 3.88 |
| 0.90 | 2.18 | 2.90 | 3.92 |
| 0.95 | 2.24 | 2.95 | 3.95 |
| 1.00 | 2.30 | 3.00 | 3.98 |
| 1.05 | 2.36 | 3.05 | 4.02 |
| 1.10 | 2.41 | 3.10 | 4.05 |
| 1.15 | 2.47 | 3.15 | 4.08 |
| 1.20 | 2.52 | 3.20 | 4.11 |
| 1.25 | 2.57 | 3.25 | 4.15 |
| 1.30 | 2.62 | 3.30 | 4.18 |
| 1.35 | 2.67 | 3.35 | 4.21 |
| 1.40 | 2.72 | 3.40 | 4.24 |
| 1.45 | 2.77 | 3.45 | 4.27 |
| 1.50 | 2.82 | 3.50 | 4.30 |
| 1.55 | 2.86 | 3.55 | 4.33 |
| 1.60 | 2.91 | 3.60 | 4.36 |
| 1.65 | 2.95 | 3.65 | 4.39 |
| 1.70 | 3.00 | 3.70 | 4.42 |
| 1.75 | 3.04 | 3.75 | 4.45 |
| 1.80 | 3.09 | 3.80 | 4.48 |
| 1.85 | 3.13 | 3.85 | 4.51 |
| 1.90 | 3.17 | 3.90 | 4.54 |
| 1.95 | 3.21 | 3.95 | 4.57 |
| 2.00 | 3.25 | 4.00 | 4.60 |

*Calculation data provided by Crown Water Ltd, SL5 7NT*

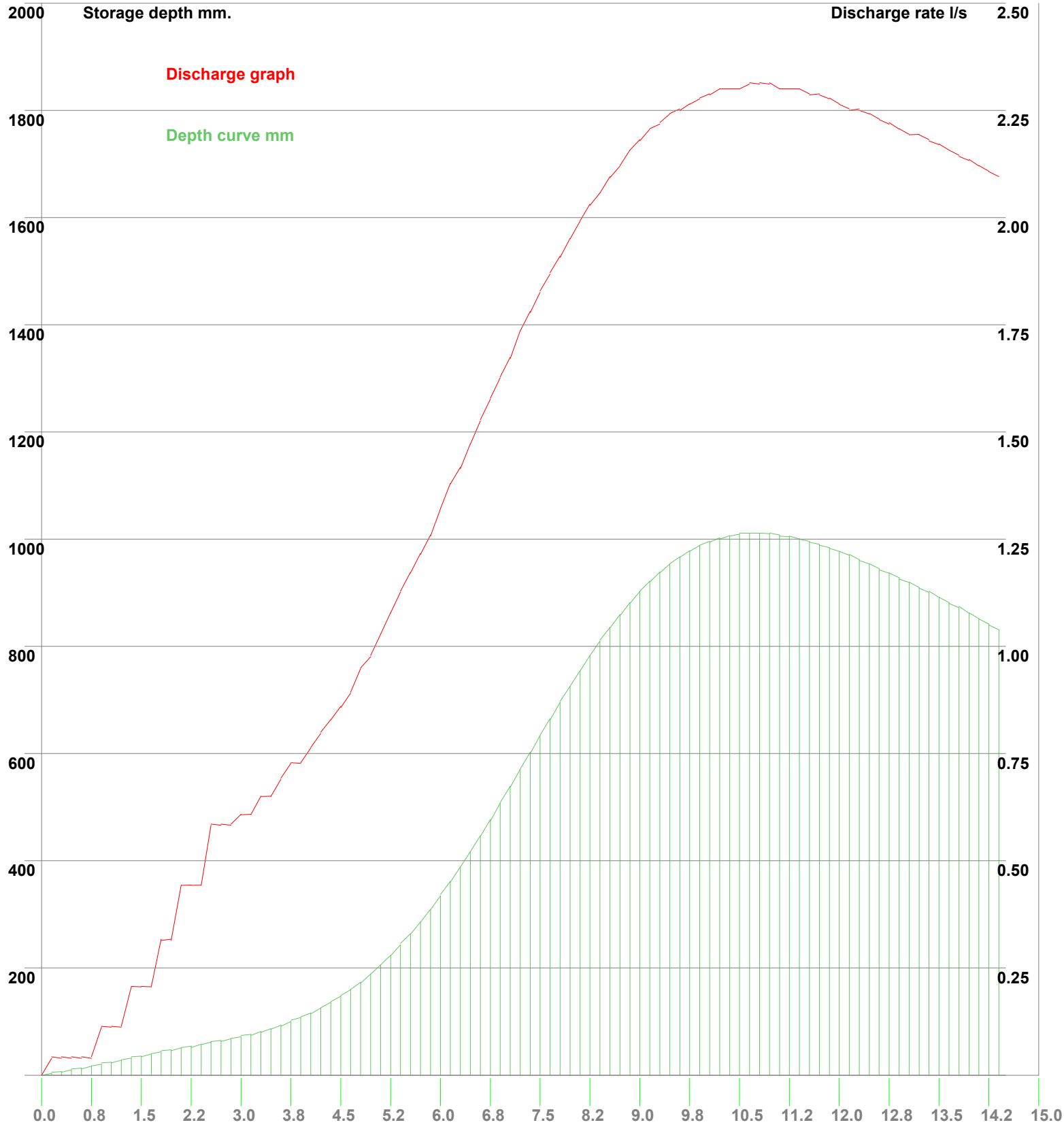
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| Job No. | 943 |
| Sheet no. | 2 |
| Date | 23/10/26 |
| Project | Oakfield |
| By | XL |
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| Reviewed | |

