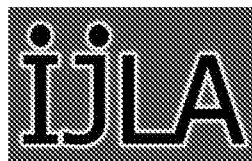


Soakage Testing

DREW SMITH GROUP



Land at Summer Lane Pagham Reserved Matters Application Planning Update

July 2019 Rev. A

28th January 2019

Our ref: GE17671/SA02/190128



Daniel O'Shea
Drew Smith Limited
Drew Smith House
Mill Court
The Sawmills
Durley
Southampton
Hampshire
SO32 2EJ

Dear Daniel,

RE: Summer Lane, Pagham, Bognor Regis, PO21 4NQ – Soakage Testing

We are pleased to present the results of the soakage testing undertaken at the above site. The soakage tests were undertaken broadly in accordance with BRE Digest 365 'Soakaway Design' BRE, 2016 with the testing limited to three consecutive days.

A geo-environmental engineer attended site on the 11th, 14th, 15th and 16th January 2019 to undertake the intrusive investigation. A total of twenty-one full scale soakage tests (TP01 to TP21) were undertaken within trial pits. Eleven windowless sample boreholes (WS01 to WS11) were also drilled during the works to allow the installation of monitoring standpipes for winter groundwater level monitoring. The exploratory positions were located in line with instructions from Drew Smith Limited and access constraints at the time of investigation.

Background

It is understood that the site is proposed to be developed with a residential development and associated infrastructure. As such, soakage testing is required to confirm the suitability of underlying soils for drainage via soakaways and to inform the planning, design and construction strategies for the site.

Published geological records indicate that the ground conditions were likely to comprise River Terrace Deposits overlying London Clay Formation.

Site Description

At the time of the investigation works the site comprised a section of a large arable field in the west with a grass paddock with areas of trees and scrub in the east. The site appeared generally level. The western field was accessed from the west end of Summer Lane via a gap in the hedgerow. Access to the paddock was afforded by a grass track in the south-eastern corner of the site.

Ground Conditions

The ground conditions encountered were relatively consistent with those anticipated from published geological maps, i.e. a thickness of Topsoil and/or Made Ground overlying River Terrace Deposits in turn overlying London Clay. A generalised summary of the encountered conditions is presented in Table 1.

Geo-Environmental Services Ltd
Unit 7, Bannock Farm, Coldfield Road, Haverhill, West Sussex BN6 9GL

Signature

679544479



Top (m bgl)	Base (m bgl)	Geology
0	0.10 – 0.30	TOPSOIL: Brown CLAY with varying proportions of silt and gravel with occasional or frequent rootlets. (All locations except TP02 and TP12).
0 – 0.10	0.10 – 0.20	MADE GROUND: Brown silty clay with rubbish and brown gravelly clay with brick. (TP02, TP04 and TP12 only).
0.10 – 0.30	1.90 – 3.00+	RIVER TERRACE DEPOSITS (CLAY): Typically CLAY with medium or high proportions of sand and gravel. Silty CLAY and CLAY with no secondary constituents occasionally encountered. The clay soils appeared visually desiccated to depths between 0.40m and 0.70m bgl. (All locations).
1.10 – 2.00	1.40 – 3.00+	RIVER TERRACE DEPOSITS (SAND): Thicknesses of clayey SAND, clayey gravelly SAND and gravelly SAND soils frequently encountered at depths greater than 1.50m bgl. (TP08, TP11, WS01 to WS06 and WS08 to WS11).
1.90 – 2.80	3.00+	LONDON CLAY FORMATION: CLAY or slightly sandy CLAY. (WS02 to WS04 and WS07 to WS11).

Table 1 Summary of Ground Conditions

Groundwater was encountered during the investigation as shown in Table 2.

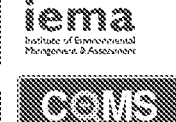
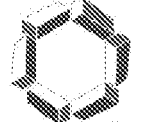
Location	Depth to groundwater (m bgl)	Comment
TP01	1.50	Rose to 1.49m bgl
TP03	1.34	
TP05	1.50	Rose to 1.40m bgl
TP06	1.50	
TP07	1.38	
TP08	1.40	Rose to 1.33m bgl
TP10	1.60	
TP11	1.45	
WS01	1.65	
WS02	1.30	
WS03	1.30	
WS04	1.30	
WS05	1.30	
WS06	1.05	
WS07	1.30	
WS08	1.30	
WS09	1.30	
WS10	1.05	
WS11	1.50	

Table 2 Summary of Groundwater Strikes

For full details of the ground conditions encountered, reference should be made to the exploratory hole logs presented within Appendix A.

Soakage Testing

Soakage testing was undertaken broadly in accordance with BRE Digest 365 Soakaway Design in all twenty-one trial pits with the exception of TP03, TP06 and TP10 where the trial pit walls collapsed and testing was abandoned. Testing was undertaken in TP01 to TP11 at depths between 1.33m and 1.50m bgl, suitable for likely proposed



conventional stormwater soakaways. Testing in TP12 to TP21 was undertaken at depths between 0.44m and 0.70m bgl, suitable for any proposed permeable pavement.

During the testing in TP01 to TP11 and TP13-TP14 the fall in water level during the test period was insufficient to calculate a rate of infiltration. Test periods ranged between 20 and 48 hours, unless water levels were noted to be increasing during testing as in TP02, TP04 and TP05. Infiltration rates within the remaining shallow soils (TP12 and TP15 to TP21) ranged between $9.5 \times 10^{-7} \text{m/s}$ and $1.1 \times 10^{-5} \text{m/s}$, however in some instances the time taken to complete the tests was such that it was not possible to undertake three complete fillings in some locations. The results of the testing are summarised in Table 2 below. The full soakage test results are presented within Appendix B.

Location	Permeability (m/s)			Test Depth (m)	Comments
	Test 1	Test 2	Test 3		
TP01	-	-	-	1.49*	Insufficient fall in water to complete test
TP02	-	-	-	1.50	
TP03	-	-	-	1.34*	Trial pit collapsed during testing
TP04	-	-	-	1.58*	Insufficient fall in water to complete test
TP05	-	-	-	1.40*	
TP06	-	-	-	-	Trial pit collapsed during testing
TP07	-	-	-	1.38*	Insufficient fall in water to complete test
TP08	-	-	-	1.33	
TP09	-	-	-	1.35	
TP10	-	-	-	-	Trial pit collapsed during testing
TP11	-	-	-	1.45*	Insufficient fall in water to complete test
TP12	1.9×10^{-6}	-	-	0.63	
TP13	-	-	-	0.70	Insufficient fall in water to complete test
TP14	-	-	-	0.60	Infiltration ceased in Test 1
TP15	1.1×10^{-5}	4.9×10^{-6}	4.1×10^{-6}	0.55	Test 3 based on data extrapolation
TP16	1.4×10^{-6}	-	-	0.67	Based on data extrapolation
TP17	5.5×10^{-6}	1.8×10^{-6}	1.5×10^{-6}	0.60	Test 3 based on data extrapolation
TP18	1.2×10^{-6}	-	-	0.50	
TP19	2.0×10^{-6}	1.9×10^{-6}	-	0.55	Infiltration ceased in Test 3
TP20	1.7×10^{-6}	1.3×10^{-6}	9.5×10^{-7}	0.55	Test 2 & 3 based on data extrapolation
TP21	8.9×10^{-6}	9.1×10^{-6}	-	0.44	Infiltration ceased in Test 3

Note: *indicates test carried out at groundwater level

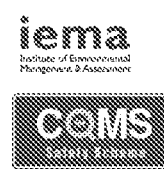
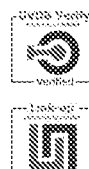
Table 2 Soakage Test Results

Winter Groundwater Monitoring

Groundwater level monitoring within the borehole standpipes installed in WS01 to WS11 is proposed to be undertaken between January and April 2019, the results of which will be reported under separate cover.

Conclusions

The testing undertaken indicates that the soils at the site are unlikely to be suitable for stormwater drainage via conventional soakaways owing to the presence of cohesive soils, clayey granular soils and the presence of groundwater. As a result, on-site storage and attenuation together with alternative storm water disposal options should be considered.



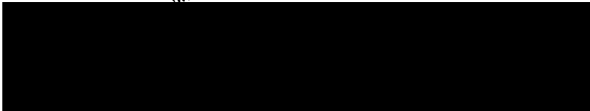


The shallow soils at the site were shown to be moderately permeable in the majority of locations tested therefore permeable paving may be an effective component in the site drainage scheme for storage and peak flow attenuation.

Closure

We trust that we have interpreted your instructions correctly, and please do not hesitate to contact us should you have any queries.

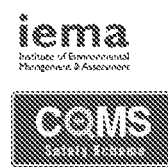
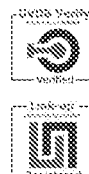
Yours sincerely
For and on Behalf of Geo-Environmental



SHAUN ARMITAGE BSc (Hons), FGS
Senior Consulting Engineer



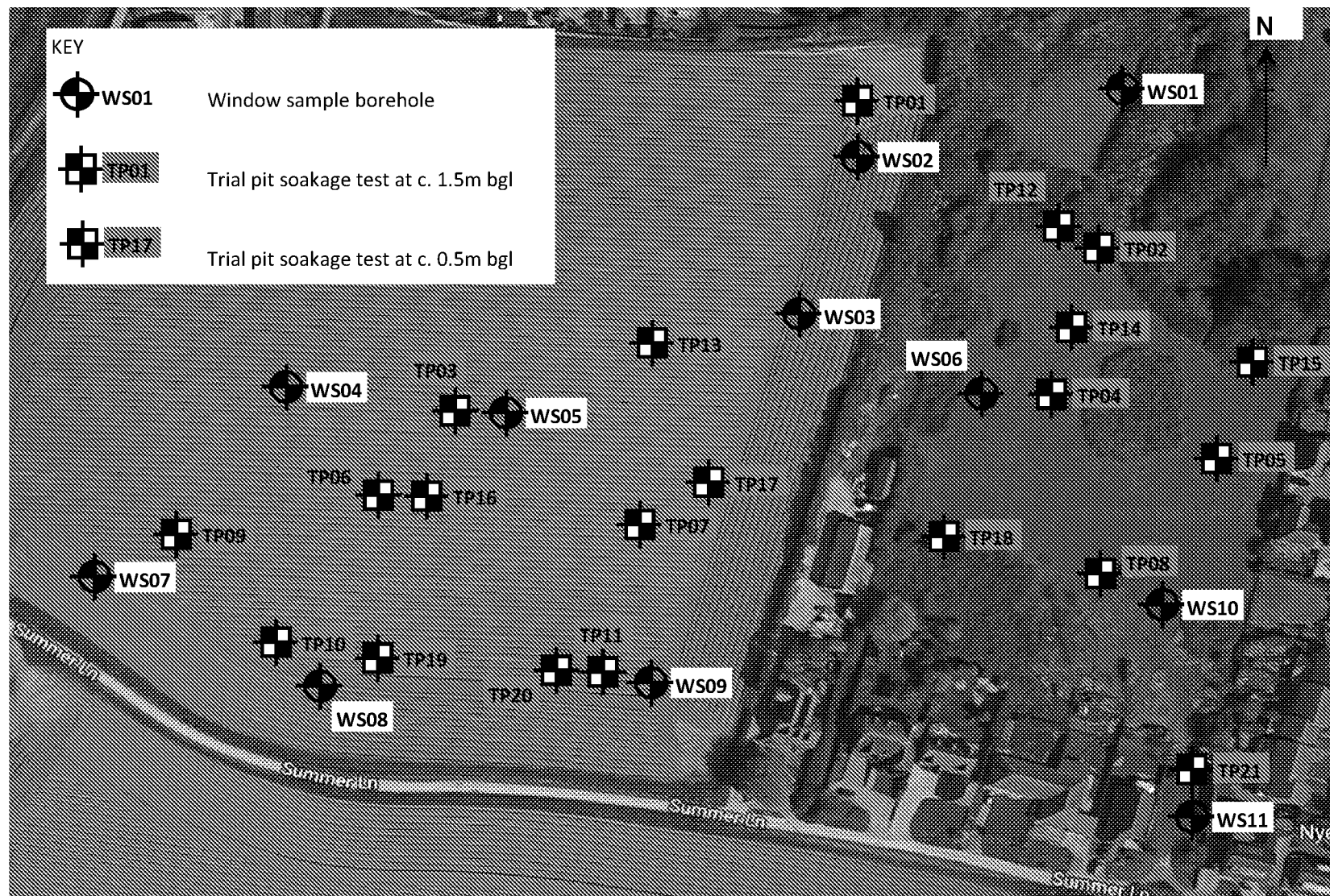
Enc	Figure 1	Site Location Plan
	Figure 2	Exploratory Hole Locations Plan
	Appendix A	Exploratory Hole Logs
	Appendix B	Soakage Test Results



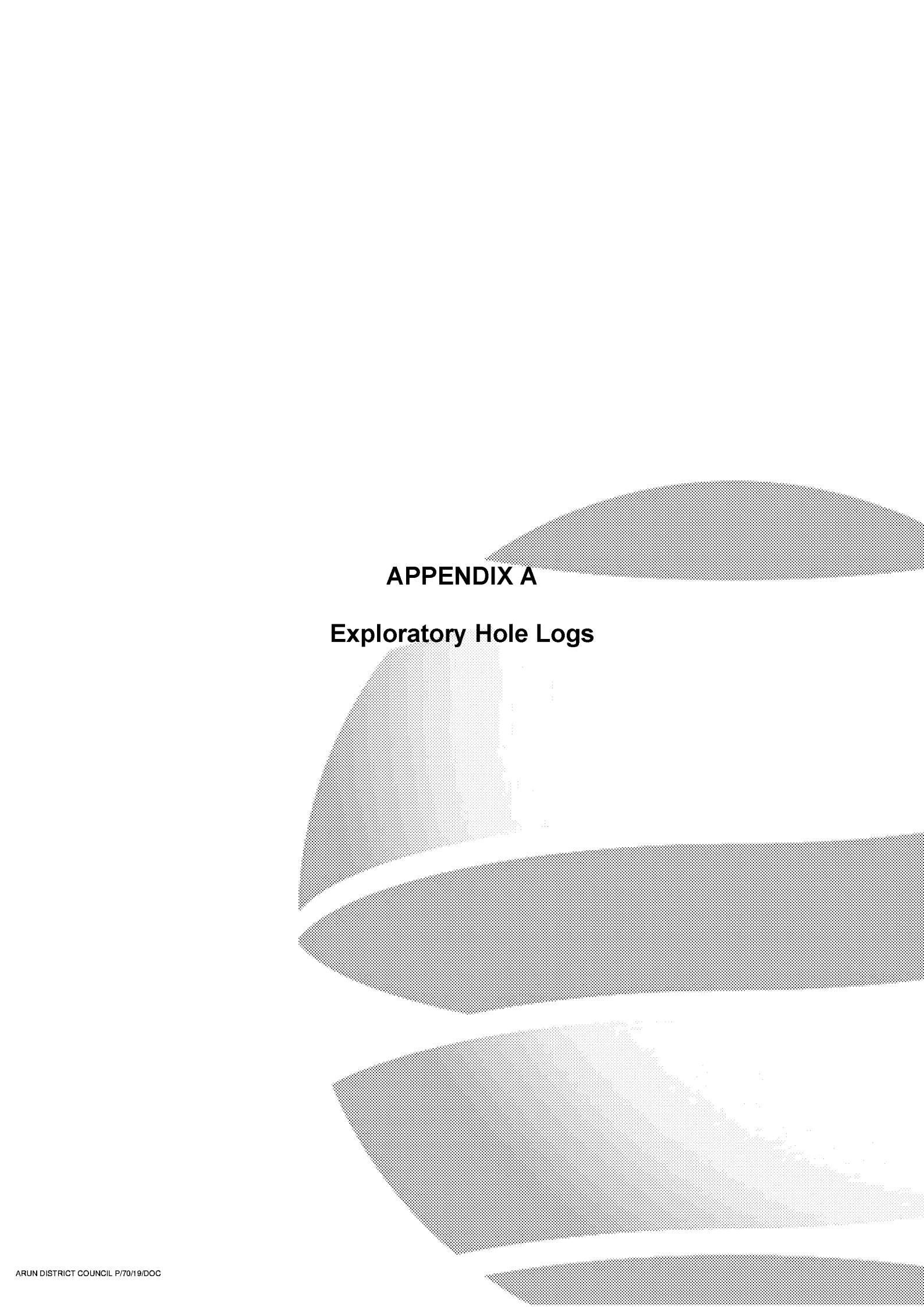
FIGURES



Project:	Summer Lane, Pagham, Bongor Regis, PO21 4NQ			Title	Site Location Plan	
Client:	Drew Smith Limited			Geo-Environmental Services Ltd Unit 7 Danworth Farm, Cuckfield Road Hurstpierpoint, West Sussex BN6 9GL +44(0)1273 832972 www.gesl.net	 Geo-Environmental	
Ref No:	GE17671	Revision:	0			
Drawn:	SA	Date:	07/01/2019			
Figure:	1	Scale:	Not To Scale			



Project:	Summer Lane, Pagham, Bongor Regis, PO21 4NQ			Title	Exploratory Hole Location Plan	
Client:	Drew Smith Limited			Geo-Environmental Services Ltd Unit 7 Danworth Farm, Cuckfield Road Hurstpierpoint, West Sussex BN6 9GL +44(0)1273 832972 www.gesl.net  Geo-Environmental		
Ref No:	GE17671	Revision:	0			
Drawn:	SA	Date:	23/01/2019			
Figure:	2	Scale:	Not To Scale			



APPENDIX A

Exploratory Hole Logs



Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

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Trial Pit Log

Trial Pit No

TP01

Sheet 1 of 1

Project Name: Summer Lane, Pagham

Project No.
GE17671

Co-ords: -
Level:

Date
14/01/2019

Location: Bongor Regis, PO21 4NQ

Dimensions
(m):

2.40

Depth
1.50

0.55

Scale
1:25

Logged
RG

Client: Drew Smith Limited

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.20			Brown silty CLAY with frequent rootlets and roots up to 50mm. TOPSOIL	
				0.50			Brown desiccated silty gravelly CLAY with occasional rootlets. Gravel fmc angular to subangular flint. RIVER TERRACE DEPOSITS	
				1.40			Brown gravelly CLAY with two cobbles of subangular flint. Gravel fmc angular to subangular flint. RIVER TERRACE DEPOSITS	1
				1.50			Light brown sandy CLAY. Sand fine. RIVER TERRACE DEPOSITS	2
							End of Pit at 1.50m	3
								4
								5
Water Strike								
Depth Strike	Water to (m)							
1.50	1.49	Remarks Groundwater encountered at 1.5m bgl						
		Stability Unstable						





Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

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Trial Pit Log

Trial Pit No

TP02

Sheet 1 of 1

Project Name: Summer Lane, Pagham

Project No.
GE17671

Co-ords: -
Level:

