

PERCOLATION TEST REPORT
UPON
LAND OFF
CHAPEL DROVE, HOLBEACH DROVE,
LINCOLNSHIRE, PE12 0PS
PROJECT No: SW 21-242
DOCUMENT REF: SW 21-242-REP-01



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1. INTRODUCTION

Acting upon the instruction of Mr Robert Spenceley, on behalf of D&R Properties, we attended site on 9th December 2021, the purpose being to observe the underlying ground conditions and determine the percolation characteristics and infiltration rates of the soil strata.

Percolation tests were undertaken in accordance with the method described within BRE digest 365 (2007 edition)

The opinions and comments expressed within this report are based upon ground conditions encountered in the trial pits excavated at the time of our visit.

This report has been prepared for the named client above and should not be relied upon by any other parties, with the exception of the client's professional advisors, for any use without the express written permission of Shields Wilson Limited.

2. LOCATION & DESCRIPTION OF SITE

2.1. Site Location

The site is situated to the west of Chapel Drove, Holbeach Drove. Appropriate national grid reference TF 324 121.

A Location plan is contained with Appendix A.

2.2. Site Description

The site currently stands as residential garden for the current land owner.

The North of the site will be bound by existing property of which the proposed site belongs to.

The Eastern Boundary is boarded by the road, Chapel Drove, of which the proposed site will gain its access.

The Western boundaries of the site is boarded by the road Drove Road.

At the time of our visit the weather was dry and clear, however there had been some precipitation in the days leading up to the visit.

2.3. Geological Description

Desktop study of the area has been undertaken using the British Geological Society Maps.

The maps indicate the site to be underlain by superficial tidal flat deposits of Sand and Silt over the Ampthill Clay (Mudstone) formation.

This information is based upon publicly available records. An extract is contained with Appendix B.

3. PERCOLATION TESTS

Two No. percolation tests were undertaken on the proposed site.

SA01 was Undertaken adjacent the Western Boundary of the site and SA02 was undertaken to the East of the site.

Logs of the test and subsequent result calculations are contained within Appendix C, Appendix D contains a photographic record.

4. INFILTRATION TEST RESULTS

Results are summarised and tabulated below

Test Pit	Test 1	Test 2
Western Pit – SA01	$8.08 \times 10^{-6} \text{ m/s}$	$1.11 \times 10^{-5} \text{ m/s}$
Eastern Pit –SA02	2.98×10^{-5}	$1.42 \times 10^{-5} \text{ m/s}$

The results are average for infiltration in the South Holland area and demonstrate that the underlying geology on the site is suitable for infiltration.

5. DISCUSSIONS

The ground conditions encountered on site, and percolation test results indicate that the site is suitable for the use of infiltration drainage techniques for disposal of run-off water.

The calculated infiltration rates are typical of South Lincolnshire sands and silts, and it is common for garden soakaways to have been successful utilised for residential roof water drainage in this area.

Designs of infiltration features and soakaways should be based upon the worst case calculated infiltration rate of 8.1×10^{-6} .