Title: **Hydrograph storage analysis (Winter profile) for COOLHAM**

**Storage curves for a 15 hours storm.**



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|---|---|---|---|---|---|
| 943 | 3 | 23/10/26 | XL | | |

Project: Oakfield

Title: Hydrograph storage analysis (Winter profile) for COOLHAM

**Incremental rainfall figures.**

| Storm Mins | Storage Depth mm | Control Flow l/s | Storm Mins | Storage Depth mm | Control Flow l/s |
|---|---|---|---|---|---|
| 9.0 | 3.5 | 0.04 | 459.0 | 665.1 | 1.87 |
| 18.0 | 6.7 | 0.04 | 468.0 | 695.7 | 1.91 |
| 27.0 | 10.1 | 0.04 | 477.0 | 725.9 | 1.95 |
| 36.0 | 13.4 | 0.04 | 486.0 | 755.1 | 1.99 |
| 45.0 | 17.0 | 0.04 | 495.0 | 783.2 | 2.03 |
| 54.0 | 20.7 | 0.11 | 504.0 | 810.0 | 2.06 |
| 63.0 | 24.1 | 0.11 | 513.0 | 835.3 | 2.10 |
| 72.0 | 27.9 | 0.11 | 522.0 | 859.2 | 2.12 |
| 81.0 | 31.8 | 0.21 | 531.0 | 881.8 | 2.16 |
| 90.0 | 35.5 | 0.21 | 540.0 | 902.6 | 2.18 |
| 99.0 | 39.5 | 0.21 | 549.0 | 921.6 | 2.21 |
| 108.0 | 43.6 | 0.32 | 558.0 | 938.5 | 2.22 |
| 117.0 | 47.2 | 0.32 | 567.0 | 953.6 | 2.24 |
| 126.0 | 51.0 | 0.44 | 576.0 | 967.0 | 2.25 |
| 135.0 | 54.3 | 0.44 | 585.0 | 978.5 | 2.27 |
| 144.0 | 57.9 | 0.44 | 594.0 | 988.1 | 2.28 |
| 153.0 | 61.7 | 0.58 | 603.0 | 996.1 | 2.29 |
| 162.0 | 64.7 | 0.58 | 612.0 | 1002.4 | 2.30 |
| 171.0 | 68.0 | 0.58 | 621.0 | 1006.7 | 2.30 |
| 180.0 | 71.9 | 0.61 | 630.0 | 1009.4 | 2.30 |
| 189.0 | 76.3 | 0.61 | 639.0 | 1010.9 | 2.31 |
| 198.0 | 81.4 | 0.65 | 648.0 | 1011.1 | 2.31 |
| 207.0 | 86.9 | 0.65 | 657.0 | 1010.1 | 2.31 |
| 216.0 | 93.3 | 0.69 | 666.0 | 1007.9 | 2.30 |
| 225.0 | 100.1 | 0.73 | 675.0 | 1004.7 | 2.30 |
| 234.0 | 107.5 | 0.73 | 684.0 | 1000.6 | 2.30 |
| 243.0 | 116.0 | 0.76 | 693.0 | 995.9 | 2.29 |
| 252.0 | 125.5 | 0.80 | 702.0 | 990.3 | 2.29 |
| 261.0 | 135.9 | 0.83 | 711.0 | 984.1 | 2.28 |
| 270.0 | 147.3 | 0.86 | 720.0 | 977.2 | 2.27 |
| 279.0 | 159.8 | 0.89 | 729.0 | 969.8 | 2.25 |
| 288.0 | 173.5 | 0.95 | 738.0 | 961.8 | 2.25 |
| 297.0 | 188.9 | 0.98 | 747.0 | 953.6 | 2.24 |
| 306.0 | 205.7 | 1.03 | 756.0 | 945.2 | 2.23 |
| 315.0 | 223.6 | 1.08 | 765.0 | 936.8 | 2.22 |
| 324.0 | 243.1 | 1.13 | 774.0 | 928.1 | 2.21 |
| 333.0 | 264.0 | 1.17 | 783.0 | 919.1 | 2.19 |
| 342.0 | 286.1 | 1.22 | 792.0 | 910.0 | 2.19 |
| 351.0 | 309.7 | 1.26 | 801.0 | 900.7 | 2.18 |
| 360.0 | 334.9 | 1.32 | 810.0 | 891.4 | 2.17 |
| 369.0 | 361.4 | 1.38 | 819.0 | 881.8 | 2.16 |
| 378.0 | 388.9 | 1.42 | 828.0 | 871.9 | 2.15 |
| 387.0 | 417.4 | 1.47 | 837.0 | 862.0 | 2.13 |
| 396.0 | 446.7 | 1.53 | 846.0 | 851.7 | 2.12 |
| 405.0 | 476.9 | 1.58 | 855.0 | 841.4 | 2.11 |
| 414.0 | 507.8 | 1.63 | 864.0 | 831.0 | 2.10 |
| 423.0 | 539.2 | 1.67 | 873.0 | 820.5 | 2.08 |
| 432.0 | 571.0 | 1.74 | 882.0 | 810.1 | 2.07 |
| 441.0 | 602.5 | 1.78 | 891.0 | 799.6 | 2.04 |
| 450.0 | 633.9 | 1.83 | 900.0 | 789.3 | 2.03 |

**Using the Get Max button causes the program to step through a series of storm durations until a maximum volume is obtained.**
**Each duration is sampled 600 times and the results recorded. The storm durations (hrs) are:-**

**0.25, 0.5, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 15, 18, 20, 24, 30, 36, 42, 48, 54, 60, 66, 72, 84, 96, 120, 150, 175, 200, 250, 300, 375, 500, 750, 1000, 1250, 1500, 1570, 2000, 2500, 3000, 3500, 4000**