Date
15/01/2019

Location: Bongor Regis, PO21 4NQ

Dimensions (m): 2.30

Depth
1.50

0.55

Scale
1:25

Logged
RG

Client: Drew Smith Limited

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.10			Brown silty clay with roots and rubbish. MADE GROUND	
				1.00			Brown CLAY. RIVER TERRACE DEPOSITS	1
				1.50			Light brown and greenish brown mottled sandy gravelly CLAY. Sand fine, gravel fmc angular to subangular flint. RIVER TERRACE DEPOSITS	2
							End of Pit at 1.50m	3
								4
								5
Water Strike		Remarks						
Depth Strike		Stability		Stable				





Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

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Trial Pit Log

Trial Pit No

TP03

Sheet 1 of 1

Project Name: Summer Lane, Pagham

Project No.
GE17671

Co-ords: -
Level:

Date
14/01/2019

Location: Bongor Regis, PO21 4NQ

Dimensions
(m):

2.20

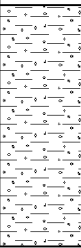
Depth
1.50

0.55

Scale
1:25

Logged
RG

Client: Drew Smith Limited

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.20			Brown silty CLAY with frequent rootlets. TOPSOIL	
							Light brown and brown desiccated CLAY with occasional rootlets. RIVER TERRACE DEPOSITS	
				0.70			Light brown and blueish grey mottled very gravelly CLAY with one flint cobble. Gravel fmc angular to subangular flint. RIVER TERRACE DEPOSITS	1
				1.50			End of Pit at 1.50m	2
								3
								4
								5
Water Strike								
Depth Strike	Water to (m)							
1.34	0.00	Remarks Groundwater encountered at 1.34m bgl						
		Stability Unstable						





Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

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Trial Pit Log

Trial Pit No

TP04

Sheet 1 of 1

Project Name: Summer Lane, Pagham

Project No.
GE17671

Co-ords: -
Level:

Date
15/01/2019

Location: Bongor Regis, PO21 4NQ

Dimensions
(m):

2.00

Depth
1.50

0.55

Scale
1:25

Logged
RG

Client: Drew Smith Limited

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.10			Brown silty CLAY with frequent rootlets. TOPSOIL	
				0.20			Brown gravelly clay. Gravel fm angular to subangular brick. MADE GROUND	
							Light brown and brown mottled CLAY. RIVER TERRACE DEPOSITS	
				0.70			Light brown and brown mottled gravelly CLAY. Gravel fmc angular to subangular flint. RIVER TERRACE DEPOSITS	1
				1.20			Light brown and greenish yellow sandy CLAY. Sand fine. RIVER TERRACE DEPOSITS	
				1.40			Brown and purplish brown mottled CLAY. RIVER TERRACE DEPOSITS	
				1.50			End of Pit at 1.50m	
								2
								3
								4
								5

Water Strike	Remarks
Depth Strike	Stability Stable





Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

Trial Pit No

TP05

Sheet 1 of 1

Project Name: Summer Lane, Pagham

Project No.
GE17671

Co-ords: -
Level:

Date
15/01/2019

Location: Bongor Regis, PO21 4NQ

Dimensions
(m):

1.80

Depth
1.50

0.55

Scale
1:25

Logged
RG

Client: Drew Smith Limited

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.20			Brown silty CLAY with frequent rootlets. TOPSOIL	
							Light brown and brown CLAY. RIVER TERRACE DEPOSITS	
				0.70			Light brown and blueish grey slightly sandy CLAY. Sand fine. RIVER TERRACE DEPOSITS	1
				1.20			Light brown and blueish grey sandy gravelly CLAY. Sand fine, gravel fmc angular to subangular flint. RIVER TERRACE DEPOSITS	
				1.50			End of Pit at 1.50m	
								2
								3
								4
								5
Water Strike								
Depth Strike	Water to (m)							
1.50	1.40	Remarks Groundwater encountered at 1.5m bgl						
		Stability Stable						





Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

Trial Pit No
TP06
Sheet 1 of 1

Project Name: Summer Lane, Pagham

Project No.
GE17671

Co-ords: -
Level:

Date
14/01/2019

Location: Bongor Regis, PO21 4NQ

Dimensions
(m):

2.00

Depth
1.50

0.55

Scale
1:25

Logged
RG

Client: Drew Smith Limited

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
				0.20			Brown silty CLAY with frequent rootlets. TOPSOIL
				0.50			Light brown and brown desiccated slightly gravelly CLAY. Gravel fmc angular to subangular flint. RIVER TERRACE DEPOSITS
				1.20			Light brown and greyish brown gravelly CLAY. Gravel fm angular to subangular flint. RIVER TERRACE DEPOSITS
				1.50			Light brown and blueish gret mottled slightly gravelly CLAY. Gravel fm angular to subangular flint. RIVER TERRACE DEPOSITS
							----- End of Pit at 1.50m
Depth Strike		Water Strike		Remarks			
1.50		0.00		Groundwater encountered at 1.5m bgl			
Stability		Unstable					





Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

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Trial Pit Log

Trial Pit No

TP07

Sheet 1 of 1

Project Name: Summer Lane, Pagham

Project No.
GE17671

Co-ords: -
Level:

Date
14/01/2019

Location: Bongor Regis, PO21 4NQ

Dimensions
(m):

2.00

Depth
1.50

0.55

Scale
1:25

Logged
RG

Client: Drew Smith Limited

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.20			Brown silty CLAY with frequent rootlets. TOPSOIL	
				0.50			Light brown and brown desiccated CLAY. RIVER TERRACE DEPOSITS	
							Light brown and brown CLAY. RIVER TERRACE DEPOSITS	
				1.20			Light brown and brown gravelly CLAY. Gravel fm angular to rounded flint. RIVER TERRACE DEPOSITS	1
				1.40			Light brown and blueish grey mottled CLAY. RIVER TERRACE DEPOSITS	
				1.50			End of Pit at 1.50m	
								2
								3
								4
								5
Water Strike		Remarks		Groundwater encountered at 1.38m bgl				
Depth Strike	1.38	Water to (m)	0.00					
		Stability		Stable				





Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

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Trial Pit Log

Trial Pit No

TP08

Sheet 1 of 1

Project Name: Summer Lane, Pagham

Project No.
GE17671

Co-ords: -
Level:

Date
15/01/2019

Location: Bongor Regis, PO21 4NQ

Dimensions
(m):

2.00

Depth
1.40

0.55

Scale
1:25

Logged
RG

Client: Drew Smith Limited

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
				0.20			Brown silty CLAY with occasional rootlets. TOPSOIL
				0.50			Light brown and brown CLAY. RIVER TERRACE DEPOSITS
				1.20			Light brown and blueish grey mottled CLAY. RIVER TERRACE DEPOSITS
				1.40			Light brown and blueish grey clayey fine SAND. RIVER TERRACE DEPOSITS
							End of Pit at 1.40m
Depth Strike		Water Strike		Remarks			
1.40		1.33		Groundwater encountered at 1.4m bgl			
				Stability Stable			







Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

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Trial Pit Log

Trial Pit No

TP09

Sheet 1 of 1

Project Name: Summer Lane, Pagham

Project No.
GE17671

Co-ords: -
Level:

Date
14/01/2019

Location: Bongor Regis, PO21 4NQ

Dimensions
(m):

2.50

Depth
1.50

0.55

Scale
1:25

Logged
RG

Client: Drew Smith Limited

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.20			Brown silty CLAY with occasional rootlets. TOPSOIL	
				0.40			Dark brown and brown desiccated CLAY. RIVER TERRACE DEPOSITS	
							Dark brown and brown CLAY. RIVER TERRACE DEPOSITS	
				1.20			Light brown and brown mottled gravelly CLAY. Gravel fm angular to subangular flint. RIVER TERRACE DEPOSITS	1
				1.50			End of Pit at 1.50m	2
								3
								4
								5
Water Strike		Remarks						
Depth Strike		Stability		Stable				





Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

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Trial Pit Log

Trial Pit No

TP10

Sheet 1 of 1

Project Name: Summer Lane, Pagham

Project No.
GE17671

Co-ords: -
Level:

Date
14/01/2019

Location: Bongor Regis, PO21 4NQ

Dimensions
(m):

2.00

Depth
1.60

0.55

Scale
1:25

Logged
RG

Client: Drew Smith Limited

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.20			Brown silty CLAY with occasional rootlets. TOPSOIL	
				0.50			Brown and light brown desiccated CLAY. RIVER TERRACE DEPOSITS	
				1.20			Light brown and brown mottled slightly gravelly CLAY. Grave fm angular to subangular flint. RIVER TERRACE DEPOSITS	1 -
				1.60			Light brown and blueish grey sandy CLAY. Sand fmc. RIVER TERRACE DEPOSITS	
							----- End of Pit at 1.60m	2 -
								3 -
								4 -
								5 -
Water Strike			Remarks	Groundwater encountered at 1.6m bgl				
Depth Strike	Water to (m)							
1.60	0.00							
Stability			Unstable					





Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

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Trial Pit Log

Trial Pit No

TP11

Sheet 1 of 1

Project Name: Summer Lane, Pagham

Project No.
GE17671

Co-ords: -
Level:

Date
14/01/2019

Location: Bongor Regis, PO21 4NQ

Dimensions
(m):

2.00

Depth
1.50

0.55

Scale
1:25

Logged
RG

Client: Drew Smith Limited

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.20			Brown silty CLAY with occasional rootlets. TOPSOIL	
				0.50			Light brown and brown mottled desiccated CLAY. RIVER TERRACE DEPOSITS	
				1.10			Light brown and brown mottled CLAY. RIVER TERRACE DEPOSITS	1
				1.50			Greenish yellow and yellowish brown clayey SAND. RIVER TERRACE DEPOSITS	
							End of Pit at 1.50m	
								2
								3
								4
								5
Water Strike		Remarks		Groundwater encountered at 1.45m bgl				
Depth Strike	1.45	Flow to (m/s)	0.00					
		Stability	Stable					





Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

Trial Pit No

TP12

Sheet 1 of 1

Project Name: Summer Lane, Pagham

Project No.
GE17671

Co-ords: -
Level:

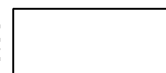
Date
15/01/2019

Location: Bongor Regis, PO21 4NQ

Dimensions (m): 1.30

Depth
0.60

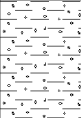
0.55



Scale
1:25

Logged
RG

Client: Drew Smith Limited

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.20			Brown silty clay with roots and rubbish. MADE GROUND	
				0.60			Light brown and blueish grey slightly gravelly CLAY. Gravel fm angular to subangular flint. RIVER TERRACE DEPOSITS	
							End of Pit at 0.60m	
								1
								2
								3
								4
								5
Water Strike								
Depth Strike								
		Remarks						
		Stability Stable						





Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

Trial Pit No

TP13

Sheet 1 of 1

Project Name: Summer Lane, Pagham

Project No.
GE17671

Co-ords: -
Level:

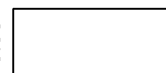
Date
14/01/2019

Location: Bongor Regis, PO21 4NQ

Dimensions (m): 2.00

Depth
0.70

0.55



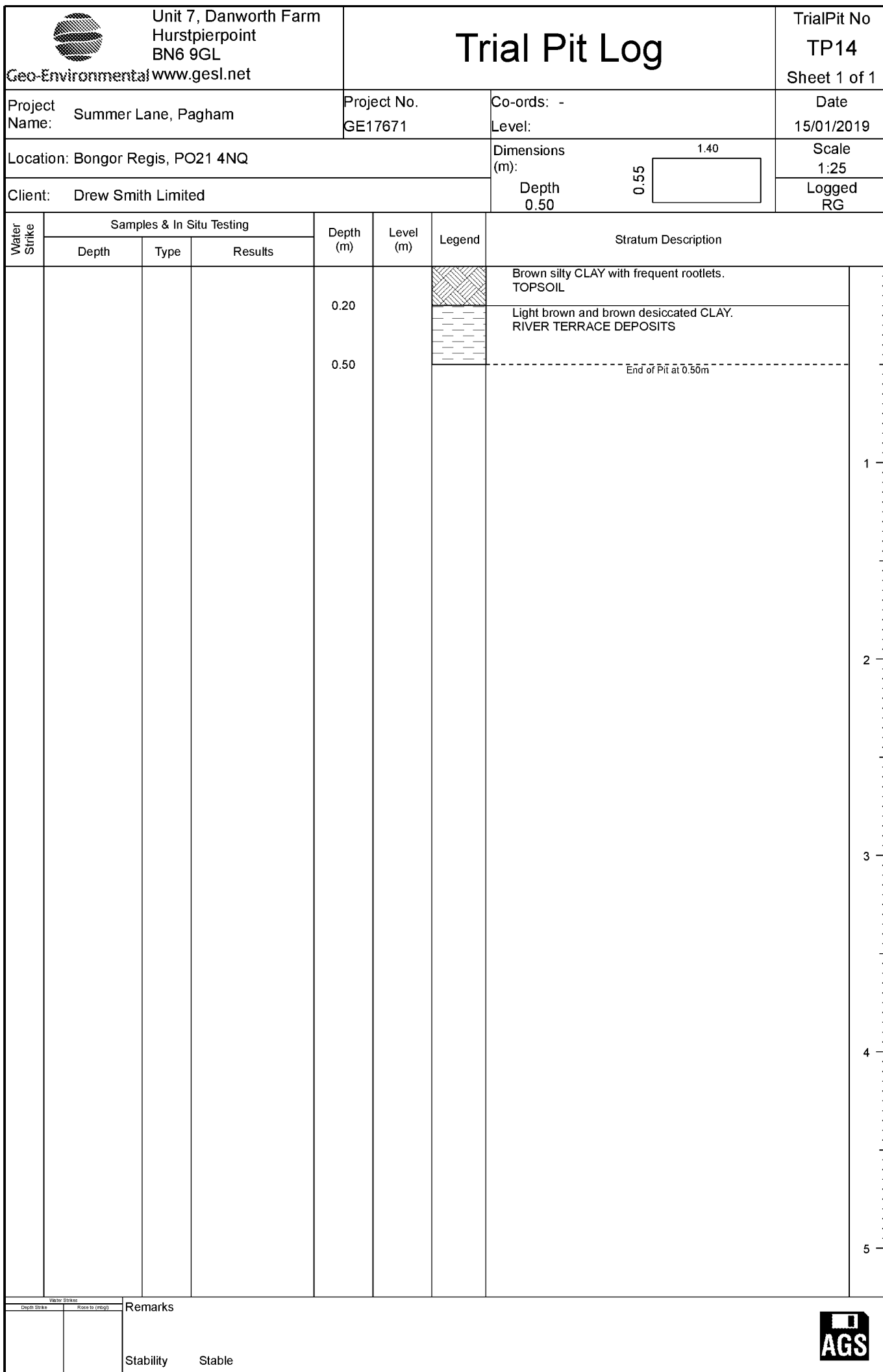
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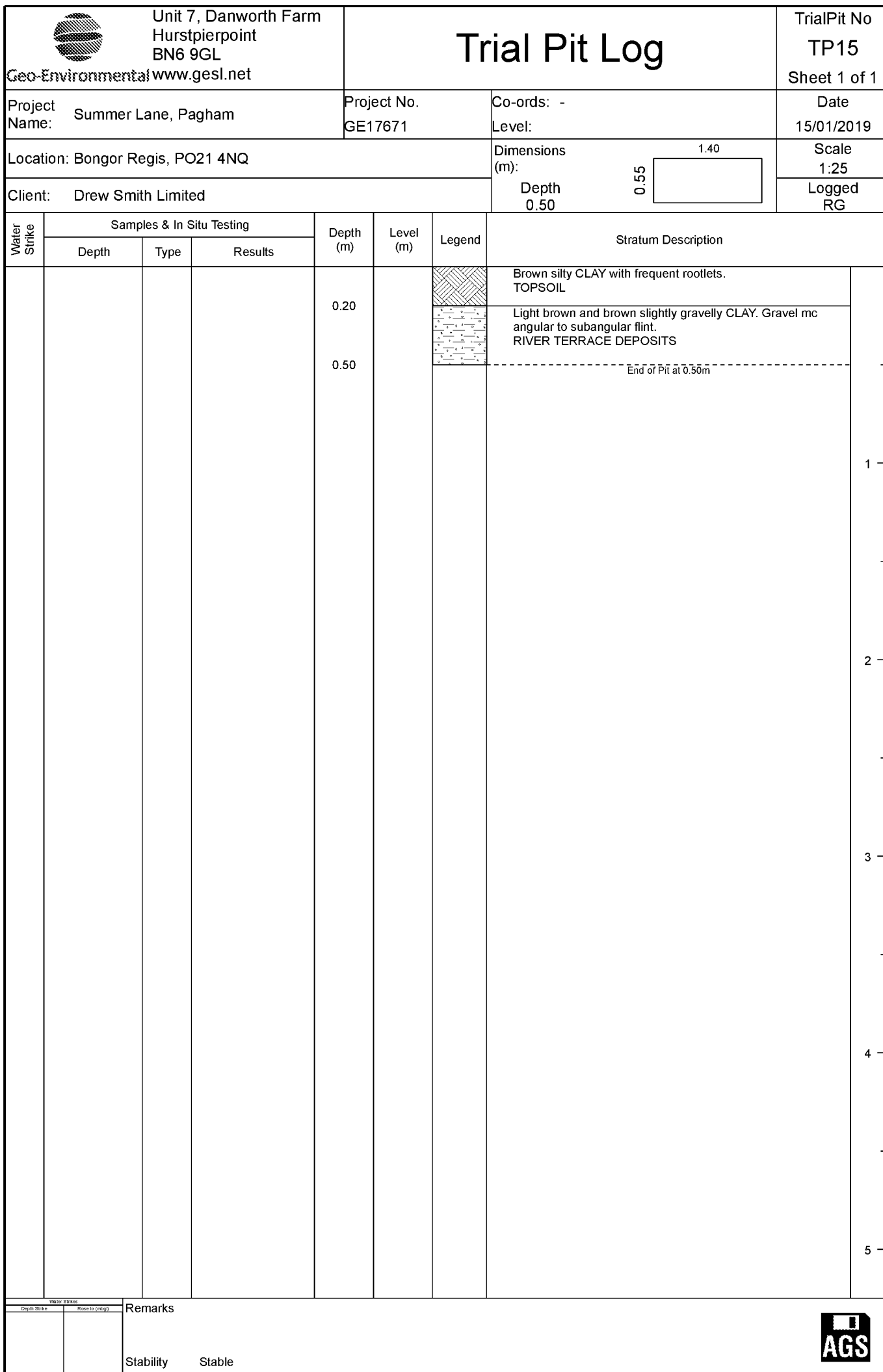
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RG

