
S.I. Ltd Contract No: 5448

Client: RKD Architects
Engineer: Garland
Contractor: Site Investigations Ltd

Magee Barracks
Kildare, Co. Kildare
Site Investigation Report

Prepared by:

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Stephen Letch

Issue Date:	09/02/2018
Status	Final
Revision	1

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1. Introduction

In May 2017 and on the instructions of Garland, Site Investigations Ltd (SIL) was appointed to complete a ground investigation at Magee Barracks, Kildare, Co. Kildare. The investigation was for a new residential development on the site and was completed on behalf of the Client, RKD Architects. Following this investigation, SIL were then requested to complete further infiltration testing on the site to test for possible areas for storm water soakaways. This report covers this additional testing.

The fieldworks comprised a programme of soakaway tests. All fieldwork was carried out in accordance with BS 5930:2015, Engineers Ireland GI Specification and Related Document 2nd Edition 2016 and Eurocode 7: Geotechnical Design.

This report presents the factual geotechnical data obtained from the field testing.

2. Fieldwork

The fieldworks were started and completed in February 2018 and comprised the following:

- 9 No. soakaway tests

2.1. Soakaway Tests

9 No. soakaway tests were completed using a wheeled excavator and they were logged by SIL geotechnical engineer. The soakaway test is used to identify possible areas for storm water drainage. The pit was filled with water and the level of the groundwater was recorded over time. As stipulated by BRE Special Digest 365, the pit should be filled three times and that the final cycle is used to provide the infiltration rate. The time taken for the water level to fall from 75% volume to 25% volume is required to calculate the rate of infiltration. However, if the water level does not fall at a steady rate then the test is deemed to have failed and the area is unsuitable for storm water drainage.

The soakaway logs are presented in Appendix 1.

2.2. Surveying

Following the completion of the works, a survey of the exploratory hole locations was completed using a GeoMax GPS Rover. The data is provided along with a site plan in Appendix 2.

Appendix 1
Soakaway Test Results

SOAKAWAY TEST

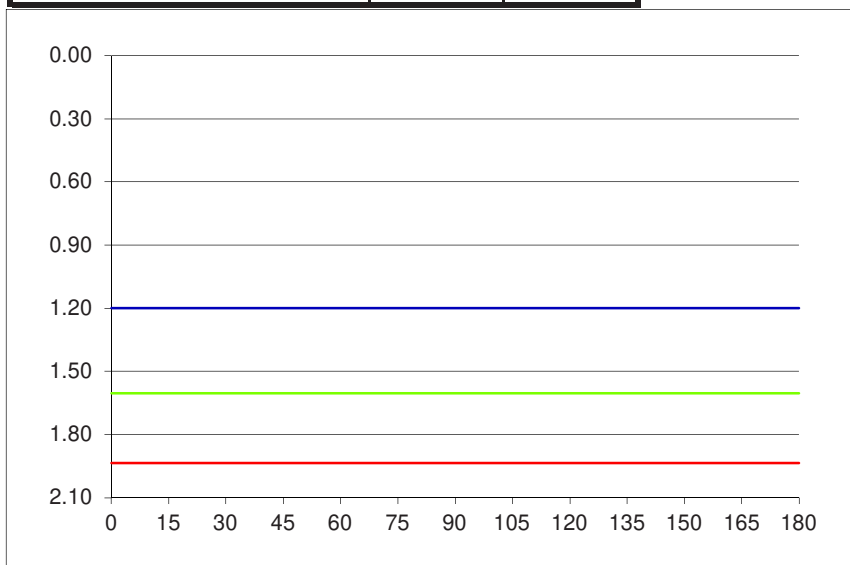


Project Reference:	5448
Contract name:	Magee Barracks
Location:	Kildare, Co. Kildare
Test No:	SA01
Date:	01/02/2018

Ground Conditions		
From	To	
0.00	0.10	TOPSOIL.
0.10	0.50	MADE GROUND: grey brown silty sandy gravel with high cobble content and some red brick fragments.
0.50	0.60	MADE GROUND: black sandy gravelly silty clay.
0.60	1.40	Firm brown slightly sandy slightly gravelly silty CLAY with low cobble content.
1.40	2.10	Firm light brown slightly sandy gravelly silty CLAY with high cobble and low boulder content.

