Appendix H RESULTS OF SOAKAWAY INFILTRATION TESTING

APPENDIX I - SOAKAWAY INFILTRATION TEST RESULTS

BRE 365 method

esp
ENGINEERS
GEOLOGISTS
SCIENTISTS

Project Name:	Former Cowbridge Comprehensive, Cowbridge		
Project Ref:	7052b	**Date of Testing:**	09/01/2019
Test Location:	TP1 (SA1)	**Soil Infiltration Rate**	**2.09E-05 m/sec**
Fill Number:	1		

Test results:

Time (mins)	Water Level (m bgl)
0	0.45
1	0.47
2	0.49
3	0.51
4	0.53
5	0.54
10	0.61
30	0.78
60	1.01
90	1.03
120	1.17
150	1.33
165	1.52

Pit Dimensions (m)

Length	1.60
Width	0.70
Depth	1.60

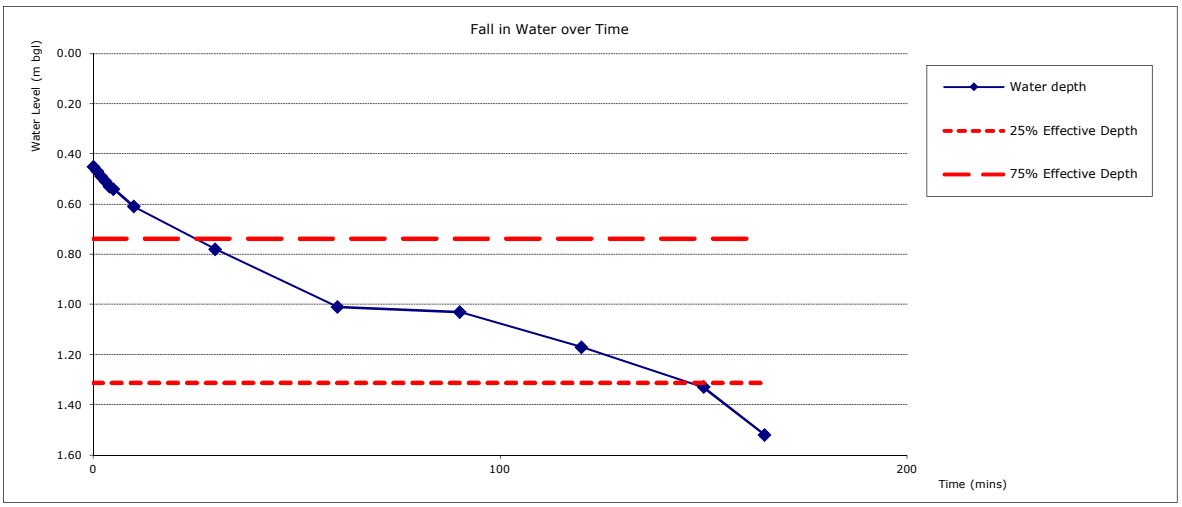
Assumed Invert Level (m bgl)	0.45

Ground Conditions:

GL - 0.8m	Loose branches and topsoil over: firm silty slightly gravelly CLAY with roots to 0.40m depth. Gravel is fine to medium subangular and angular limestone (GLACIO-FLUVIAL DEPOSITS).
0.8 - 1.3m	Medium dense pale brown clayey sandy fine to coarse, angular and subangular limestone GRAVEL (WEATHERED MARGINAL FACIES/MERCIA MUDSTONE GROUP - Class C).
1.3 - 1.6	Stiff reddish brown mottled pale grey sandy gravelly CLAY with medium cobble content. Gravel is fine to coarse angular limestone. Cobbles are angular limestone (Weathered MERCIA MUDSTONE).

Remarks:

1. Testing undertaken in general accordance with BRE Digest 365:2007
2. Trial pit was not filled with aggregate for test.
3. Stability of pit sides was good.



