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12th February 2025 ref: A12342-1/250205/L2

Laura Cornborough
Foreman Homes
Yarmouth House
1300 Parkway
Whiteley
PO15 7AX

By Email only: laura.cornborough@foremanhomes.co.uk

Dear Laura,

RE: Goodwillies Timber Yard, 154 London Road, Purbrook, Waterlooville, PO7 5SR – Additional Infiltration Testing

Omnia were commissioned by Foreman Homes, to undertake additional infiltration testing in full accordance with BRE Digest 365 – Soakaway Design at the above referenced site. Please find set out below a summary of on-site observations from site works undertaken from Wednesday the 29th of January 2025 to the 31st January 2025, including presentation of infiltration rates.

Yours sincerely,

[redacted]

Jevhan Williams
Graduate Geo-Environmental Consultant

[redacted]

Olivia Maxwell
Principal Geo-Environmental Consultant

Attachments:
Appendix I: Limitations
Appendix II: Figures
Appendix III: Logs
Appendix IV: In-situ Soakaway Certificates

Omnia Environmental Consulting (south) Ltd. Trades as Omnia
Registered Address: 3 Acorn Business Centre, Northarbour Road, Cosham, Portsmouth PO6 3TH. Company Registration No.: 8715583

Quality Assurance

Project Number: A12342-1 February 2025						
Geo-Environmental	**Infiltration Testing Letter Report**					
	Prepared by:	J. Williams	**Date:**	05/02/2025	**Signature:**	[redacted]
	Reviewed by:	H. Spurling	**Date:**	06/02/2025	**Signature:**	
	Authorised by:	O. Maxwell	**Date:**	12/02/2025	**Signature:**	
Updated to include updated proposed development plan	**Reviewed by:**	H. Spurling	**Date:**	04/02/2026	**Signature:**	

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No.3 Fulwood,
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Site Address	Goodwillie's Timber Yard, 154 London Road, Purbrook, Waterlooville, PO7 5SR
National Grid Reference	467688, 108563
Site Area	3.41 ha

1.0 BACKGROUND

The area of investigation is located in the north of Purbrook and was irregularly shaped covering an area of 3.41ha. with an access route from the northern boundary which exits onto London Road (A3) to the north. The site at the time of the investigation (January 2025) was a derelict former timber yard which generally comprised areas of hardstanding, buildings and associated infrastructure in the north, centre and east of the site with an area considered to comprise a former outdoor storage area in the west and areas of dense vegetation in the south and southwest.

It is understood that the proposed development comprises an outline planning application for a residential development comprising approximately one hundred and eleven (111no.) houses.

Soakaway testing was completed on site previously by Omnia (A12342/241218/L1) at test locations specified by the drainage engineers for the scheme (BP Civils) as presented within drawing reference 000-BPC-WD-ZZ-D-C-004 dated May 2024, to determine if the ground was suitable for conventional soakaway testing. However, the results of the soakage testing were mixed and therefore the client requested further testing to attempt to locate the geology boundary between the locations which were considered to have failed and passed. Therefore, further Infiltration testing was undertaken from Wednesday 29th January 2025 to Friday 31st January 2025 with the most recent test locations specified by the client are presented as Figure 3.0 in Appendix II.

2.0 PREVIOUS INVESTIGATION

A Phase I Geo-Environmental Site Assessment was undertaken by Omnia in December 2024 (ref: A12342/1.1 Dated January 2025) as well as an intrusive site investigation (Ref: A12342/241218/L1 Dated January 2025) in order to provide information on existing ground conditions and broad level information on drainage potential.

Soakaway testing was carried out in December 2024 by Omnia (Ref: A12342/241218/L1) within seven (7no.) locations, of which four (4no.) passed (TP102, TP103, TP104 and TP105) yielding infiltration rates between $1.90x10^{-6}$ to $1.19x10^{-5}$m/s. Three (3no.) locations failed to reach the 25% effective storage depths (TP101, TP106 and TP107) due to a cohesive stratum encountered.

It was recommended that TP102 test 1 should be discounted when designing the soakaway due to the rapid infiltration rate yielded on the first test in comparison to tests 2 and 3.

The Infiltration rates for the near surface granular Wittering formation of the site were considered suitable for conventional soakaway design within locations TP102, TP103, TP104 and TP105 only. However, it was recommended that the calculated infiltration rates were provided to a suitably qualified drainage engineer to assess the suitability for drainage design.

3.0 GEOLOGY & HYDROGEOLOGY

The British Geological Survey (BGS) map for the site, Fareham (Sheet 316, Fareham, Solid and Drift Edition at a scale of 1:50,000, 1998) indicates that the site is underlain by the following geological sequence:

Table 1-1 Geological sequence on-site

Geological Unit	Formation Name	Description
Superficial	No Superficial Deposits recorded	
Bedrock	Wittering Formation (Majority of site)	Sand, silt and clay
	London Clay Formation (Most northern extent)	Clay, silt and sand

4.0 GROUND CONDITIONS ENCOUNTERED

4.1 Made Ground

Made Ground was encountered within all exploratory hole locations (SA201-SA206), to a maximum depth of 1.10m bgl (SA203), and an average Made Ground thickness of 0.71m across site. The Made Ground generally comprised soft dark brown gravelly silty CLAY. Gravel was angular to sub-rounded fine to coarse brick, concrete, flint, OR dark brown slightly clayey very gravelly SILT. Gravel was angular to sub-rounded fine to coarse macadam, brick and concrete.

4.2 Bedrock Deposits – Wittering Formation

Soils attributed to the Wittering Formation had an average thickness of 1.79m and were encountered within all locations (SA201-SA206) directly beneath the Made Ground to a maximum observed depth of 2.50m bgl although the base of the strata was not proven within any of the locations.

Typically, the bedrock deposits comprised soft orangeish brown mottled light brown sandy silty CLAY, sand was fine to coarse OR Yellowish brown silty fine to coarse SAND.

The Clay deposits were found to overlay the Sand deposits of the Whittering Formation within Locations SA201, SA205, and SA206. The thickness of the clay ranged between 0.90-1.00m with an average thickness of 0.95m.

The base of the bedrock deposits was not encountered during this investigation.

4.3 Groundwater Conditions

Groundwater was not encountered within any intrusive location.

Exploratory hole logs are included within Appendix III of this report.

5.0 BRE DG365 Soakaway Testing

Soakaway testing was undertaken in full accordance with BRE DG365 between 29th January and 31st January 2025 within SA201-SA206.

The soakaway test certificates, including full time and depth data, are included within Appendix IV with the test results summarised in Table 5.1.

Table 5-1 Summary of Infiltration rate

Location	Test Number	Pit Dimensions (L x W x D)	Depth to fill (m bgl)	Strata Type	Duration of Test (hrs:mins)	Infiltration Rate (m/s)
SA201	1	1.90x0.50x2.50	1.40	Sand	19:39	8.09×10^{-7}
	2		1.39		23:00	6.84×10^{-7}
	3		1.40		24:00	6.90×10^{-7}
SA202	1	2.00x0.50x2.50	1.40	Sand	03:00	5.87×10^{-6}
	2		1.20		05:00	3.14×10^{-6}
	3		1.10		06:00	2.48×10^{-6}
SA203	1	2.00x0.50x2.50	1.30	Sand	01:04	1.60×10^{-5}
	2		1.30		01:33	1.01×10^{-5}
	3		1.30		01:35	9.87×10^{-6}
SA204	1	1.80x0.45x2.50	1.30	Sand	01:30	1.20×10^{-5}
	2		1.30		02:00	7.69×10^{-6}
	3		1.30		02:30	8.24×10^{-6}
SA205	1	1.90x0.50x2.50	1.30	Sand	01:25	1.22×10^{-5}
	2		1.27		03:00	4.90×10^{-6}
	3		1.30		03:30	3.92×10^{-6}
SA206	1	2.00x0.45x2.50	1.30	Sand	03:00	4.34×10^{-6}
	2		1.20		04:00	3.54×10^{-6}
	3		1.20		04:00	3.21×10^{-6}

Testing was undertaken within SA201-SA206 over a duration of between 01:04 and 24:00 (hours: minutes). During these periods, the required 25% and 75% effective storage depth intercepts were reached within all locations (SA201-SA206) such that the tests were considered to be successful, providing soil infiltration rates ranging from 6.84×10^{-7} to 1.60×10^{-5}m/s.

It is recommended that the calculated infiltration rates are provided to a suitably qualified drainage engineer. The application of soakaway drainage will ultimately be dependent on the specific requirements of the development. All soakaways should be designed in accordance with BRE Special Digest 365-Soakaway Design.

6.0 DISCUSSION & CONCLUSIONS

During the soakaway testing, three (3no.) successful tests were undertaken in each of the successful trial pits in succession to ensure full saturation of surrounding soils, with all reaching the 25% and 75% effective storage depth intercepts. As a result soil infiltration rates were able to be calculated and ranged from 6.84 $x10^{-7}$ to 1.60 $x10^{-5}$m/s indicating low to medium permeability soil with poor to good drainage conditions. The results of the previous investigation (A12342/241218/L1) for successful test locations are also within this range.

Given the infiltration rates within the near surface granular Wittering Formation the site is likely to prove suitable for conventional soakaway design within locations TP102 – TP105 and SA201-SA206, and it is recommended that a qualified drainage engineer is provided with the results of this testing for further discussion.

The application of soakaway drainage will ultimately be dependent on the specific requirements of the development. All soakaways should be designed in accordance with BRE Special Digest 365-Soakaway Design.

END OF REPORT

APPENDIX I

LIMITATIONS

1. This report and its findings should be considered in relation to the terms of reference and objectives agreed between OE Ltd and the Client as indicated in Section 1.2.

2. For the work, reliance has been placed on publicly available data obtained from the sources identified. The information is not necessarily exhaustive and further information relevant to the site may be available from other sources. When using the information, it has been assumed it is correct. No attempt has been made to verify the information.

3. This report has been produced in accordance with current UK policy and legislative requirements for land and groundwater contamination, which are enforced, by the local authority and the Environment Agency. Liabilities associated with land contamination are complex and requires advice from legal professionals.

4. During the site walkover reasonable effort has been made to obtain an overview of the site conditions. However, during the site walkover no attempt has been made to enter areas of the site that are unsafe or present a risk to health and safety, are locked, barricaded, overgrown, or the location of the area has not been made known or accessible.

5. Access considerations, the presence of services and the activities being carried out on the site limited the locations where sampling locations could be installed and the techniques that could be used.

6. Site sensitivity assessments have been made based on available information at the time of writing and are ultimately for the decision of the regulatory authorities.

7. Where mention has been made to the identification of Japanese Knotweed and other invasive plant species and asbestos or asbestos-containing materials this is for indicative purposes only and do not constitute or replace full and proper surveys.

8. The executive summary, conclusions and recommendations sections of the report provide an overview and guidance only and should not be specifically relied upon without considering the context of the report in full.

9. OE cannot be held responsible for any use of the report or its contents for any purpose other than that for which it was prepared. The copyright in this report and other plans and documents prepared by OE is owned by them and no such plans or documents may be reproduced, published, or adapted without written consent. Complete copies of this may, however, be made and distributed by the client as is expected in dealing with matters related to its commission. Should the client pass copies of the report to other parties for information, the whole report should be copied, but no professional liability or warranties shall be extended to other parties by OE in this connection without their explicit written agreement there to by OE.