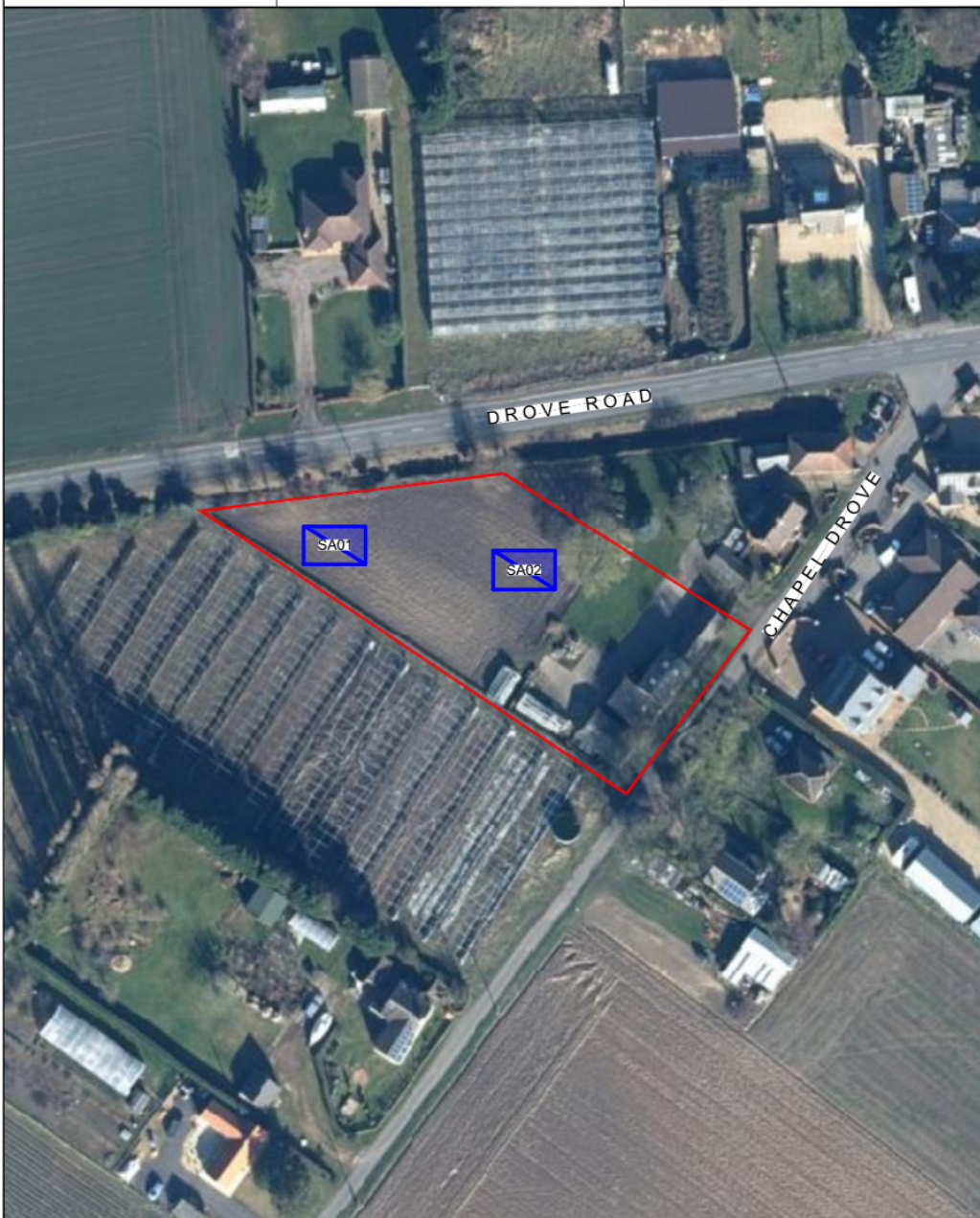
For and on behalf of **SHIELDS WILSON LIMITED**

A.P.Wilson CEng MStructE

28th January 2021.