Soil Infiltration Rate (m/sec) $f = \frac{V_{p75-25}}{\alpha_{p50} \times t_{p75-25}}$

V_{p75-25}	Effective depth storage volume of water in the trial pit between 75% and 25% effective depth	0.64
α_{p50}	The internal surface area of the trial pit up to 50% effective depth and including the base area	3.765
t_{p75-25}	The time for the water level to fall from 75% to 25% effective depth	137

Soil Infiltration Rate (m/sec) $f = \frac{0.644}{30884.76563}$

f **2.09E-05**

APPENDIX X - SOAKAWAY INFILTRATION TEST RESULTS

BRE 365 method

esp ENGINEERS GEOLOGISTS SCIENTISTS

Project Name:	Former Cowbridge Comprehensive, Cowbridge
Project Ref:	7052b
Date of Testing:	09/01/2019
Test Location:	TP1 (SA1)
Fill Number:	2
Soil Infiltration Rate	1.43E-05 m/sec

Test results:

Time (mins)	Water Level (m bgl)
0	0.58
1	0.59
2	0.60
3	0.61
4	0.62
5	0.63
10	0.65
30	0.72
60	0.92
120	1.13
190	1.25
400	1.52

Pit Dimensions (m)

Length	1.60
Width	0.70
Depth	1.52

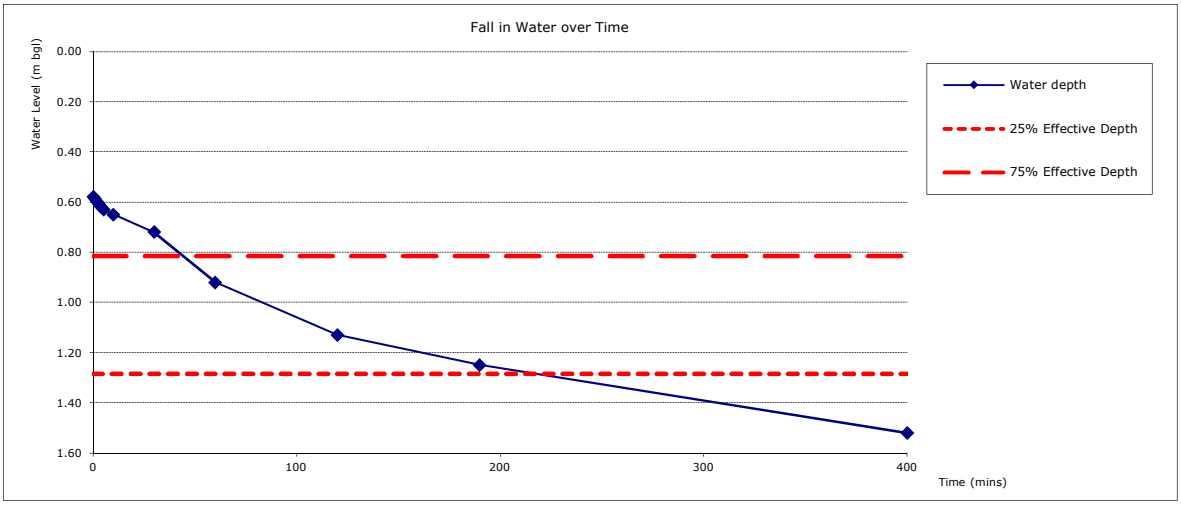
Assumed Invert Level (m bgl)	0.58

Ground Conditions:

GL - 1.3m	Loose branches and topsoil over: firm silty slightly gravelly CLAY with roots to 0.40m depth. Gravel is fine to medium subangular and angular limestone (GLACIO-FLUVIAL DEPOSITS).
1.3 - 1.6	Stiff reddish brown mottled pale grey sandy gravelly CLAY with medium cobble content. Gravel is fine to coarse angular limestone. Cobbles are angular limestone (Weathered MERCIA MUDSTONE).

Remarks:

1. Testing undertaken in general accordance with BRE Digest 365:2007
2. Trial pit was not filled with aggregate for test.
3. Stability of pit sides was good.