**It should be noted that the six hour storm frequently requested rarely demonstrates the worst case for storage.**

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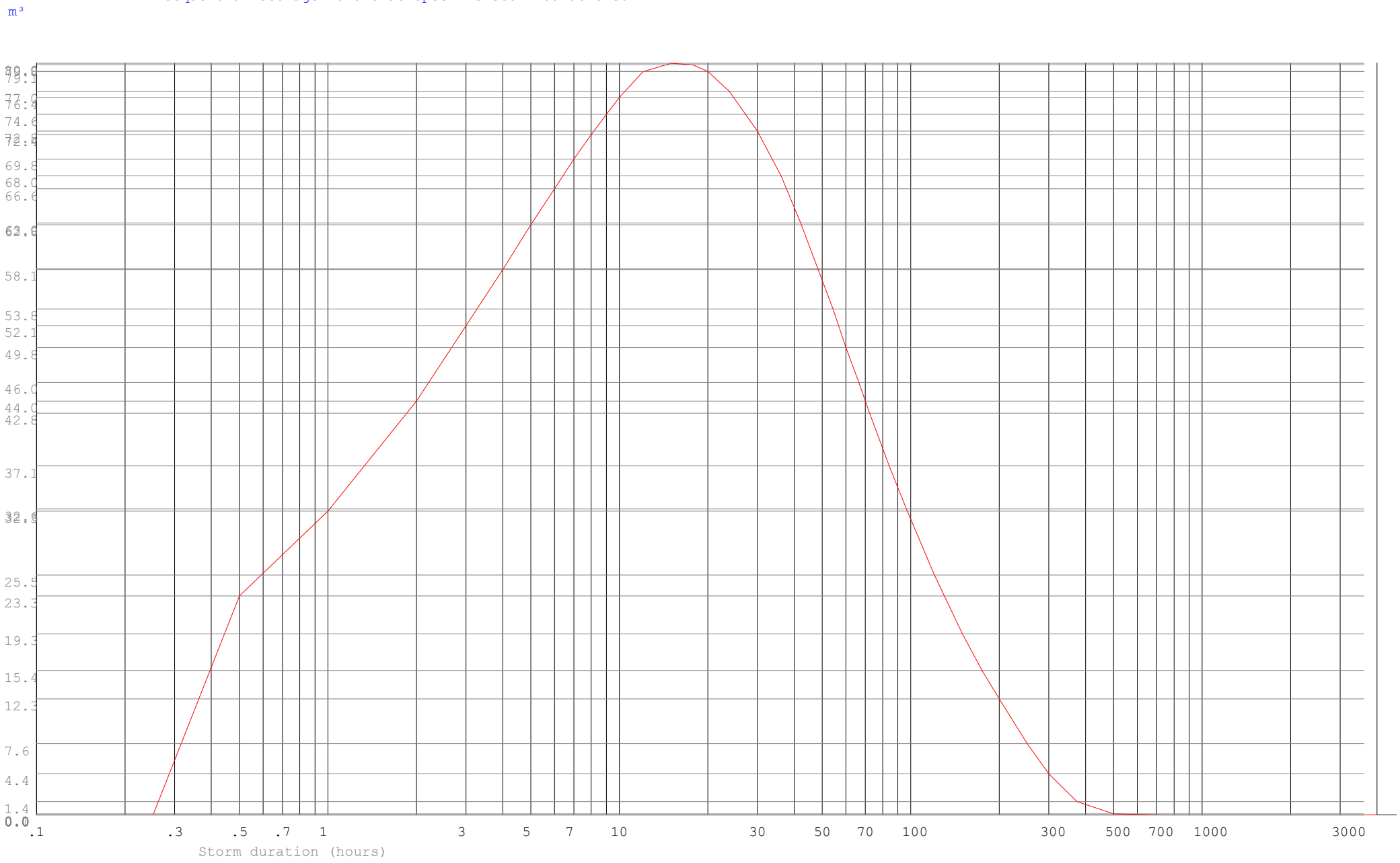
| Job No. | Sheet no. | Date | By | Checked | Reviewed |
|---|---|---|---|---|---|
| 943 | 4 | 23/10/26 | XL | | |

MasterDrain SW

Project **Oakfield**

Title **Hydrograph storage analysis (Winter profile) for COOLHAM**

Sequential storage volume at specific storm durations.



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|---|---|---|---|
| Job No. 943 | | | |
| Sheet no. 1 | | | |
| Date 27/10/26 09:49 | | | |
| Project Oakfield | By XL | Checked | Reviewed |
| Title Manhole printout for OAKFIELD.SW | | | |

