



SIMON DENT ASSOCIATES

Hove – East Sussex
Gosport - Hampshire

Consulting Engineers to the Civil and Water Industry

Civil – Infrastructure – Flood Risk – Building Drainage -Public Health

1593_251010

10TH OCTOBER 2025

Mr Paul Burgess

Lewis & Co

2 Port Hall Road, Brighton, BN1 5PD

BY EMAIL ONLY

Dear Paul

1593 - 203 JUNCTION ROAD BURGESS HILL RH15 0NX

Please see attached our Infiltration Testing Summary for your issue to the planners in response to their email dated 2nd October 2025.

I do note there is a typo on the drawings which we indicate the rate as 1.35 x 10-5 m/s whereas calculation indicated this as 1.27 but the error makes little difference in the storm water strategy. I have altered the main drawing to suit this which is also attached and perhaps you can relay this to the planning officer.

If you have any queries, please contact me on 0754 658 3150.

Kind regards,

Simon Dent
For Simon Dent Associates

INFILTRATION TESTING SUMMARY

FOR 201 JUNCTION ROAD BURGESS HILL WEST SUSSEX RH15 0NX

Preliminary Work

BRE 365 soakaway testing was requested by SDA to be carried out for the site. The client carried these out with SDA present partly. The test results were provided for two differing locations as shown on the test pit plan below.



The British Geological Society (BGS) website indicated soils as Wealdstone clay which gave surprisingly good results. The clay was silty and with subsequent tests still proved viable for soakage design even at depth.

Each pit was excavated to 2.0m x 1.0m x 1.5m with the sides holding firm throughout.

Testing was carried out in November 2019 within two pits within.

No groundwater was encountered during the tests which were carried out in November 2019.

Each pit was filled and emptied three times (albeit starting depths reduced due to time taken on the initial test) over the consecutive days (due to the time taken to empty) with the average result used with a factor of safety to determined new soakaway and drainage blanket sizing.

Initially depths were taken at 10 min increments but subsequent recording were taken on the hour due to time taken. A one-day limit was placed on each test.

Where the test does not fully drain, test results are established using the water level drop from 75% to 25% of the actual drained depth as is permitted in the BRE 365 test. Test locations are in the location at which the design required at the time.



Fig 1 - Soakaway test pits in 2019

Results

The client was provided with the forms to fill in the SDA test record depths for the given time and infiltration results established therefrom. The test results are shown attached with the results summary below with the resultant chosen design infiltration rate.

Pit and Test No.	Test result
Pit 1 Test 1	1.60×10^{-5} m/s
Pit 1 Test 2	0.89×10^{-5} m/s
Pit 1 Test 3	0.96×10^{-5} m/s
Pit 2 Test 1	1.48×10^{-5} m/s
Pit 2 Test 2	0.89×10^{-5} m/s
Pit 2 Test 3	1.83×10^{-5} m/s

With the resultant test rates, the average of the six was taken resulting in the design figure of 1.27×10^{-5} m/s.

This rate has been factored by 1.5 for design purposes.



