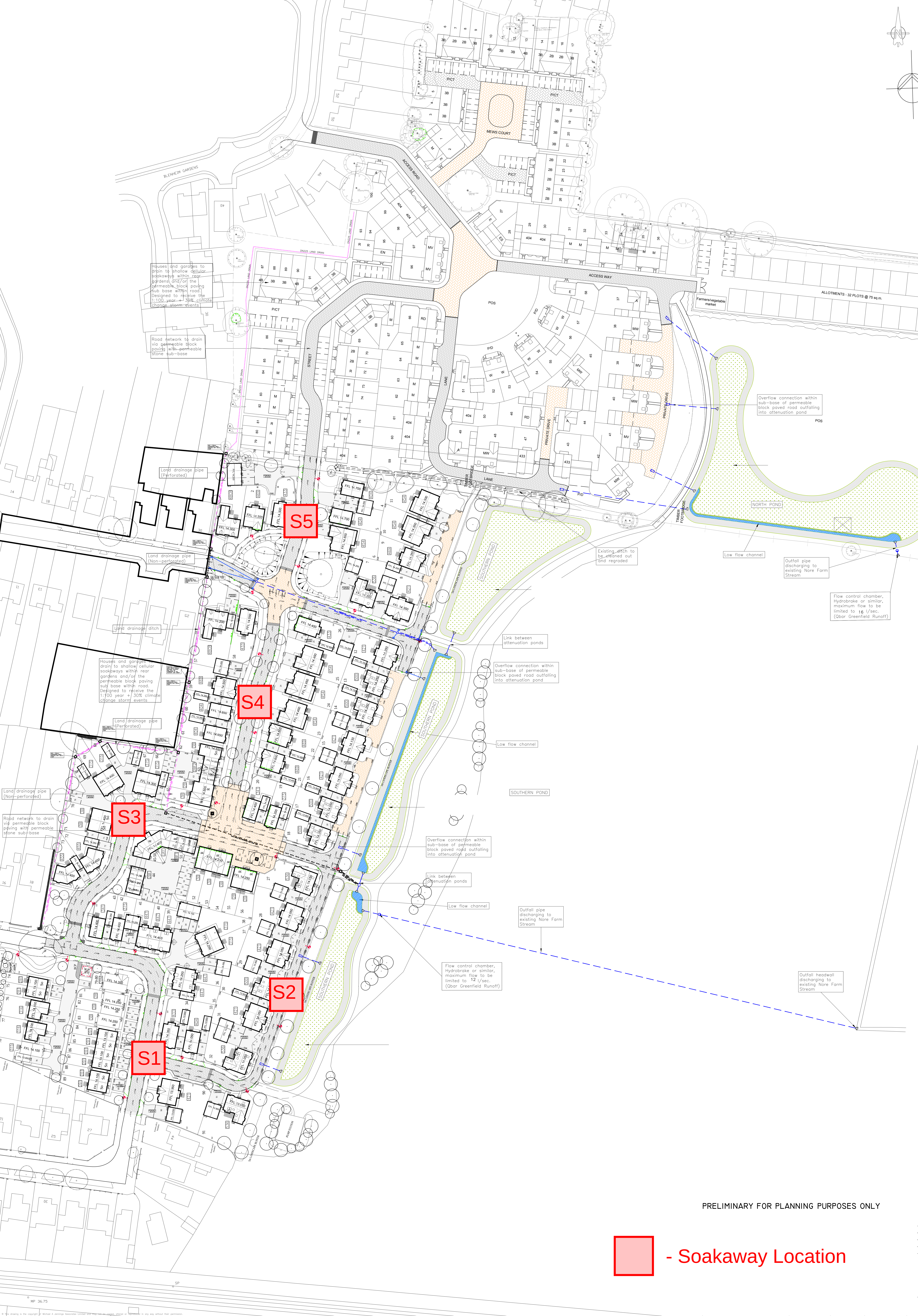
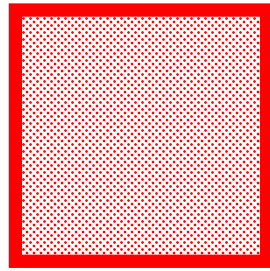