Elapsed Time (mins)	Fall of Water (m)
0	1.20
0.5	1.20
1	1.20
1.5	1.20
2	1.20
2.5	1.20
3	1.20
3.5	1.20
4	1.20
4.5	1.20
5	1.20
6	1.20
7	1.20
8	1.20
9	1.20
10	1.20
12	1.20
14	1.20
16	1.20
18	1.20
20	1.20
25	1.20
30	1.20
40	1.20
50	1.20
60	1.20
90	1.20
120	1.20
150	1.20
180	1.20

Pit Dimensions (m)		
Length (m)	2.30	m
Width (m)	0.50	m
Depth	2.10	m
Water		
Start Depth of Water	1.44	m
Depth of Water	0.66	m
75% Full	1.61	m
25% Full	1.94	m
75%-25%	0.33	m
Volume of water (75%-25%)	0.38	m ³
Area of Drainage	11.76	m ²
Area of Drainage (75%-25%)	3.00	m ²
Time		
75% Full	N/A	min
25% Full	N/A	min
Time 75% to 25%	N/A	min
Time 75% to 25% (sec)	N/A	sec



f = Fail or Fail
m/min m/s

SOAKAWAY TEST

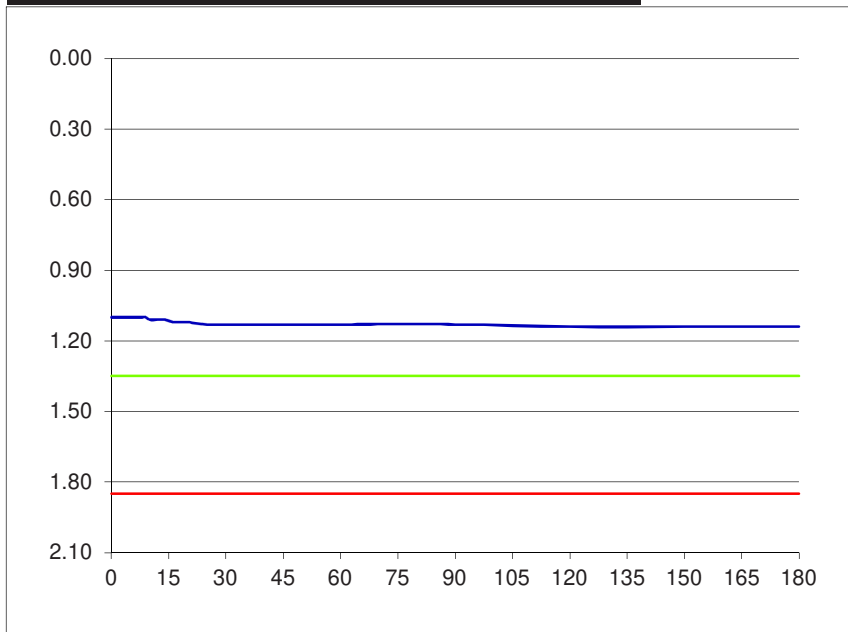


Project Reference:	5448
Contract name:	Magee Barracks
Location:	Kildare, Co. Kildare
Test No:	SA02
Date:	01/02/2018

Ground Conditions		
From	To	Description
0.00	0.10	TOPSOIL.
0.10	0.50	MADE GROUND: brown slightly sandy gravelly silty clay with medium cobble content and some red brick fragments.
0.50	0.70	Firm brown slightly sandy slightly gravelly silty CLAY.
0.70	2.10	Firm grey brown slightly sandy gravelly silty CLAY with low cobble content.

Elapsed Time (mins)	Fall of Water (m)
0	1.10
0.5	1.10
1	1.10
1.5	1.10
2	1.10
2.5	1.10
3	1.10
3.5	1.10
4	1.10
4.5	1.10
5	1.10
6	1.10
7	1.10
8	1.10
9	1.10
10	1.11
12	1.11
14	1.11
16	1.12
18	1.12
20	1.12
25	1.13
30	1.13
40	1.13
50	1.13
60	1.13
90	1.13
120	1.14
150	1.14
180	1.14