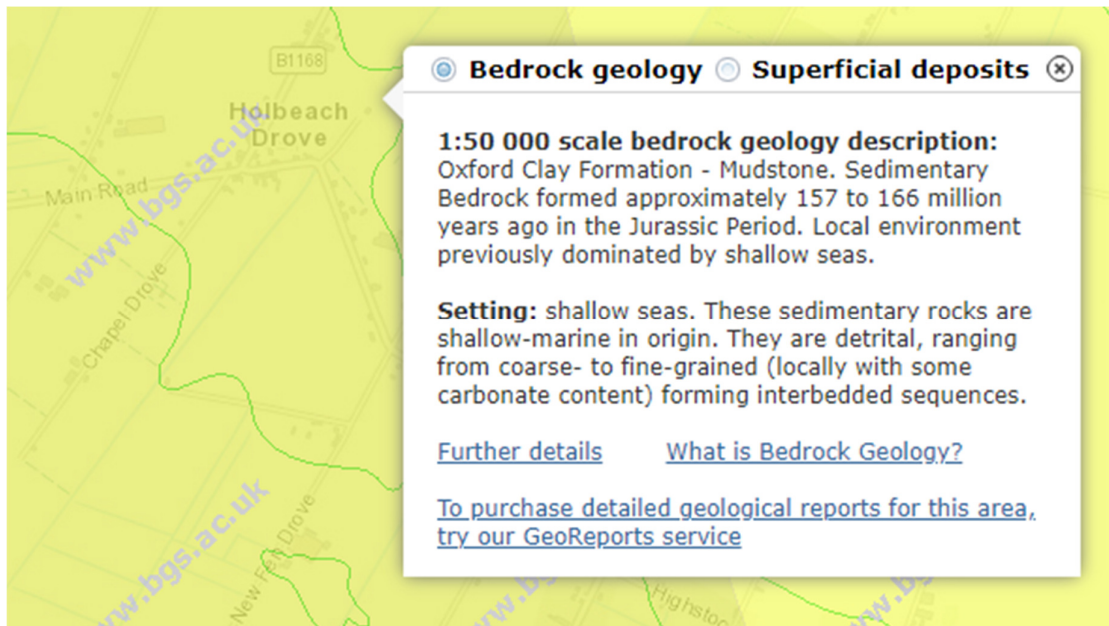
APPENDIX A

GROUND INVESTIGATION	Project: LAND OFF CHAPEL DROVE, GEDNEY DROVE	Date: JAN. '22	Designer: JL
Project No: SW 22-242	Subject:	Sheet No: SK01	Rev: -

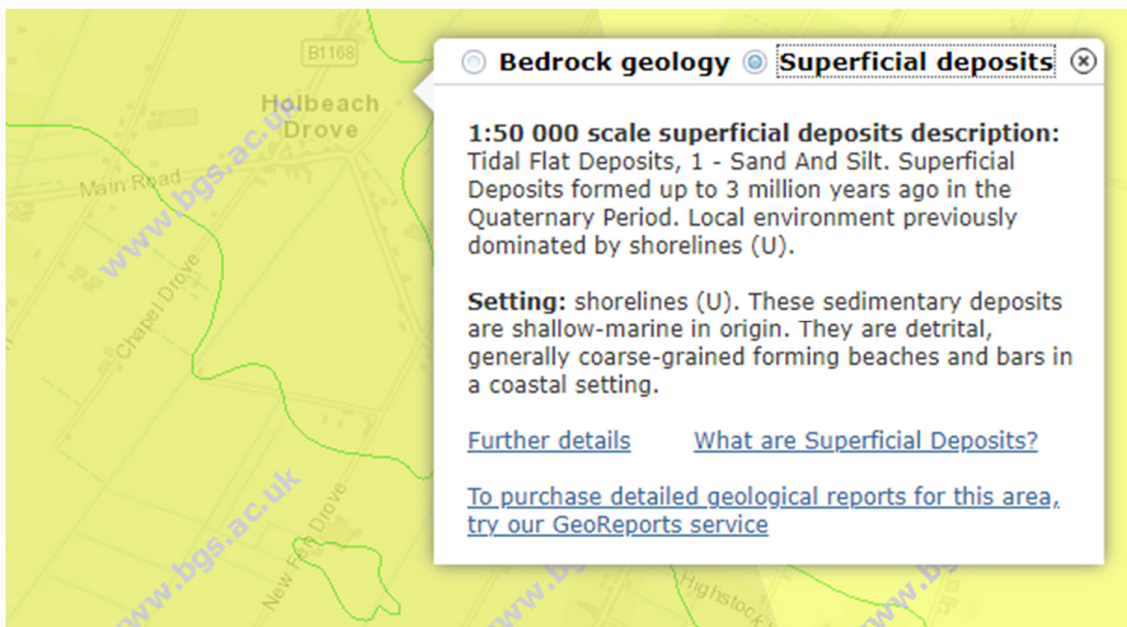


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APPENDIX B



Extract British Geological Society Maps – Bedrock Geology



Extract British Geological Society Maps – Superficial Deposits

APPENDIX C

Soak-Away Test SA 01

TEST 1	
SA01	
TIME (Mins)	DEPTH mm (d)
0	440
15	400
30	390
45	380
60	370
90	360
120	340
150	330
180	320