Project Title: 203 Junction Road Burgess Hill - PIT No. 1 - Test 1 **No.:** 1593

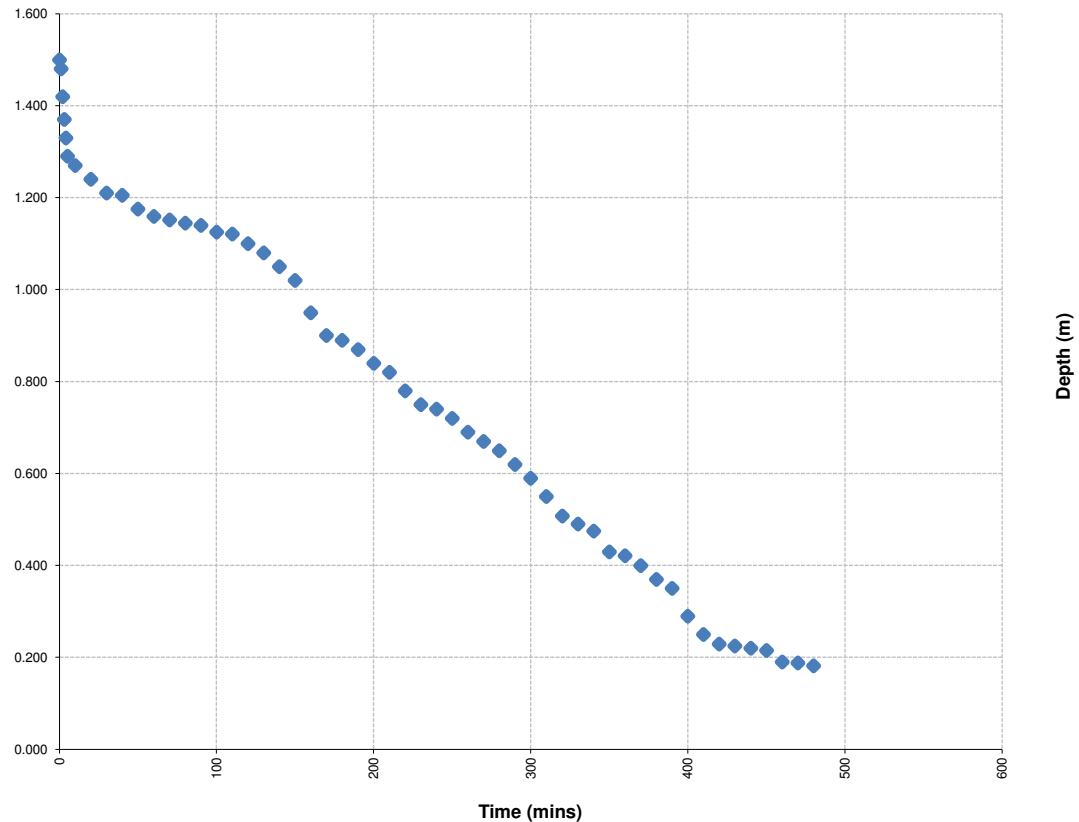
Infiltration test and rate calculation

1. Permeability rate calculations		2. Test Outflow results		3. Infiltration coefficient (q) (m/h)	
Test pit L:	2.00	Tot vol.:	3	a_{50} (sq.m):	4.50
Test pit W:	1.00	a_{50} :	6.5	Inflow (cu.m):	#REF!
Test pit D:	1.50	V_{75-25} :	1.318	Outflow(cu.m):	1.50
Free vol (%):	100	t_{p75-25} :	210	Storage(cu.m):	#REF!
Effective depth:		1.318		Rate (q) provided by SI=	
Infiltration rate (f):		1.609E-05		Calculated Soil Rate (f)=	

Log of falling head test

Time	Depth								
5	1290	105		205		305		405	
10	1270	110	1121	210	820	310	550	410	250
15		115		215		315		415	
20	1240	120	1100	220	780	320	508	420	229
25		125		225		325		425	
30	1210	130	1080	230	750	330	490	430	225
35		135		235		335		435	
40	1205	140	1050	240	740	340	475	440	220
45		145		245		345		445	
50	1175	150	1020	250	720	350	430	450	215
55		155		255		355		455	
60	1159	160	950	260	690	360	421	460	190
65		165		265		365		465	
70	1152	170	900	270	670	370	400	470	188
75		175		275		375		475	
80	1145	180	890	280	650	380	370	480	182
85		185		285		385		485	
90	1140	190	870	290	620	390	350	490	
95		195		295		395		495	
100	1125	200	840	300	590	400	290	500	