Pit Dimensions (m)		
Length (m)	2.20	m
Width (m)	0.50	m
Depth	2.10	m
Water		
Start Depth of Water	1.10	m
Depth of Water	1.00	m
75% Full	1.35	m
25% Full	1.85	m
75%-25%	0.50	m
Volume of water (75%-25%)	0.55	m ³
Area of Drainage	11.34	m ²
Area of Drainage (75%-25%)	3.80	m ²
Time		
75% Full	N/A	min
25% Full	N/A	min
Time 75% to 25%	N/A	min
Time 75% to 25% (sec)	N/A	sec



f = Fail or Fail
m/min m/s

Fail
m/s

SOAKAWAY TEST



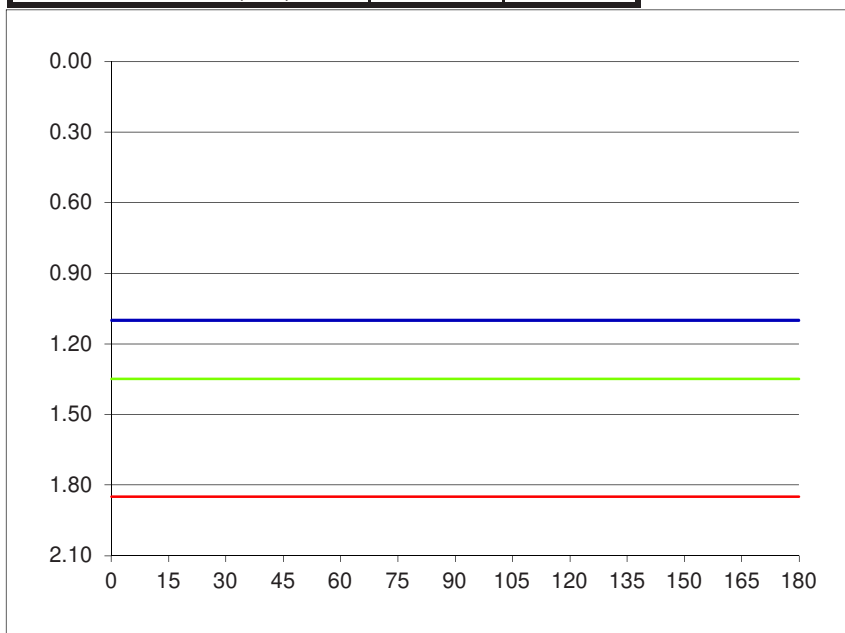
Project Reference:	5448
Contract name:	Magee Barracks
Location:	Kildare, Co. Kildare
Test No:	SA03
Date:	01/02/2018

Ground Conditions

From	To	
0.00	0.90	MADE GROUND: black grey silty sandy gravel with medium cobble content and some ash, glass, red brick and scrap metal fragments.
0.90	1.70	MADE GROUND: grey brown grey slightly sandy gravelly silty clay with high cobble content and some red brick fragments.
1.70	2.10	Firm grey brown sandy slightly gravelly silty CLAY.

Elapsed Time (mins)	Fall of Water (m)
0	1.10
0.5	1.10
1	1.10
1.5	1.10
2	1.10
2.5	1.10
3	1.10
3.5	1.10
4	1.10
4.5	1.10
5	1.10
6	1.10
7	1.10
8	1.10
9	1.10
10	1.10
12	1.10
14	1.10
16	1.10
18	1.10
20	1.10
25	1.10
30	1.10
40	1.10
50	1.10
60	1.10
90	1.10
120	1.10
150	1.10
180	1.10

Pit Dimensions (m)		
Length (m)	2.40	m
Width (m)	0.50	m
Depth	2.10	m
Water		
Start Depth of Water	1.10	m
Depth of Water	1.00	m
75% Full	1.35	m
25% Full	1.85	m
75%-25%	0.50	m
Volume of water (75%-25%)	0.60	m ³
Area of Drainage	12.18	m ²
Area of Drainage (75%-25%)	4.10	m ²
Time		
75% Full	N/A	min
25% Full	N/A	min
Time 75% to 25%	N/A	min
Time 75% to 25% (sec)	N/A	sec