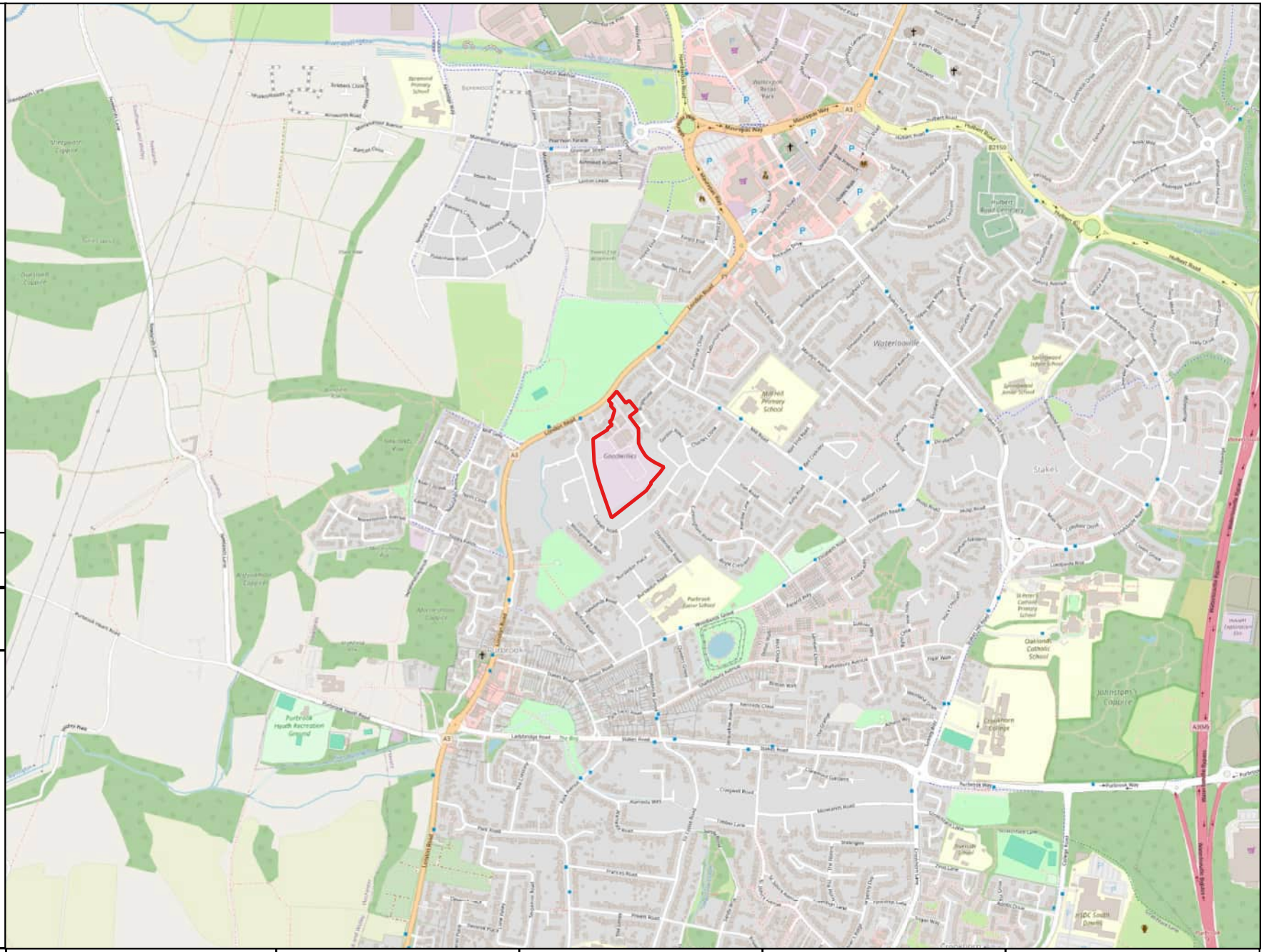
10. New information, revised practices or changes in legislation may necessitate the re-interpretation of the report, in whole or in part.

APPENDIX II

FIGURES

Key

Site Boundary



0 0.25 0.5 km

Scale	Paper Size
1:15,000	A4

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OMNIA

Job Title: Goodwillies Timber Yard	Client: Foreman Homes	Project Number: A12342-1	Date: 19/12/2024	Drawing Title: Figure 1.0 Site Location Plan
		Drawn By: H. Spurling	Authorised By: T. Rees-Blanchard	

Key

Site Boundary

0 25 50 m

Scale	Paper Size
1:1,400	A4

Contains information provided by the client (Ref: 23.128 Goodwillies Timber Yard Extract 220126)

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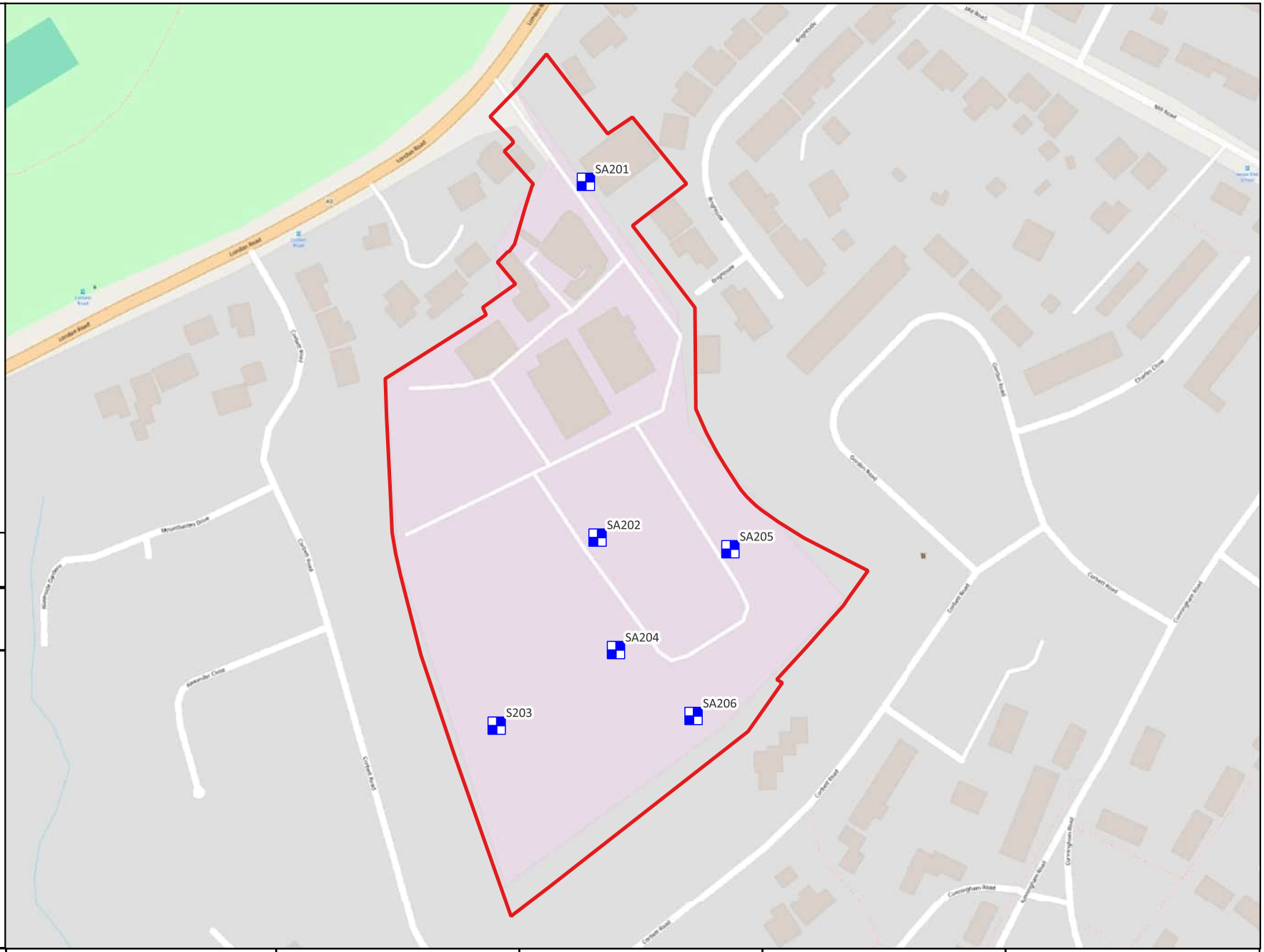
OMNIA

Project Number: A12342-1	Client: Foreman Homes	Drawn By: H. Spurling	Drawing Title: Figure 2.0 Proposed Development Plan
Job Title: Goodwillies Timber Yard	Date: 04/02/2026	Authorised By: O. Maxwell	

Key

Site Boundary

SA Locations Jan 25



0 25 50 75 100 m

Scale	Paper Size
1:2,200	A4

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OMNIA

Job Title:	Client:	Project Number:	Date:	Drawing Title:
Goodwillies Timber Yard	Foreman Homes	A12342-1	23/01/2025	Figure 3.0 Intrusive Location Plan
		Drawn By: J. Wolverton	Authorised By: H. Spurling	

APPENDIX III
INTRUSIVE LOGS

Trial Pit Log

OMNIA			Trialpit No **SA201** Sheet 1 of 1
Project Name: Goodwillies Timber Yard Phase 2	Project No. A12342-1	Co-ords: 467684.00 - 108701.00 Level:	Date 29/01/2025
Location: 154 London Road, Purbrook, Waterlooville, Portsmouth, PO7 5SR		Dimensions (m): 1.9 × 0.5, Depth 2.50	Scale 1:20
Client: Foreman Homes			Logged JW

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
							Grass over soft dark orangeish brown gravelly silty CLAY with occasional sub-angular cobbles of brick and concrete. Gravel is angular to sub-rounded fine to coarse brick, flint, concrete and macadam. [MADE GROUND]
				0.45			Soft orange brown mottled dark brown silty CLAY. [WITTERING FORMATION]
				0.90			Soft dark brown silty CLAY. [WITTERING FORMATION]
				1.45			Light brown mottled orangeish brown clayey silty fine to coarse SAND. [WITTERING FORMATION]
				2.50			End of pit at 2.50 m

Remarks: 1. Position scanned with calibrated CAT & 'Genny' prior to excavation. 2. No groundwater encountered.

Stability: STABLE

AGS

OMNIA

Trial Pit Log

Trialpit No
SA202
Sheet 1 of 1

Project Name: Goodwillies Timber Yard Phase 2	Project No. A12342-1	Co-ords: 467689.00 - 108548.00 Level:	Date 29/01/2025
Location: 154 London Road, Purbrook, Waterlooville, Portsmouth, PO7 5SR		Dimensions (m): Depth 2.50 — 2 × 0.5	Scale 1:20
Client: Foreman Homes			Logged JW

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
							CONCRETE. [MADE GROUND]
				0.20			Soft dark brown clayey very gravelly SILT with occasional cobbles of brick. Gravel is angular to sub-rounded fine to coarse brick, concrete and rare macadam. [MADE GROUND]
				0.65			Orange brown clayey silty fine to coarse SAND. [WITTERING FORMATION]
				1.80			Light yellowish brown silty fine and medium SAND. [WITTERING FORMATION]
				2.50			End of pit at 2.50 m

1
2
3
4

Remarks: 1. Position scanned with calibrated CAT & 'Genny' prior to excavation. 2. No groundwater encountered.

Stability: STABLE

AGS

Trial Pit Log

Trialpit No **SA203**

Sheet 1 of 1

Project Name: Goodwillies Timber Yard Phase 2	Project No. A12342-1	Co-ords: 467656.00 - 108482.00 Level:	Date 29/01/2025
Location: 154 London Road, Purbrook, Waterlooville, Portsmouth, PO7 5SR		Dimensions (m): Depth 2.50 — 2 × 0.5	Scale 1:20
Client: Foreman Homes			Logged JW

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
							Vegetation over soft dark brown slightly gravelly silty CLAY. Gravel is sub-angular to sub-rounded fine to coarse flint and brick. [MADE GROUND]
				0.20			Soft brown slightly gravelly silty CLAY. Gravel is angular to sub-rounded fine to coarse brick and flint. [MADE GROUND]
				1.10			Light yellowish brown silty fine and medium SAND. [WITTERING FORMATION]
				2.50			End of pit at 2.50 m

1 2 3 4

Remarks: 1. Position scanned with calibrated CAT & 'Genny' prior to excavation. 2. No groundwater encountered.