Trial Pit Dimensions

A =	1.3 m
B =	1 m
C =	1.10 m

Plan Area of Trial Pit

SA01 =	1.3 m ²
Total Volume =	0.156 m ³
75% Volume =	0.117 m ³
25% Volume =	0.039 m ³

Time Taken From 75%**Volume to 25% Volume**

102	Mins
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Effective Depth From 75%**Volume to 25% Volume**

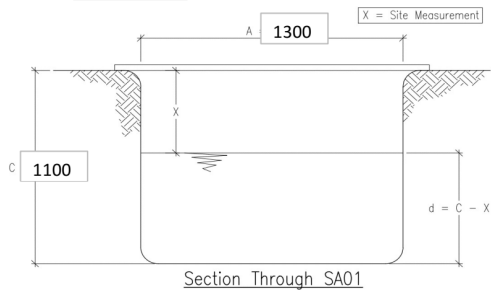
0.06 m

50% Effective Internal Surface**Area Including Base Area**

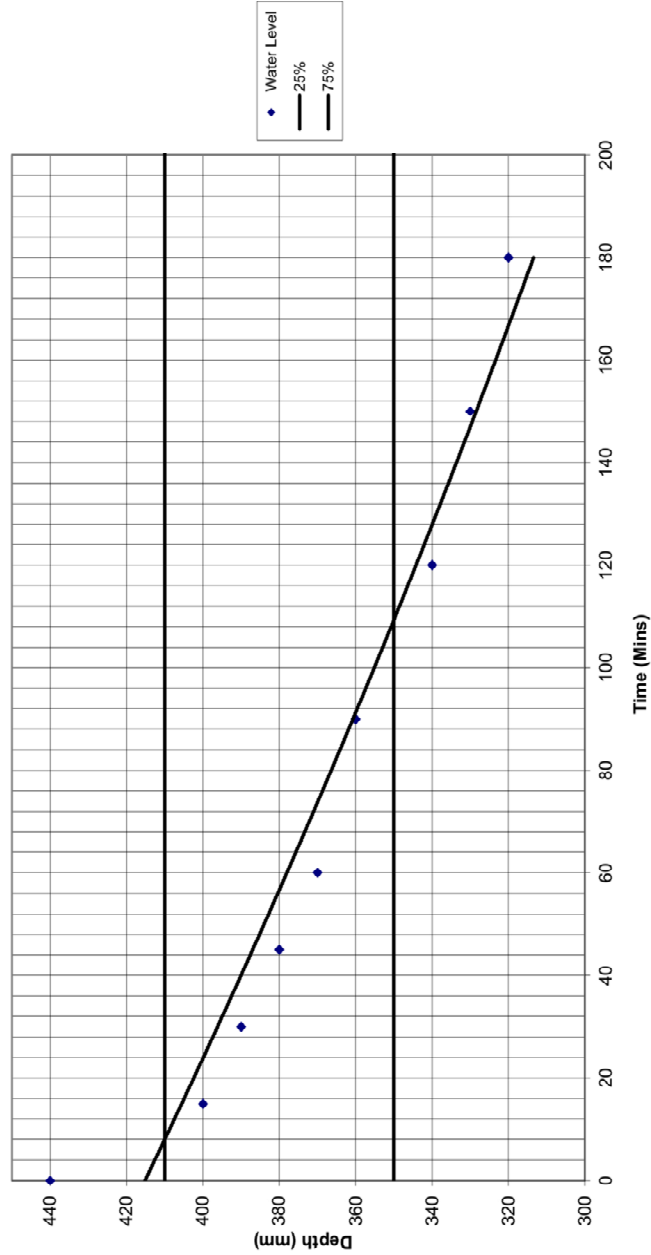
1.576 m ²

Soil Infiltration Rate, f

8.08699E-06 m/s
0.029113168 m/h

Project TitleProposed Residential Development
Chapel Drove, Holbeach Drove**Project No.** 21-242**Site Visit Date** 09/12/2021

Proposed Residential Development,
Chapel Drove, Holbeach Drove.
Project No. 21-242 09/12/2021
Plot showing water level against time for SA01 - TEST 1