APPENDIX C
INFILTRATION TEST RESULTS – WILSON BAILEY 18.01.13



PRELIMINARY FOR PLANNING PURPOSES ONLY

 - Soakaway Location

Site Manor Farm, Denvilles, Hallett Road, Havant, Hampshire

Job Number
J11002

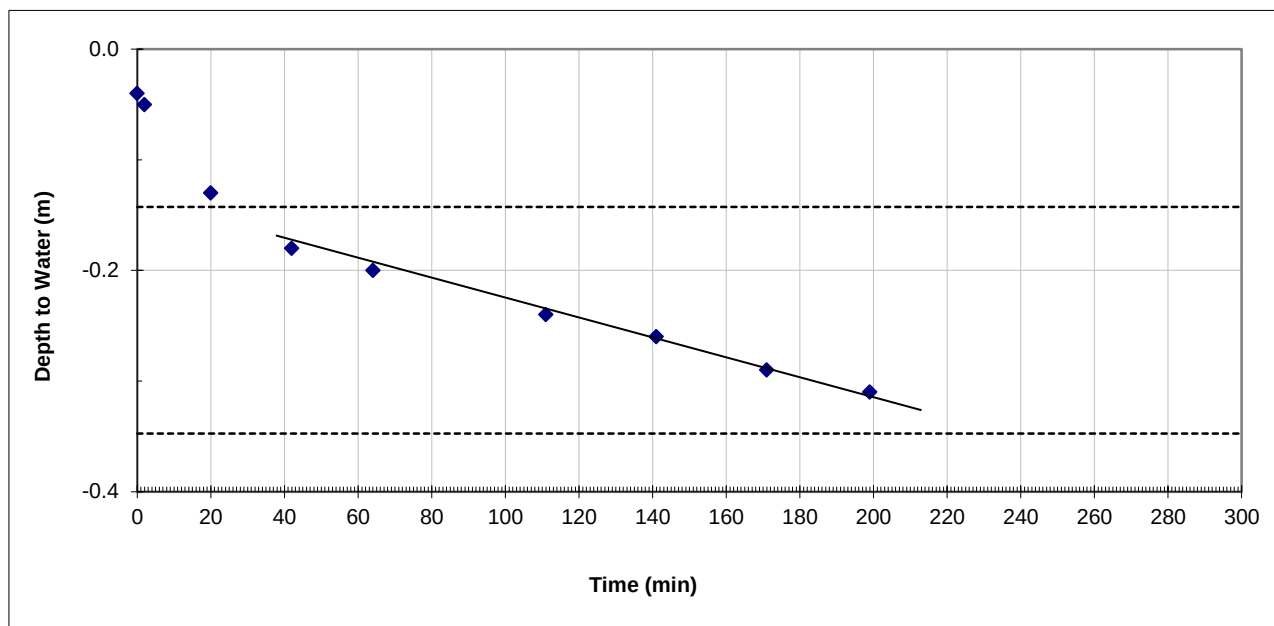
Client BDW Southampton

Sheet
1 / 3

Trial Pit No. S1

Soakage Test No. 1