Stability: STABLE

Trial Pit Log

Trialpit No **SA204**

Sheet 1 of 1

Project Name: Goodwillies Timber Yard Phase 2	Project No. A12342-1	Co-ords: 467701.00 - 108506.00 Level:	Date 29/01/2025
Location: 154 London Road, Purbrook, Waterlooville, Portsmouth, PO7 5SR		Dimensions (m): 1.8 × 0.45 Depth 2.50	Scale 1:20
Client: Foreman Homes			Logged JW

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.20			Vegetation over soft dark brown silty CLAY with rootlets. [MADE GROUND]
				0.70			Soft dark greyish brown slightly gravelly silty CLAY. Gravel is sub-angular to sub-rounded fine to coarse flint and brick. [MADE GROUND]
				1.30			Dark orange silty fine to coarse SAND. [WITTERING FORMATION]
				2.50			Light yellowish brown silty clayey fine and medium SAND. [WITTERING FORMATION] End of pit at 2.50 m

1 2 3 4

Remarks: 1. Position scanned with calibrated CAT & 'Genny' prior to excavation. 2. No groundwater encountered.

Stability: STABLE

Trial Pit Log

OMNIA			Trialpit No **SA205** Sheet 1 of 1
Project Name: Goodwillies Timber Yard Phase 2	Project No. A12342-1	Co-ords: 467749.00 - 108549.00 Level:	Date 29/01/2025
Location: 154 London Road, Purbrook, Waterlooville, Portsmouth, PO7 5SR		Dimensions (m): Depth 2.50 — 1.9 × 0.5	Scale 1:20
Client: Foreman Homes			Logged JW

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.15			CONCRETE. [MADE GROUND]
				0.55			Soft dark brown slightly clayey very gravelly SILT with occasional sub-angular to sub-rounded cobbles of brick and concrete. Gravel is angular to sub-rounded fine to coarse brick, concrete and rare macadam. [MADE GROUND]
				1.60			Dark orangeish brown mottled light brown sandy silty CLAY. Sand is fine to coarse. [WITTERING FORMATION]
				2.50			Light yellowish brown silty fine to coarse SAND. [WITTERING FORMATION]
							End of pit at 2.50 m

1 2 3 4

Remarks: 1. Position scanned with calibrated CAT & 'Genny' prior to excavation. 2. No groundwater encountered.

Stability: STABLE

AGS

Trial Pit Log

Trialpit No **SA206**

Sheet 1 of 1

Project Name: Goodwillies Timber Yard Phase 2	Project No. A12342-1	Co-ords: 467738.00 - 108480.00 Level:	Date 29/01/2025
Location: 154 London Road, Purbrook, Waterlooville, Portsmouth, PO7 5SR		Dimensions (m): 2 × 0.45 Depth 2.50	Scale 1:20
Client: Foreman Homes			Logged JW

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.20			Vegetation over soft dark brown clayey SILT with rootlets. [MADE GROUND]
				0.80			Soft dark brown gravelly silty CLAY. Gravel is sub-angular to sub-rounded fine to coarse flint and occasional brick. [MADE GROUND]
				1.70			Soft orange brown mottled light brown sandy silty CLAY. Sand is fine to coarse. [WITTERING FORMATION]
				2.50			Light yellowish brown silty fine to coarse SAND. [WITTERING FORMATION] End of pit at 2.50 m

1 2 3 4

Remarks: 1. Position scanned with calibrated CAT & 'Genny' prior to excavation. 2. No groundwater encountered.

Stability: STABLE

APPENDIX IV
SOAKAWAY TESTING CERTIFICATES

Site Name:	Goodwillies Timber Yard
Site Reference:	A12342-1
Test Date:	29/01/2025 - 31/01/2025

Trial Pit Identification:	SA201
Trial Pit Length (m):	1.90
Trial Pit Width (m):	0.50
Trial Pit Depth (m):	2.50
Groundwater Level (m bgl):	N/A

GRAVEL FILLED SOIL INFILTRATION RATE TEST

20mm Clean Gravel used with 30% free void space assumed

See BRE DG365, Soakaway Design (2016).

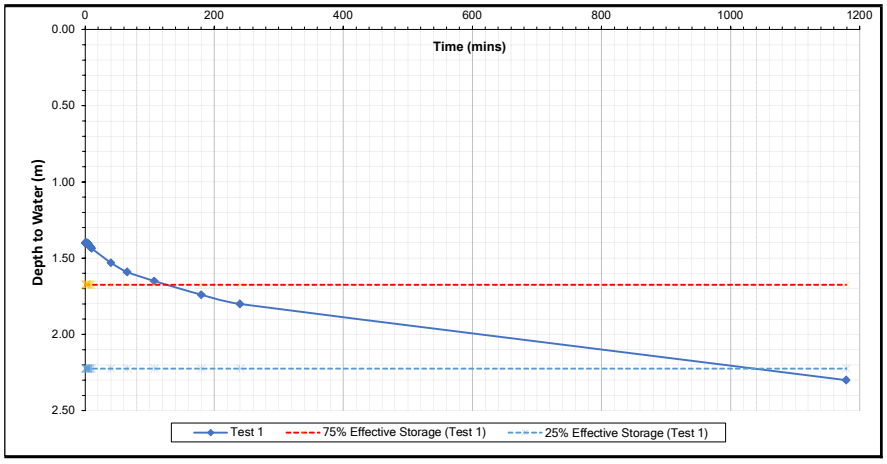
Geology Description:

0.00-0.45 Grass over soft dark orangeish brown gravelly silty CLAY with occasional sub-angular cobbles of brick and concrete. Gravel is angular to sub-rounded fine to coarse brick, flint, concrete and macadam. [MADE GROUND]. 0.45-0.90 Soft orange brown mottled dark brown silty CLAY. [WITTERING FORMATION]. 0.90-1.45 Soft dark brown silty CLAY. [WITTERING FORMATION]. 1.45-2.50 Light brown mottled orangeish brown clayey silty fine to coarse SAND. [WITTERING FORMATION].

Test Parameters	**TEST 1**	
Effective Storage Depth (m):	**Time (min)**	**Depth (m)**
1.10	0.00	1.40
	0.25	1.40
75% Effective Storage Depth (m):	0.50	1.40
0.83	0.75	1.40
	1.00	1.40
(i.e. Depth Below Ground Level) (m):	1.50	1.40
1.68	2.00	1.40
	2.50	1.40
25% Effective Storage Depth (m):	3.00	1.40
0.28	3.50	1.41
	4.00	1.41
(i.e. Depth Below Ground Level) (m):	4.50	1.41
2.23	5.00	1.41
	6.00	1.42
Effective Storage Depth Across 75% - 25% (m):	7.00	1.42
0.55	8.00	1.43
	9.00	1.43
Time to Fall to 75% Effective Depth (min):	10.00	1.44
130	40.00	1.53
	65.00	1.59
Time to Fall to 25% Effective Depth (min):	107.00	1.65
1030	180.00	1.74
	240.00	1.80
30%(Vp75%-25%) (m3):	1179.00	2.30
0.16		
As50% (m2):		
3.59		
Tp75%-25% (mins):		
900		

DESIGN SOIL INFILTRATION RATE, f (m/s):	**8.09E-07**

Comments:



Site Engineer:	**Date:**
JW	29/01/2025 31/01/2025

Checked and Approved By:	**Date:**
HS	11/02/2025

Location
SA201

Site Name:	Goodwillies Timber Yard
Site Reference:	A12342-1
Test Date:	29/01/2025 - 31/01/2025

Trial Pit Identification:	SA201
Trial Pit Length (m):	1.90
Trial Pit Width (m):	0.50
Trial Pit Depth (m):	2.50
Groundwater Level (m bgl):	N/A

GRAVEL FILLED SOIL INFILTRATION RATE TEST

20mm Clean Gravel used with 30% free void space assumed

See BRE DG365, Soakaway Design (2016).

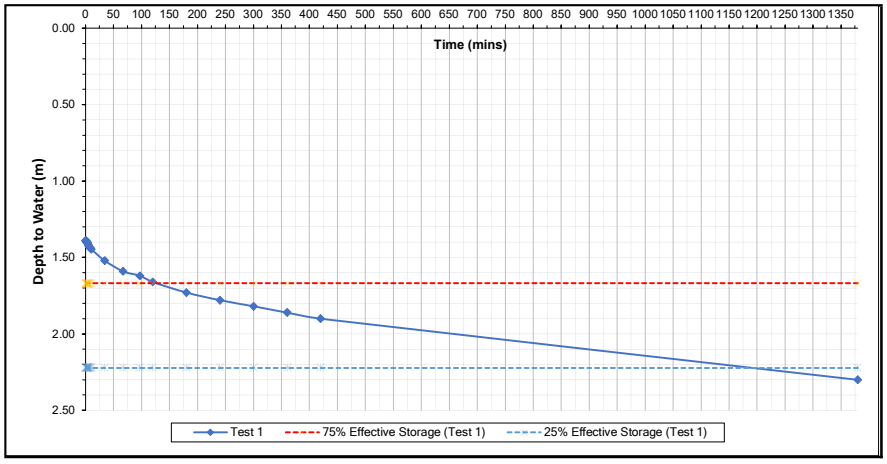
Geology Description:

0.00-0.45 Grass over soft dark orangeish brown gravelly silty CLAY with occasional sub-angular cobbles of brick and concrete. Gravel is angular to sub-rounded fine to coarse brick, flint, concrete and macadam. [MADE GROUND]. 0.45-0.90 Soft orange brown mottled dark brown silty CLAY. [WITTERING FORMATION]. 0.90-1.45 Soft dark brown silty CLAY. [WITTERING FORMATION]. 1.45-2.50 Light brown mottled orangeish brown clayey silty fine to coarse SAND. [WITTERING FORMATION].

Test Parameters	**TEST 2**	
Effective Storage Depth (m):	**Time (min)**	**Depth (m)**
1.11	0.00	1.39
	0.25	1.39
75% Effective Storage Depth (m):	0.50	1.39
0.83	0.75	1.39
	1.00	1.40
(i.e. Depth Below Ground Level) (m):	1.50	1.40
1.67	2.00	1.40
	2.50	1.40
25% Effective Storage Depth (m):	3.00	1.41
0.28	3.50	1.41
	4.00	1.41
(i.e. Depth Below Ground Level) (m):	4.50	1.42
2.22	5.00	1.42
	6.00	1.43
Effective Storage Depth Across 75% - 25% (m):	7.00	1.43
0.56	8.00	1.44
	9.00	1.44
Time to Fall to 75% Effective Depth (min):	10.00	1.45
124.00	34.00	1.52
	67.00	1.59
Time to Fall to 25% Effective Depth (min):	97.00	1.62
1190.00	120.00	1.66
	180.00	1.73
30%(Vp75%-25%) (m3):	240.00	1.78
0.16	300.00	1.82
	360.00	1.86
As50% (m2):	420.00	1.90
3.61	1380.00	2.30
Tp75%-25% (mins):		
1066.00		

DESIGN SOIL INFILTRATION RATE, f (m/s):	**6.84E-07**

Comments:



Site Engineer:	**Date:**
JW	29/01/2025 31/01/2025

Checked and Approved By:	**Date:**
HS	11/02/2025

Location
SA201

Site Name:	Goodwillies Timber Yard
Site Reference:	A12342-1
Test Date:	29/01/2025 - 31/01/2025

Trial Pit Identification:	SA201
Trial Pit Length (m):	1.90
Trial Pit Width (m):	0.50
Trial Pit Depth (m):	2.50
Groundwater Level (m bgl):	N/A

GRAVEL FILLED SOIL INFILTRATION RATE TEST

20mm Clean Gravel used with 30% free void space assumed

See BRE DG365, Soakaway Design (2016).