Soak-Away Test SA 01

TEST 2	
SA01	
TIME (Mins)	DEPTH mm (d)
0	660
15	650
30	640
45	630
60	610
90	590
120	570

Trial Pit Dimensions

A =	1.3 m
B =	1 m
C =	1.10 m

Plan Area of Trial Pit

SA01 =	1.3 m ²
Total Volume =	0.117 m ³
75% Volume =	0.088 m ³
25% Volume =	0.029 m ³

Time Taken From 75%**Volume to 25% Volume**

58	Mins
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Effective Depth From 75%**Volume to 25% Volume**

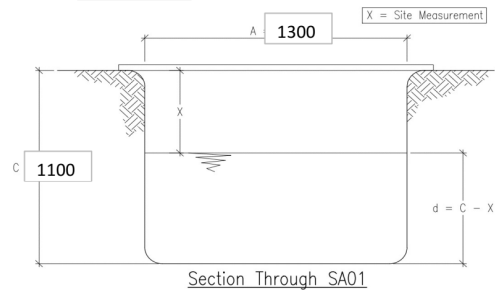
0.045 m

50% Effective Internal Surface**Area Including Base Area**

1.507 m ²

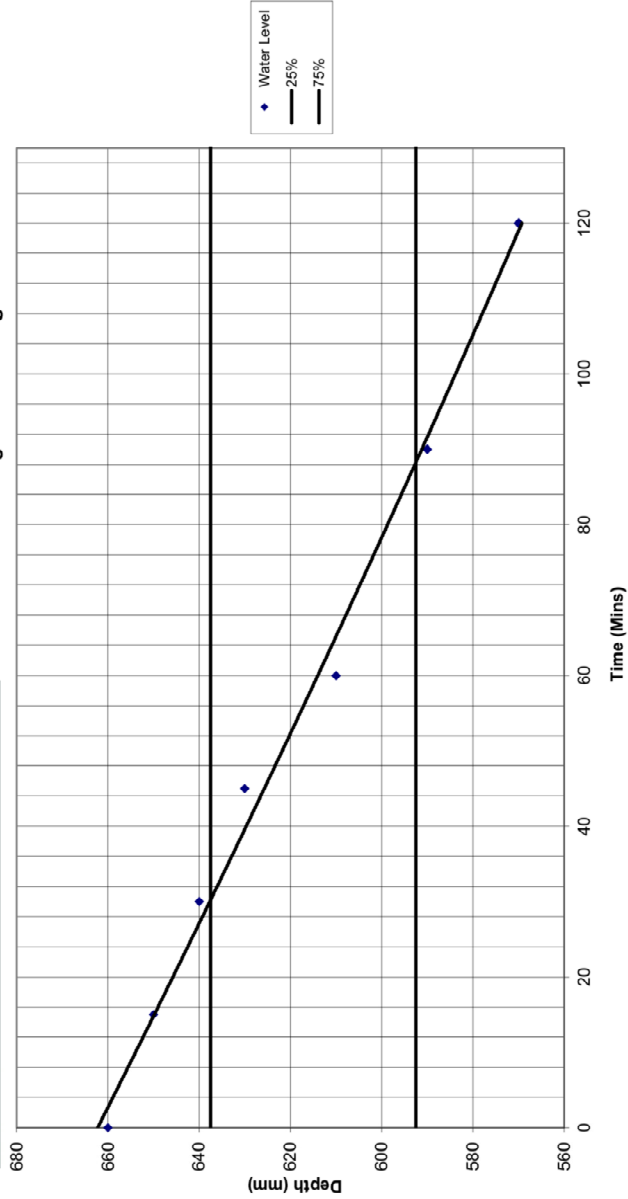
Soil Infiltration Rate, f

1.11548E-05 m/s
0.040157426 m/h

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Proposed Residential Development,
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Project No. 21-242 09/12/2021
Plot showing water level against time for SA01 - TEST 2