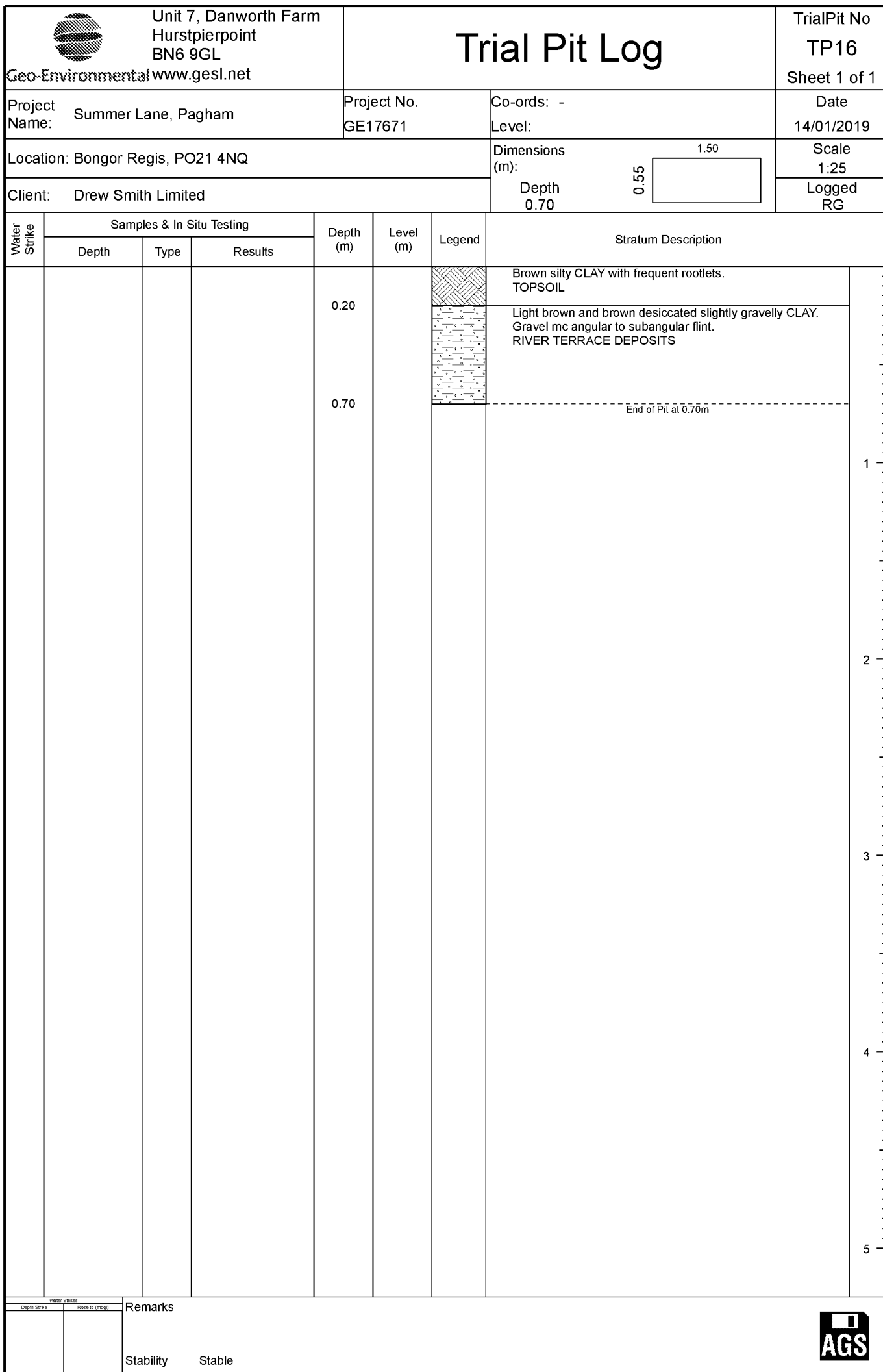
Client: Drew Smith Limited

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.20			Brown silty CLAY with frequent rootlets. TOPSOIL	
				0.70			Light brown and brown desiccated gravelly CLAY. Gravel fmc angular to subangular flint. RIVER TERRACE DEPOSITS	
							End of Pit at 0.70m	
								1
								2
								3
								4
								5
Water Strike		Remarks						
Depth Strike		Stability Stable						











Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

Trial Pit No

TP17

Sheet 1 of 1

Project Name: Summer Lane, Pagham

Project No.
GE17671

Co-ords: -
Level:

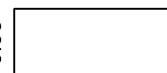
Date
14/01/2019

Location: Bongor Regis, PO21 4NQ

Dimensions (m): 1.20

Depth
0.50

0.55



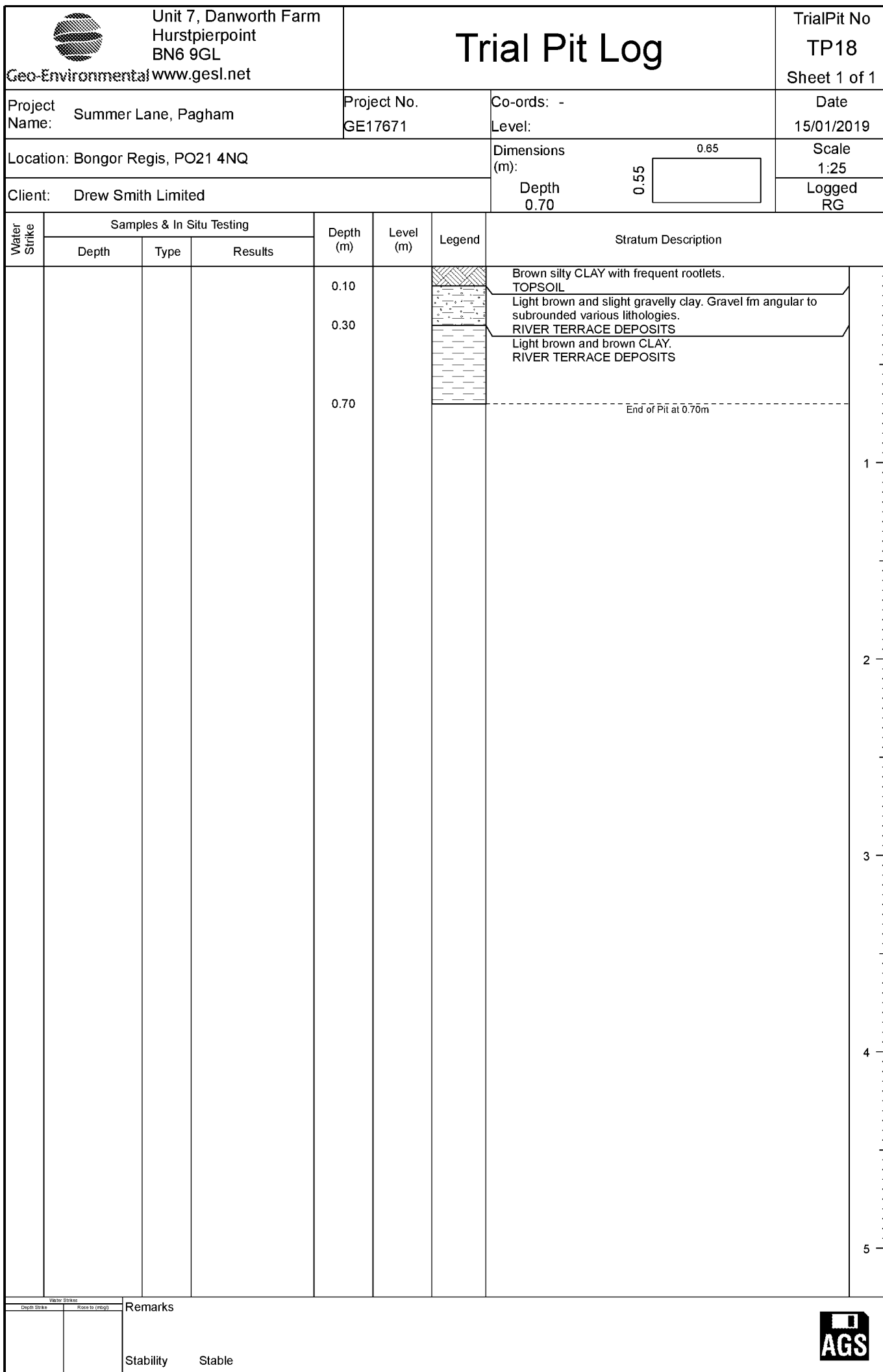
Scale
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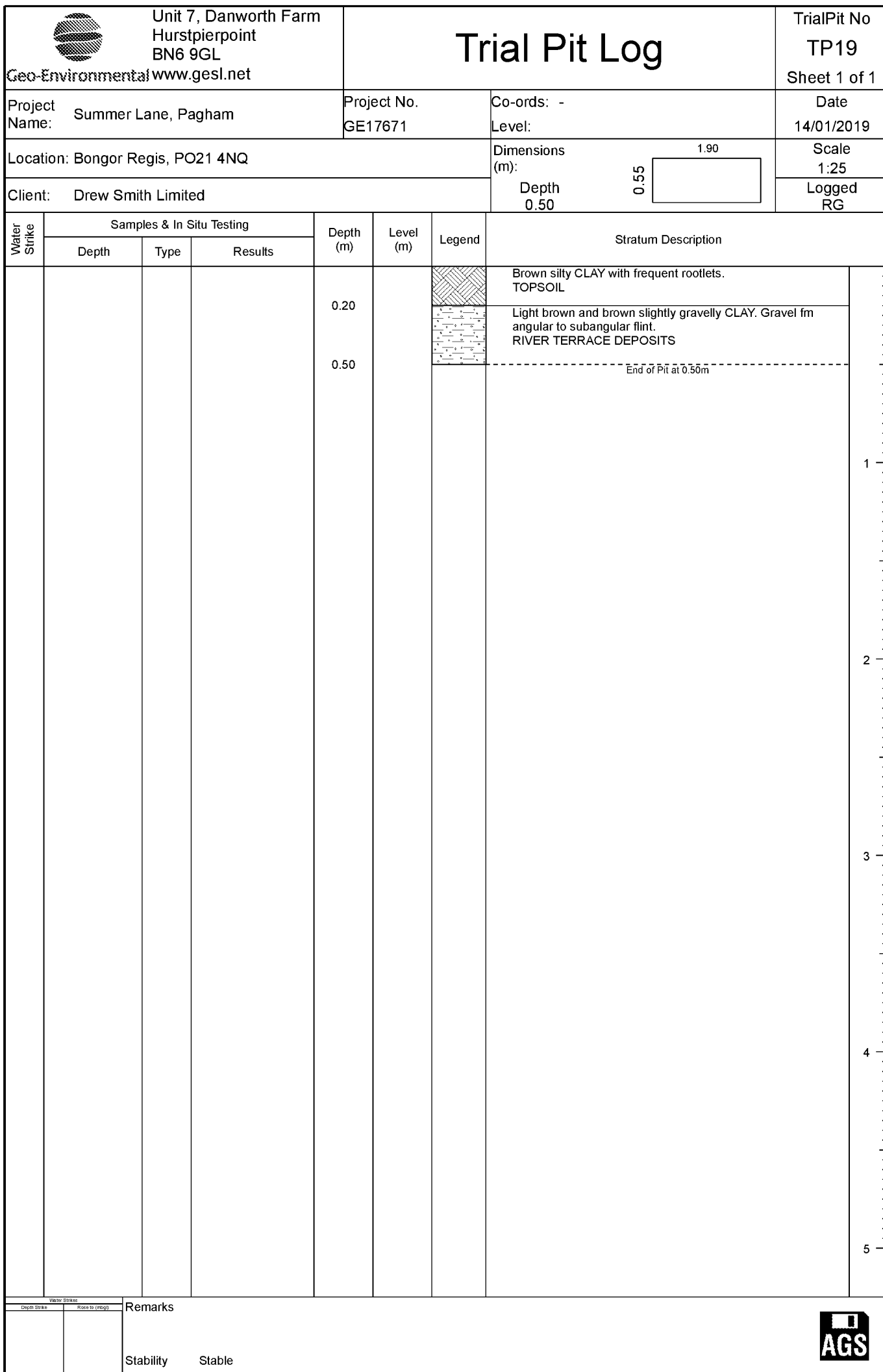
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RG

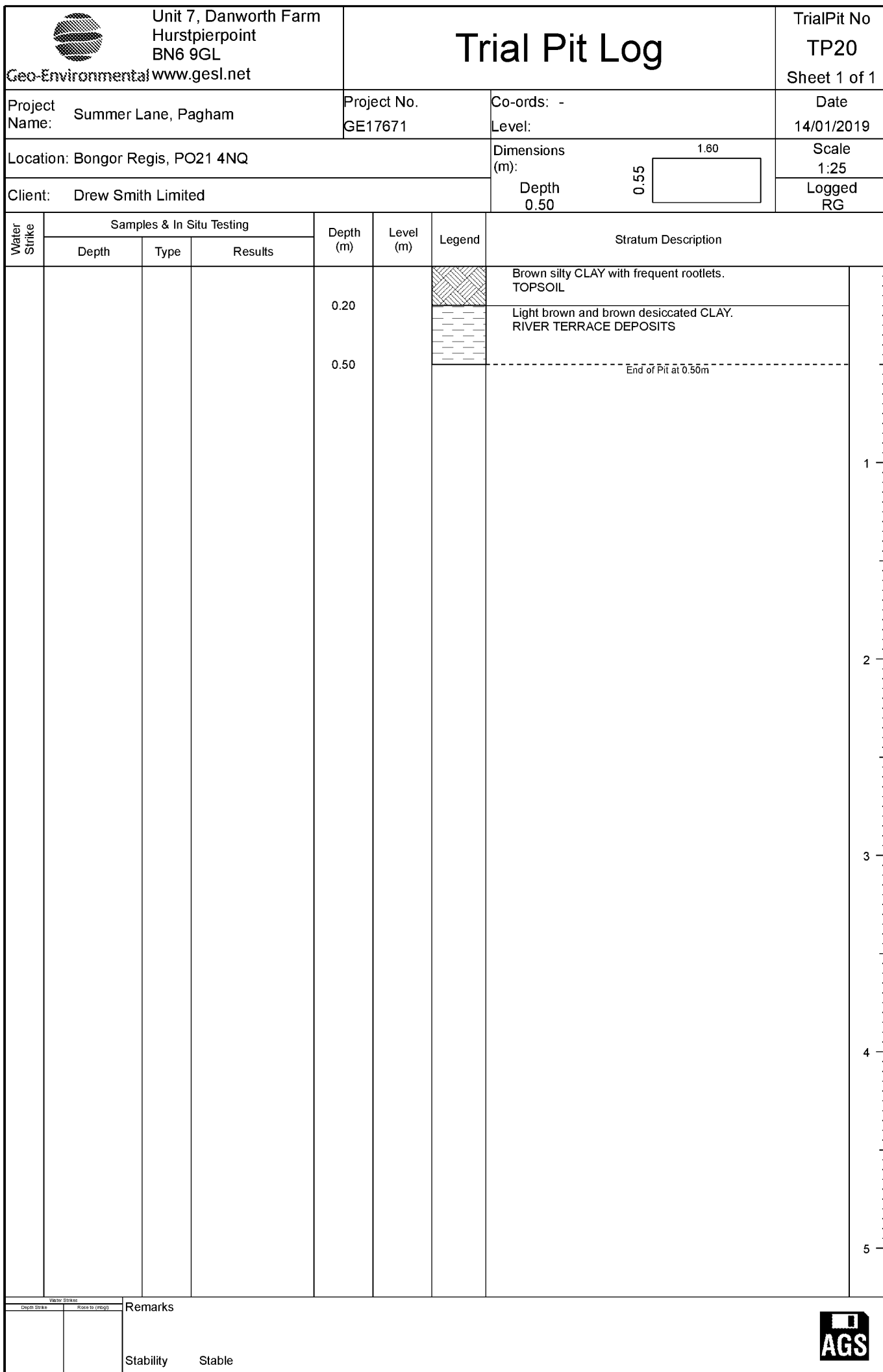
Client: Drew Smith Limited

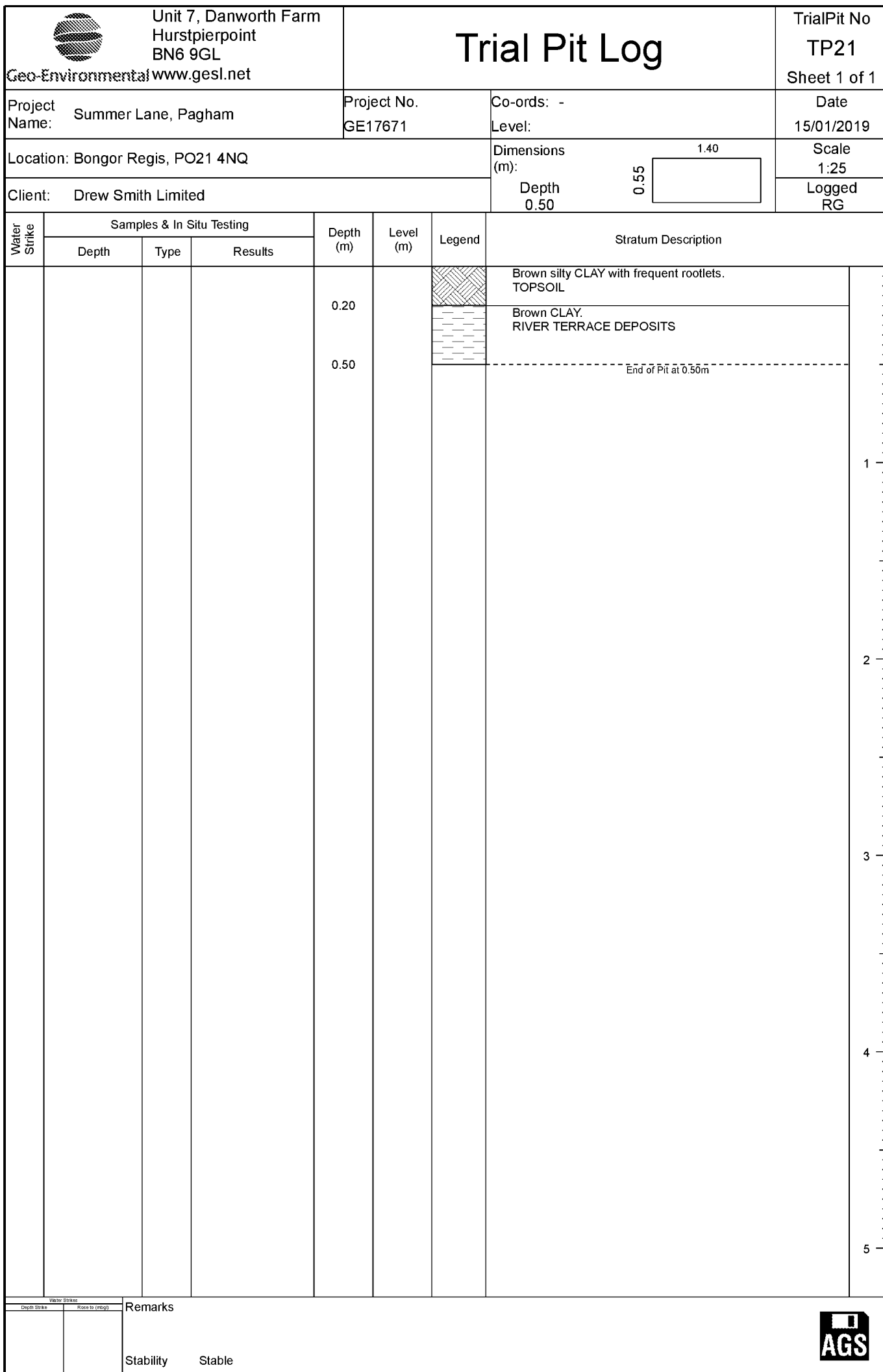
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.20			Brown silty CLAY with frequent rootlets. TOPSOIL	
							Brown and dark brown desiccated CLAY. RIVER TERRACE DEPOSITS	
							End of Pit at 0.50m	













Geo-Environmental

Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL
www.gesl.net

Borehole Log

Borehole No.