Emptying times for soakage test pit





Project Title: 203 Junction Road Burgess Hill - PIT No. 1 - Test 2 **No.:** 1593

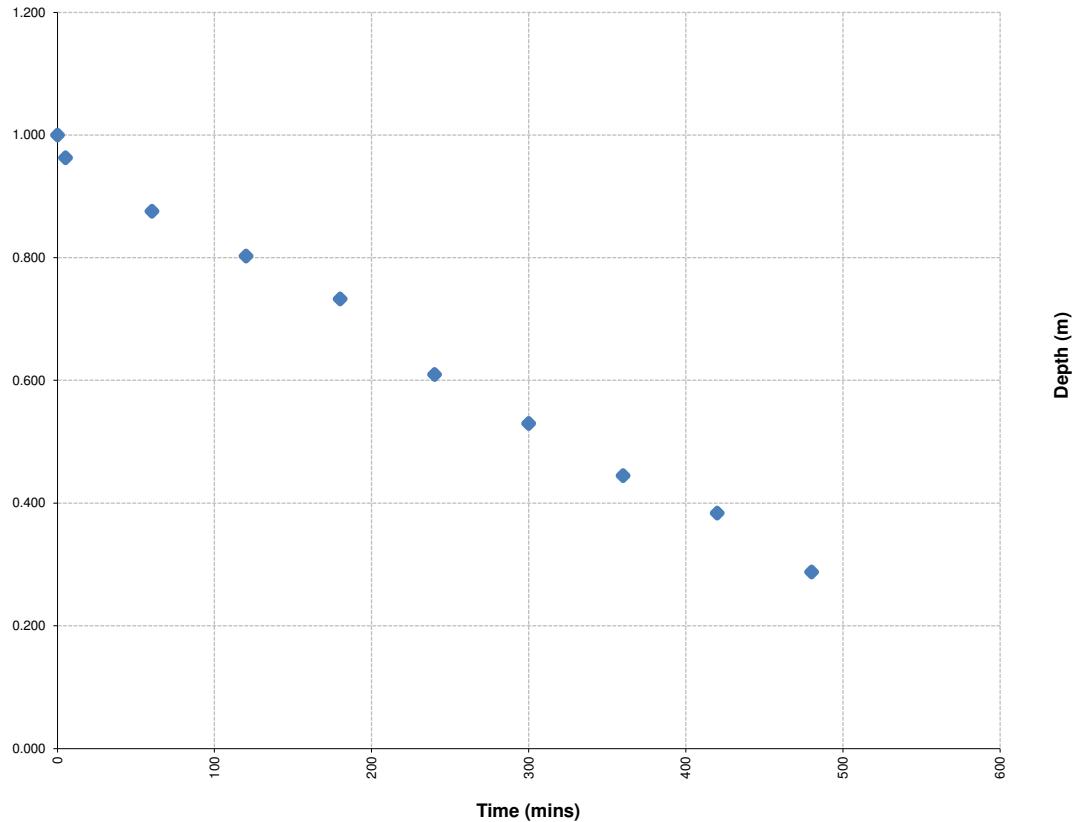
Infiltration test and rate calculation

1. Permeability rate calculations		2. Test Outflow results		3. Infiltration coefficient (q) (m/h)	
Test pit L:	2.00	Tot vol.:	3	a_{so} (sq.m):	4.50
Test pit W:	1.00	a_{p50} :	6.5	Inflow (cu.m):	#REF!
Test pit D:	1.50	V_{p75-25} :	0.712	Outflow(cu.m):	1.50
Free vol (%):	100	t_{p75-25} :	205	Storage(cu.m):	#REF!
Effective depth:		0.712		Rate (q) provided by SI=	
Infiltration rate (f):		8.906E-06		Calculated Soil Rate (f)=	

Log of falling head test

Time	Depth								
5	963	105	205	305	405				
10	110	210	310	410					
15	115	215	315	415					
20	120	803	220	320	420	384			
25	125	225	325	425					
30	130	230	330	430					
35	135	235	335	435					
40	140	240	610	340	440				
45	145	245	345	445					
50	150	250	350	450					
55	155	255	355	455					
60	876	160	260	360	445	460			
65	165	265	365	465					
70	170	270	370	470					
75	175	275	375	475					
80	180	733	280	380	480	288			
85	185	285	385	485					
90	190	290	390	490					
95	195	295	395	495					
100	200	300	530	400	500				