f = Fail or

Fail
m/min m/s

SOAKAWAY TEST



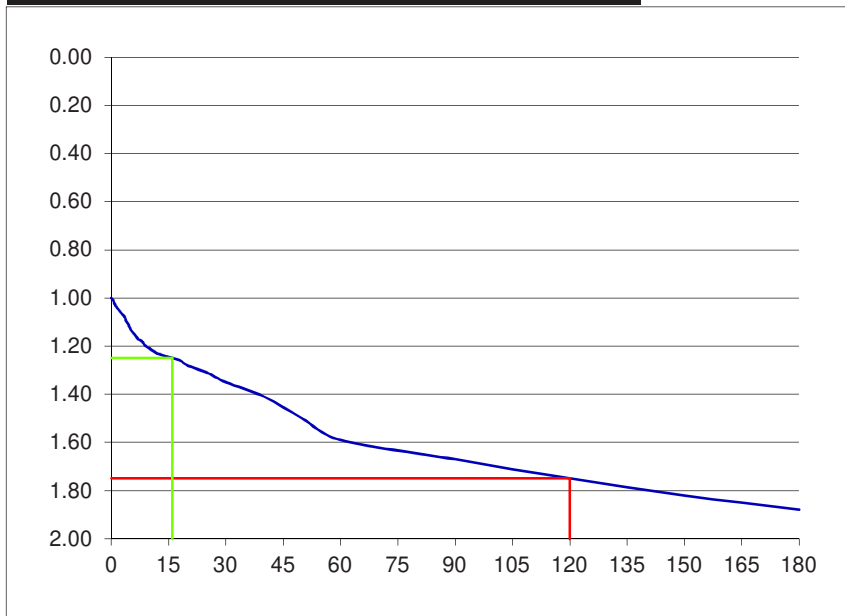
Project Reference:	5448
Contract name:	Magee Barracks
Location:	Kildare, Co. Kildare
Test No:	SA04
Date:	01/02/2018

Ground Conditions

From	To	
0.00	0.10	TOPSOIL.
0.10	0.40	MADE GROUND: brown silty sandy gravel with some red brick fragments.
0.40	0.70	Firm brown slightly sandy slightly gravelly silty CLAY.
0.70	1.70	Firm grey slightly sandy slightly gravelly silty CLAY.
1.70	2.00	Firm light brown slightly sandy slightly gravelly silty CLAY.

Elapsed Time (mins)	Fall of Water (m)
0	1.00
0.5	1.01
1	1.03
1.5	1.04
2	1.05
2.5	1.06
3	1.07
3.5	1.08
4	1.10
4.5	1.11
5	1.13
6	1.15
7	1.17
8	1.18
9	1.20
10	1.21
12	1.23
14	1.24
16	1.25
18	1.26
20	1.28
25	1.31
30	1.35
40	1.41
50	1.50
60	1.59
90	1.67
120	1.75
150	1.82
180	1.88

Pit Dimensions (m)	
Length (m)	2.10 m
Width (m)	0.40 m
Depth	2.00 m
Water	
Start Depth of Water	1.00 m
Depth of Water	1.00 m
75% Full	1.25 m
25% Full	1.75 m
75%-25%	0.5 m
Volume of water (75%-25%)	0.42 m ³
Area of Drainage	10 m ²
Area of Drainage (75%-25%)	3.34 m ²
Time	
75% Full	16 min
25% Full	120 min
Time 75% to 25%	104 min
Time 75% to 25% (sec)	6240 sec



f = 0.00121 or 2.02E-05
 m/min m/s

SOAKAWAY TEST



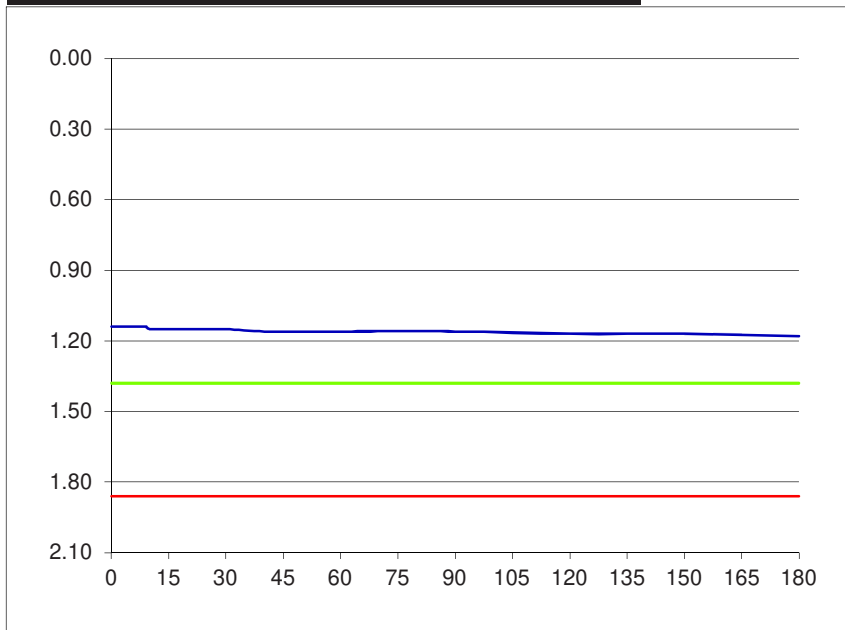
Project Reference:	5448
Contract name:	Magee Barracks
Location:	Kildare, Co. Kildare
Test No:	SA05
Date:	01/02/2018