WS01

Sheet 1 of 1

Project Name: Summer Lane, Pagham

Project No.
GE17671

Co-ords:

Hole Type
WLS

Location: Bongor Regis, PO21 4NQ

Level:

Scale
1:25

Client: Drew Smith Limited

Dates: 11/01/2019

Logged By
RG

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.20			Brown silty CLAY with frequent rootlets. TOPSOIL	
					0.50			Brown silty desiccated CLAY with occasional rootlets. RIVER TERRACE DEPOSITS	
					1.50			Light brown slightly gravelly CLAY. Gravel fine to medium angular to subangular. RIVER TERRACE DEPOSITS	
					2.00			Light brown gravelly CLAY. Gravel fmc angular to subangular of flint. RIVER TERRACE DEPOSITS	
					3.00			Light brown and orangish brown gravelly clayey SAND. Sand fine. Gravel fmc angular to subangular of flint. RIVER TERRACE DEPOSITS	
							End of Borehole at 3.00m		3
									4
									5

Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to	
		1.65	0.00			Groundwater encountered at 1.65m bgl. Monitoring standpipe installed

		Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net		Borehole Log			Borehole No. WS02	
Project Name: Summer Lane, Pagham		Project No. GE17671		Co-ords:		Sheet 1 of 1 Hole Type WLS		
Location: Bongor Regis, PO21 4NQ				Level:		Scale 1:25		
Client: Drew Smith Limited				Dates: 11/01/2019		Logged By RG		

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.20		Brown slightly gravelly silty CLAY with frequent rootlets. Gravel fine to medium angular to subangular of flint. TOPSOIL		
					0.50		Brown silty gravelly desiccated CLAY with occasional rootlets and rare charcoal up to 1mm. Gravel fine to medium angular to subangular of flint. RIVER TERRACE DEPOSITS		
					1.40		Light brown, pinkish brown, orangish brown and black gravelly CLAY with occasional charcoal and rare rootlets. Gravel fmc of angular to subrounded flint. RIVER TERRACE DEPOSITS		
					2.70		Yellowish brown gravelly fine SAND. Gravel fmc of angular to subrounded flint and sandstone. RIVER TERRACE DEPOSITS		
					3.00		Greyish brown and brown mottled CLAY. LONDON CLAY		
							End of Borehole at 3.00m		

Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to	
		1.30	0.00			Groundwater encountered at 1.30m bgl. Monitoring standpipe installed



Geo-Environmental

Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL
www.gesl.net

Borehole Log

Borehole No.

WS03

Sheet 1 of 1

Project Name: Summer Lane, Pagham

Project No.
GE17671

Co-ords:

Hole Type
WLS

Location: Bongor Regis, PO21 4NQ

Level:

Scale
1:25

Client: Drew Smith Limited

Dates: 11/01/2019

Logged By
RG

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.20				
					0.40				
					0.90				
					1.10			1	
					1.80				
					2.20			2	
					3.00				
Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks Groundwater encountered at 1.30m bgl. Monitoring standpipe installed			
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to				
		1.30	0.00						



Geo-Environmental

Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL
www.gesl.net

Borehole Log

Borehole No.

WS04

Sheet 1 of 1

Project Name: Summer Lane, Pagham

Project No.
GE17671

Co-ords:

Hole Type
WLS

Location: Bongor Regis, PO21 4NQ

Level:

Scale
1:25

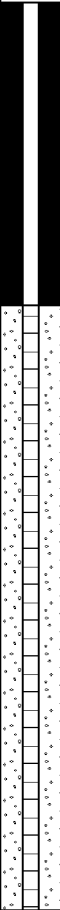
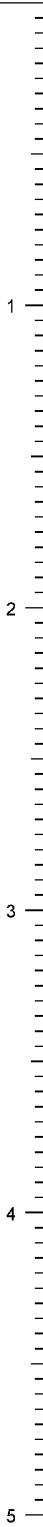
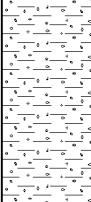
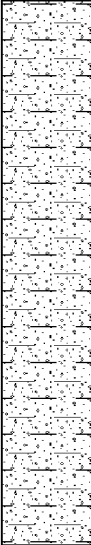
Client: Drew Smith Limited

Dates: 14/01/2019

Logged By
RG

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.20			Brown silty CLAY with frequent rootlets. TOPSOIL	
					0.60			Light brown and brown desiccated CLAY with occasional charcoal. RIVER TERRACE DEPOSITS	
					0.90			Brown, black and grey clayey fmc very angular to subangular GRAVEL of flint. RIVER TERRACE DEPOSITS	
					1.30			Dark brown gravelly CLAY. Gravel fine to medium of angular to subangular flint. RIVER TERRACE DEPOSITS	
					1.90			Yellowish brown gravelly fine SAND. Gravel fmc angular to subangular flint. RIVER TERRACE DEPOSITS	
					3.00			Light brown and brown CLAY. LONDON CLAY	
								End of Borehole at 3.00m	
Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks			
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to				
		1.30	0.00			Monitoring standpipe installed			

 Geo-Environmental www.gesl.net		Unit 7, Danworth Farm Hurstpierpoint BN6 9GL				Borehole Log				Borehole No. WS05 Sheet 1 of 1			
Project Name:		Summer Lane, Pagham				Project No.		GE17671		Co-ords:		Hole Type WLS	
Location:		Bongor Regis, PO21 4NQ				Level:				Scale 1:25		Logged By RG	
Client:		Drew Smith Limited				Dates:		14/01/2019					

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
		Depth (m)	Type	Results						
					0.20			Brown silty CLAY with frequent rootlets. TOPSOIL		
					0.50			Brown slightly gravelly desiccated CLAY with occasional charcoal. Gravel fine to medium subangular to rounded of flint. RIVER TERRACE DEPOSITS		
					1.20			Brown and light brown gravelly CLAY with rare rootlets. Gravel fmc angular to subrounded flint. RIVER TERRACE DEPOSITS		
					3.00			Yellowish brown and greenish brown clayey gravelly fine SAND. Gravel fmc angular to subangular flint. RIVER TERRACE DEPOSITS		
							End of Borehole at 3.00m			

Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to	
		1.30	0.00			Monitoring standpipe installed





Geo-Environmental

Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL
www.gesl.net

Borehole Log

Borehole No.

WS06

Sheet 1 of 1

Project Name: Summer Lane, Pagham

Project No.
GE17671

Co-ords:

Hole Type
WLS

Location: Bongor Regis, PO21 4NQ

Level:

Scale
1:25

Client: Drew Smith Limited

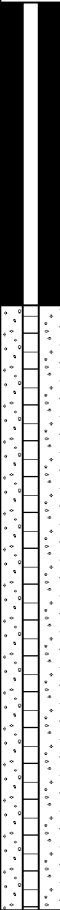
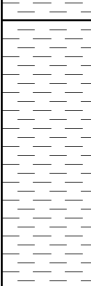
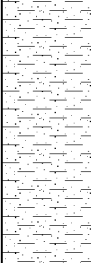
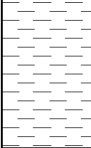
Dates: 11/01/2019

Logged By
RG

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.30			Brown silty slightly gravelly CLAY with frequent rootlets. Gravel fine to medium angular to subangular of flint. TOPSOIL	
					0.60			Light brown slightly gravelly CLAY with occasional rootlets. Gravel fine angular to subangular of flint. RIVER TERRACE DEPOSITS	
					1.10			Light brown and pinkish brown gravelly CLAY with one cobble of rounded flint at 0.9m bgl 80mm diameter. Gravel fine to medium angular to subrounded of flint. RIVER TERRACE DEPOSITS	
					1.50			Yellowish brown clayey gravelly fine SAND. Gravel fine angular to subangular flint. RIVER TERRACE DEPOSITS	
					1.90			Light brown and pinkish brown mottled slightly sandy CLAY. Sand fine. RIVER TERRACE DEPOSITS	
					2.30			Greenish yellow clayey fine SAND. RIVER TERRACE DEPOSITS	
					3.00			Light brown, pinkish brown and greyish brown mottled slightly sandy CLAY. Sand fine RIVER TERRACE DEPOSITS	
							End of Borehole at 3.00m		3
									4
									5

Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to	
		1.05	0.00			Groundwater encountered at 1.05m bgl. Monitoring standpipe installed

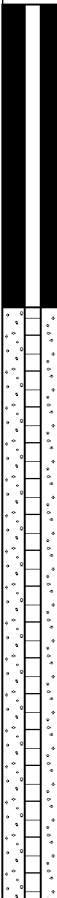
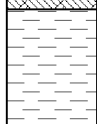
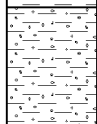
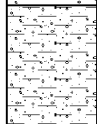
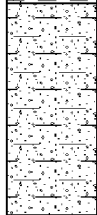
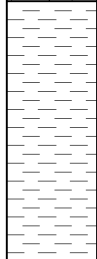
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Project Name: Summer Lane, Pagham		Project No. GE17671		Co-ords:				Hole Type WLS	
Location: Bongor Regis, PO21 4NQ				Level:				Scale 1:25	
Client: Drew Smith Limited				Dates: 14/01/2019				Logged By RG	

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.20			Brown silty CLAY with occasional rootlets. TOPSOIL	
					0.50			Brown desiccated CLAY with rare rootlets and charcoal. RIVER TERRACE DEPOSITS	
					1.40			Light brown and brown mottled CLAY with rare charcoal. RIVER TERRACE DEPOSITS	
					1.50			Light brown and brown mottled gravelly CLAY. Gravel fine to medium angular to subangular flint. RIVER TERRACE DEPOSITS	
					2.50			Yellowish brown and light brown sandy CLAY. Sand fine. RIVER TERRACE DEPOSITS	
					3.00			Dark grey CLAY with rare white shell inclusions up to 30mm. LONDON CLAY	
								End of Borehole at 3.00m	

Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to	
		1.30	0.00			Monitoring standpipe installed



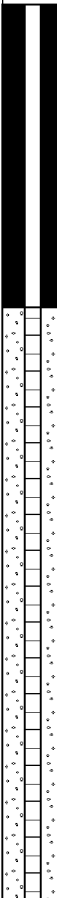
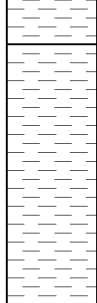
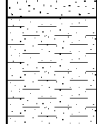
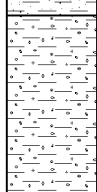
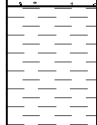
 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net		Borehole Log				Borehole No. WS08 Sheet 1 of 1	
Project Name: Summer Lane, Pagham		Project No. GE17671		Co-ords:		Hole Type WLS	
Location: Bongor Regis, PO21 4NQ				Level:		Scale 1:25	
Client: Drew Smith Limited				Dates: 14/01/2019		Logged By RG	

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.20			Brown silty CLAY with frequent rootlets. TOPSOIL	1
					0.60			Brown desiccated CLAY with occasional rootlets. RIVER TERRACE DEPOSITS	
					1.00			Brown gravelly CLAY. Gravel fmc angular to subrounded flint. RIVER TERRACE DEPOSITS	2
					1.40			Yellowish grey and light brown sandy gravelly CLAY. Sand fine. Gravel fine subangular to rounded flint. RIVER TERRACE DEPOSITS	
					2.10			Yellowish brown and brown clayey gravelly fine SAND. Gravel fmc angular to subrounded flint. RIVER TERRACE DEPOSITS	3
					3.00			Purplish brown and brown mottled CLAY. LONDON CLAY	
End of Borehole at 3.00m								4	
								5	

Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to	
		1.30	0.00			Monitoring standpipe installed



 Geo-Environmental www.gesl.net		Unit 7, Danworth Farm Hurstpierpoint BN6 9GL				Borehole Log				Borehole No. WS09 Sheet 1 of 1	
Project Name: Summer Lane, Pagham		Project No. GE17671		Co-ords:		Hole Type WLS					
Location: Bongor Regis, PO21 4NQ		Level:		Scale 1:25				Logged By RG			
Client: Drew Smith Limited		Dates: 14/01/2019									

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.20			Brown silty CLAY with frequent rootlets TOPSOIL	
					0.50			Brown desiccated CLAY with occasional rootlets and charcoal. RIVER TERRACE DEPOSITS	
								Light brown CLAY with occasional charcoal. RIVER TERRACE DEPOSITS	
					1.40			Yellowish brown and yellowish grey fine SAND. RIVER TERRACE DEPOSITS	
					1.60			Yellowish grey sandy CLAY. Sand fmc. RIVER TERRACE DEPOSITS	
					2.00			Brown gravelly CLAY. Gravel fmc of angular to subangular flint. RIVER TERRACE DEPOSITS	
					2.60			Brown and purplish brown mottled CLAY. LONDON CLAY	
					3.00		End of Borehole at 3.00m		

Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to	
		1.30	0.00			
						Monitoring standpipe installed





Geo-Environmental

Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL
www.gesl.net

Borehole Log

Borehole No.

WS10

Sheet 1 of 1

Project Name: Summer Lane, Pagham

Project No.
GE17671

Co-ords:

Hole Type
WLS

Location: Bongor Regis, PO21 4NQ

Level:

Scale
1:25

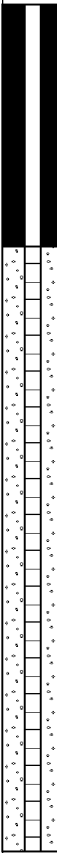
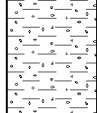
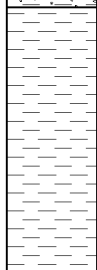
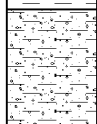
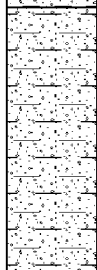
Client: Drew Smith Limited

Dates: 11/01/2019

Logged By
RG

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.20			Brown silty CLAY with frequent rootlets. TOPSOIL	
								Light brown and pinkish brown mottled desiccated CLAY with occasional rootlets. RIVER TERRACE DEPOSITS	
					0.70			Light brown, pinkish brown and brown mottled slightly gravelly sandy CLAY. Sand is fine. Gravel fine to medium angular to subangular of flint. RIVER TERRACE DEPOSITS	
					1.10			Light brown, yellowish brown and greyish brown gravelly CLAY. Gravel fmc of angular to subangular flint. RIVER TERRACE DEPOSITS	
					1.60			Yellowish brown clayey gravelly fine SAND. Gravel fmc of angular to subrounded flint. RIVER TERRACE DEPOSITS	
					2.00			Yellowish brown clayey SAND. Sand fmc. RIVER TERRACE DEPOSITS	
					2.50			Light brown and pinkish brown CLAY. LONDON CLAY	
					3.00		End of Borehole at 3.00m		
Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks			
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to				
		1.05	0.00			Groundwater encountered at 0.80m bgl. Monitoring standpipe installed			

 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net		Borehole Log				Borehole No. WS11 Sheet 1 of 1	
Project Name: Summer Lane, Pagham		Project No. GE17671		Co-ords:		Hole Type WLS	
Location: Bongor Regis, PO21 4NQ				Level:		Scale 1:25	
Client: Drew Smith Limited				Dates: 11/01/2019		Logged By RG	

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.20		 Brown silty gravelly CLAY with frequent rootlets. Gravel fmc angular to subrounded flint. TOPSOIL		
					0.60		 Brown slightly gravelly desiccated CLAY with frequent rootlets. Gravel fine to medium subangular to subrounded of sandstone and flint. RIVER TERRACE DEPOSITS		
					1.50		 Light brown, pinkish brown and brown mottled CLAY. RIVER TERRACE DEPOSITS		
					1.90		 Light brown pinkish brown and brown sandy gravelly CLAY. Sand fmc. Gravel fmc angular to subangular of flint. RIVER TERRACE DEPOSITS		
					2.80		 Yellowish brown clayey gravelly fine SAND. Gravel fmc angular to subrounded of flint. RIVER TERRACE DEPOSITS		
					3.00		 Light brown and pinkish brown slightly sandy CLAY. Sand fine. LONDON CLAY		
End of Borehole at 3.00m									

Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to	
		1.50	0.00			Groundwater encountered at 1.50m bgl. Monitoring standpipe installed



APPENDIX B

Soakage Test Results

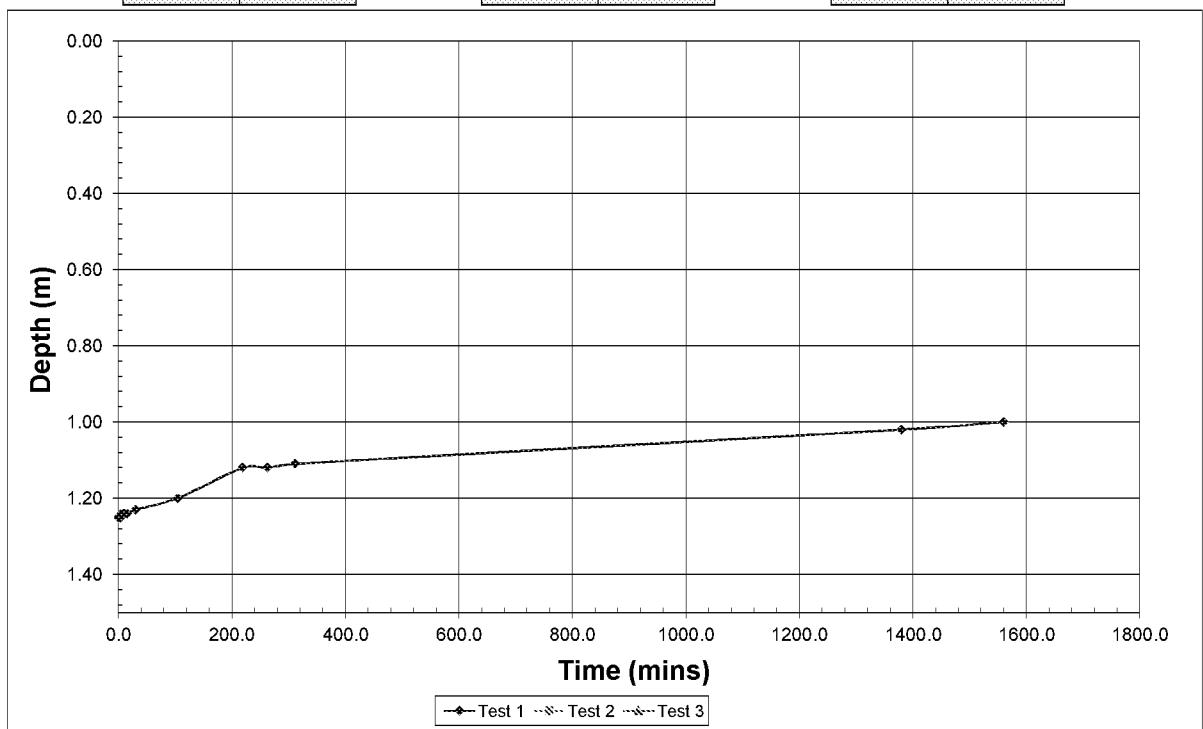
 Geo-Environmental	Soakaway Test Results (after BRE Digest 365)		Geo-Environmental Services Limited Unit 7 Danworth Farm, Cuckfield Road
	Project Name : Summer Lane, Pagham, Bognor Regis, PO21 4NQ		
	Client : Drew Smith Limited		