| Manhole ref. | X ref | Y ref | Form | Cham diam. or length | Rect. width | Chamb. height | Shaft height | MH Volume | Exit Diam | Exit Crown | Exit Invert | Chamb const | Slab level | Cover Level | Dwnstr MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SW1 | 17.7 | 19 | circ | 450 | N/A | 0.50 | | 0.08 | 100 | 26.485 | 26.360 | N/A | 26.310 | 26.860 | ATT |
| SW2 | 48.65 | 26.89 | circ | 450 | N/A | 0.50 | | 0.08 | 100 | 25.625 | 25.500 | N/A | 25.450 | 26.000 | ATT |
| SW3 | 43.52 | 43.85 | circ | 600 | N/A | 0.50 | | 0.14 | 150 | 24.675 | 24.500 | N/A | 24.450 | 25.000 | ATT |
| ATT | 35.14 | 39.96 | circ | 2000 | N/A | 1.89 | | 5.94 | 150 | 24.175 | 24.000 | N/A | 23.950 | 25.890 | SW4 |
| SW4 | 27.97 | 24.67 | circ | 600 | N/A | 2.39 | | 0.68 | 1500 | 25.025 | 23.500 | N/A | 23.450 | 25.890ELD | DRAIN |

All manholes to be as per 'Sewers for Adoption'

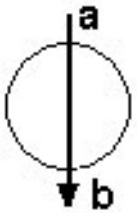
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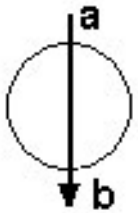
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|---|---|
| Job No. | 943 |
| Sheet no. | 2 |
| Date | 27/10/26 09:50 |

| Project | By | Checked | Reviewed |
|---|---|---|---|
| Oakfield | XL | | |

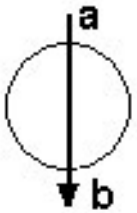
Title **Manhole printout for OAKFIELD.SW**




**MH = SW1**
**a=head**
**b = 100**

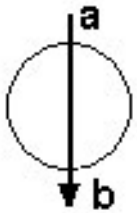



**MH = SW2**
**a=head**
**b = 100**




**MH = SW3**
**a=head**
**b = 150**

**MH = ATT**
**a= 100**
**b = 150**
**c = 100**
**d = 100**




**MH = SW4**
**a= 150**
**b = 1500**

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| | | | |
|---|---|---|---|
| Job No. 943 | | | |
| Sheet no. 3 | | | |
| Date 27/10/26 09:50 | | | |
| Project Oakfield | By XL | Checked | Reviewed |
| Title Manhole printout for OAKFIELD.SW | | | |

These explanatory notes should be read in conjunction with the Manhole printout

1) Manhole ref - the reference for the manhole in question
2) Form - either circular or rectangular
3) Chamber diam or length - diameter of chamber if circular, or length if rectangular - in metres
4) Rectangular width - if form is rectangular, this gives the width of the chamber
5) Chamber height - height of chamber from invert
6) Shaft height - height of access shaft if applicable, from top of chamber to ground level
7) Manhole volume - cubic capacity of manhole chamber
8) Exit diameter - diameter of pipe leaving this manhole
9) Exit crown - crown level of pipe leaving this manhole
10) Exit invert - invert level of pipe leaving this manhole
11) Chamb const - manhole construction :-
    N/A - not specified
    Conc - concrete rings
    Poly - polypropylene rings surrounded by selected fill
    Poly/conc - polypropylene rings surrounded by concrete
    Brick - brick built with waterproof render
    In situ - concrete cast in situ
12) Slab level - surface level of base slab (if no sump, this is placed at 50mm below exit invert to allow levels manipulation).
13) Manhole diameters of 9999 have exceeded the sizes available in SfA
14) Manhole diameters may have to be modified due to the number of branches

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MasterDrain
Foul 11.5

| | |
|---|---|
| Job No. | 943 |
| Sheet no. | 0 |
| Date | 28/10/26 |
| Project | Oakfield |
| Title | Manhole printout for OAKFIELD.FL |
| By | XL |
| Checked | |
| Reviewed | |