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Soak-Away Test SA 02

TEST 1	
SA01	
TIME (Mins)	DEPTH mm (d)
0	430
15	310
30	270
45	250
60	220
90	200

Trial Pit Dimensions

A =	1.7 m
B =	1 m
C =	1.10 m

Plan Area of Trial Pit

SA01 =	1.7 m ²
Total Volume =	0.391 m ³
75% Volume =	0.293 m ³
25% Volume =	0.098 m ³

Time Taken From 75% Volume to 25% Volume

47	Mins
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Effective Depth From 75% Volume to 25% Volume

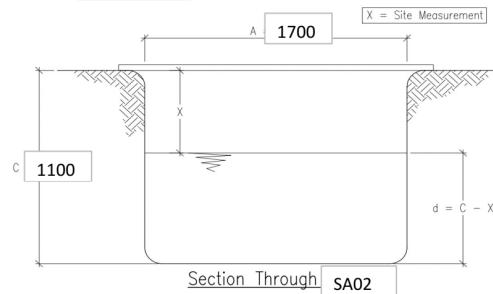
0.115 m

50% Effective Internal Surface Area Including Base Area

2.321 m ²

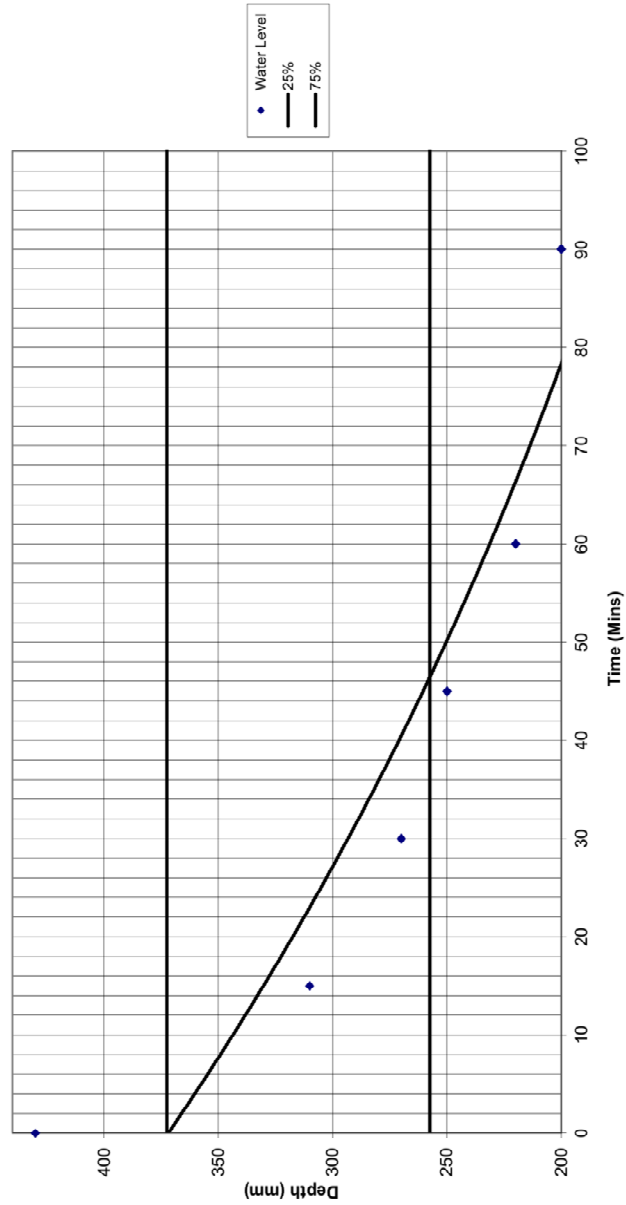
Soil Infiltration Rate, f

2.98691E-05 m/s
0.107528853 m/h

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Chapel Drove, Holbeach Drove**Project No.** 21-242**Site Visit Date** 09/12/2021

Proposed Residential Development,
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Project No. 21-242 09/12/2021
Plot showing water level against time for SA02 - TEST 1

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Soak-Away Test SA 02

TEST 2	
SA01	
TIME (Mins)	DEPTH mm (d)
0	450
15	400
30	370
45	340
55	330
70	310
85	300
115	270
145	250
175	220
205	200