Soil Infiltration Rate (m/sec) $f = \frac{V_{p75-25}}{\alpha_{p50} \times t_{p75-25}}$

V_{p75-25}	Effective depth storage volume of water in the trial pit between 75% and 25% effective depth	0.53
α_{p50}	The internal surface area of the trial pit up to 50% effective depth and including the base area	3.282
t_{p75-25}	The time for the water level to fall from 75% to 25% effective depth	187

Soil Infiltration Rate (m/sec) $f = \frac{0.526}{36867.8}$

f **1.43E-05**

APPENDIX X - SOAKAWAY INFILTRATION TEST RESULTS

BRE 365 method

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Project Name:	Former Cowbridge Comprehensive, Cowbridge
Project Ref:	7052b
Date of Testing:	09/01/2019
Test Location:	TP2 (SA2)
Fill Number:	1
Soil Infiltration Rate	**7.46E-06 m/sec**

Test results:

Time (mins)	Water Level (m bgl)
0	0.45
1	0.46
2	0.47
3	0.47
4	0.48
5	0.48
10	0.49
30	0.63
60	0.75
120	0.90
190	1.03
315	1.15
360	1.25
420	1.35
480	1.50
540	1.70
600	1.80

Pit Dimensions (m)

Length	1.70
Width	0.70
Depth	1.80

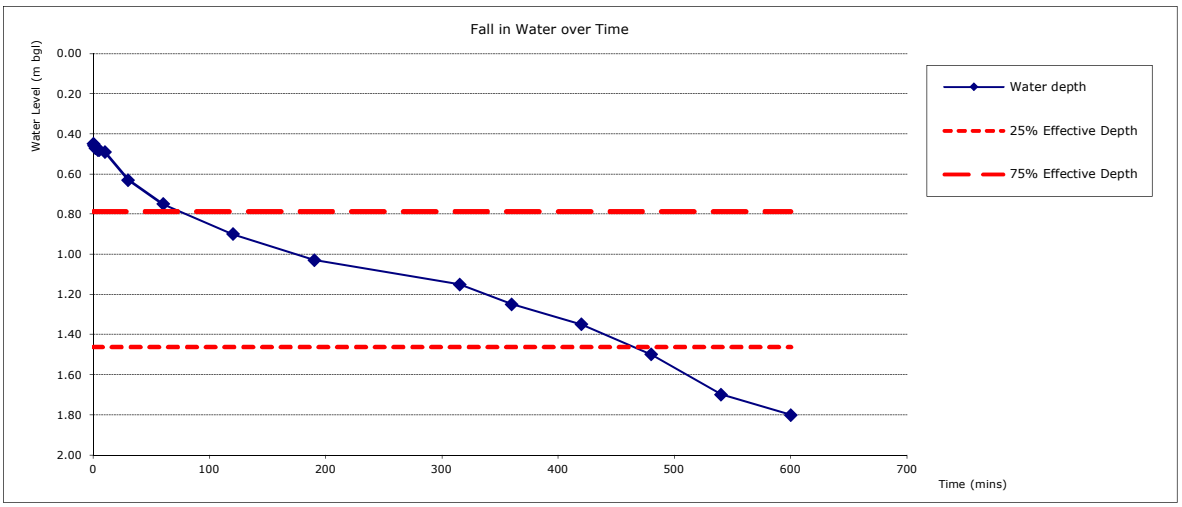
Assumed Invert Level (m bgl)	0.45

Ground Conditions:

GL- 0.8m	Topsoil with roots over: firm gravelly silty CLAY with roots to 0.30m depth. Gravel is fine to medium subangular and angular limestone.
0.8 - 1.7m	Firm reddish brown slightly gravelly silty CLAY with medium cobble content. Gravel is fine to coarse subangular and angular limestone (GLACIOFLUVIAL DEPOSITS)
1.7 - 1.8m	Stiff reddish brown mottled pale grey sandy gravelly CLAY with medium cobble content. Gravel is fine to coarse angular limestone. Cobbles are angular limestone. (Weathered MERCIA MUDSTONE MARGINAL FACIES)

Remarks:

1. Testing undertaken in general accordance with BRE Digest 365:2007
2. Trial pit was not filled with aggregate for test.
3. Minor spalling of pit sides at 0.80m depth.