Ground Conditions

From	To	
0.00	0.10	TOPSOIL.
0.10	0.20	MADE GROUND: grey concrete.
0.20	0.40	MADE GROUND: grey brown silty sandy gravel with high cobble content.
0.40	0.80	Soft light grey slightly sandy slightly gravelly silty CLAY.
0.80	2.10	Firm light brown slightly sandy gravelly silty CLAY with low cobble content.

Elapsed Time (mins)	Fall of Water (m)
0	1.14
0.5	1.14
1	1.14
1.5	1.14
2	1.14
2.5	1.14
3	1.14
3.5	1.14
4	1.14
4.5	1.14
5	1.14
6	1.14
7	1.14
8	1.14
9	1.14
10	1.15
12	1.15
14	1.15
16	1.15
18	1.15
20	1.15
25	1.15
30	1.15
40	1.16
50	1.16
60	1.16
90	1.16
120	1.17
150	1.17
180	1.18

Pit Dimensions (m)		
Length (m)	2.40	m
Width (m)	0.50	m
Depth	2.10	m
Water		
Start Depth of Water	1.14	m
Depth of Water	0.96	m
75% Full	1.38	m
25% Full	1.86	m
75%-25%	0.48	m
Volume of water (75%-25%)	0.58	m ³
Area of Drainage	12.18	m ²
Area of Drainage (75%-25%)	3.98	m ²
Time		
75% Full	N/A	min
25% Full	N/A	min
Time 75% to 25%	N/A	min
Time 75% to 25% (sec)	N/A	sec



f = Fail or Fail
m/min m/s

SOAKAWAY TEST



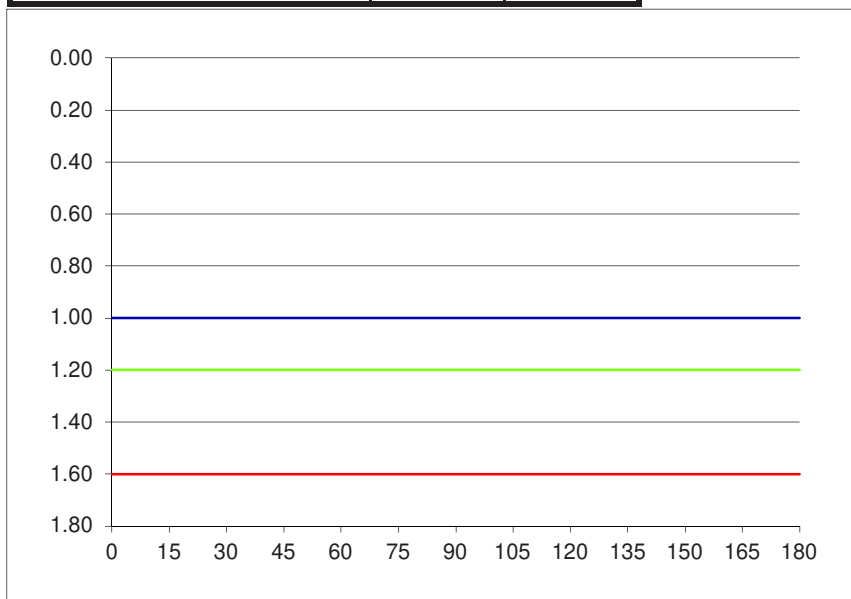
Project Reference:	5448
Contract name:	Magee Barracks
Location:	Kildare, Co. Kildare
Test No:	SA06
Date:	02/02/2018

Ground Conditions

From	To	
0.00	0.05	MADE GROUND: tarmacadam.
0.05	0.25	MADE GROUND: grey brown silty sandy gravel with high cobble content and some red brick fragments.
0.25	0.95	Firm light brown slightly sandy slightly gravelly silty CLAY.
0.95	1.80	Firm light brown slightly sandy gravelly silty CLAY with medium cobble content.
1.80		Obstruction - boulders.