| Manhole ref. | Form | Cham diam. or length | Rect. width | Chamb. height | Shaft height | MH Volume | Ent. Diam | Ent. Crown | Ent. Invert | Exit Diam | Exit Crown | Exit Invert | Chamb const | Cover Level | Dwnstr MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FW1 | circ | 450 | N/A | 0.50 | | 0.08 | Head | ---- | ---- | 100 | 24.475 | 24.350 | N/A | 24.850 | FW2 |
| FW2 | circ | 450 | N/A | 1.00 | | 0.16 | 100 | 0.000 | 0.000 | 100 | 23.975 | 23.850 | N/A | 24.850 | STP |
| FW3 | circ | 450 | N/A | 0.50 | | 0.08 | Head | ---- | ---- | 100 | 26.515 | 26.390 | N/A | 27.390 | FW4 |
| FW4 | circ | 450 | N/A | 0.50 | | 0.08 | 100 | 0.000 | 0.000 | 100 | 26.395 | 26.270 | N/A | 26.470 | STP |
| STP | circ | 600 | N/A | 2.00 | 1.12 | 1.28 | 100 | 0.000 | 0.000 | 150 | 23.525 | 23.350 | N/A | 26.470 | OUTFALL |

All manholes to be as per 'Sewers for Adoption'

Levels calculated for level inverts

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MasterDrain
Foul 11.5

| | |
|---|---|
| Job No. | 943 |
| Sheet no. | 0 |
| Date | 28/10/26 |
| Project | Oakfield |
| Title | Manhole printout for OAKFIELD.FL |
| By | XL |
| Checked | |
| Reviewed | |

These explanatory notes should be read in conjunction with the Manhole printout

1) Manhole ref - the reference for the manhole in question

2) Form - either circular or rectangular

3) Chamber diam or length - diameter of chamber if circular, or length if rectangular - in metres

4) Rectangular width - if form is rectangular, this gives the width of the chamber

5) Chamber height - height of chamber from invert

6) Shaft height - height of access shaft if applicable, from top of chamber to ground level

7) Manhole volume - cubic capacity of manhole chamber

8) Exit diameter - diameter of pipe leaving this manhole

9) Exit crown - crown level of pipe leaving this manhole

10) Exit invert - invert level of pipe leaving this manhole

11) Manhole diameters of 9999 have exceeded the sizes available in SfA

12) Manhole diameters may have to be modified due to the number of branches

# APPENDIX E:

# PHOTOGRAPHS

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The site showing the barn and entrance to Coolham Road



The Atcost barn and existing dwelling



Lawn area to the rear of the existing house



© Environmental Assessment Services Limited

Existing foul water manhole



Existing Tricel Sewage Treatment Plant and Manhole/Chamber





Existing drainage ditch (flowing west)