Soil Infiltration Rate (m/sec) $f = \frac{V_{p75-25}}{\alpha_{p50} \times t_{p75-25}}$

V_{p75-25}	Effective depth storage volume of water in the trial pit between 75% and 25% effective depth	0.80
α_{p50}	The internal surface area of the trial pit up to 50% effective depth and including the base area	4.43
t_{p75-25}	The time for the water level to fall from 75% to 25% effective depth	405

Soil Infiltration Rate (m/sec) $f = \frac{0.803}{107649}$

f **7.46E-06**

APPENDIX X - SOAKAWAY INFILTRATION TEST RESULTS

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Project Name:	Former Cowbridge Comprehensive, Cowbridge		
Project Ref:	7052b	**Date of Testing:**	09/01/2019
Test Location:	TP3A (SA3)	**Soil Infiltration Rate**	**8.61E-06 m/sec**
Fill Number:	1		

Test results:

Time (mins)	Water Level (m bgl)
0	0.90
1	0.91
2	0.93
3	0.94
4	0.95
5	0.96
10	1.01
30	1.10
60	1.20
120	1.37
210	1.51
240	1.60
300	1.70
360	1.80
420	1.90
480	2.00
540	2.10
600	2.20

Pit Dimensions (m)

Length	1.65
Width	0.70
Depth	2.20

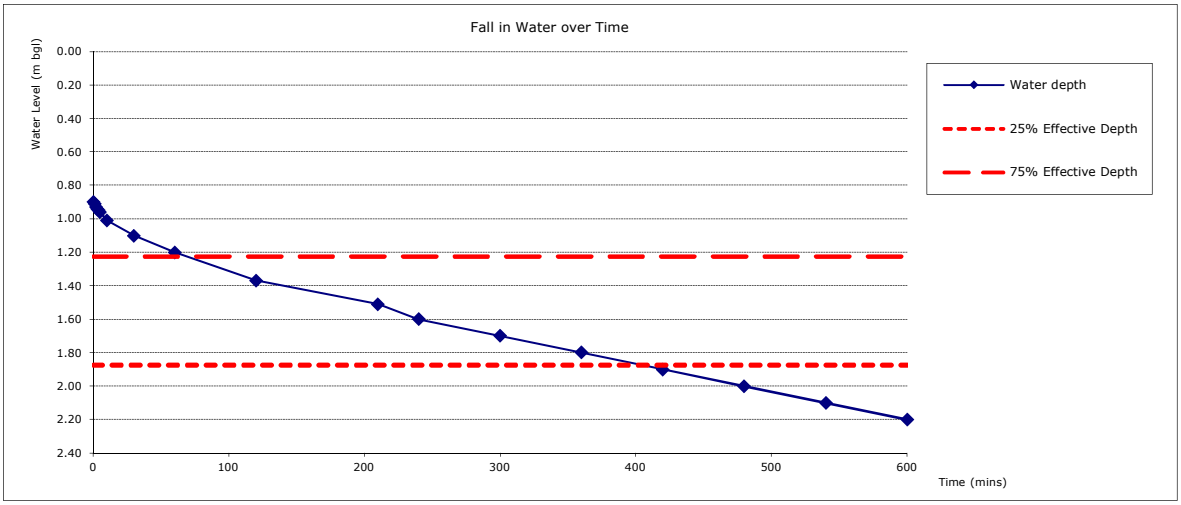
Assumed Invert Level (m bgl)	0.90

Ground Conditions:

GL- 0.7m	Topsoil with roots over: firm gravelly silty CLAY with roots to 0.30m depth. Gravel is fine to medium subangular and angular limestone.
0.7 - 1.7m	Firm reddish brown slightly gravelly silty CLAY with medium cobble content. Gravel is fine to coarse subangular and angular limestone (GLACIO-FLUVIAL DEPOSITS)
1.7 - 1.9m	Stiff reddish brown mottled pale grey sandy gravelly CLAY with medium cobble content. Gravel is fine to coarse angular limestone. Cobbles are angular limestone. (Weathered MERCIA MUDSTONE)

Remarks:

1. Testing undertaken in general accordance with BRE Digest 365:2007
2. Trial pit was not filled with aggregate for test.
3. Stability of pit sides was good.



Soil Infiltration Rate (m/sec) $f = \frac{V_{p75-25}}{\alpha_{p50} \times t_{p75-25}}$

V_{p75-25}	Effective depth storage volume of water in the trial pit between 75% and 25% effective depth	0.75
α_{p50}	The internal surface area of the trial pit up to 50% effective depth and including the base area	4.21
t_{p75-25}	The time for the water level to fall from 75% to 25% effective depth	345

Soil Infiltration Rate (m/sec) $f = \frac{0.751}{87147}$

f **8.61E-06**