Pit reference	TP01
Pit depth (m)	1.50
Pit width (m)	0.55
Pit length (m)	2.40
Depth to standing water (m)	1.49

Test 1	
Time (min)	Depth (m)
0.0	1.25
1.0	1.25
2.0	1.25
3.0	1.25
4.0	1.25
5.0	1.24
10.0	1.24
15.0	1.24
30.0	1.23
104.0	1.20
219.0	1.12
263.0	1.12
311.0	1.11
1380.0	1.02
1560.0	1.00

Test 2	
Time (min)	Depth (m)

Test 3	
Time (min)	Depth (m)



Max. depth (m)	1.50	1.50	1.50
Effective depth (m)	0.25	1.50	1.50
75% effective depth (m)	1.31	0.38	0.38
50% effective depth (m)	1.38	0.75	0.75
25% effective depth (m)	1.44	1.13	1.13
t75 (min)			
t50 (min)			
t25 (min)			
Vp 75-25	0.17	0.99	0.99
ap 50	2.0575	5.745	5.745
tp 75-25	0.00	0.00	0.00

Soil infiltration rate (m/s)	Insufficient fall in water to complete test	
Soil infiltration rate (mm/hr)	Insufficient fall in water to complete test	

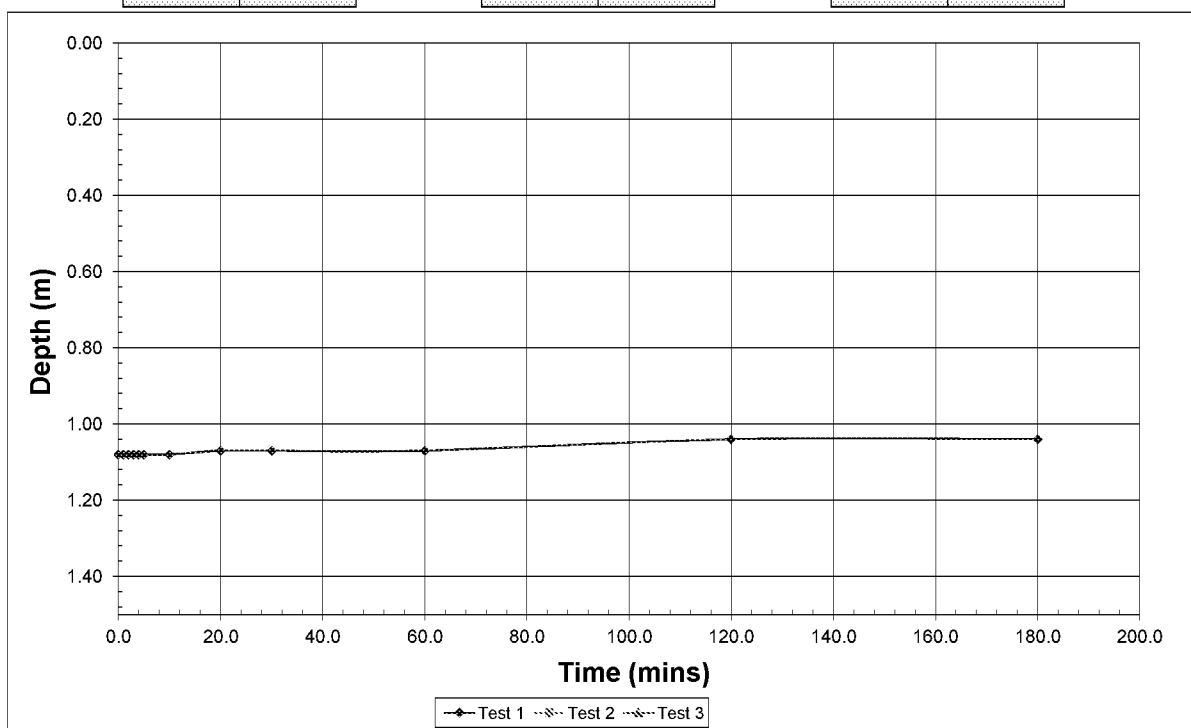
 Geo-Environmental	Soakaway Test Results (after BRE Digest 365)	Geo-Environmental Services Limited Unit 7 Danworth Farm, Cuckfield Road,
Project Name : Summer Lane, Pagham, Bognor Regis, PO21 4NQ		
Client : Drew Smith Limited		

Pit reference	TP02
Pit depth (m)	1.50
Pit width (m)	0.55
Pit length (m)	2.30
Depth to standing water (m)	

Test 1	
Time (min)	Depth (m)
0.0	1.08
1.0	1.08
2.0	1.08
3.0	1.08
4.0	1.08
5.0	1.08
10.0	1.08
20.0	1.07
30.0	1.07
60.0	1.07
120.0	1.04
180.0	1.04

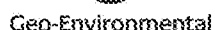
Test 2	
Time (min)	Depth (m)

Test 3	
Time (min)	Depth (m)



Max. depth (m)	1.50	1.50	1.50
Effective depth (m)	0.42	1.50	1.50
75% effective depth (m)	1.19	0.38	0.38
50% effective depth (m)	1.29	0.75	0.75
25% effective depth (m)	1.40	1.13	1.13
t75 (min)			
t50 (min)			
t25 (min)			
Vp 75-25	0.27	0.95	0.95
ap 50	2.462	5.54	5.54
tp 75-25	0.00	0.00	0.00

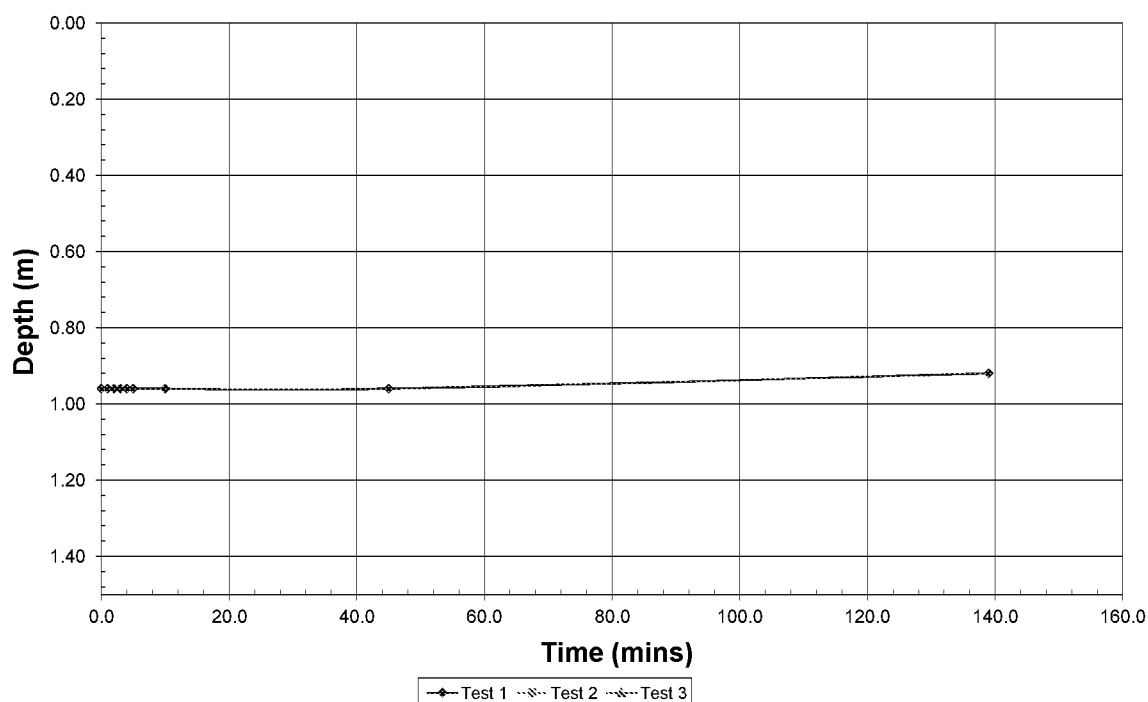
Soil infiltration rate (m/s)	Insufficient fall in water to complete test	
Soil infiltration rate (mm/hr)	Insufficient fall in water to complete test	



Geo-Environmental Services Limited

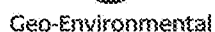
Client : Drew Smith Limited

Pit reference	TP04
Pit depth (m)	1.58
Pit width (m)	0.55
Pit length (m)	2.00
Depth to standing water (m)	

[illegible][illegible][illegible]

Max. depth (m)	1.58	1.58	1.58
Effective depth (m)	0.62	1.58	1.58
75% effective depth (m)	1.12	0.40	0.40
50% effective depth (m)	1.27	0.79	0.79
25% effective depth (m)	1.43	1.19	1.19
t75 (min)			
t50 (min)			
t25 (min)			
Vp 75-25	0.34	0.87	0.87
ap 50	2.681	5.129	5.129
tp 75-25	0.00	0.00	0.00

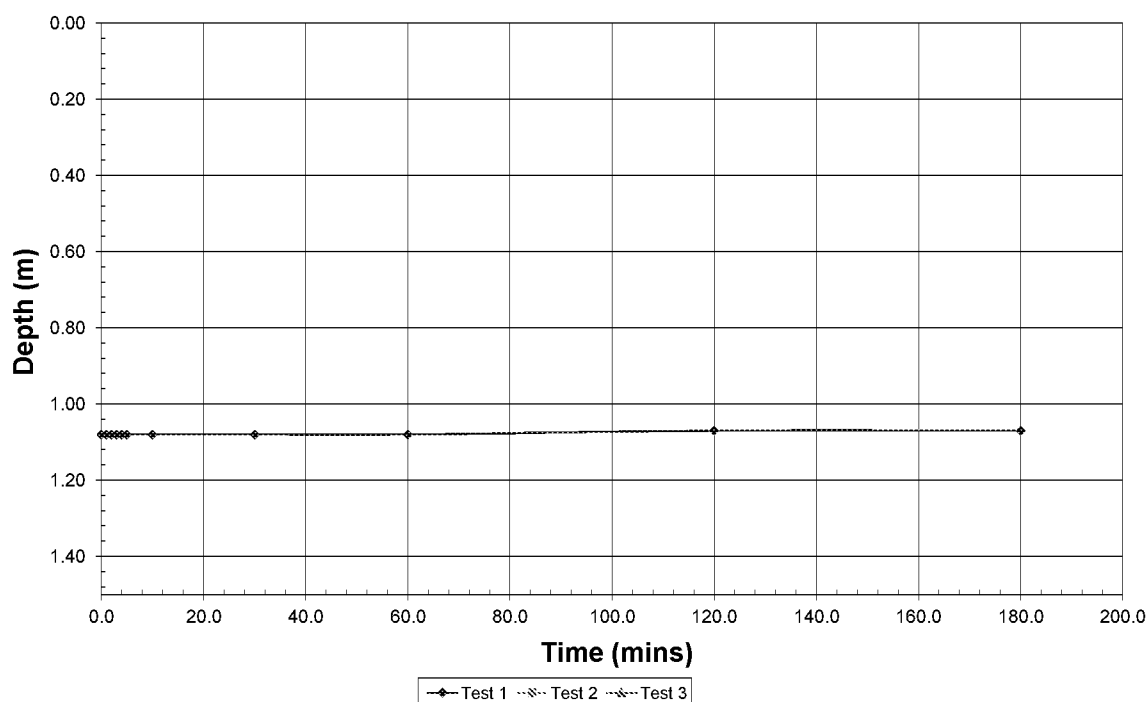
Soil infiltration rate (m/s)	Insufficient fall in water to complete test
Soil infiltration rate (mm/hr)	Insufficient fall in water to complete test



Conclusions

Client : Drew Smith Limited

Pit reference	TP05
Pit depth (m)	1.52
Pit width (m)	0.55
Pit length (m)	1.80
Depth to standing water (m)	1.40

[illegible][illegible][illegible]

Max. depth (m)	1.52	1.52	1.52
Effective depth (m)	0.44	1.52	1.52
75% effective depth (m)	1.19	0.38	0.38
50% effective depth (m)	1.30	0.76	0.76
25% effective depth (m)	1.41	1.14	1.14
t75 (min)			
t50 (min)			
t25 (min)			
Vp 75-25	0.22	0.75	0.75
ap 50	2.024	4.562	4.562
tp 75-25	0.00	0.00	0.00

Soil infiltration rate (m/s)	Insufficient fall in water to complete test
Soil infiltration rate (mm/hr)	Insufficient fall in water to complete test

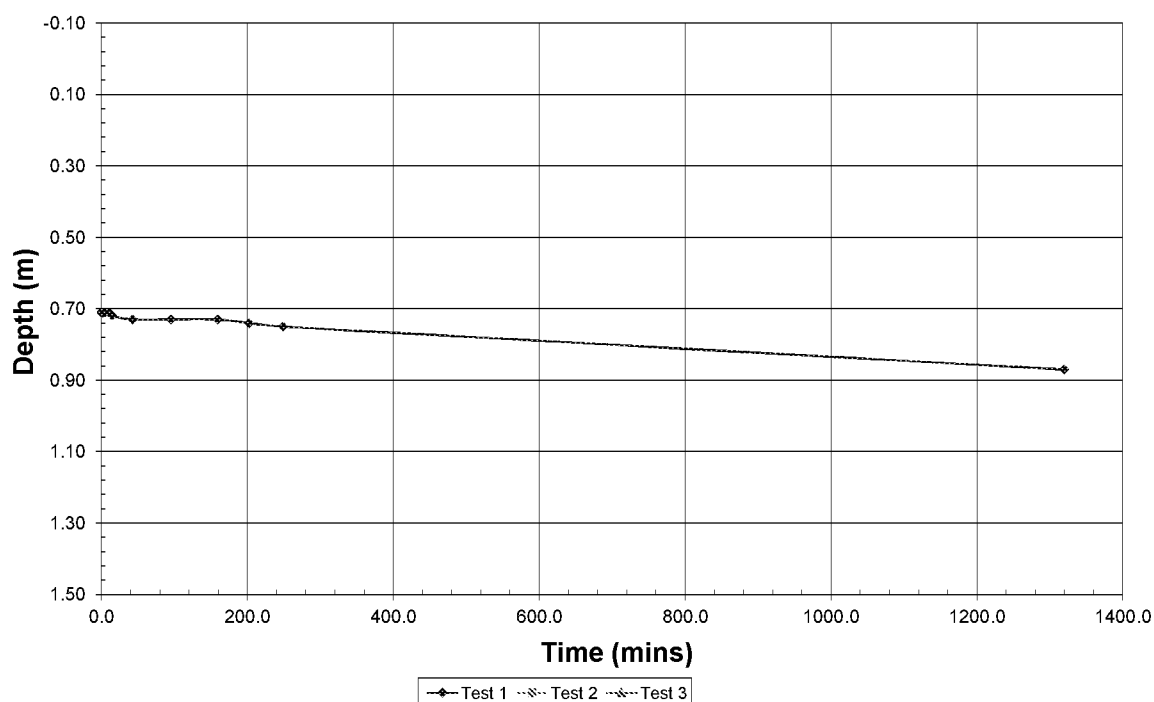


Geo-Environmental Services Limited

Client : Drew Smith Limited

Pit reference	TP07
Pit depth (m)	1.42
Pit width (m)	0.55
Pit length (m)	2.00
Depth to standing water (m)	1.38

Test 1	
Time (min)	Depth (m)
0.0	0.71
1.0	0.71
2.0	0.71
3.0	0.71
4.0	0.71
5.0	0.71
10.0	0.71
15.0	0.72
43.0	0.73
95.0	0.73
159.0	0.73
202.0	0.74
249.0	0.75
1320.0	0.87

[illegible][illegible]

Max. depth (m)	1.42	1.42	1.42
Effective depth (m)	0.71	1.42	1.42
75% effective depth (m)	0.89	0.36	0.36
50% effective depth (m)	1.07	0.71	0.71
25% effective depth (m)	1.24	1.07	1.07
t75 (min)			
t50 (min)			
t25 (min)			
Vp 75-25	0.39	0.78	0.78
ap 50	2.9105	4.721	4.721
tp 75-25	0.00	0.00	0.00

Soil infiltration rate (m/s)	Insufficient fall in water to complete test
Soil infiltration rate (mm/hr)	Insufficient fall in water to complete test