Elapsed Time (mins)	Fall of Water (m)
0	1.00
0.5	1.00
1	1.00
1.5	1.00
2	1.00
2.5	1.00
3	1.00
3.5	1.00
4	1.00
4.5	1.00
5	1.00
6	1.00
7	1.00
8	1.00
9	1.00
10	1.00
12	1.00
14	1.00
16	1.00
18	1.00
20	1.00
25	1.00
30	1.00
40	1.00
50	1.00
60	1.00
90	1.00
120	1.00
150	1.00
180	1.00

Pit Dimensions (m)		
Length (m)	3.10	m
Width (m)	0.50	m
Depth	1.80	m
Water		
Start Depth of Water	1.00	m
Depth of Water	0.80	m
75% Full	1.20	m
25% Full	1.60	m
75%-25%	0.40	m
Volume of water (75%-25%)	0.62	m ³
Area of Drainage	12.96	m ²
Area of Drainage (75%-25%)	4.43	m ²
Time		
75% Full	N/A	min
25% Full	N/A	min
Time 75% to 25%	N/A	min
Time 75% to 25% (sec)	N/A	sec



f = Fail or **Fail**
m/min **m/s**

SOAKAWAY TEST

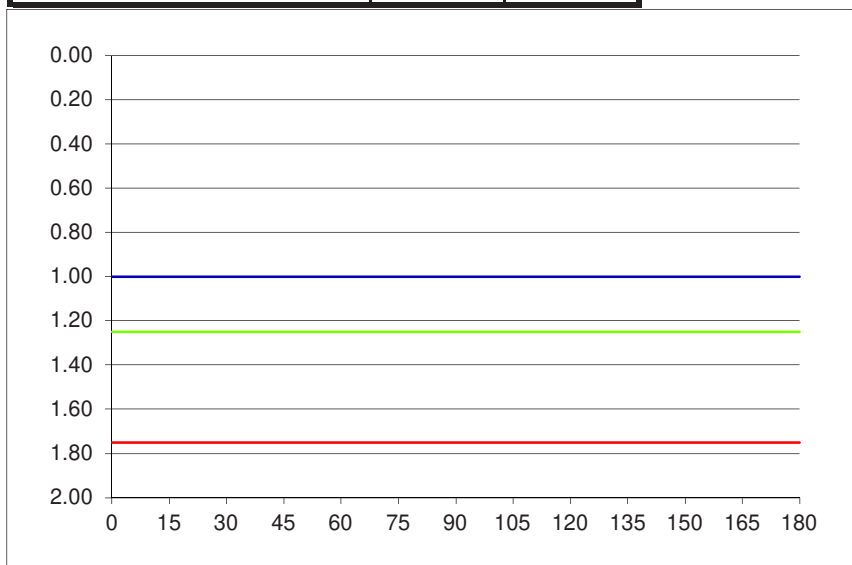


Project Reference:	5448
Contract name:	Magee Barracks
Location:	Kildare, Co. Kildare
Test No:	SA07
Date:	02/02/2018

Ground Conditions		
From	To	Description
0.00	0.05	MADE GROUND: tarmacadam.
0.05	0.25	MADE GROUND: brown silty sandy gravel with high cobble content and some red brick fragments.
0.25	0.35	Soft grey slightly sandy slightly gravelly silty CLAY.
0.35	1.10	Firm light brown slightly sandy slightly gravelly silty CLAY.
1.10	2.10	Firm light brown slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content.

Elapsed Time (mins)	Fall of Water (m)
0	1.00
0.5	1.00
1	1.00
1.5	1.00
2	1.00
2.5	1.00
3	1.00
3.5	1.00
4	1.00
4.5	1.00
5	1.00
6	1.00
7	1.00
8	1.00
9	1.00
10	1.00
12	1.00
14	1.00
16	1.00
18	1.00
20	1.00
25	1.00
30	1.00
40	1.00
50	1.00
60	1.00
90	1.00
120	1.00
150	1.00
180	1.00