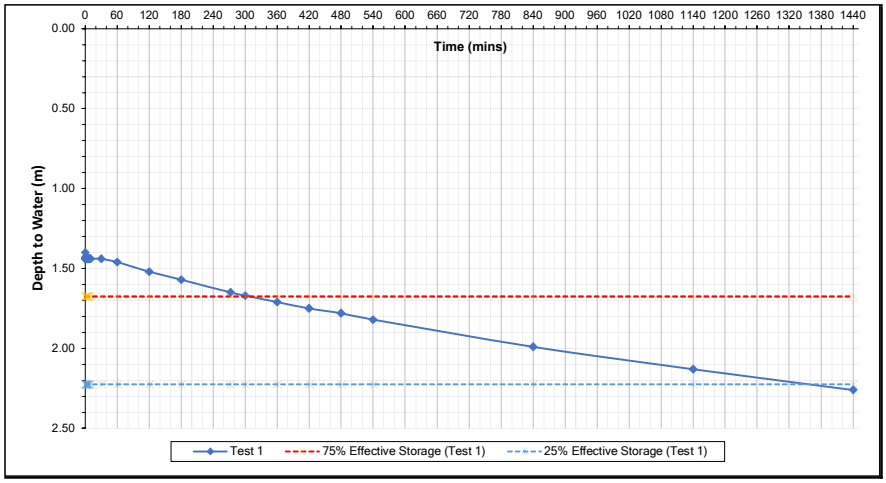
Geology Description:

0.00-0.45 Grass over soft dark orangeish brown gravelly silty CLAY with occasional sub-angular cobbles of brick and concrete. Gravel is angular to sub-rounded fine to coarse brick, flint, concrete and macadam. [MADE GROUND]. 0.45-0.90 Soft orange brown mottled dark brown silty CLAY. [WITTERING FORMATION]. 0.90-1.45 Soft dark brown silty CLAY. [WITTERING FORMATION]. 1.45-2.50 Light brown mottled orangeish brown clayey silty fine to coarse SAND. [WITTERING FORMATION].

Test Parameters	**TEST 3**	
Effective Storage Depth (m):	**Time (min)**	**Depth (m)**
1.10	0.00	1.40
	0.25	1.43
75% Effective Storage Depth (m):	0.50	1.44
0.83	0.75	1.44
	1.00	1.44
(i.e. Depth Below Ground Level) (m):	1.50	1.44
1.68	2.00	1.44
	2.50	1.44
25% Effective Storage Depth (m):	3.00	1.44
0.28	3.50	1.44
	4.00	1.44
(i.e. Depth Below Ground Level) (m):	4.50	1.44
2.23	5.00	1.44
	6.00	1.44
Effective Storage Depth Across 75% - 25% (m):	7.00	1.44
0.55	8.00	1.44
	9.00	1.44
Time to Fall to 75% Effective Depth (min):	10.00	1.44
300	30.00	1.44
	60.00	1.46
Time to Fall to 25% Effective Depth (min):	120.00	1.52
1355	180.00	1.57
	273.00	1.65
30%(Vp75%-25%) (m3):	300.00	1.67
0.16	360.00	1.71
	420.00	1.75
As50% (m2):	480.00	1.78
3.59	540.00	1.82
	840.00	1.99
Tp75%-25% (mins):	1140.00	2.13
1055	1440.00	2.26

DESIGN SOIL INFILTRATION RATE, f (m/s):	**6.90E-07**

Comments:



Site Engineer:	**Date:**
JW	29/01/2025 31/01/2025

Checked and Approved By:	**Date:**
HS	11/02/2025

Location
SA201

Site Name:	Goodwillies Timber Yard
Site Reference:	A12342-1
Test Date:	29/01/2025 - 31/01/2025

Trial Pit Identification:	SA202
Trial Pit Length (m):	2.00
Trial Pit Width (m):	0.50
Trial Pit Depth (m):	2.50
Groundwater Level (m bgl):	N/A

GRAVEL FILLED SOIL INFILTRATION RATE TEST

20mm Clean Gravel used with 30% free void space assumed

See BRE DG365, Soakaway Design (2016).

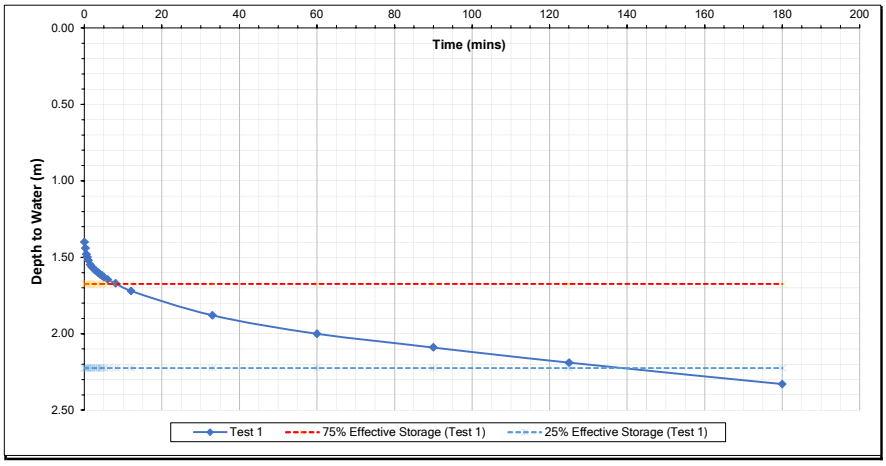
Geology Description:

0.00-0.20 CONCRETE. [MADE GROUND]. 0.20-0.65 Soft dark brown clayey very gravelly SILT with occasional cobbles of brick. Gravel is angular to sub-rounded fine to coarse brick, concrete and rare macadam. [MADE GROUND]. 0.65-1.80 Orange brown clayey silty fine to coarse SAND. [WITTERING FORMATION] 1.80-2.50 Light yellowish brown silty fine and medium SAND. [WITTERING FORMATION]

Test Parameters	**TEST 1**	
Effective Storage Depth (m):	**Time (min)**	**Depth (m)**
1.10	0.00	1.40
	0.25	1.44
75% Effective Storage Depth (m):	0.50	1.48
0.83	0.75	1.50
	1.00	1.52
(i.e. Depth Below Ground Level) (m):	1.50	1.55
1.68	2.00	1.57
	2.50	1.58
25% Effective Storage Depth (m):	3.00	1.59
0.28	3.50	1.60
	4.00	1.61
(i.e. Depth Below Ground Level) (m):	4.50	1.62
2.23	5.00	1.63
	6.00	1.65
Effective Storage Depth Across 75% - 25% (m):	8.00	1.67
0.55	12.00	1.72
	33.00	1.88
Time to Fall to 75% Effective Depth (min):	60.00	2.00
10	90.00	2.09
	125.00	2.19
Time to Fall to 25% Effective Depth (min):	180.00	2.33
135		
30%(Vp75%-25%) (m3):		
0.17		
As50% (m2):		
3.75		
Tp75%-25% (mins):		
125		

DESIGN SOIL INFILTRATION RATE, f (m/s):	**5.87E-06**

Comments:



Site Engineer:	**Date:**
JW	29/01/2025 31/01/2025

Checked and Approved By:	**Date:**
HS	06/02/2025

Location
SA202

Site Name:	Goodwillies Timber Yard
Site Reference:	A12342-1
Test Date:	29/01/2025 - 31/01/2025

Trial Pit Identification:	SA202
Trial Pit Length (m):	2.00
Trial Pit Width (m):	0.50
Trial Pit Depth (m):	2.50
Groundwater Level (m bgl):	N/A

GRAVEL FILLED SOIL INFILTRATION RATE TEST

20mm Clean Gravel used with 30% free void space assumed

See BRE DG365, Soakaway Design (2016).

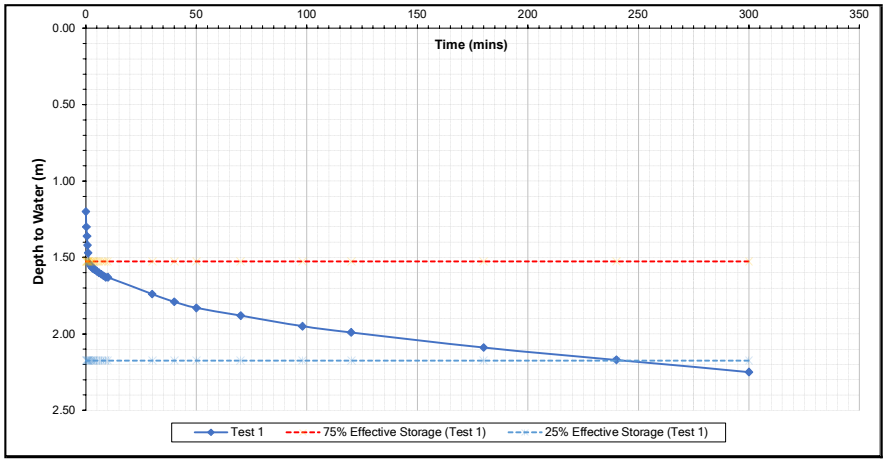
Geology Description:

0.00-0.20 CONCRETE. [MADE GROUND]. 0.20-0.65 Soft dark brown clayey very gravelly SILT with occasional cobbles of brick. Gravel is angular to sub-rounded fine to coarse brick, concrete and rare macadam. [MADE GROUND]. 0.65-1.80 Orange brown clayey silty fine to coarse SAND. [WITTERING FORMATION] 1.80-2.50 Light yellowish brown silty fine and medium SAND. [WITTERING FORMATION]

Test Parameters	TEST 2	
Effective Storage Depth (m):	**Time (min)**	**Depth (m)**
1.30	0.00	1.20
	0.25	1.30
75% Effective Storage Depth (m):	0.50	1.36
0.98	0.75	1.42
	1.00	1.47
(i.e. Depth Below Ground Level) (m):	1.50	1.54
1.53	2.00	1.55
	2.50	1.56
25% Effective Storage Depth (m):	3.00	1.57
0.33	3.50	1.57
	4.00	1.58
(i.e. Depth Below Ground Level) (m):	5.00	1.59
2.18	6.00	1.60
	7.00	1.61
Effective Storage Depth Across 75% - 25% (m):	8.00	1.62
0.65	9.00	1.63
	10.00	1.63
Time to Fall to 75% Effective Depth (min):	30.00	1.74
1.25	40.00	1.79
	50.00	1.83
Time to Fall to 25% Effective Depth (min):	70.00	1.88
245.00	98.00	1.95
	120.00	1.99
30%(Vp75%-25%) (m3):	180.00	2.09
0.20	240.00	2.17
	300.00	2.25
As50% (m2):		
4.25		
Tp75%-25% (mins):		
243.75		

DESIGN SOIL INFILTRATION RATE, f (m/s):	**3.14E-06**

Comments:



Site Engineer:	Date:
JW	29/01/2025 31/01/2025

Checked and Approved By:	Date:
HS	06/02/2025

Location
SA202

Site Name:	Goodwillies Timber Yard
Site Reference:	A12342-1
Test Date:	29/01/2025 - 31/01/2025

Trial Pit Identification:	SA202
Trial Pit Length (m):	2.00
Trial Pit Width (m):	0.50
Trial Pit Depth (m):	2.50
Groundwater Level (m bgl):	N/A

GRAVEL FILLED SOIL INFILTRATION RATE TEST

20mm Clean Gravel used with 30% free void space assumed

See BRE DG365, Soakaway Design (2016).