Pit Length (m) 0.6 Pit Width (m) 0.6 Pit Depth (m) 0.45

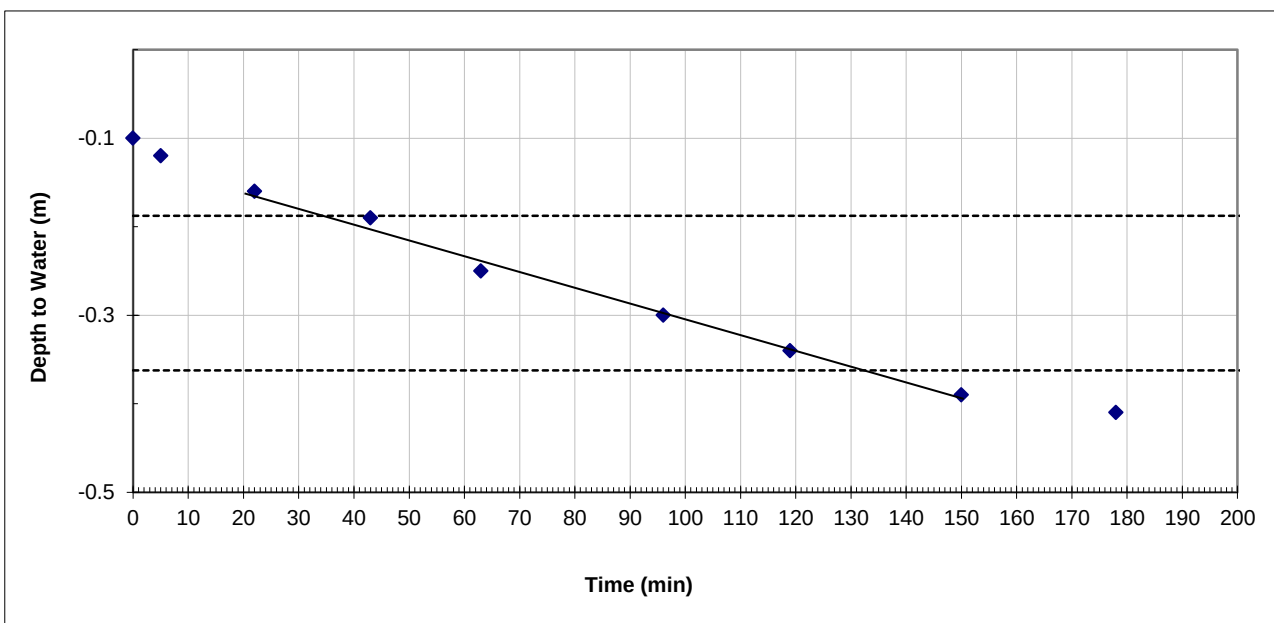


Design Soakage Rate 5.8E-06 m/s (based on linear portion of graph as shown)
0.50 m/day

Trial Pit No. S2

Soakage Test No. 1

Pit Length (m) 0.5 Pit Width (m) 0.5 Pit Depth (m) 0.45



Design Soakage Rate 1.2E-05 m/s (based on linear portion of graph as shown)
1.05 m/day