Emptying times for soakage test pit





Project Title: 203 Junction Road Burgess Hill - PIT No. 1 - Test 3 **No.:** 1593

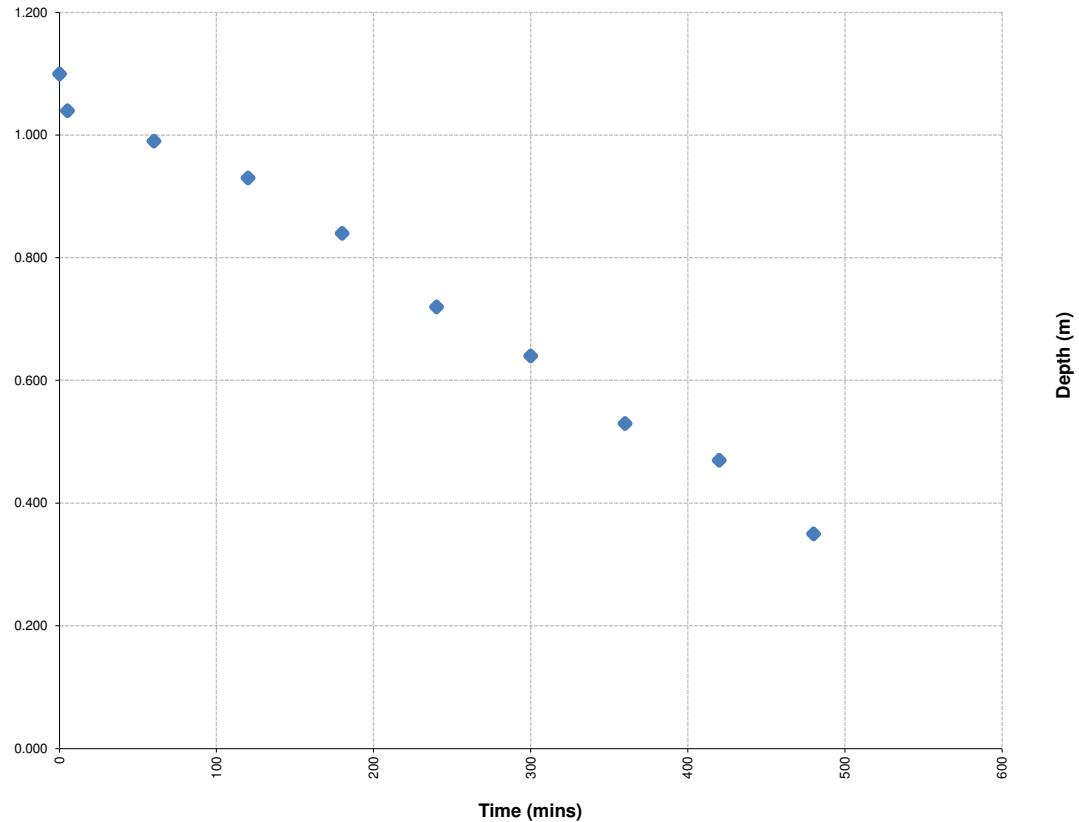
Infiltration test and rate calculation

1. Permeability rate calculations		2. Test Outflow results		3. Infiltration coefficient (q) (m/h)	
Test pit L:	2.00	Tot vol.:	3	a_{so} (sq.m):	4.50
Test pit W:	1.00	a_{p50} :	6.5	Inflow (cu.m):	#REF!
Test pit D:	1.50	V_{p75-25} :	0.75	Outflow(cu.m):	1.50
Free vol (%):	100	t_{p75-25} :	200	Storage(cu.m):	#REF!
Effective depth:		0.750		Rate (q) provided by Sl=	
Infiltration rate (f):		9.615E-06		Calculated Soil Rate (f)=	

Log of falling head test

Time	Depth								
5	1040	105	205	305	405				
10	110	210	310	410					
15	115	215	315	415					
20	120	930	220	320	420	470			
25	125	225	325	425					
30	130	230	330	430					
35	135	235	335	435					
40	140	240	720	340	440				
45	145	245	345	445					
50	150	250	350	450					
55	155	255	355	455					
60	990	160	260	360	530	460			
65	165	265	365	465					
70	170	270	370	470					
75	175	275	375	475					
80	180	840	280	380	480	350			
85	185	285	385	485					
90	190	290	390	490					
95	195	295	395	495					
100	200	300	640	400	500				