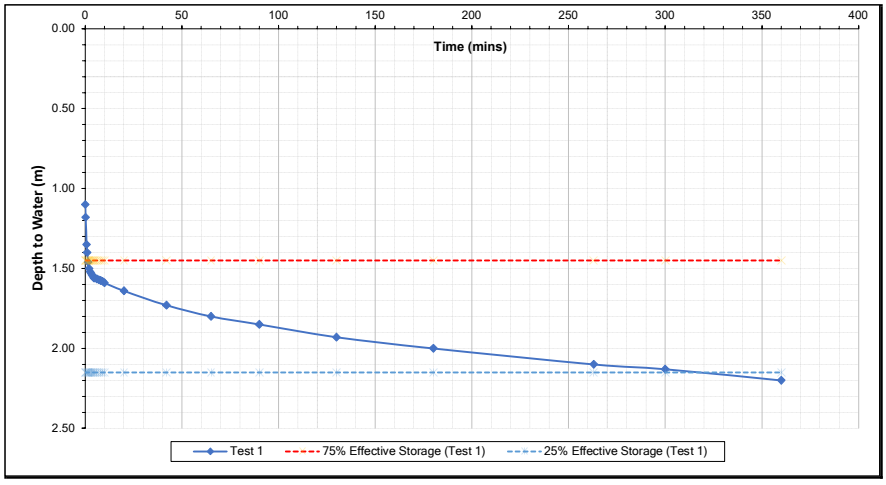
Geology Description:

0.00-0.20 CONCRETE. [MADE GROUND]. 0.20-0.65 Soft dark brown clayey very gravelly SILT with occasional cobbles of brick. Gravel is angular to sub-rounded fine to coarse brick, concrete and rare macadam. [MADE GROUND]. 0.65-1.80 Orange brown clayey silty fine to coarse SAND. [WITTERING FORMATION] 1.80-2.50 Light yellowish brown silty fine and medium SAND. [WITTERING FORMATION]

Test Parameters	TEST 3	
Effective Storage Depth (m):	**Time (min)**	**Depth (m)**
1.40	0.00	1.10
	0.25	1.18
75% Effective Storage Depth (m):	0.75	1.35
1.05	1.00	1.40
	1.50	1.46
(i.e. Depth Below Ground Level) (m):	2.00	1.50
1.45	2.50	1.52
	3.00	1.53
25% Effective Storage Depth (m):	3.50	1.54
0.35	4.00	1.55
	4.50	1.56
(i.e. Depth Below Ground Level) (m):	5.00	1.56
2.15	6.00	1.57
	7.00	1.57
Effective Storage Depth Across 75% - 25% (m):	8.00	1.58
0.7	9.00	1.58
	10.00	1.59
Time to Fall to 75% Effective Depth (min):	20.00	1.64
1.5	42.00	1.73
	65.00	1.80
Time to Fall to 25% Effective Depth (min):	90.00	1.85
315	130.00	1.93
	180.00	2.00
30%(Vp75%-25%) (m3):	263.00	2.10
0.21	300.00	2.13
	360.00	2.20
As50% (m2):		
4.5		
Tp75%-25% (mins):		
313.5		

DESIGN SOIL INFILTRATION RATE, f (m/s):	**2.48E-06**

Comments:



Site Engineer:	Date:
JW	29/01/2025 31/01/2025

Checked and Approved By:	Date:
HS	06/02/2025

Location
SA202

Site Name:	Goodwillies Timber Yard
Site Reference:	A12342-1
Test Date:	30/01/2025 - 31/01/2025

Trial Pit Identification:	SA203
Trial Pit Length (m):	2.00
Trial Pit Width (m):	0.50
Trial Pit Depth (m):	2.50
Groundwater Level (m bgl):	N/A

GRAVEL FILLED SOIL INFILTRATION RATE TEST

20mm Clean Gravel used with 30% free void space assumed

See BRE DG365, Soakaway Design (2016).

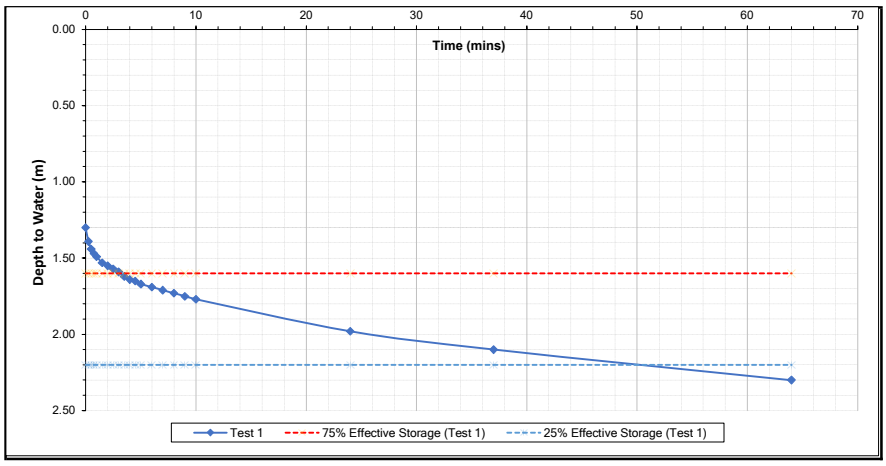
Geology Description:

0.00-0.20 Vegetation over soft dark brown slightly gravelly silty CLAY. Gravel is sub-angular to sub-rounded fine to coarse flint and brick. [MADE GROUND]. 0.20-1.10 Soft brown slightly gravelly silty CLAY. Gravel is angular to sub-rounded fine to coarse brick and flint. [MADE GROUND]. 1.10-2.50 Light yellowish brown silty fine and medium SAND. [WITTERING FORMATION]

Test Parameters	TEST 1	
Effective Storage Depth (m):	**Time (min)**	**Depth (m)**
1.20	0.00	1.30
	0.25	1.39
75% Effective Storage Depth (m):	0.50	1.44
0.90	0.75	1.47
	1.00	1.49
(i.e. Depth Below Ground Level) (m):	1.50	1.53
1.60	2.00	1.55
	2.50	1.57
25% Effective Storage Depth (m):	3.00	1.59
0.30	3.50	1.62
	4.00	1.64
(i.e. Depth Below Ground Level) (m):	4.50	1.65
2.20	5.00	1.67
	6.00	1.69
Effective Storage Depth Across 75% - 25% (m):	7.00	1.71
0.60	8.00	1.73
	9.00	1.75
Time to Fall to 75% Effective Depth (min):	10.00	1.77
3	24.00	1.98
	37.00	2.10
Time to Fall to 25% Effective Depth (min):	64.00	2.30
50		
30%(Vp75%-25%) (m3):		
0.18		
As50% (m2):		
4.00		
Tp75%-25% (mins):		
47		

DESIGN SOIL INFILTRATION RATE, f (m/s):	**1.60E-05**

Comments:



Site Engineer:	Date:
JW	30/01/2025 31/01/2025

Checked and Approved By:	Date:
HS	06/02/2025

Location
SA203

Site Name:	Goodwillies Timber Yard
Site Reference:	A12342-1
Test Date:	30/01/2025 - 31/01/2025

Trial Pit Identification:	SA203
Trial Pit Length (m):	2.00
Trial Pit Width (m):	0.50
Trial Pit Depth (m):	2.50
Groundwater Level (m bgl):	N/A

GRAVEL FILLED SOIL INFILTRATION RATE TEST

20mm Clean Gravel used with 30% free void space assumed

See BRE DG365, Soakaway Design (2016).

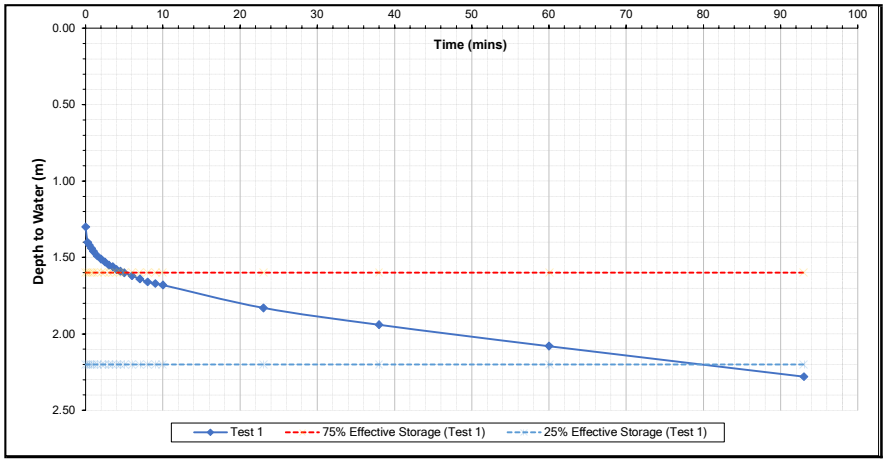
Geology Description:

0.00-0.20 Vegetation over soft dark brown slightly gravelly silty CLAY. Gravel is sub-angular to sub-rounded fine to coarse flint and brick. [MADE GROUND]. 0.20-1.10 Soft brown slightly gravelly silty CLAY. Gravel is angular to sub-rounded fine to coarse brick and flint. [MADE GROUND]. 1.10-2.50 Light yellowish brown silty fine and medium SAND. [WITTERING FORMATION]

Test Parameters	**TEST 2**	
Effective Storage Depth (m):	**Time (min)**	**Depth (m)**
1.20	0.00	1.30
	0.25	1.40
75% Effective Storage Depth (m):	0.50	1.42
0.90	0.75	1.44
	1.00	1.46
(i.e. Depth Below Ground Level) (m):	1.50	1.49
1.60	2.00	1.51
	2.50	1.53
25% Effective Storage Depth (m):	3.00	1.55
0.30	3.50	1.56
	4.00	1.58
(i.e. Depth Below Ground Level) (m):	4.50	1.59
2.20	5.00	1.60
	6.00	1.62
Effective Storage Depth Across 75% - 25% (m):	7.00	1.64
0.60	8.00	1.66
	9.00	1.67
Time to Fall to 75% Effective Depth (min):	10.00	1.68
5.00	23.00	1.83
	38.00	1.94
Time to Fall to 25% Effective Depth (min):	60.00	2.08
79.50	93.00	2.28
30%(Vp75%-25%) (m3):		
0.18		
As50% (m2):		
4.00		
Tp75%-25% (mins):		
74.50		

DESIGN SOIL INFILTRATION RATE, f (m/s):	**1.01E-05**

Comments:



Site Engineer:	**Date:**
JW	30/01/2025 31/01/2025

Checked and Approved By:	**Date:**
HS	06/02/2025

Location
SA203

Site Name:	Goodwillies Timber Yard
Site Reference:	A12342-1
Test Date:	30/01/2025 - 31/01/2025

Trial Pit Identification:	SA203
Trial Pit Length (m):	2.00
Trial Pit Width (m):	0.50
Trial Pit Depth (m):	2.50
Groundwater Level (m bgl):	N/A

GRAVEL FILLED SOIL INFILTRATION RATE TEST

20mm Clean Gravel used with 30% free void space assumed

See BRE DG365, Soakaway Design (2016).