© Environmental Assessment Services Limited

Existing surface water manhole



Open chamber to existing field drain



Foul outfall to the existing stream



© Environmental Assessment Services Limited

Stream as seen at out visit





Trial Pit 1 filled with rainwater (not draining after 1 day) and clay sub-soil





Trial Pit 2 filled with rainwater (not draining after 1 day) and clay sub-soil



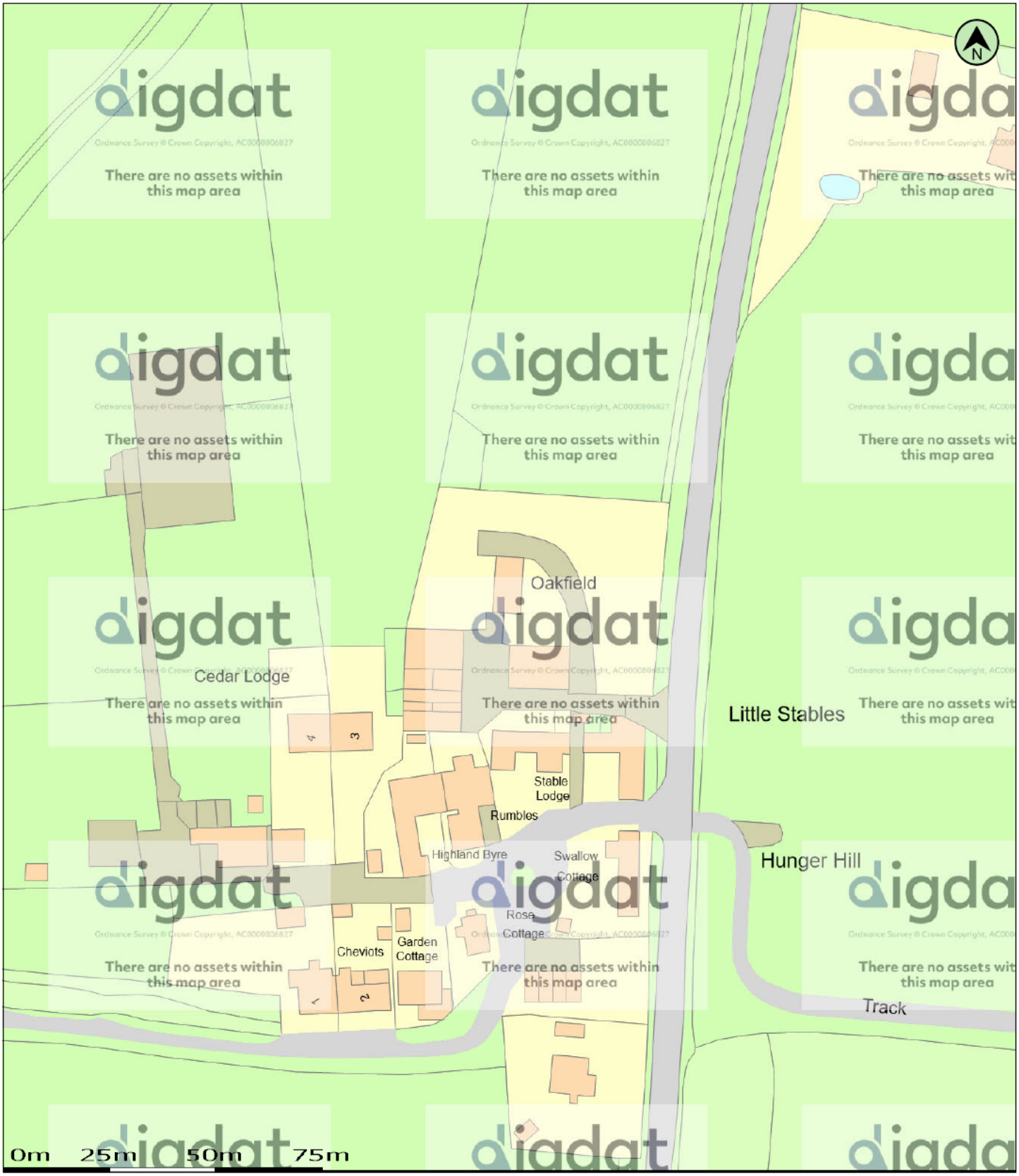


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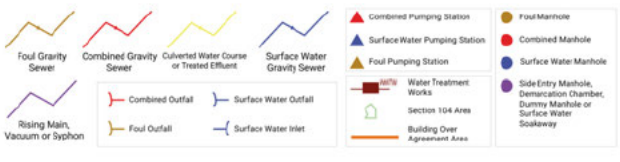
# APPENDIX F

# SOUTHERN WATER SEWER PLANS

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|---|---|---|---|
| (c) Crown copyright and database rights 2026 Ordnance Survey AC0000808122 | Scale: 1:1250 | Date: 20/10/26 | Wastewater Plan A4 |
| Data updated: 18/09/26 | Map Centre: 511464,120645 | Our Ref: 2237778 - 1 | Powered by digdat |




malcolm@easltd.co.uk

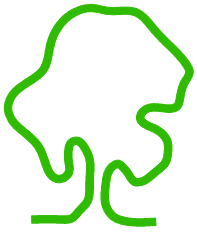
Oakfield

WATER forLIFE from Southern Water

The positions of pipes shown on this plan are believed to be correct, but Southern Water Services Ltd accept no responsibility in the event of inaccuracy. The actual positions should be determined on site. This plan is produced by Southern Water Services Ltd (c) Crown copyright and database rights 2026 Ordnance Survey AC0000808122 .This map is to be used for the purposes of viewing the location of Southern Water plant only. Any other uses of the map data or further copies is not permitted.

WARNING: BAC pipes are constructed of Bonded Asbestos Cement.

WARNING: Unknown (UNK) materials may include Bonded Asbestos Cement.



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