Emptying times for soakage test pit





Project Title:	203 Junction Road Burgess Hill - PIT No. 2 - Test 1	No.:	1593
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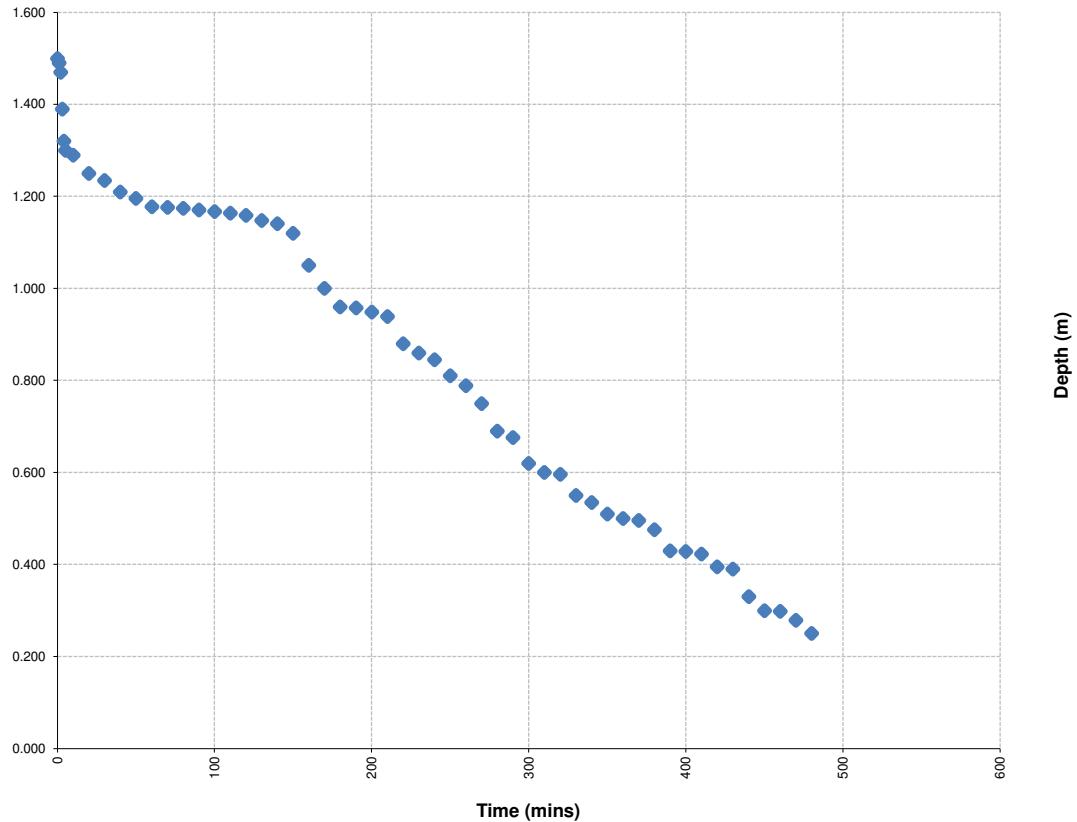
Infiltration test and rate calculation

1. Permeability rate calculations		2. Test Outflow results		3. Infiltration coefficient (q) (m/h)	
Test pit L:	2.00	Tot vol.:	3	a_{50} (sq.m):	4.50
Test pit W:	1.00	a_{50} :	6.5	Inflow (cu.m):	#REF!
Test pit D:	1.50	V_{p75-25} :	1.218	Outflow(cu.m):	1.50
Free vol (%):	100	t_{p75-25} :	210	Storage(cu.m):	#REF!
Effective depth:		1.218		Rate (q) provided by SI=	
Infiltration rate (f):		1.487E-05		Calculated Soil Rate (f)=	
				0.05354	

Log of falling head test

Time	Depth								
5	1300	105		205		305		405	
10	1290	110	1164	210	939	310	600	410	423
15		115		215		315		415	
20	1250	120	1159	220	880	320	596	420	395
25		125		225		325		425	
30	1235	130	1148	230	860	330	550	430	390
35		135		235		335		435	
40	1210	140	1141	240	845	340	535	440	330
45		145		245		345		445	
50	1196	150	1120	250	810	350	510	450	300
55		155		255		355		455	
60	1179	160	1050	260	789	360	500	460	298
65		165		265		365		465	
70	1176	170	1000	270	750	370	496	470	279
75		175		275		375		475	
80	1174	180	960	280	690	380	476	480	250
85		185		285		385		485	
90	1171	190	958	290	676	390	430	490	
95		195		295		395		495	
100	1167	200	949	300	620	400	429	500	