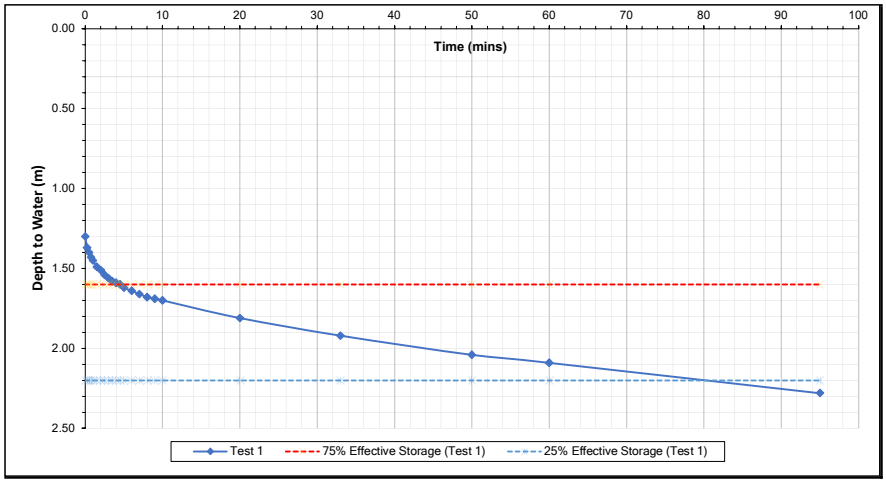
Geology Description:

0.00-0.20 Vegetation over soft dark brown slightly gravelly silty CLAY. Gravel is sub-angular to sub-rounded fine to coarse flint and brick. [MADE GROUND]. 0.20-1.10 Soft brown slightly gravelly silty CLAY. Gravel is angular to sub-rounded fine to coarse brick and flint. [MADE GROUND]. 1.10-2.50 Light yellowish brown silty fine and medium SAND. [WITTERING FORMATION]

Test Parameters	**TEST 3**	
Effective Storage Depth (m):	**Time (min)**	**Depth (m)**
1.20	0.00	1.30
	0.25	1.37
75% Effective Storage Depth (m):	0.50	1.40
0.90	0.75	1.43
	1.00	1.45
(i.e. Depth Below Ground Level) (m):	1.50	1.49
1.60	2.00	1.51
	2.50	1.54
25% Effective Storage Depth (m):	3.00	1.56
0.30	3.50	1.58
	4.00	1.59
(i.e. Depth Below Ground Level) (m):	4.50	1.60
2.20	5.00	1.62
	6.00	1.64
Effective Storage Depth Across 75% - 25% (m):	7.00	1.66
0.6	8.00	1.68
	9.00	1.69
Time to Fall to 75% Effective Depth (min):	10.00	1.70
4	20.00	1.81
	33.00	1.92
Time to Fall to 25% Effective Depth (min):	50.00	2.04
80	60.00	2.09
	95.00	2.28
30%(Vp75%-25%) (m3):		
0.18		
As50% (m2):		
4		
Tp75%-25% (mins):		
76		

DESIGN SOIL INFILTRATION RATE, f (m/s):	**9.87E-06**

Comments:



Site Engineer:	**Date:**
JW	30/01/2025 31/01/2025

Checked and Approved By:	**Date:**
HS	06/02/2025

Location
SA203

Site Name:	Goodwillies Timber Yard
Site Reference:	A12342-1
Test Date:	30/01/25 - 31/01/25

Trial Pit Identification:	SA204
Trial Pit Length (m):	1.80
Trial Pit Width (m):	0.45
Trial Pit Depth (m):	2.50
Groundwater Level (m bgl):	N/A

GRAVEL FILLED SOIL INFILTRATION RATE TEST

20mm Clean Gravel used with 30% free void space assumed

See BRE DG365, Soakaway Design (2016).

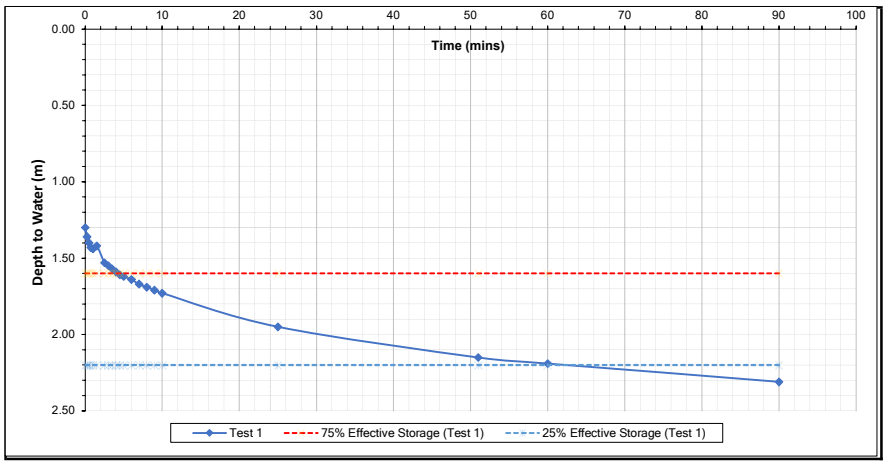
Geology Description:

0.00-0.20 Vegetation over soft dark brownish black silty CLAY with rootlets. [MADE GROUND]. 0.20-0.70 Soft dark greyish brown slightly gravelly silty CLAY. Gravel is sub-angular to sub-rounded fine to coarse flint and brick. [MADE GROUND]. 0.70-1.30 Dark orange silty fine to coarse SAND. [WITTERING FORMATION]. 1.30-2.50 Light yellowish brown silty clayey fine and medium SAND. [WITTERING FORMATION].

Test Parameters	TEST 1	
Effective Storage Depth (m):	**Time (min)**	**Depth (m)**
1.20	0.00	1.30
	0.25	1.36
75% Effective Storage Depth (m):	0.50	1.40
0.90	0.75	1.43
	1.00	1.44
(i.e. Depth Below Ground Level) (m):	1.50	1.42
1.60	2.50	1.53
	3.00	1.55
25% Effective Storage Depth (m):	3.50	1.57
0.30	4.00	1.59
	4.50	1.61
(i.e. Depth Below Ground Level) (m):	5.00	1.62
2.20	6.00	1.64
	7.00	1.67
Effective Storage Depth Across 75% - 25% (m):	8.00	1.69
0.60	9.00	1.71
	10.00	1.73
Time to Fall to 75% Effective Depth (min):	25.00	1.95
4.5	51.00	2.15
	60.00	2.19
Time to Fall to 25% Effective Depth (min):	90.00	2.31
62		
30%(Vp75%-25%) (m3):		
0.15		
As50% (m2):		
3.51		
Tp75%-25% (mins):		
57.5		

DESIGN SOIL INFILTRATION RATE, f (m/s):	**1.20E-05**

Comments:



Site Engineer:	Date:
JW	30/01/25 - 31/01/25

Checked and Approved By:	Date:
HS	06/02/2025

Location
SA204

Site Name:	Goodwillies Timber Yard
Site Reference:	A12342-1
Test Date:	30/01/25 - 31/01/25

Trial Pit Identification:	SA204
Trial Pit Length (m):	1.80
Trial Pit Width (m):	0.45
Trial Pit Depth (m):	2.50
Groundwater Level (m bgl):	N/A

GRAVEL FILLED SOIL INFILTRATION RATE TEST

20mm Clean Gravel used with 30% free void space assumed

See BRE DG365, Soakaway Design (2016).

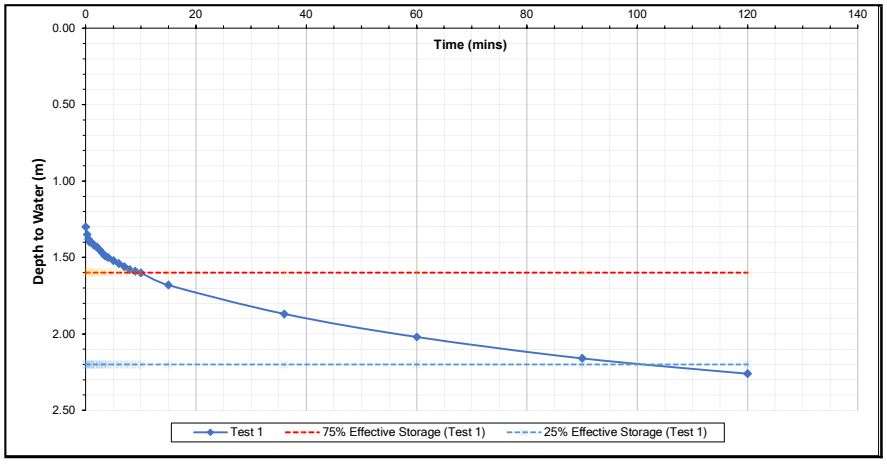
Geology Description:

0.00-0.20 Vegetation over soft dark brownish black silty CLAY with rootlets. [MADE GROUND]. 0.20-0.70 Soft dark greyish brown slightly gravelly silty CLAY. Gravel is sub-angular to sub-rounded fine to coarse flint and brick. [MADE GROUND]. 0.70-1.30 Dark orange silty fine to coarse SAND. [WITTERING FORMATION]. 1.30-2.50 Light yellowish brown silty clayey fine and medium SAND. [WITTERING FORMATION].

Test Parameters	**TEST 2**	
Effective Storage Depth (m):	**Time (min)**	**Depth (m)**
1.20	0.00	1.30
	0.25	1.35
75% Effective Storage Depth (m):	0.50	1.38
0.90	0.75	1.40
	1.00	1.40
(i.e. Depth Below Ground Level) (m):	1.50	1.42
1.60	2.00	1.43
	2.50	1.45
25% Effective Storage Depth (m):	3.00	1.47
0.30	3.50	1.49
	4.00	1.50
(i.e. Depth Below Ground Level) (m):	5.00	1.52
2.20	6.00	1.54
	7.00	1.56
Effective Storage Depth Across 75% - 25% (m):	8.00	1.58
0.60	9.00	1.59
	10.00	1.60
Time to Fall to 75% Effective Depth (min):	15.00	1.68
10.00	36.00	1.87
	60.00	2.02
Time to Fall to 25% Effective Depth (min):	90.00	2.16
100.00	120.00	2.26
30%(Vp75%-25%) (m3):		
0.15		
As50% (m2):		
3.51		
Tp75%-25% (mins):		
90.00		

DESIGN SOIL INFILTRATION RATE, f (m/s):	**7.69E-06**

Comments:



Site Engineer:	**Date:**
JW	30/01/25 - 31/01/25

Checked and Approved By:	**Date:**
HS	06/02/2025

Location
SA204

Site Name:	Goodwillies Timber Yard
Site Reference:	A12342-1
Test Date:	30/01/25 - 31/01/25

Trial Pit Identification:	SA204
Trial Pit Length (m):	1.80
Trial Pit Width (m):	0.45
Trial Pit Depth (m):	2.50
Groundwater Level (m bgl):	N/A

GRAVEL FILLED SOIL INFILTRATION RATE TEST

20mm Clean Gravel used with 30% free void space assumed

See BRE DG365, Soakaway Design (2016).

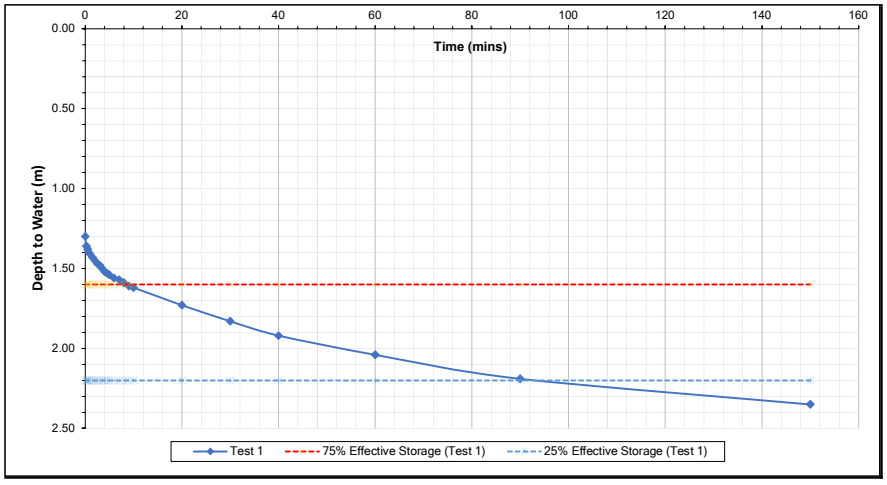
Geology Description:

0.00-0.20 Vegetation over soft dark brownish black silty CLAY with rootlets. [MADE GROUND]. 0.20-0.70 Soft dark greyish brown slightly gravelly silty CLAY. Gravel is sub-angular to sub-rounded fine to coarse flint and brick. [MADE GROUND]. 0.70-1.30 Dark orange silty fine to coarse SAND. [WITTERING FORMATION]. 1.30-2.50 Light yellowish brown silty clayey fine and medium SAND. [WITTERING FORMATION].