Site Manor Farm, Denvilles, Hallett Road, Havant, Hampshire

Client BDW Southampton

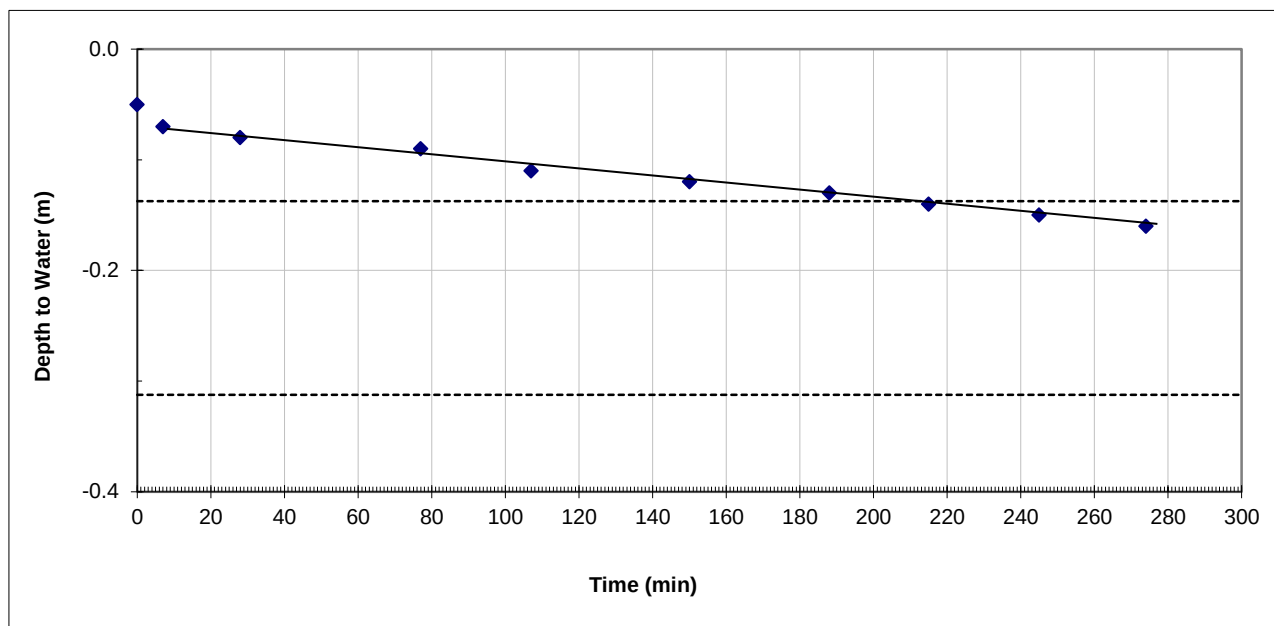
Job Number
J11002

Sheet
2 / 3

Trial Pit No. S3

Soakage Test No. 1

Pit Length (m) 0.6 Pit Width (m) 0.6 Pit Depth (m) 0.4

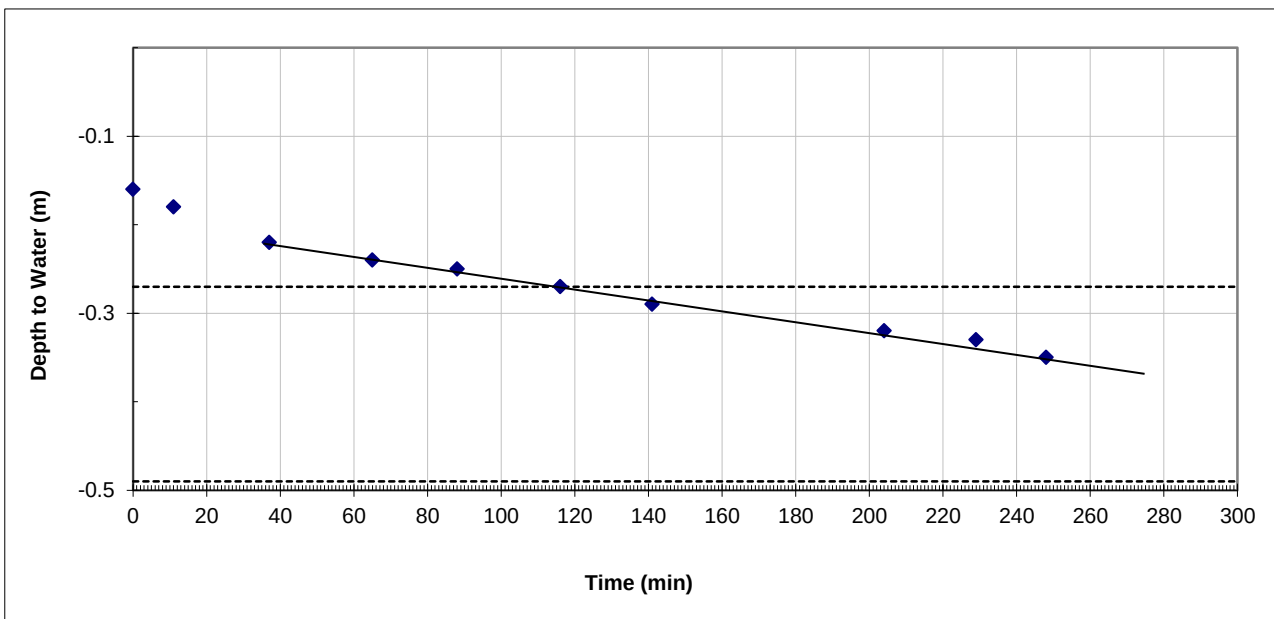


Design Soakage Rate 1.9E-06 m/s (based on linear portion of graph as shown)
0.17 m/day

Trial Pit No. S4

Soakage Test No. 1

Pit Length (m) 0.6 Pit Width (m) 0.6 Pit Depth (m) 0.6



Design Soakage Rate 3.1E-06 m/s (based on linear portion of graph as shown)
0.27 m/day