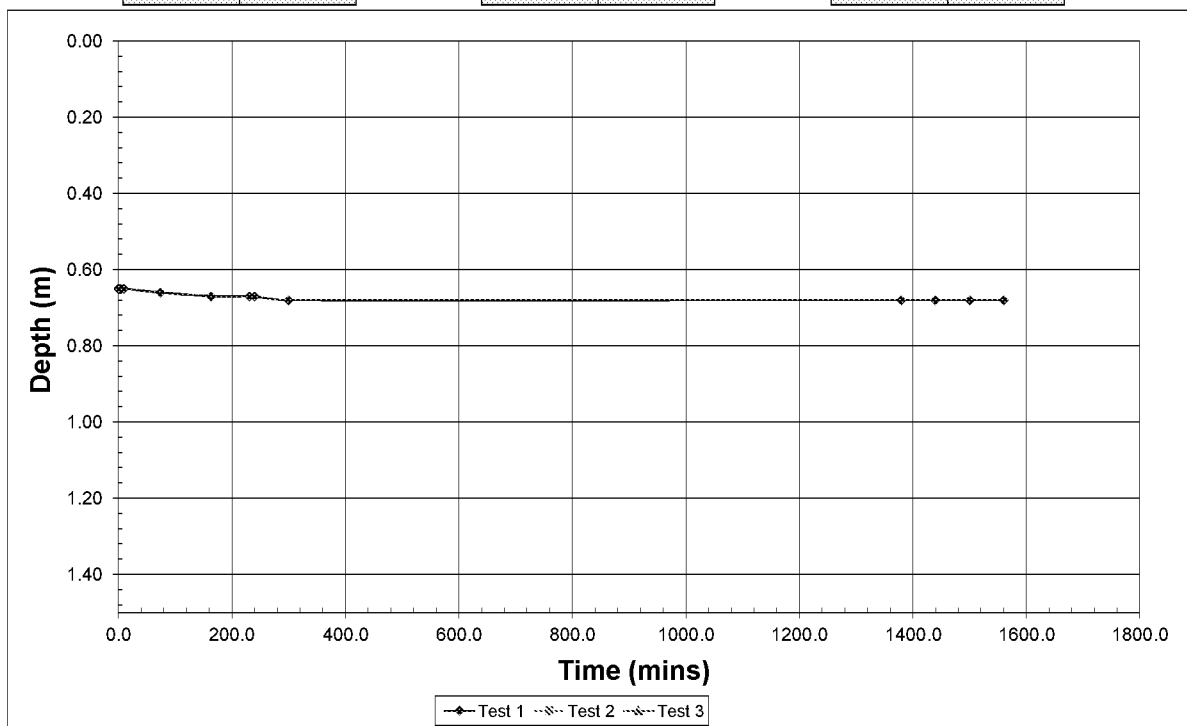
 Geo-Environmental	Soakaway Test Results (after BRE Digest 365)	Geo-Environmental Services Limited Unit 7 Danworth Farm, Cuckfield Road,
Project Name : Summer Lane, Pagham, Bognor Regis, PO21 4NQ		
Client : Drew Smith Limited		

Pit reference	TP08
Pit depth (m)	1.40
Pit width (m)	0.55
Pit length (m)	2.00
Depth to standing water (m)	1.33

Test 1	
Time (min)	Depth (m)
0.0	0.65
1.0	0.65
2.0	0.65
3.0	0.65
4.0	0.65
5.0	0.65
10.0	0.65
74.0	0.66
163.0	0.67
231.0	0.67
240.0	0.67
300.0	0.68
1380.0	0.68
1440.0	0.68
1500.0	0.68
1560.0	0.68

Test 2	
Time (min)	Depth (m)

Test 3	
Time (min)	Depth (m)



Max. depth (m)	1.40	1.40	1.40
Effective depth (m)	0.75	1.40	1.40
75% effective depth (m)	0.84	0.35	0.35
50% effective depth (m)	1.03	0.70	0.70
25% effective depth (m)	1.21	1.05	1.05
t75 (min)			
t50 (min)			
t25 (min)			
Vp 75-25	0.41	0.77	0.77
ap 50	3.0125	4.67	4.67
tp 75-25	0.00	0.00	0.00

Soil infiltration rate (m/s)	Insufficient fall in water to complete test	
Soil infiltration rate (mm/hr)	Insufficient fall in water to complete test	

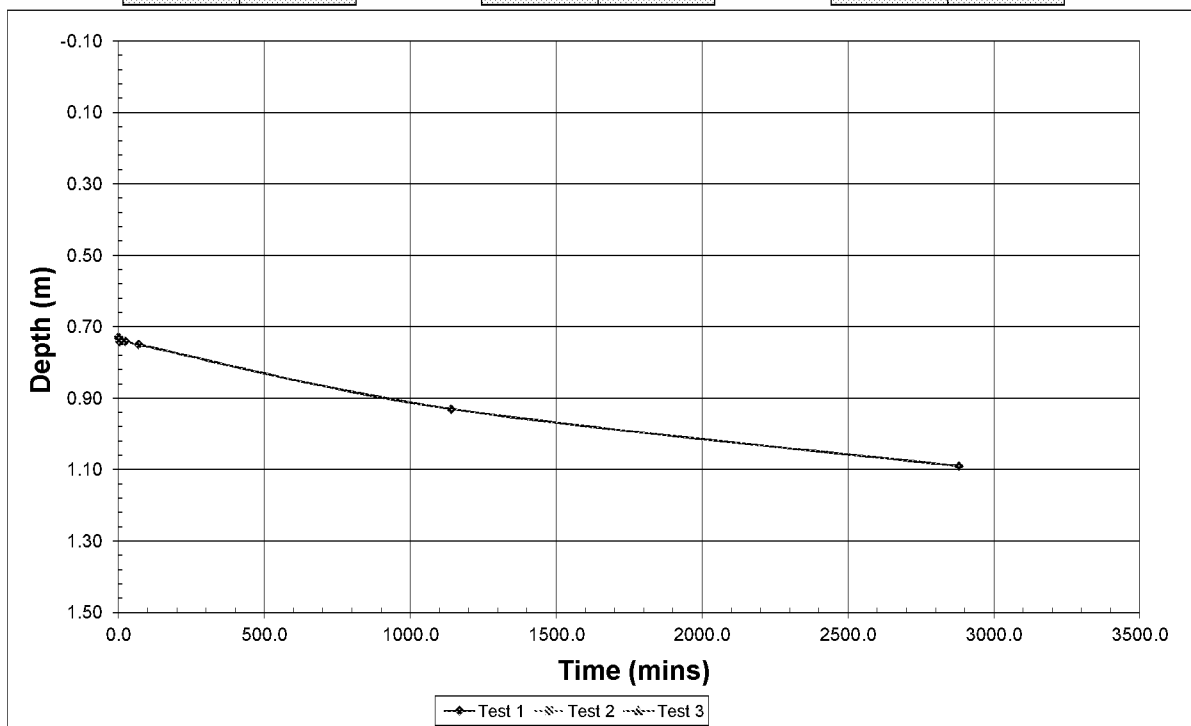
 Geo-Environmental	Soakaway Test Results (after BRE Digest 365)	Geo-Environmental Services Limited Unit 7 Danworth Farm, Cuckfield Road,
Project Name : Summer Lane, Pagham, Bongor Regis, PO21 4NQ		
Client : Drew Smith Limited		

Pit reference	TP09
Pit depth (m)	1.35
Pit width (m)	0.55
Pit length (m)	2.50
Depth to standing water (m)	

Test 1	
Time (min)	Depth (m)
0.0	0.73
1.0	0.73
2.0	0.73
3.0	0.74
4.0	0.74
5.0	0.74
10.0	0.74
24.0	0.74
70.0	0.75
1140.0	0.93
2880.0	1.09

Test 2	
Time (min)	Depth (m)

Test 3	
Time (min)	Depth (m)



Max. depth (m)	1.35	1.35	1.35
Effective depth (m)	0.62	1.35	1.35
75% effective depth (m)	0.89	0.34	0.34
50% effective depth (m)	1.04	0.68	0.68
25% effective depth (m)	1.20	1.01	1.01
t75 (min)			
t50 (min)			
t25 (min)			
Vp 75-25	0.43	0.93	0.93
ap 50	3.266	5.4925	5.4925
tp 75-25	0.00	0.00	0.00

Soil infiltration rate (m/s)	Insufficient fall in water to complete test	
Soil infiltration rate (mm/hr)	Insufficient fall in water to complete test	

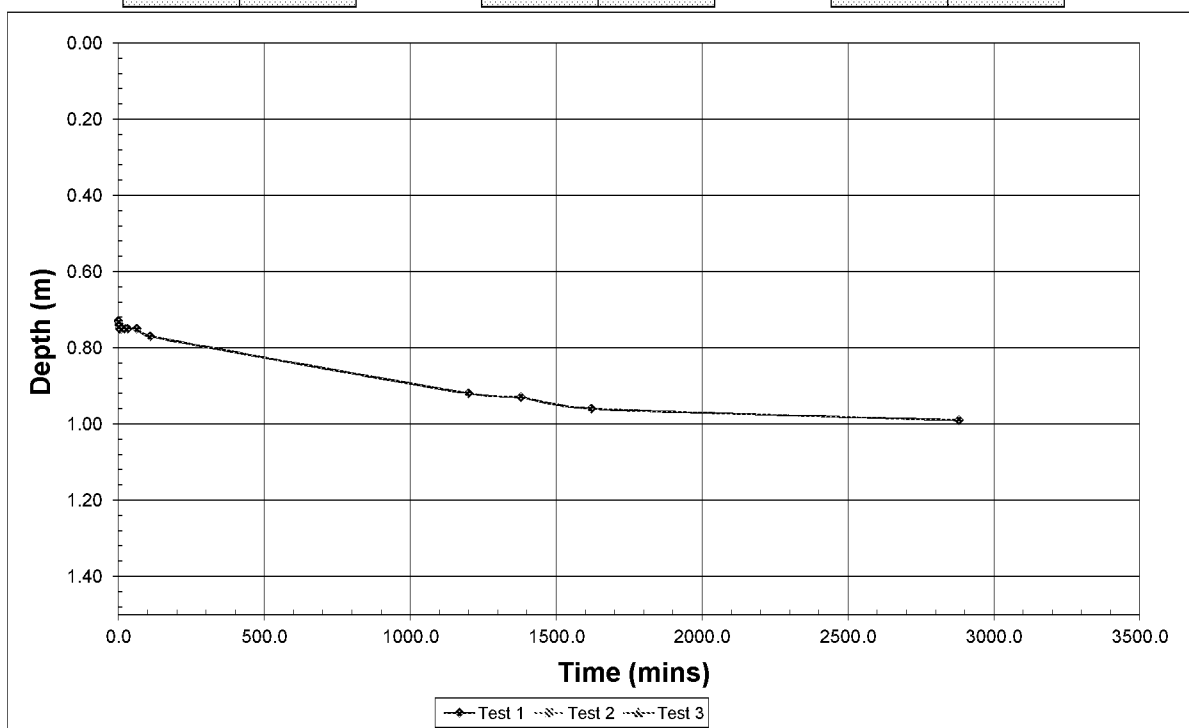
 Geo-Environmental	Soakaway Test Results (after BRE Digest 365)	Geo-Environmental Services Limited Unit 7 Danworth Farm, Cuckfield Road
Project Name : Summer Lane, Pagham, Bognor Regis, PO21 4NQ		
Client : Drew Smith Limited		

Pit reference	TP11
Pit depth (m)	1.50
Pit width (m)	0.55
Pit length (m)	2.00
Depth to standing water (m)	1.45

Test 1	
Time (min)	Depth (m)
0.0	0.73
1.0	0.74
2.0	0.74
3.0	0.74
4.0	0.75
5.0	0.75
10.0	0.75
20.0	0.75
33.0	0.75
62.0	0.75
108.0	0.77
1200.0	0.92
1380.0	0.93
1620.0	0.96
2880.0	0.99

Test 2	
Time (min)	Depth (m)

Test 3	
Time (min)	Depth (m)



Max. depth (m)	1.50	1.50	1.50
Effective depth (m)	0.77	1.50	1.50
75% effective depth (m)	0.92	0.38	0.38
50% effective depth (m)	1.12	0.75	0.75
25% effective depth (m)	1.31	1.13	1.13
t75 (min)			
t50 (min)			
t25 (min)			
Vp 75-25	0.42	0.83	0.83
ap 50	3.0635	4.925	4.925
tp 75-25	0.00	0.00	0.00

Soil infiltration rate (m/s)	Insufficient fall in water to complete test	
Soil infiltration rate (mm/hr)	Insufficient fall in water to complete test	

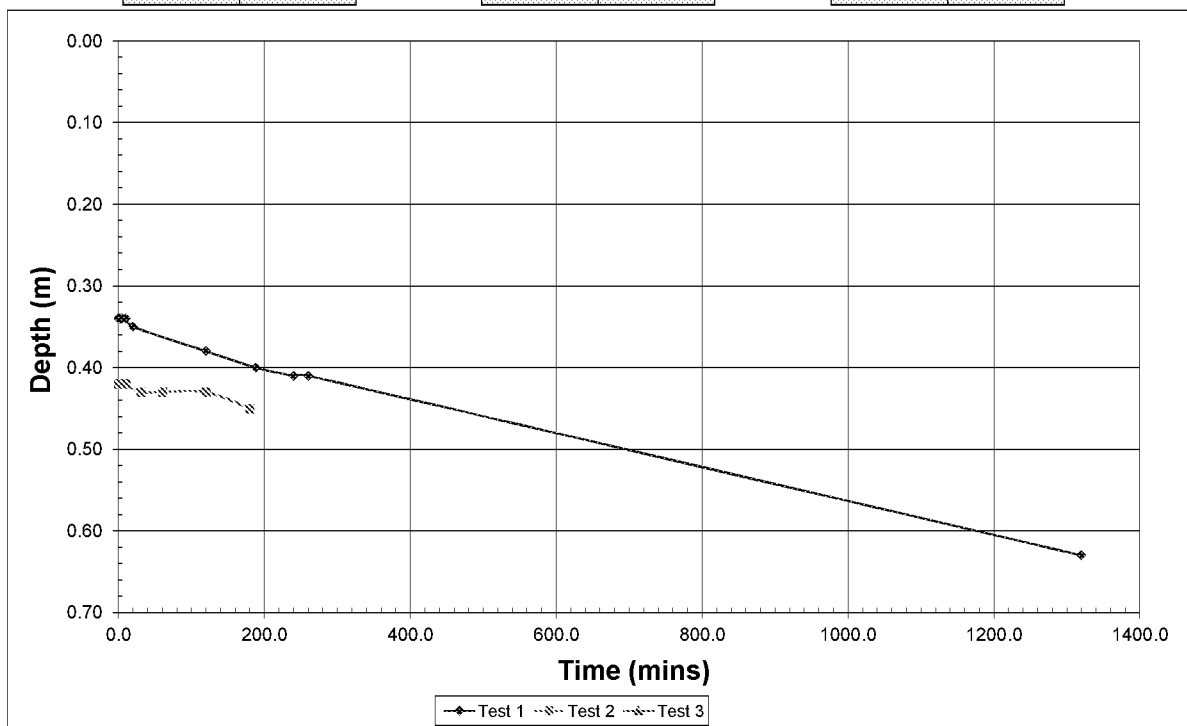
 Geo-Environmental	Soakaway Test Results (after BRE Digest 365)	Geo-Environmental Services Limited Unit 7 Danworth Farm, Cuckfield Road,
	Project Name : Summer Lane, Pagham, Bognor Regis, PO21 4NQ Client : Drew Smith Limited	

Pit reference	TP12
Pit depth (m)	0.63
Pit width (m)	0.55
Pit length (m)	1.30
Depth to standing water (m)	

Test 1	
Time (min)	Depth (m)
0.0	0.34
1.0	0.34
2.0	0.34
3.0	0.34
4.0	0.34
5.0	0.34
10.0	0.34
20.0	0.35
120.0	0.38
188.0	0.40
240.0	0.41
260.0	0.41
1320.0	0.63

Test 2	
Time (min)	Depth (m)
0.0	0.42
1.0	0.42
2.0	0.42
3.0	0.42
4.0	0.42
5.0	0.42
10.0	0.42
30.0	0.43
60.0	0.43
120.0	0.43
180.0	0.45

Test 3	
Time (min)	Depth (m)



Max. depth (m)	0.63	0.63	0.63
Effective depth (m)	0.29	0.21	0.63
75% effective depth (m)	0.41	0.47	0.16
50% effective depth (m)	0.49	0.53	0.32
25% effective depth (m)	0.56	0.58	0.47
t75 (min)	260.00		
t50 (min)	640.00		
t25 (min)	980.00		
Vp 75-25	0.10	0.08	0.23
ap 50	1.2515	1.1035	1.8805
tp 75-25	720.00	0.00	0.00

Soil infiltration rate (m/s)	1.9E-06		
Soil infiltration rate (mm/hr)	6.90E+00		

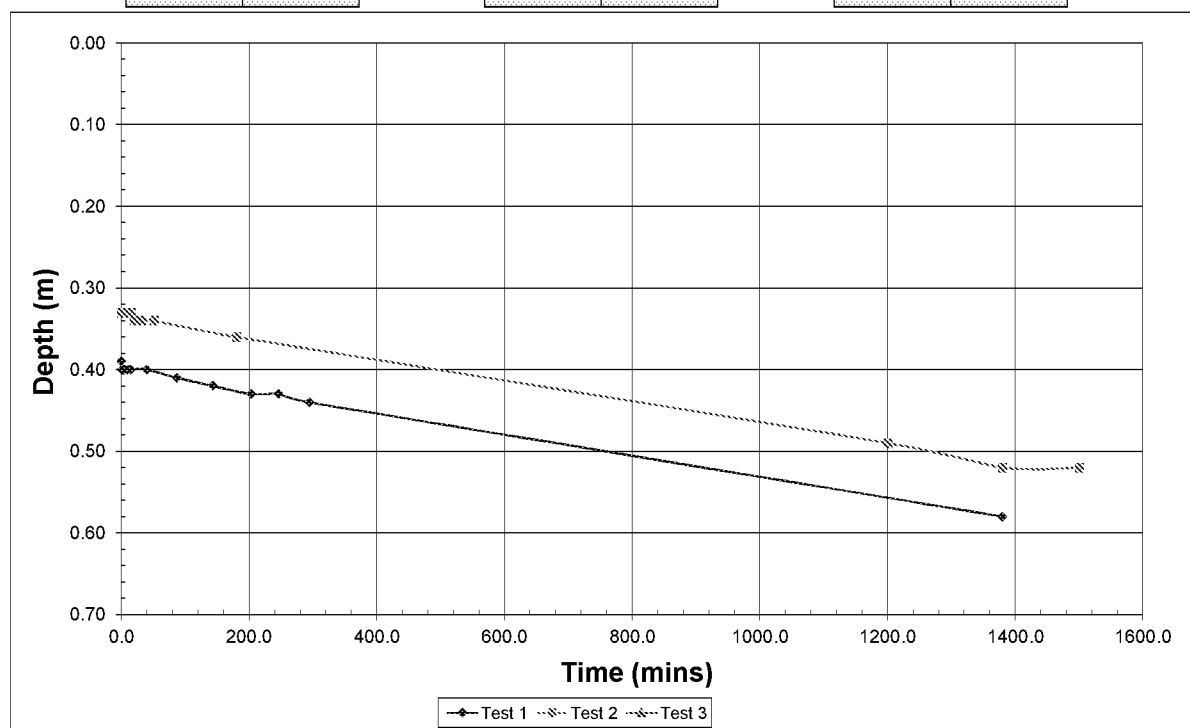
 Geo-Environmental	Soakaway Test Results (after BRE Digest 365)	Geo-Environmental Services Limited Unit 7, Danworth Farm, Cuckfield Road 
Project Name : Summer Lane, Pagham, Bognor Regis, PO21 4NQ		
Client : Drew Smith Limited		

Pit reference	TP13
Pit depth (m)	0.70
Pit width (m)	0.55
Pit length (m)	2.00
Depth to standing water (m)	