Test Parameters	**TEST 3**	
Effective Storage Depth (m):	**Time (min)**	**Depth (m)**
1.20	0.00	1.30
	0.25	1.36
75% Effective Storage Depth (m):	0.50	1.38
0.90	0.75	1.40
	1.00	1.41
(i.e. Depth Below Ground Level) (m):	1.50	1.43
1.60	2.00	1.45
	2.50	1.47
25% Effective Storage Depth (m):	3.00	1.48
0.30	3.50	1.50
	4.00	1.52
(i.e. Depth Below Ground Level) (m):	4.50	1.53
2.20	5.00	1.54
	6.00	1.56
Effective Storage Depth Across 75% - 25% (m):	7.00	1.57
0.6	8.00	1.59
	9.00	1.61
Time to Fall to 75% Effective Depth (min):	10.00	1.62
8	20.00	1.73
	30.00	1.83
Time to Fall to 25% Effective Depth (min):	40.00	1.92
92	60.00	2.04
	90.00	2.19
30%(Vp75%-25%) (m3):	150.00	2.35
0.15		
As50% (m2):		
3.51		
Tp75%-25% (mins):		
84		

DESIGN SOIL INFILTRATION RATE, f (m/s):	**8.24E-06**

Comments:



Site Engineer:	**Date:**
JW	30/01/25 - 31/01/25

Checked and Approved By:	**Date:**
HS	06/02/2025

Location
SA204

Site Name:	Goodwillies Timber Yard
Site Reference:	A12342-1
Test Date:	29/01/2025 - 30/01/2025

Trial Pit Identification:	SA205
Trial Pit Length (m):	1.90
Trial Pit Width (m):	0.50
Trial Pit Depth (m):	2.50
Groundwater Level (m bgl):	N/A

GRAVEL FILLED SOIL INFILTRATION RATE TEST

20mm Clean Gravel used with 30% free void space assumed

See BRE DG365, Soakaway Design (2016).

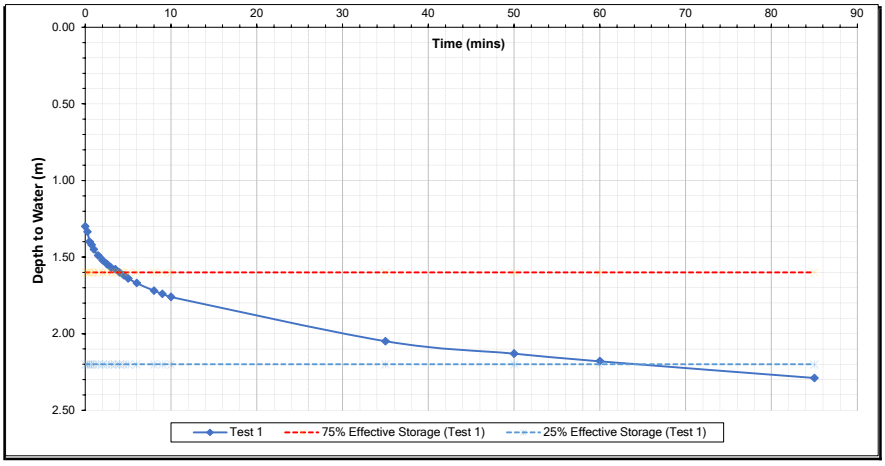
Geology Description:

0.00-0.15 CONCRETE. [MADE GROUND]. 0.15-0.55 Soft dark brown clayey very gravelly SILT with occasional sub-angular to sub-rounded cobbles of brick and concrete. Gravel is angular to sub-rounded fine to coarse brick, concrete and rare macadam. [MADE GROUND]. 0.55-1.60 Dark orangeish brown mottled light brown sandy silty CLAY. Sand is fine to coarse. [WITTERING FORMATION]. 1.60-2.50 Light yellowish brown silty fine to coarse SAND. [WITTERING FORMATION].

Test Parameters	**TEST 1**	
Effective Storage Depth (m):	**Time (min)**	**Depth (m)**
1.20	0.00	1.30
	0.25	1.34
75% Effective Storage Depth (m):	0.50	1.40
0.90	0.75	1.42
	1.00	1.45
(i.e. Depth Below Ground Level) (m):	1.50	1.49
1.60	2.00	1.52
	2.50	1.55
25% Effective Storage Depth (m):	3.00	1.57
0.30	3.50	1.58
	4.00	1.60
(i.e. Depth Below Ground Level) (m):	4.50	1.62
2.20	5.00	1.64
	6.00	1.67
Effective Storage Depth Across 75% - 25% (m):	8.00	1.72
0.60	9.00	1.74
	10.00	1.76
Time to Fall to 75% Effective Depth (min):	35.00	2.05
4	50.00	2.13
	60.00	2.18
Time to Fall to 25% Effective Depth (min):	85.00	2.29
65		
30%(Vp75%-25%) (m3):		
0.17		
As50% (m2):		
3.83		
Tp75%-25% (mins):		
61		

DESIGN SOIL INFILTRATION RATE, f (m/s):	**1.22E-05**

Comments:



Site Engineer:	**Date:**
JW	29/01/2025 30/01/2025

Checked and Approved By:	**Date:**
HS	06/02/2025

Location
SA205

Site Name:	Goodwillies Timber Yard
Site Reference:	A12342-1
Test Date:	29/01/2025 - 30/01/2025

Trial Pit Identification:	SA205
Trial Pit Length (m):	1.90
Trial Pit Width (m):	0.50
Trial Pit Depth (m):	2.50
Groundwater Level (m bgl):	N/A

GRAVEL FILLED SOIL INFILTRATION RATE TEST

20mm Clean Gravel used with 30% free void space assumed

See BRE DG365, Soakaway Design (2016).

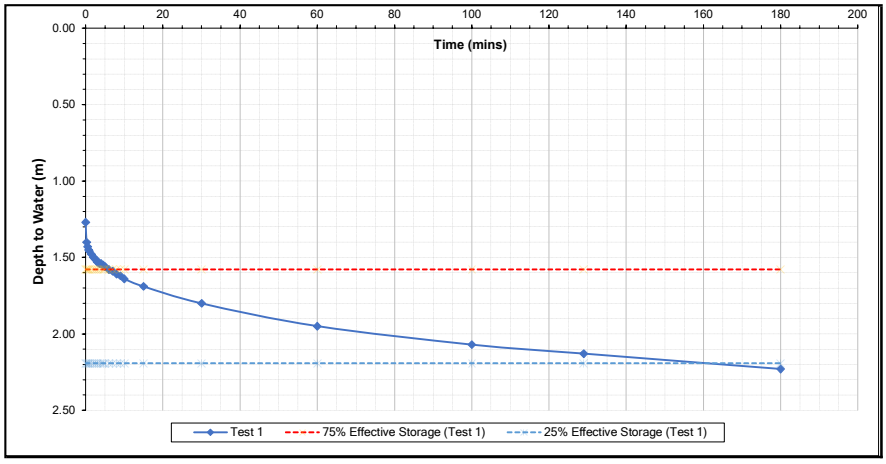
Geology Description:

0.00-0.15 CONCRETE. [MADE GROUND]. 0.15-0.55 Soft dark brown clayey very gravelly SILT with occasional sub-angular to sub-rounded cobbles of brick and concrete. Gravel is angular to sub-rounded fine to coarse brick, concrete and rare macadam. [MADE GROUND]. 0.55-1.60 Dark orangeish brown mottled light brown sandy silty CLAY. Sand is fine to coarse. [WITTERING FORMATION]. 1.60-2.50 Light yellowish brown silty fine to coarse SAND. [WITTERING FORMATION].

Test Parameters	**TEST 2**	
Effective Storage Depth (m):	**Time (min)**	**Depth (m)**
1.23	0.00	1.27
	0.25	1.40
75% Effective Storage Depth (m):	0.50	1.43
0.92	0.75	1.45
	1.00	1.46
(i.e. Depth Below Ground Level) (m):	1.50	1.48
1.58	2.00	1.50
	2.50	1.51
25% Effective Storage Depth (m):	3.00	1.53
0.31	3.50	1.54
	4.00	1.54
(i.e. Depth Below Ground Level) (m):	4.50	1.55
2.19	5.00	1.56
	6.00	1.58
Effective Storage Depth Across 75% - 25% (m):	7.00	1.59
0.62	8.00	1.61
	9.00	1.62
Time to Fall to 75% Effective Depth (min):	10.00	1.64
7.25	15.00	1.69
	30.00	1.80
Time to Fall to 25% Effective Depth (min):	60.00	1.95
160.00	100.00	2.07
	129.00	2.13
30%(Vp75%-25%) (m3):	180.00	2.23
0.18		
As50% (m2):		
3.90		
Tp75%-25% (mins):		
152.75		

DESIGN SOIL INFILTRATION RATE, f (m/s):	**4.90E-06**

Comments:



Site Engineer:	**Date:**
JW	29/01/2025 30/01/2025

Checked and Approved By:	**Date:**
HS	06/02/2025

Location
SA205

Site Name:	Goodwillies Timber Yard
Site Reference:	A12342-1
Test Date:	29/01/2025 - 30/01/2025

Trial Pit Identification:	SA205
Trial Pit Length (m):	1.90
Trial Pit Width (m):	0.50
Trial Pit Depth (m):	2.50
Groundwater Level (m bgl):	N/A

GRAVEL FILLED SOIL INFILTRATION RATE TEST

20mm Clean Gravel used with 30% free void space assumed

See BRE DG365, Soakaway Design (2016).

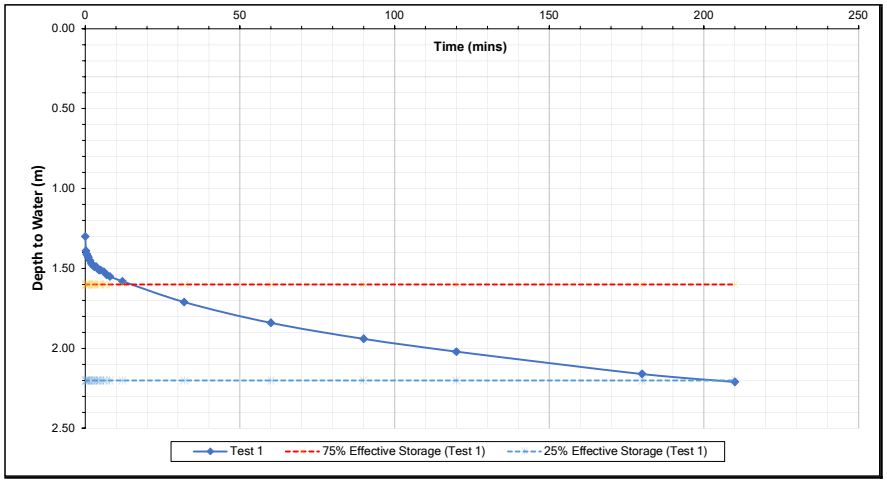
Geology Description:

0.00-0.15 CONCRETE. [MADE GROUND]. 0.15-0.55 Soft dark brown clayey very gravelly SILT with occasional sub-angular to sub-rounded cobbles of brick and concrete. Gravel is angular to sub-rounded fine to coarse brick, concrete and rare macadam. [MADE GROUND]. 0.55-1.60 Dark orangeish brown mottled light brown sandy silty CLAY. Sand is fine to coarse. [WITTERING FORMATION]. 1.60-2.50 Light yellowish brown silty fine to coarse SAND. [WITTERING FORMATION].