Site Manor Farm, Denvilles, Hallett Road, Havant, Hampshire

Job Number
J11002

Client BDW Southampton

Sheet
3 / 3

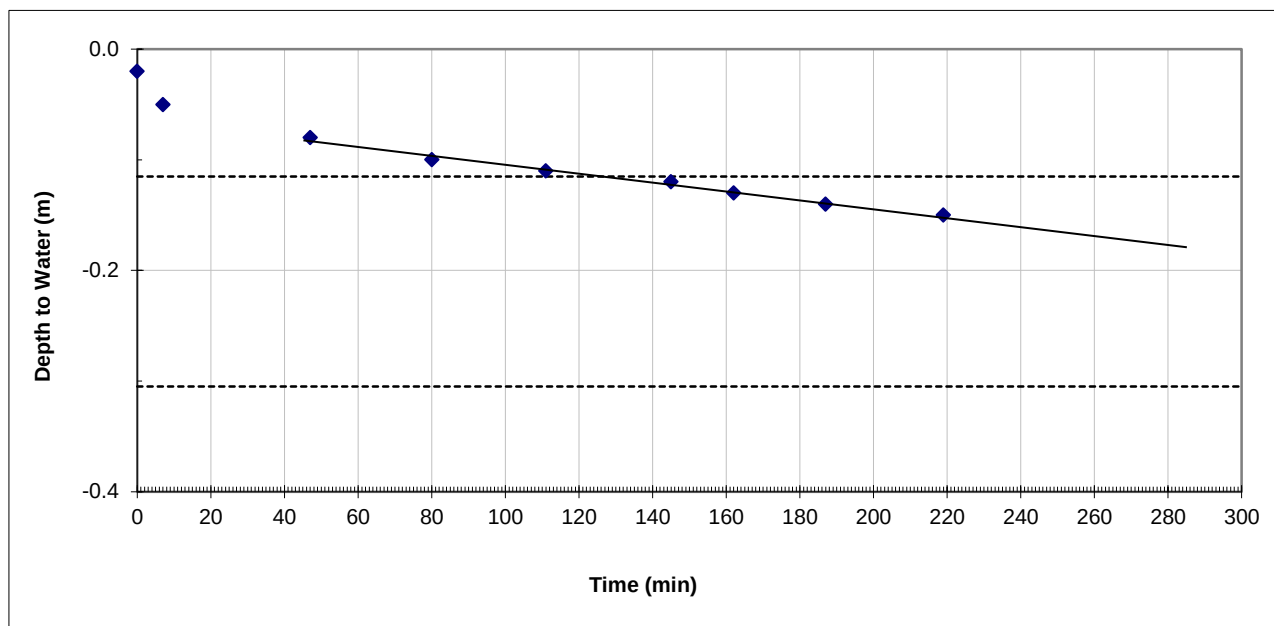
Trial Pit No. S5

Soakage Test No. 1

Pit Length (m) 0.4

Pit Width (m) 0.4

Pit Depth (m) 0.4



Design Soakage Rate

1.8E-06

m/s

(based on linear portion of graph as shown)

0.15

m/day

APPENDIX D
PRE/POST DEVELOPMENT FLOW RATES

Michael A Jennings Associates		Page 1
58-62 Ock Street Abingdon Oxon OX14 5BZ	Manor Farm (3.37ha) Greenfield Runoff Rate	
Date 02.04.13 File	Designed by C.Pendle Checked by	
Micro Drainage Source Control 2013.1		
<u>ICP SUDS Mean Annual Flood</u> Input Return Period (years) 1 Soil 0.400 Area (ha) 3.370 Urban 0.000 SAAR (mm) 732 Region Number Region 7 Results 1/s QBAR Rural 12.1 QBAR Urban 12.1 Q1 year 10.3 Q1 year 10.3 Q30 years 27.4 Q100 years 38.5		
©1982-2012 Micro Drainage Ltd		

Michael A Jennings Associates		Page 1																										
58-62 Ock Street Abingdon Oxon OX14 5BZ	Manor Farm (3.37ha) Greenfield Runoff Volume 100year 6hr																											
Date 02.04.13 File	Designed by C.Pendle Checked by																											
Micro Drainage Source Control 2013.1																												
<u>Greenfield Runoff Volume</u> FSR Data <table> <tr> <td>Return Period (years)</td> <td>100</td> </tr> <tr> <td>Storm Duration (mins)</td> <td>360</td> </tr> <tr> <td>Region</td> <td>England and Wales</td> </tr> <tr> <td>M5-60 (mm)</td> <td>19.500</td> </tr> <tr> <td>Ratio R</td> <td>0.350</td> </tr> <tr> <td>Areal Reduction Factor</td> <td>1.00</td> </tr> <tr> <td>Area (ha)</td> <td>3.370</td> </tr> <tr> <td>SAAR (mm)</td> <td>732</td> </tr> <tr> <td>CWI</td> <td>109.129</td> </tr> <tr> <td>Urban</td> <td>0.000</td> </tr> <tr> <td>SPR</td> <td>37.000</td> </tr> </table> Results <table> <tr> <td>Percentage Runoff (%)</td> <td>37.25</td> </tr> <tr> <td>Greenfield Runoff Volume (m³)</td> <td>808.962</td> </tr> </table>			Return Period (years)	100	Storm Duration (mins)	360	Region	England and Wales	M5-60 (mm)	19.500	Ratio R	0.350	Areal Reduction Factor	1.00	Area (ha)	3.370	SAAR (mm)	732	CWI	109.129	Urban	0.000	SPR	37.000	Percentage Runoff (%)	37.25	Greenfield Runoff Volume (m³)	808.962
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©1982-2012 Micro Drainage Ltd																												