Pit Dimensions (m)		
Length (m)	3.10	m
Width (m)	0.50	m
Depth	2.00	m
Water		
Start Depth of Water	1.00	m
Depth of Water	1.00	m
75% Full	1.25	m
25% Full	1.75	m
75%-25%	0.50	m
Volume of water (75%-25%)	0.78	m ³
Area of Drainage	14.40	m ²
Area of Drainage (75%-25%)	5.15	m ²
Time		
75% Full	N/A	min
25% Full	N/A	min
Time 75% to 25%	N/A	min
Time 75% to 25% (sec)	N/A	sec



f = **Fail** or **Fail**
 m/min **m/s**

SOAKAWAY TEST



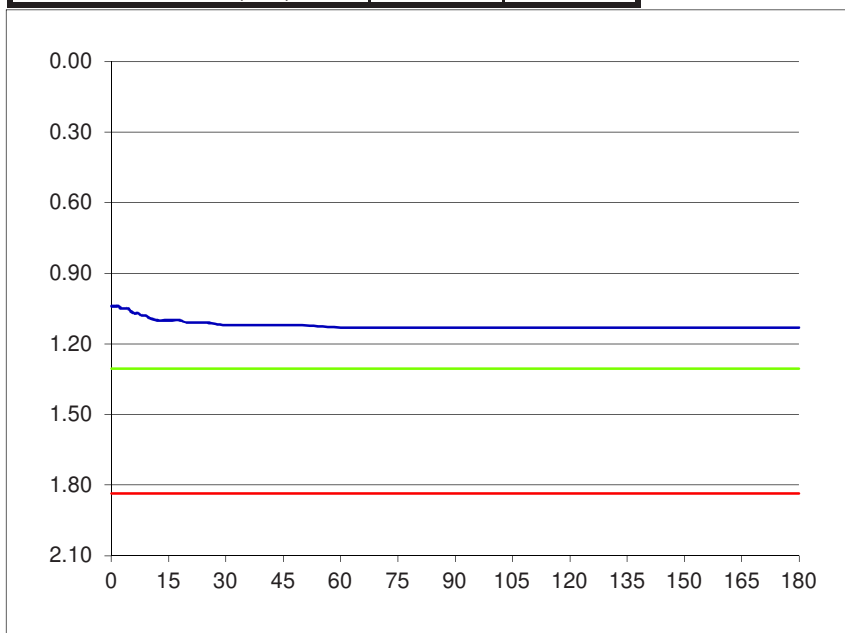
Project Reference:	5448
Contract name:	Magee Barracks
Location:	Kildare, Co. Kildare
Test No:	SA08
Date:	02/02/2018

Ground Conditions

From	To	
0.00	0.30	TOPSOIL.
0.40	1.20	MADE GROUND: grey brown sandy gravelly silty clay with high cobble content and some red brick fragments.
1.20	1.80	Firm brown slightly sandy slightly gravelly silty CLAY.
1.80	2.10	Firm grey brown slightly sandy gravelly silty CLAY with low cobble content.

Elapsed Time (mins)	Fall of Water (m)
0	1.04
0.5	1.04
1	1.04
1.5	1.04
2	1.04
2.5	1.05
3	1.05
3.5	1.05
4	1.05
4.5	1.05
5	1.06
6	1.07
7	1.07
8	1.08
9	1.08
10	1.09
12	1.10
14	1.10
16	1.10
18	1.10
20	1.11
25	1.11
30	1.12
40	1.12
50	1.12
60	1.13
90	1.13
120	1.13
150	1.13
180	1.13

Pit Dimensions (m)		
Length (m)	3.30	m
Width (m)	0.50	m
Depth	2.10	m
Water		
Start Depth of Water	1.04	m
Depth of Water	1.06	m
75% Full	1.305	m
25% Full	1.835	m
75%-25%	0.53	m
Volume of water (75%-25%)	0.8745	m ³
Area of Drainage	15.96	m ²
Area of Drainage (75%-25%)	5.678	m ²
Time		
75% Full	N/A	min
25% Full	N/A	min
Time 75% to 25%	N/A	min
Time 75% to 25% (sec)	N/A	sec