Test Parameters	**TEST 3**	
Effective Storage Depth (m):	**Time (min)**	**Depth (m)**
1.20	0.00	1.30
	0.25	1.39
75% Effective Storage Depth (m):	0.50	1.41
0.90	0.75	1.42
	1.00	1.43
(i.e. Depth Below Ground Level) (m):	1.50	1.45
1.60	2.00	1.47
	2.50	1.48
25% Effective Storage Depth (m):	3.00	1.49
0.30	3.50	1.49
	4.00	1.50
(i.e. Depth Below Ground Level) (m):	4.50	1.51
2.20	5.00	1.51
	6.00	1.52
Effective Storage Depth Across 75% - 25% (m):	7.00	1.54
0.6	8.00	1.55
	12.00	1.58
Time to Fall to 75% Effective Depth (min):	32.00	1.71
15	60.00	1.84
	90.00	1.94
Time to Fall to 25% Effective Depth (min):	120.00	2.02
205	180.00	2.16
	210.00	2.21
30%(Vp75%-25%) (m3):		
0.17		
As50% (m2):		
3.83		
Tp75%-25% (mins):		
190		

DESIGN SOIL INFILTRATION RATE, f (m/s):	**3.92E-06**

Comments:



Site Engineer:	**Date:**
JW	29/01/2025 30/01/2025

Checked and Approved By:	**Date:**
HS	06/02/2025

Location
SA205

Site Name:	Goodwillies Timber Yard
Site Reference:	A12342-1
Test Date:	29/01/2025 - 31/01/2025

Trial Pit Identification:	SA206
Trial Pit Length (m):	2.00
Trial Pit Width (m):	0.45
Trial Pit Depth (m):	2.50
Groundwater Level (m bgl):	N/A

GRAVEL FILLED SOIL INFILTRATION RATE TEST

20mm Clean Gravel used with 30% free void space assumed

See BRE DG365, Soakaway Design (2016).

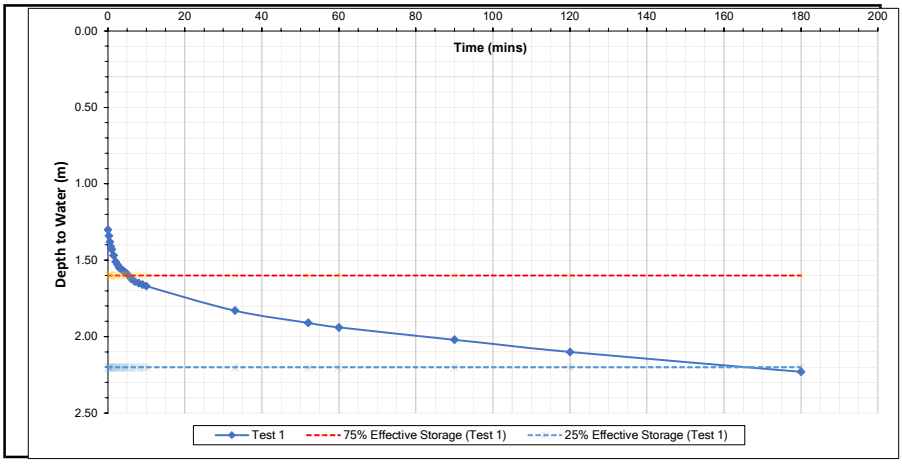
Geology Description:

0.00-0.20 Vegetation over soft dark brown clayey SILT with rootlets. [MADE GROUND]. 0.20-0.80 Soft dark brown gravelly silty CLAY. Gravel is sub-angular to sub-rounded fine to coarse flint and occasional brick. [MADE GROUND]. 0.80-1.70 Soft orange brown mottled light brown sandy silty CLAY. Sand is fine to coarse. [WITTERING FORMATION]. 1.70-2.50 Light yellowish brown silty fine to coarse SAND. [WITTERING FORMATION]

Test Parameters	**TEST 1**	
Effective Storage Depth (m):	**Time (min)**	**Depth (m)**
1.20	0.00	1.30
	0.25	1.34
75% Effective Storage Depth (m):	0.50	1.38
0.90	0.75	1.41
	1.00	1.43
(i.e. Depth Below Ground Level) (m):	1.50	1.47
1.60	2.00	1.51
	2.50	1.53
25% Effective Storage Depth (m):	3.00	1.55
0.30	3.50	1.56
	4.00	1.57
(i.e. Depth Below Ground Level) (m):	4.50	1.58
2.20	5.00	1.59
	6.00	1.62
Effective Storage Depth Across 75% - 25% (m):	7.00	1.64
0.60	8.00	1.65
	9.00	1.66
Time to Fall to 75% Effective Depth (min):	10.00	1.67
5	33.00	1.83
	52.00	1.91
Time to Fall to 25% Effective Depth (min):	60.00	1.94
167	90.00	2.02
	120.00	2.10
30%(Vp75%-25%) (m3):	180.00	2.23
0.16		
As50% (m2):		
3.84		
Tp75%-25% (mins):		
162		

DESIGN SOIL INFILTRATION RATE, f (m/s):	**4.34E-06**

Comments:



Site Engineer:	**Date:**
JW	29/01/2025 31/01/2025

Checked and Approved By:	**Date:**
HS	06/02/2025

Location
SA206

Site Name:	Goodwillies Timber Yard
Site Reference:	A12342-1
Test Date:	29/01/2025 - 31/01/2025

Trial Pit Identification:	SA206
Trial Pit Length (m):	2.00
Trial Pit Width (m):	0.45
Trial Pit Depth (m):	2.50
Groundwater Level (m bgl):	N/A

GRAVEL FILLED SOIL INFILTRATION RATE TEST

20mm Clean Gravel used with 30% free void space assumed

See BRE DG365, Soakaway Design (2016).

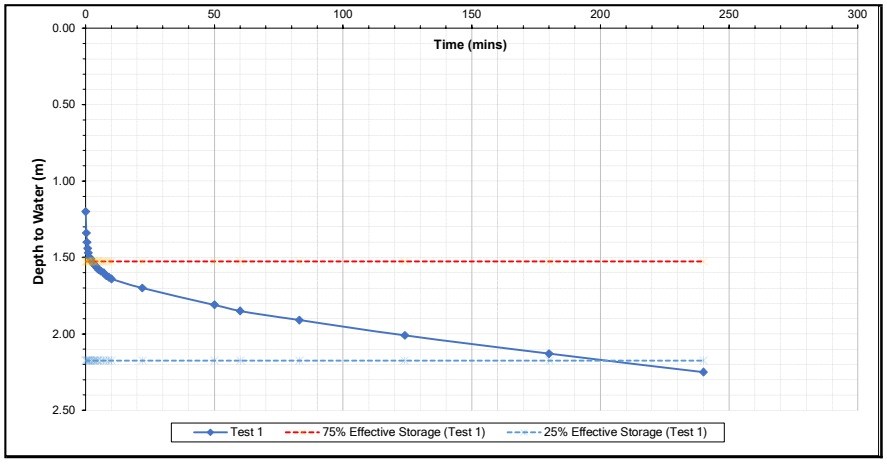
Geology Description:

0.00-0.20 Vegetation over soft dark brown clayey SILT with rootlets. [MADE GROUND]. 0.20-0.80 Soft dark brown gravelly silty CLAY. Gravel is sub-angular to sub-rounded fine to coarse flint and occasional brick. [MADE GROUND]. 0.80-1.70 Soft orange brown mottled light brown sandy silty CLAY. Sand is fine to coarse. [WITTERING FORMATION]. 1.70-2.50 Light yellowish brown silty fine to coarse SAND. [WITTERING FORMATION]

Test Parameters	**TEST 2**	
Effective Storage Depth (m):	**Time (min)**	**Depth (m)**
1.30	0.00	1.20
	0.25	1.34
75% Effective Storage Depth (m):	0.50	1.40
0.98	0.75	1.44
	1.00	1.47
(i.e. Depth Below Ground Level) (m):	1.50	1.50
1.53	2.00	1.51
	2.50	1.53
25% Effective Storage Depth (m):	3.00	1.54
0.33	3.50	1.55
	4.00	1.56
(i.e. Depth Below Ground Level) (m):	4.50	1.57
2.18	5.00	1.58
	6.00	1.59
Effective Storage Depth Across 75% - 25% (m):	7.00	1.60
0.65	8.00	1.62
	9.00	1.63
Time to Fall to 75% Effective Depth (min):	10.00	1.64
2.50	22.00	1.70
	50.00	1.81
Time to Fall to 25% Effective Depth (min):	60.00	1.85
205.00	83.00	1.91
	124.00	2.01
30%(Vp75%-25%) (m3):	180.00	2.13
0.18	240.00	2.25
As50% (m2):		
4.09		
Tp75%-25% (mins):		
202.50		

DESIGN SOIL INFILTRATION RATE, f (m/s):	**3.54E-06**

Comments:



Site Engineer:	**Date:**
JW	29/01/2025 31/01/2025

Checked and Approved By:	**Date:**
HS	06/02/2025

Location
SA206

Site Name:	Goodwillies Timber Yard
Site Reference:	A12342-1
Test Date:	29/01/2025 - 31/01/2025

Trial Pit Identification:	SA206
Trial Pit Length (m):	2.00
Trial Pit Width (m):	0.45
Trial Pit Depth (m):	2.50
Groundwater Level (m bgl):	N/A

GRAVEL FILLED SOIL INFILTRATION RATE TEST

20mm Clean Gravel used with 30% free void space assumed

See BRE DG365, Soakaway Design (2016).

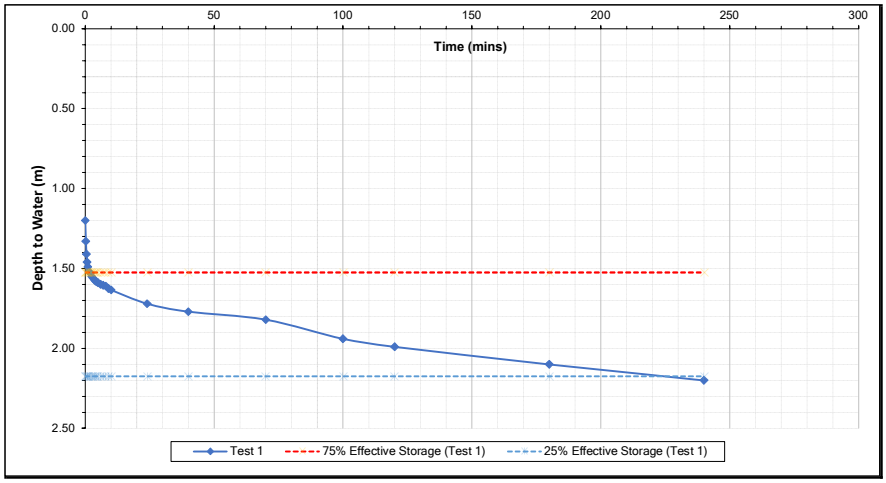
Geology Description:

0.00-0.20 Vegetation over soft dark brown clayey SILT with rootlets. [MADE GROUND]. 0.20-0.80 Soft dark brown gravelly silty CLAY. Gravel is sub-angular to sub-rounded fine to coarse flint and occasional brick. [MADE GROUND]. 0.80-1.70 Soft orange brown mottled light brown sandy silty CLAY. Sand is fine to coarse. [WITTERING FORMATION]. 1.70-2.50 Light yellowish brown silty fine to coarse SAND. [WITTERING FORMATION]

Test Parameters	**TEST 3**	
Effective Storage Depth (m):	**Time (min)**	**Depth (m)**
1.30	0.00	1.20
	0.25	1.33
75% Effective Storage Depth (m):	0.50	1.41
0.98	0.75	1.46
	1.00	1.49
(i.e. Depth Below Ground Level) (m):	1.50	1.52
1.53	2.00	1.53
	2.50	1.55
25% Effective Storage Depth (m):	3.00	1.56
0.33	3.50	1.57
	4.00	1.58
(i.e. Depth Below Ground Level) (m):	4.50	1.59
2.18	5.00	1.59
	6.00	1.60
Effective Storage Depth Across 75% - 25% (m):	7.00	1.61
0.65	8.00	1.61
	9.00	1.63
Time to Fall to 75% Effective Depth (min):	10.00	1.64
2	24.00	1.72
	40.00	1.77
Time to Fall to 25% Effective Depth (min):	70.00	1.82
225	100.00	1.94
	120.00	1.99
30%(Vp75%-25%) (m3):	180.00	2.10
0.18	240.00	2.20
As50% (m2):		
4.085		
Tp75%-25% (mins):		
223		

DESIGN SOIL INFILTRATION RATE, f (m/s):	**3.21E-06**

Comments:



Site Engineer:	**Date:**
JW	29/01/2025 31/01/2025

Checked and Approved By:	**Date:**
HS	06/02/2025

Location
SA206