Test 1	
Time (min)	Depth (m)
0.0	0.39
1.0	0.40
2.0	0.40
3.0	0.40
4.0	0.40
5.0	0.40
10.0	0.40
15.0	0.40
40.0	0.40
87.0	0.41
143.0	0.42
203.0	0.43
246.0	0.43
294.0	0.44
1380.0	0.58

Test 2	
Time (min)	Depth (m)
0.0	0.33
1.0	0.33
2.0	0.33
3.0	0.33
4.0	0.33
5.0	0.33
10.0	0.33
15.0	0.33
20.0	0.34
31.0	0.34
51.0	0.34
180.0	0.36
1200.0	0.49
1380.0	0.52
1500.0	0.52

Test 3	
Time (min)	Depth (m)



Max. depth (m)	0.70	0.70	0.70
Effective depth (m)	0.31	0.37	0.70
75% effective depth (m)	0.47	0.42	0.18
50% effective depth (m)	0.55	0.52	0.35
25% effective depth (m)	0.62	0.61	0.53
t75 (min)			
t50 (min)			
t25 (min)			
Vp 75-25	0.17	0.20	0.39
ap 50	1.8905	2.0435	2.885
tp 75-25	0.00	0.00	0.00

Soil infiltration rate (m/s)	Insufficient fall in water to complete test	
Soil infiltration rate (mm/hr)	Insufficient fall in water to complete test	

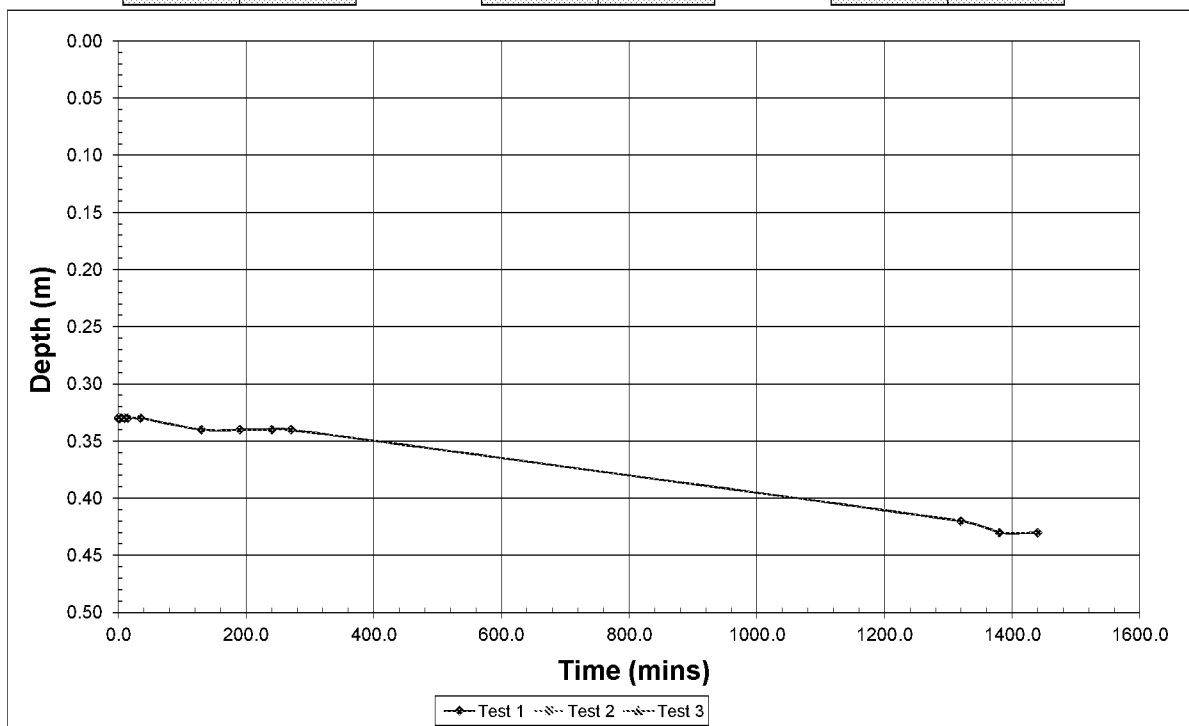
 Geo-Environmental	Soakaway Test Results (after BRE Digest 365)	Geo-Environmental Services Limited Unit 7, Broomfield Farm, Guelfield Road
Project Name : Summer Lane, Pagham, Bognor Regis, PO21 4NQ		
Client : Drew Smith Limited		

Pit reference	TP14
Pit depth (m)	0.60
Pit width (m)	0.55
Pit length (m)	1.40
Depth to standing water (m)	

Test 1	
Time (min)	Depth (m)
0.0	0.33
1.0	0.33
2.0	0.33
3.0	0.33
4.0	0.33
5.0	0.33
10.0	0.33
15.0	0.33
35.0	0.33
130.0	0.34
190.0	0.34
240.0	0.34
270.0	0.34
1320.0	0.42
1380.0	0.43
1440.0	0.43

Test 2	
Time (min)	Depth (m)

Test 3	
Time (min)	Depth (m)



Max. depth (m)	0.60	0.60	0.60
Effective depth (m)	0.27	0.60	0.60
75% effective depth (m)	0.40	0.15	0.15
50% effective depth (m)	0.47	0.30	0.30
25% effective depth (m)	0.53	0.45	0.45
t75 (min)			
t50 (min)			
t25 (min)			
Vp 75-25	0.10	0.23	0.23
ap 50	1.2965	1.94	1.94
tp 75-25	0.00	0.00	0.00

Soil infiltration rate (m/s)	Insufficient fall in water to complete test	
Soil infiltration rate (mm/hr)	Insufficient fall in water to complete test	

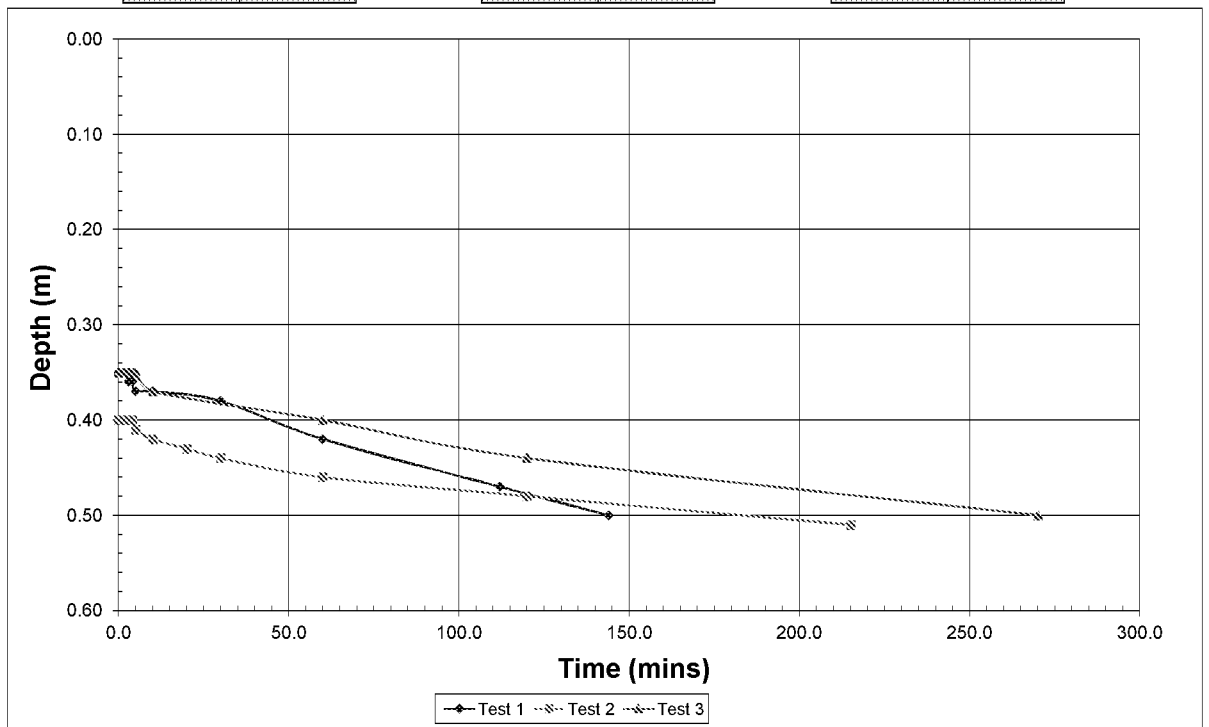
 Geo-Environmental	Soakaway Test Results (after BRE Digest 365)		Geo-Environmental Services Limited Unit 7 Danworth Farm, Cuckfield Road,
	Project Name : Summer Lane, Pagham, Bongor Regis, PO21 4NQ		
	Client : Drew Smith Limited		

Pit reference	TP15
Pit depth (m)	0.55
Pit width (m)	0.55
Pit length (m)	1.40
Depth to standing water (m)	

Test 1	
Time (min)	Depth (m)
0.0	0.35
1.0	0.35
2.0	0.35
3.0	0.36
4.0	0.36
5.0	0.37
10.0	0.37
30.0	0.38
60.0	0.42
112.0	0.47
144.0	0.50

Test 2	
Time (min)	Depth (m)
0.0	0.40
1.0	0.40
2.0	0.40
3.0	0.40
4.0	0.40
5.0	0.41
10.0	0.42
20.0	0.43
30.0	0.44
60.0	0.46
120.0	0.48
215.0	0.51

Test 3	
Time (min)	Depth (m)
0.0	0.35
1.0	0.35
2.0	0.35
3.0	0.35
4.0	0.35
5.0	0.35
10.0	0.37
60.0	0.40
120.0	0.44
270.0	0.50



Max. depth (m)	0.55	0.55	0.55
Effective depth (m)	0.20	0.15	0.20
75% effective depth (m)	0.40	0.44	0.40
50% effective depth (m)	0.45	0.48	0.45
25% effective depth (m)	0.50	0.51	0.50
t75 (min)	44.00	30.00	0.60
t50 (min)	90.00	120.00	145.00
t25 (min)	144.00	215.00	270.00
Vp 75-25	0.08	0.06	0.08
ap 50	1.16	1.0625	1.16
tp 75-25	100.00	185.00	269.00

Soil infiltration rate (m/s)	1.1E-05	4.9E-06	4.1E-06
Soil infiltration rate (mm/hr)	3.98E+01	1.76E+01	1.48E+01

Based on extrapolated data in red

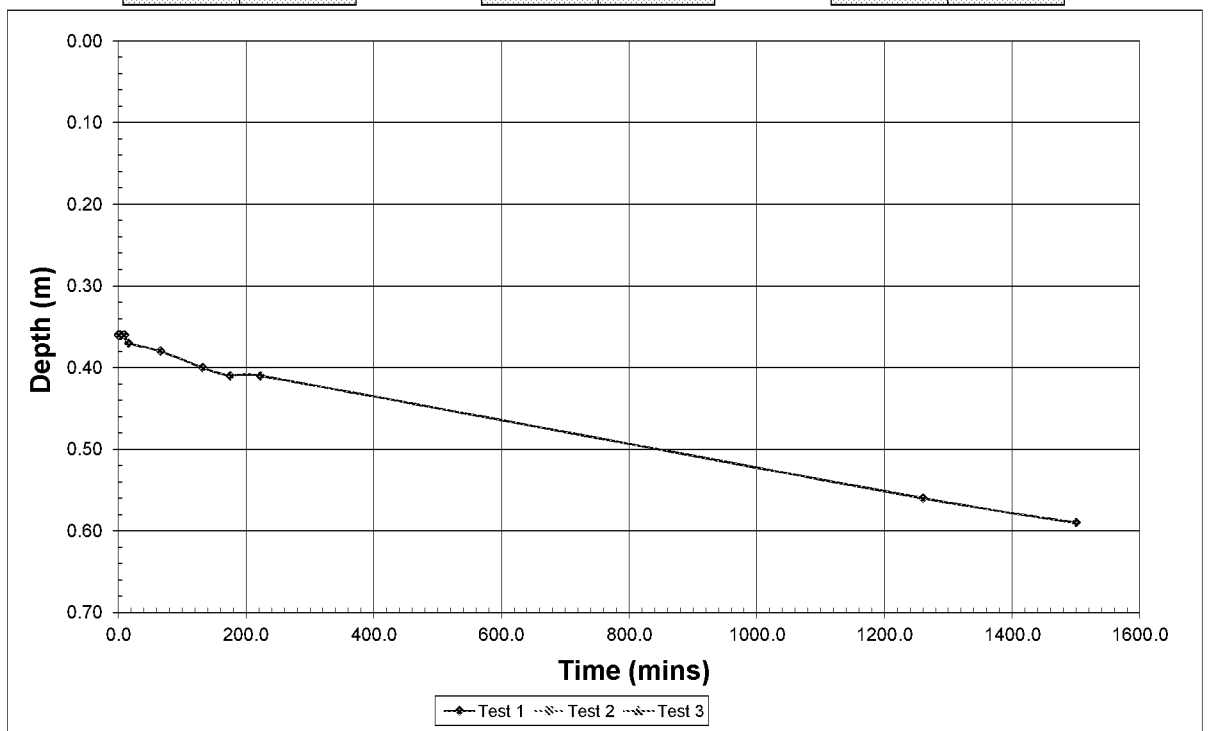
 Geo-Environmental	Soakaway Test Results (after BRE Digest 365)	Geo-Environmental Services Limited Unit 7 Danworth Farm, Cuckfield Road,
	Project Name : Summer Lane, Pagham, Bognor Regis, PO21 4NQ Client : Drew Smith Limited	

Pit reference	TP16
Pit depth (m)	0.67
Pit width (m)	0.55
Pit length (m)	1.50
Depth to standing water (m)	

Test 1	
Time (min)	Depth (m)
0.0	0.36
1.0	0.36
2.0	0.36
3.0	0.36
4.0	0.36
5.0	0.36
10.0	0.36
16.0	0.37
66.0	0.38
132.0	0.40
175.0	0.41
222.0	0.41
1260.0	0.56
1800.0	0.58

Test 2	
Time (min)	Depth (m)

Test 3	
Time (min)	Depth (m)



Max. depth (m)	0.67	0.67	0.67
Effective depth (m)	0.31	0.67	0.67
75% effective depth (m)	0.44	0.17	0.17
50% effective depth (m)	0.52	0.34	0.34
25% effective depth (m)	0.59	0.50	0.50
t75 (min)	430.00		
t50 (min)	980.00		
t25 (min)	1500.00		
Vp 75-25	0.13	0.28	0.28
ap 50	1.4605	2.1985	2.1985
tp 75-25	1070.00	0.00	0.00

Soil infiltration rate (m/s)	1.4E-05		
Soil infiltration rate (mm/hr)	4.3E+00		

Based on extrapolated data in red

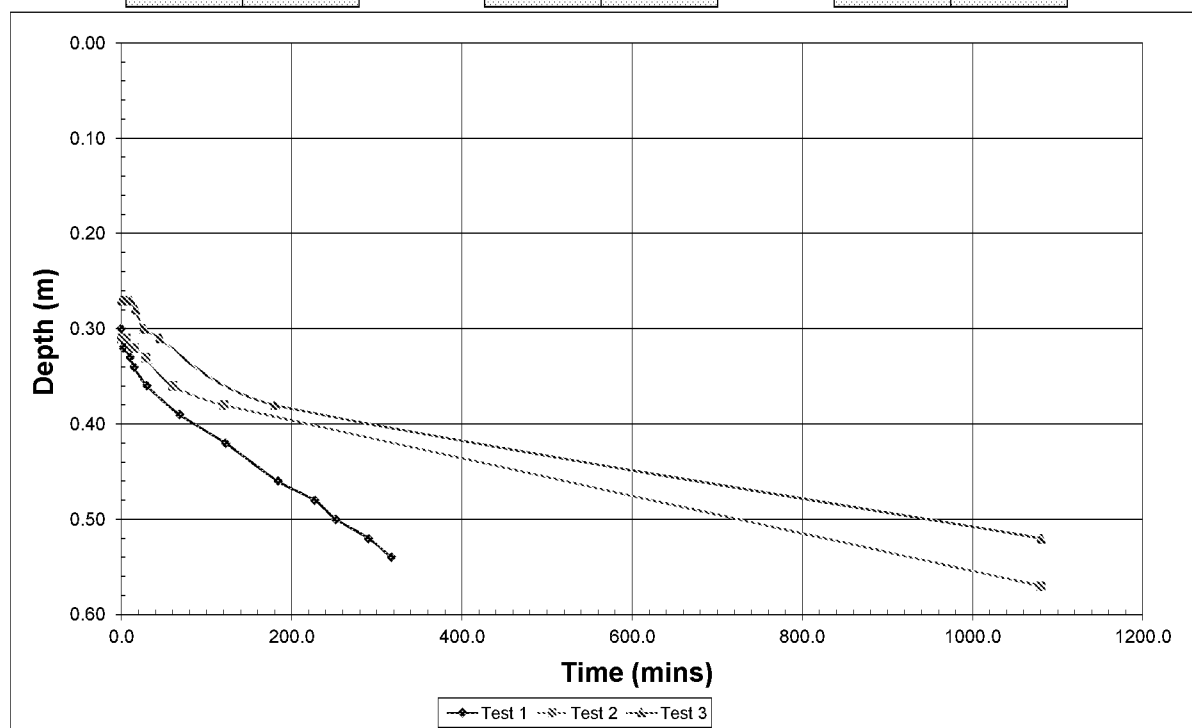
 Geo-Environmental	Soakaway Test Results (after BRE Digest 365)	Geo-Environmental Services Limited Unit 5, The Mill, Mill Lane, Boreham, Essex, SS16 1LS, UK Tel: 01702 355600 Fax: 01702 355601 Email: enquiries@geo-environmental.co.uk
Project Name : Summer Lane, Pagham, Bognor Regis, PO21 4NQ		
Client : Drew Smith Limited		

Pit reference	TP17
Pit depth (m)	0.60
Pit width (m)	0.55
Pit length (m)	1.20
Depth to standing water (m)	

Test 1	
Time (min)	Depth (m)
0.0	0.30
1.0	0.31
2.0	0.32
3.0	0.32
4.0	0.32
5.0	0.32
10.0	0.33
15.0	0.34
30.0	0.36
68.0	0.39
122.0	0.42
184.0	0.46
227.0	0.48
252.0	0.50
290.0	0.52
317.0	0.54

Test 2	
Time (min)	Depth (m)
0.0	0.31
1.0	0.31
2.0	0.31
3.0	0.31
4.0	0.31
5.0	0.31
10.0	0.32
15.0	0.32
28.0	0.33
60.0	0.36
120.0	0.38
1080.0	0.57