f = Fail or

Fail
m/min m/s

SOAKAWAY TEST



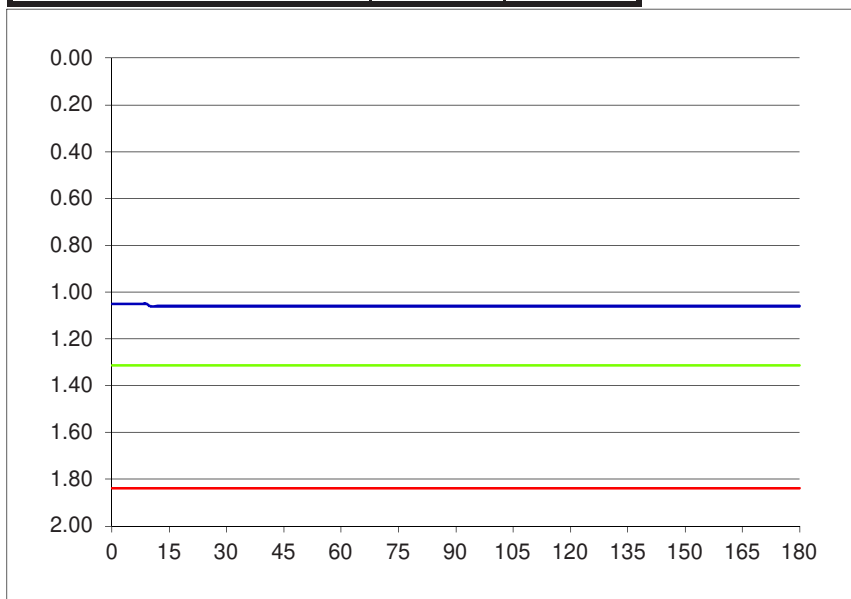
Project Reference:	5448
Contract name:	Magee Barracks
Location:	Kildare, Co. Kildare
Test No:	SA09
Date:	02/02/2018

Ground Conditions

From	To	
0.00	0.40	TOPSOIL.
0.40	0.70	MADE GROUND: brown sandy gravelly silty clay with low cobble content.
0.70	0.90	MADE GROUND: black silty sandy gravel with low cobble content and some ash, red brick, glass and scrap metal fragments.
0.90	1.80	Firm brown slightly sandy slightly gravelly silty CLAY.
1.80	2.10	Firm light brown slightly sandy gravelly silty CLAY with low cobble content.

Elapsed Time (mins)	Fall of Water (m)
0	1.05
0.5	1.05
1	1.05
1.5	1.05
2	1.05
2.5	1.05
3	1.05
3.5	1.05
4	1.05
4.5	1.05
5	1.05
6	1.05
7	1.05
8	1.05
9	1.05
10	1.06
12	1.06
14	1.06
16	1.06
18	1.06
20	1.06
25	1.06
30	1.06
40	1.06
50	1.06
60	1.06
90	1.06
120	1.06
150	1.06
180	1.06

Pit Dimensions (m)		
Length (m)	3.00	m
Width (m)	0.50	m
Depth	2.10	m
Water		
Start Depth of Water	1.05	m
Depth of Water	1.05	m
75% Full	1.31	m
25% Full	1.84	m
75%-25%	0.53	m
Volume of water (75%-25%)	0.79	m ³
Area of Drainage	14.70	m ²
Area of Drainage (75%-25%)	5.18	m ²
Time		
75% Full	N/A	min
25% Full	N/A	min
Time 75% to 25%	N/A	min
Time 75% to 25% (sec)	N/A	sec



f = Fail or Fail
m/min

Fail
m/s

Appendix 2
Survey Data

Survey Data

Location	Irish Transverse Mercator		Elevation	Irish National Grid	
	Easting	Northing		Easting	Northing
Soakaways					
ST01	673536.999	712495.042	97.33	273602.392	212463.819
ST02	673541.493	712371.464	98.26	273606.888	212340.214
ST03	673648.675	712278.792	100.77	273714.094	212247.523
ST04	673461.579	712423.157	98.35	273526.956	212391.918
ST05	673366.195	712521.941	98.55	273431.551	212490.723
ST06	673496.308	712243.132	101.78	273561.694	212211.854
ST07	673523.073	712239.760	101.66	273588.465	212208.481
ST08	673395.906	712159.591	100.24	273461.270	212128.294
ST09	673374.752	712167.292	99.99	273440.112	212135.997

Legend Key

☒ Locations By Type - OP



Contract No:	5448
Contract Name:	Magee Barracks
Location:	Kildare, Co. Kildare
Client:	RKD Architects
Engineer:	Garland
Title:	Site Plan
Scale:	1:2500
Drawn By:	SL



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100 Metres
400 Feet