Michael A Jennings Associates		Page 1
58-62 Ock Street Abingdon Oxon OX14 5BZ	Copseys Nursery (4.48ha) Greenfield Runoff Rate	
Date 02.04.13 File	Designed by C.Pendle Checked by	
Micro Drainage Source Control 2013.1		

ICP SUDS Mean Annual Flood

Input

Return Period (years)	1	Soil	0.400
Area (ha)	4.480	Urban	0.000
SAAR (mm)	732	Region Number	Region 7

Results 1/s

QBAR Rural 16.1
QBAR Urban 16.1

Q1 year 13.7

Q1 year 13.7
Q30 years 36.4
Q100 years 51.2

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Michael A Jennings Associates		Page 1																										
58-62 Ock Street Abingdon Oxon OX14 5BZ	Copseys Nursery (4.48ha) Greenfield Runoff Volume 100y 6hr																											
Date 02.04.13 File	Designed by C.Pendle Checked by																											
Micro Drainage Source Control 2013.1																												
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Project

COPSEYS NURSERY
NORTHERN SITE-

Job No.

Date

02-04-13

Page No.

Rev.

Member/Location

Engineer

CP

Checked

POST DEVELOPMENT RUNOFF

RATIONAL METHOD - $Q = 2.78 \cdot C \cdot I \cdot A$

WHERE: C - RUNOFF COEFFICIENT (1.0)
I - RAINFALL INTENSITY ~ TOC (30 mins)
A - IMPERMEABLE AREA (1.81 ha)
Q - PEAK RUNOFF (l/s)

RP	D(min)	AVE I (mm/hr)	+30%
1	30	20.2	26.2
30	30	49.5	64.3
100	30	64.7	84.1
100	360	10.4	13.5

$$1 \text{ YEAR} - Q = 2.78 \times 1 \times 26.2 \times 1.81 = 131 \text{ l/s}$$

$$30 \text{ YEAR} - Q = 2.78 \times 1 \times 64.3 \times 1.81 = 323 \text{ l/s}$$

$$100 \text{ YEAR} - Q = 2.78 \times 1 \times 84.1 \times 1.81 = 423 \text{ l/s}$$

POST DEVELOPMENT VOLUME

100 YEAR OHR EVENT

$$V = (2.78 \times 1 \times 13.5 \times 1.81 \times 0.001) \times 21600$$

$$V = 1467 \text{ m}^3$$

	Project	Job No.	Date	Page No.	Rev.
	MANOR FARM SOUTHERN SITE		02.04.13		
		Member/Location	Engineer	Checked	
			CP		

POST DEVELOPMENT RUNOFF

RATIONAL METHOD - $Q = 2.78 \cdot C \cdot I \cdot A$

WHERE: C - RUNOFF COEFFICIENT (1.0)
 I - RAINFALL INTENSITY ~ TOC (30 mins)
 A - IMPERMEABLE AREA (2.64 ha)
 Q - PEAK RUNOFF (l/s)

RP	D(min)	AVE I (mm/hr)	+30%
1	30	20.2	26.2
30	30	49.5	64.3
100	30	64.7	84.1
100	360	10.4	13.5

$$1 \text{ YEAR} - Q = 2.78 \times 1 \times 26.2 \times 2.64 = 192 \text{ l/s}$$

$$30 \text{ YEAR} - Q = 2.78 \times 1 \times 64.3 \times 2.64 = 472 \text{ l/s}$$

$$100 \text{ YEAR} - Q = 2.78 \times 1 \times 84.1 \times 2.64 = 617 \text{ l/s}$$

POST DEVELOPMENT VOLUME

100 year 6hr EVENT

$$V = (2.78 \times 1 \times 13.5 \times 2.64 \times 0.001) \times 21600$$

$$V = 2140 \text{ m}^3$$