Trial Pit Dimensions

A =	1.7 m
B =	1 m
C =	1.10 m

Plan Area of Trial Pit

SA01 =	1.7 m ²
Total Volume =	0.425 m ³
75% Volume =	0.319 m ³
25% Volume =	0.106 m ³

Time Taken From 75%**Volume to 25% Volume**

105	Mins
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Effective Depth From 75%**Volume to 25% Volume**

0.125 m

50% Effective Internal Surface**Area Including Base Area**

2.375 m ²

Soil Infiltration Rate, f

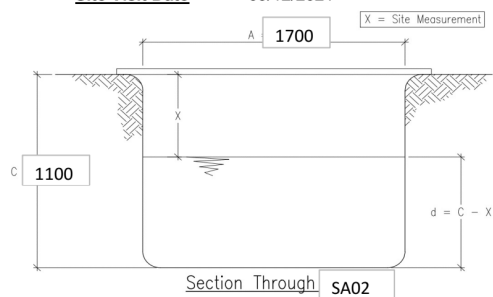
1.42022E-05 m/s
0.05112782 m/h

Project TitleProposed Residential Development
Chapel Drove, Holbeach Drove**Project No.**

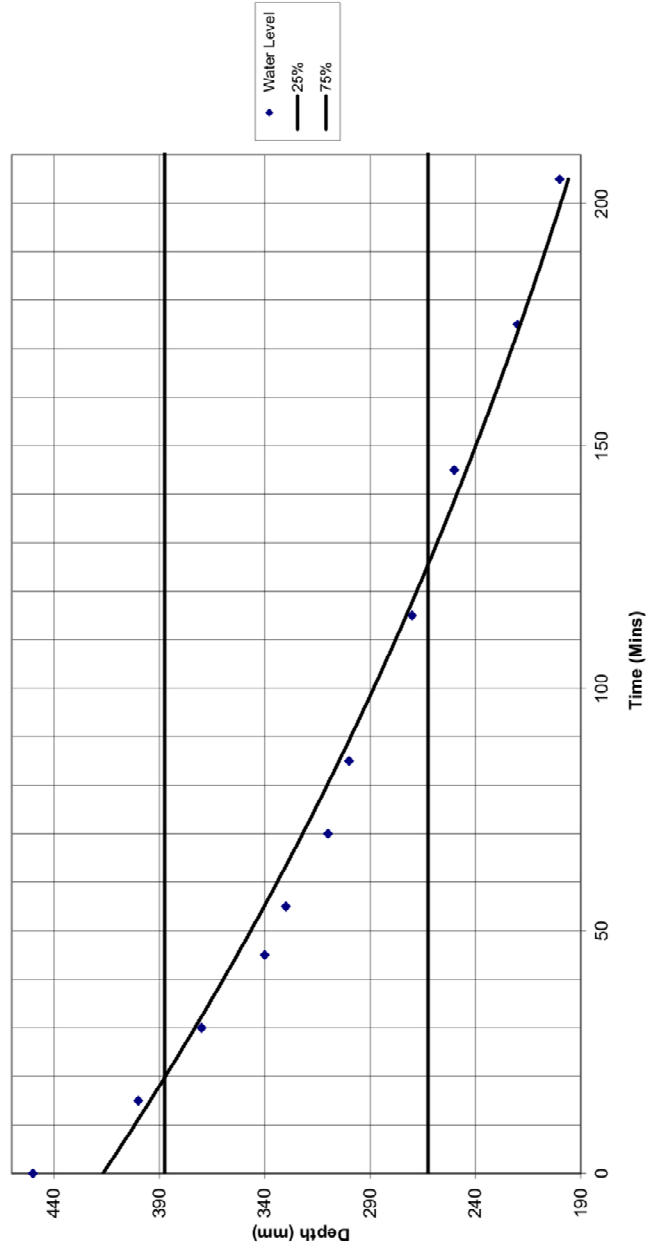
21-242

Site Visit Date

09/12/2021



Proposed Residential Development,
Chapel Drove, Holbeach Drove.
Project No. 21-242 09/12/2021
Plot showing water level against time for SA02 - TEST 2



APPENDIX D