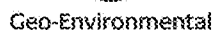
Test 3	
Time (min)	Depth (m)
0.0	0.27
1.0	0.27
2.0	0.27
3.0	0.27
4.0	0.27
5.0	0.27
10.0	0.27
16.0	0.28
26.0	0.30
45.0	0.31
180.0	0.38
1080.0	0.52



Max. depth (m)	0.60	0.60	0.60
Effective depth (m)	0.30	0.29	0.33
75% effective depth (m)	0.38	0.38	0.35
50% effective depth (m)	0.45	0.46	0.44
25% effective depth (m)	0.53	0.53	0.52
t75 (min)	50.00	120.00	105.00
t50 (min)	163.00	520.00	540.00
t25 (min)	303.00	860.00	1080.00
Vp 75-25	0.10	0.10	0.11
ap 50	1.185	1.1675	1.2375
tp 75-25	253.00	740.00	975.00

Soil infiltration rate (m/s)	5.5E-06	1.8E-06	1.5E-06
Soil infiltration rate (mm/hr)	1.98E+01	6.65E+00	5.40E+00

Based on extrapolated data in red

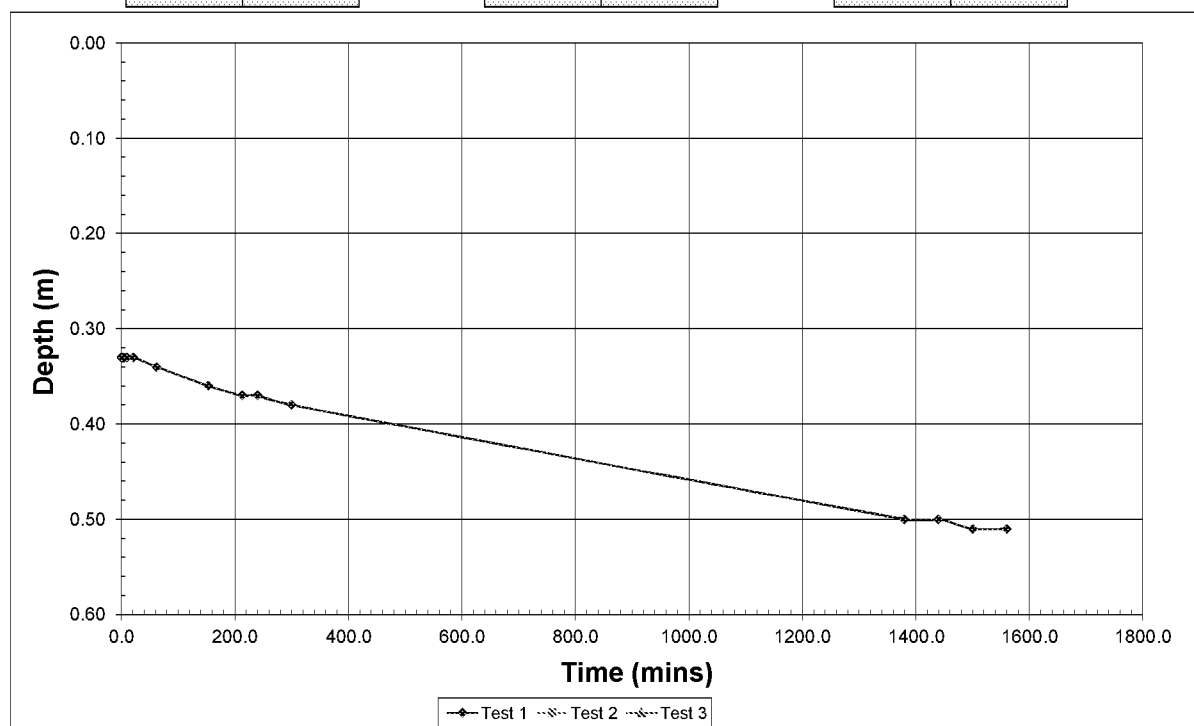


Geo-Environmental Services Limited
Unit 7 Danworth Farm, Cuckfield Road

Client : Drew Smith Limited

Pit reference	TP18
Pit depth (m)	0.50
Pit width (m)	0.55
Pit length (m)	0.65
Depth to standing water (m)	

Test 1	
Time (min)	Depth (m)
0.0	0.33
1.0	0.33
2.0	0.33
3.0	0.33
4.0	0.33
5.0	0.33
10.0	0.33
21.0	0.33
62.0	0.34
153.0	0.36
213.0	0.37
240.0	0.37
300.0	0.38
1380.0	0.50
1440.0	0.50
1500.0	0.51
1560.0	0.51

[illegible][illegible]

Max. depth (m)	0.50	0.50	0.50
Effective depth (m)	0.17	0.50	0.50
75% effective depth (m)	0.37	0.13	0.13
50% effective depth (m)	0.42	0.25	0.25
25% effective depth (m)	0.46	0.38	0.38
t75 (min)	240.00		
t50 (min)	660.00		
t25 (min)	1020.00		
Vp 75-25	0.03	0.09	0.09
ap 50	0.5615	0.9575	0.9575
tp 75-25	780.00	0.00	0.00

Soil infiltration rate (m/s)	1.2E-06		
Soil infiltration rate (mm/hr)	4.16E+00		

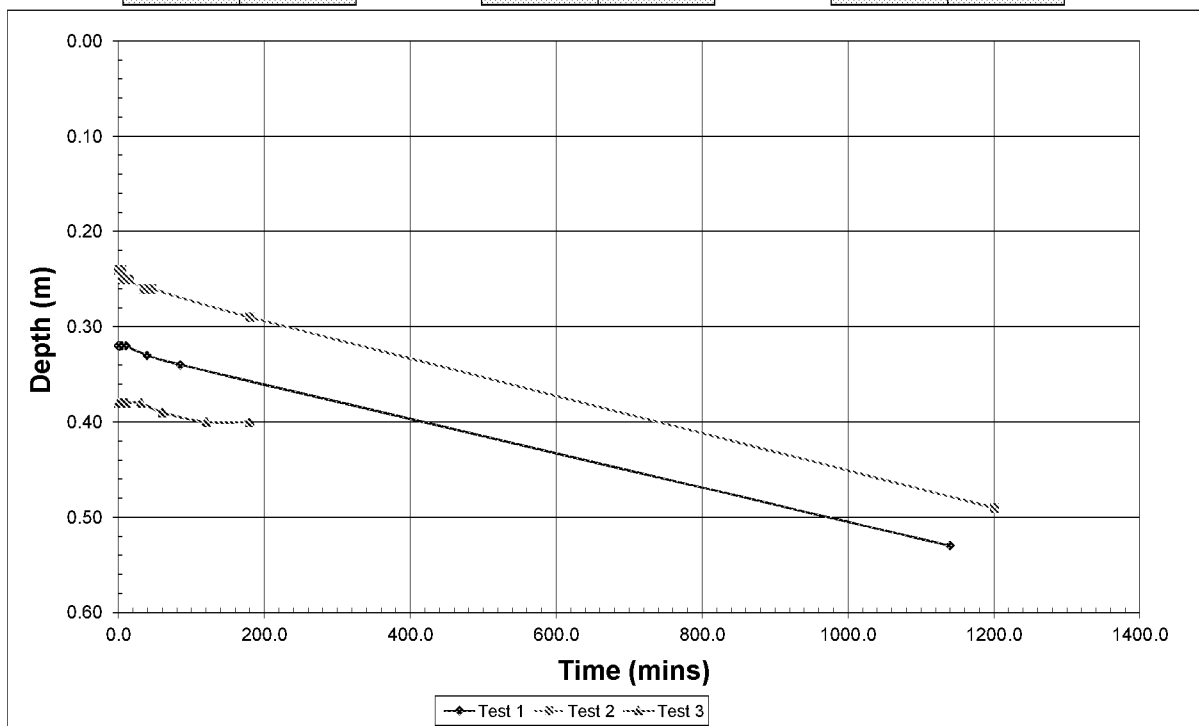
 Geo-Environmental	Soakaway Test Results (after BRE Digest 365)	Geo-Environmental Services Limited
Project Name : Summer Lane, Pagham, Bognor Regis, PO21 4NQ		
Client : Drew Smith Limited		

Pit reference	TP19
Pit depth (m)	0.55
Pit width (m)	0.55
Pit length (m)	1.90
Depth to standing water (m)	

Test 1	
Time (min)	Depth (m)
0.0	0.32
1.0	0.32
2.0	0.32
3.0	0.32
4.0	0.32
5.0	0.32
10.0	0.32
39.0	0.33
85.0	0.34
1140.0	0.53

Test 2	
Time (min)	Depth (m)
0.0	0.24
1.0	0.24
2.0	0.24
3.0	0.24
4.0	0.24
5.0	0.25
10.0	0.25
15.0	0.25
35.0	0.26
45.0	0.26
180.0	0.29
1200.0	0.49

Test 3	
Time (min)	Depth (m)
0.0	0.38
1.0	0.38
2.0	0.38
3.0	0.38
4.0	0.38
5.0	0.38
10.0	0.38
30.0	0.38
60.0	0.39
120.0	0.40
180.0	0.40



Max. depth (m)	0.55	0.55	0.55
Effective depth (m)	0.23	0.31	0.17
75% effective depth (m)	0.38	0.32	0.42
50% effective depth (m)	0.44	0.40	0.47
25% effective depth (m)	0.49	0.47	0.51
t75 (min)	300.00	330.00	
t50 (min)	640.00	740.00	
t25 (min)	930.00	1100.00	
Vp 75-25	0.12	0.16	0.09
ap 50	1.6085	1.8045	1.4615
tp 75-25	630.00	770.00	0.00

Soil infiltration rate (m/s)	2.0E-06	1.9E-06	Insufficient fall in water to complete test
Soil infiltration rate (mm/hr)	7.12E+00	6.99E+00	Insufficient fall in water to complete test



Soakaway Test Results (after BRE Digest 365)

Geo-Environmental Services Limited

Project Name : Summer Lane, Pagham, Bognor Regis, PO21 4NQ

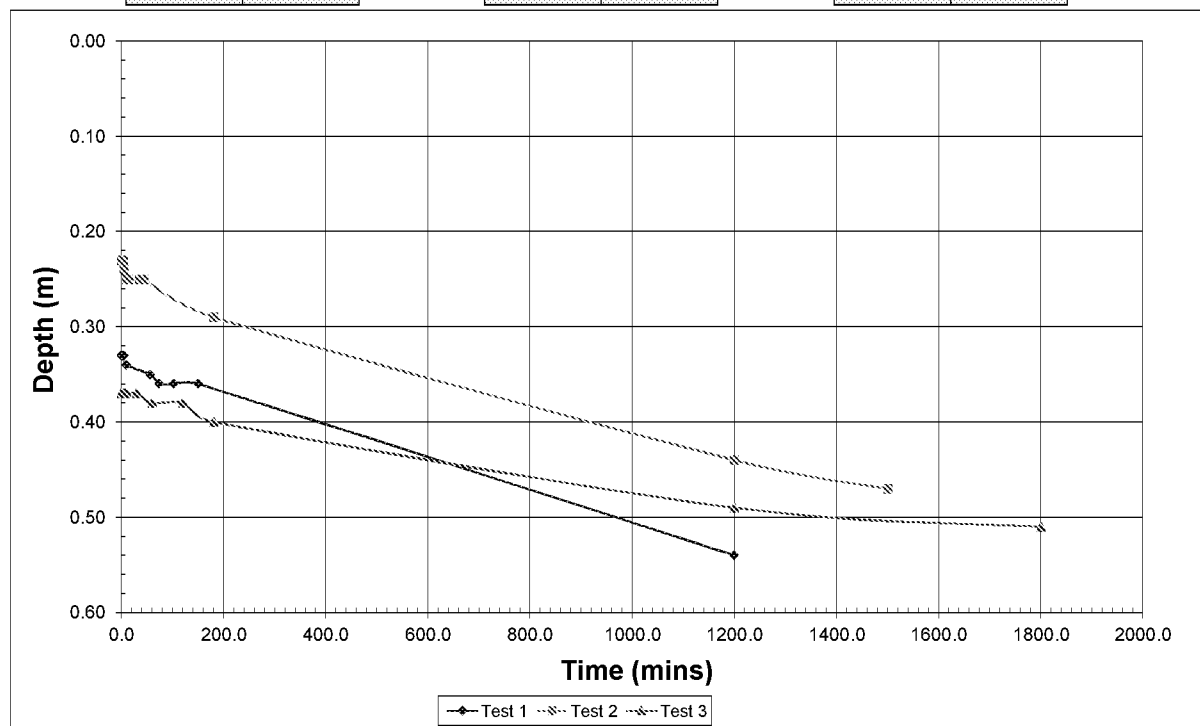
Client : Drew Smith Limited

Pit reference	TP20
Pit depth (m)	0.55
Pit width (m)	0.55
Pit length (m)	1.60
Depth to standing water (m)	

Test 1	
Time (min)	Depth (m)
0.0	0.33
1.0	0.33
2.0	0.33
3.0	0.33
4.0	0.33
5.0	0.33
10.0	0.34
56.0	0.35
74.0	0.36
102.0	0.36
150.0	0.36
1200.0	0.54

Test 2	
Time (min)	Depth (m)
0.0	0.23
1.0	0.23
2.0	0.23
3.0	0.23
4.0	0.24
5.0	0.24
10.0	0.25
13.0	0.25
35.0	0.25
43.0	0.25
180.0	0.29
1200.0	0.44
1500.0	0.47

Test 3	
Time (min)	Depth (m)
0.0	0.37
1.0	0.37
2.0	0.37
3.0	0.37
4.0	0.37
5.0	0.37
10.0	0.37
30.0	0.37
60.0	0.38
120.0	0.38
180.0	0.40
1200.0	0.49
1500.0	0.51



Max. depth (m)	0.55	0.55	0.55
Effective depth (m)	0.22	0.32	0.18
75% effective depth (m)	0.39	0.31	0.42
50% effective depth (m)	0.44	0.39	0.46
25% effective depth (m)	0.50	0.47	0.51
t75 (min)	270.00	380.00	400.00
t50 (min)	620.00	790.00	800.00
t25 (min)	970.00	1500.00	1500.00
Vp 75-25	0.10	0.14	0.08
ap 50	1.353	1.568	1.267
tp 75-25	700.00	1120.00	1100.00

Soil infiltration rate (m/s)	1.7E-06	1.3E-06	3.5E-07
Soil infiltration rate (mm/hr)	6.13E+00	4.81E+00	1.21E+00

Based on extrapolated data in red

Based on extrapolated data in red

Soakaway Test Results (after BRE Digest 365)

Geo-Environmental Services Limited
Unit 7, Broomfield Farm, Grafton Road

Project Name : Summer Lane, Pagham, Bognor Regis, PO21 4NQ

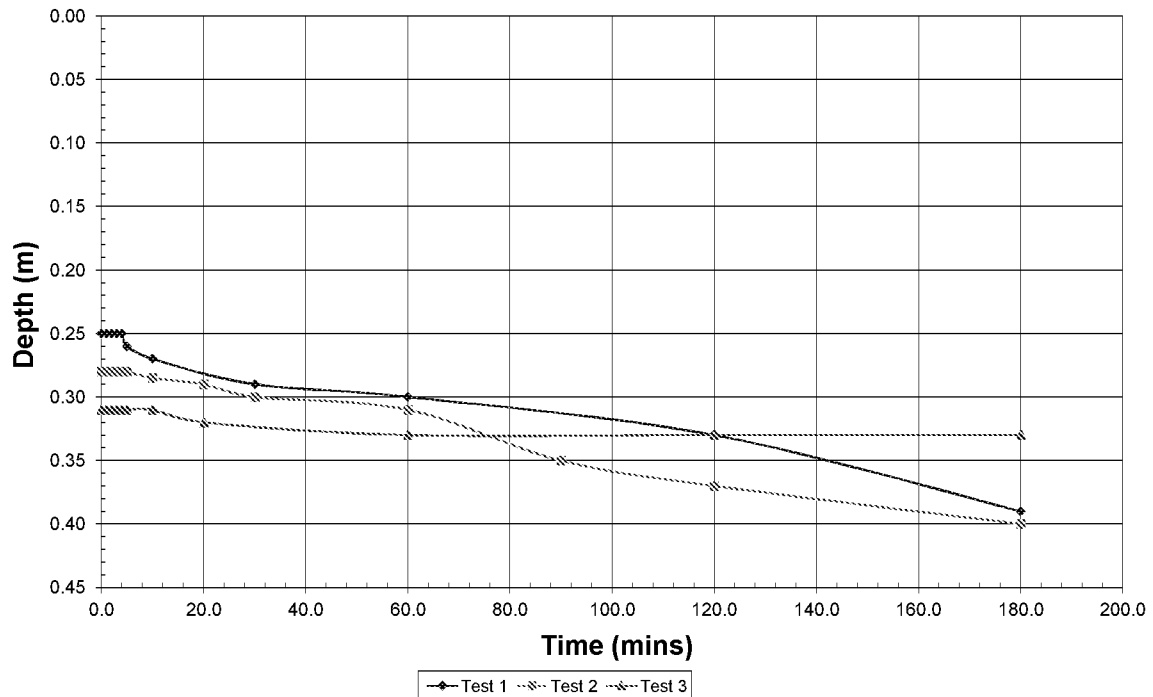
Client : Drew Smith Limited

Pit reference	TP21
Pit depth (m)	0.44
Pit width (m)	0.55
Pit length (m)	1.40
Depth to standing water (m)	

Test 1	
Time (min)	Depth (m)
0.0	0.25
1.0	0.25
2.0	0.25
3.0	0.25
4.0	0.25
5.0	0.26
10.0	0.27
30.0	0.29
60.0	0.30
120.0	0.33
180.0	0.39

Test 2	
Time (min)	Depth (m)
0.0	0.28
1.0	0.28
2.0	0.28
3.0	0.28
4.0	0.28
5.0	0.28
10.0	0.29
20.0	0.29
30.0	0.30
60.0	0.31
90.0	0.35
120.0	0.37
180.0	0.40

Test 3	
Time (min)	Depth (m)
0.0	0.31
1.0	0.31
2.0	0.31
3.0	0.31
4.0	0.31
5.0	0.31
10.0	0.31
20.0	0.32
60.0	0.33
120.0	0.33
180.0	0.33



Max. depth (m)	0.44	0.44	0.44
Effective depth (m)	0.19	0.16	0.13
75% effective depth (m)	0.30	0.32	0.34
50% effective depth (m)	0.35	0.36	0.38
25% effective depth (m)	0.39	0.40	0.41
t75 (min)	60.00	76.00	
t50 (min)	142.00	100.00	
t25 (min)	180.00	180.00	
Vp 75-25	0.07	0.06	0.05
ap 50	1.1405	1.082	1.0235
tp 75-25	120.00	104.00	0.00

Soil infiltration rate (m/s)	8.9E-06	9.1E-06	Insufficient fall in water to complete test
Soil infiltration rate (mm/hr)	3.21E+01	3.28E+01	Insufficient fall in water to complete test