Emptying times for soakage test pit





Project Title: 203 Junction Road Burgess Hill - PIT No. 2 - Test 2 **No.:** 1593

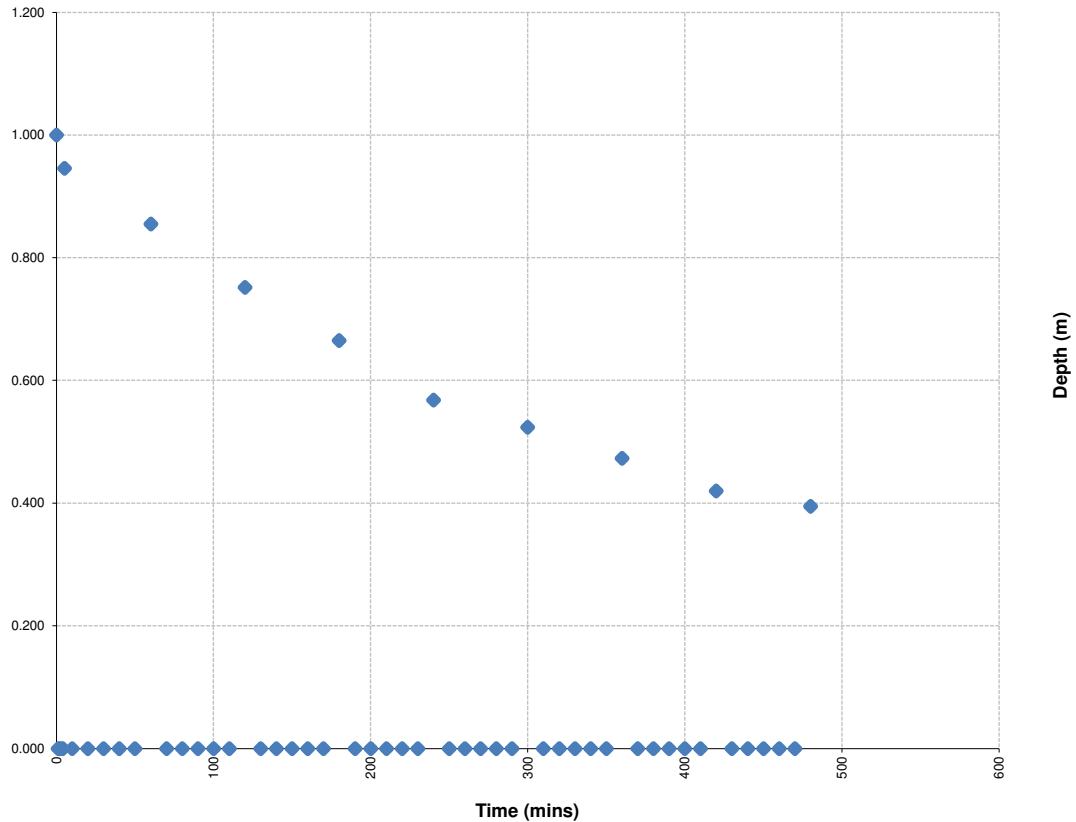
Infiltration test and rate calculation

1. Permeability rate calculations		2. Test Outflow results		3. Infiltration coefficient (q) (m/h)	
Test pit L:	2.00	Tot vol.:	3	a_{50} (sq.m):	4.50
Test pit W:	1.00	a_{50} :	6.5	Inflow (cu.m):	#REF!
Test pit D:	1.50	V_{p75-25} :	0.712	Outflow(cu.m):	1.50
Free vol (%):	100	t_{p75-25} :	205	Storage(cu.m):	#REF!
Effective depth:		0.712		Rate (q) provided by SI=	
Infiltration rate (f):		8.906E-06		Calculated Soil Rate (f)=	

Log of falling head test

Time	Depth								
5	963	105		205		305		405	
10		110		210		310		410	
15		115		215		315		415	
20		120	803	220		320		420	384
25		125		225		325		425	
30		130		230		330		430	
35		135		235		335		435	
40		140		240	610	340		440	
45		145		245		345		445	
50		150		250		350		450	
55		155		255		355		455	
60	876	160		260		360	445	460	
65		165		265		365		465	
70		170		270		370		470	
75		175		275		375		475	
80		180	733	280		380		480	288
85		185		285		385		485	
90		190		290		390		490	
95		195		295		395		495	
100		200		300	530	400		500	

Emptying times for soakage test pit





Project Title: 203 Junction Road Burgess Hill - PIT No. 2 - Test 3 **No.:** 1593

Infiltration test and rate calculation

1. Permeability rate calculations		2. Test Outflow results		3. Infiltration coefficient (q) (m/h)	
Test pit L:	2.00	Tot vol.:	3	a_{sso} (sq.m):	4.50
Test pit W:	1.00	a_{p50} :	6.5	Inflow (cu.m):	#REF!
Test pit D:	1.50	V_{p75-25} :	1.5	Outflow(cu.m):	1.50
Free vol (%):	100	t_{p75-25} :	210	Storage(cu.m):	#REF!
Effective depth:		1.500			
Infiltration rate (f):		1.832E-05			

Log of falling head test

Time	Depth								
5	1040	105		205		305		405	
10		110		210		310		410	
15		115		215		315		415	
20		120	930	220		320		420	470
25		125		225		325		425	
30		130		230		330		430	
35		135		235		335		435	
40		140		240	720	340		440	
45		145		245		345		445	
50		150		250		350		450	
55		155		255		355		455	
60	990	160		260		360	530	460	
65		165		265		365		465	
70		170		270		370		470	
75		175		275		375		475	
80		180	840	280		380		480	350
85		185		285		385		485	
90		190		290		390		490	
95		195		295		395		495	
100		200		300	640	400		500	

Emptying times for soakage test pit

