

#### **Key to Exploratory Hole Logs**

#### General

All soil & rock descriptions in general accordance with BS5930, BS EN ISO 14688 and BS EN ISO 14689 The Geology Code is only provided where positive identification of the sampled strata has been made.

#### Sampling

Environmental Sample (taken in appropriate sampling container)

D Disturbed Sample B **Bulk Sample** 

LB Large Bulk for Earthworks testing

C Core Sample

U Undisturbed Sample (number of blows indicated in results column)

SPTLS SPT Liner Sampler Piston Sample W Water Sample

#### Insitu Tests

Standard Penetration Test in accordance with BS EN ISO 22476-3 SPT SPT (C) Cone Penetration Test in accordance with BS EN ISO 22476-3 PT Penetration Test - STL documented equivalent SPT N Value

PPT Perth Penetration Test - STL in house documented method (N Value) UCS Unconfined Compressive Strength measure by hand penetrometer (kN/m2) (\_\_\_)

IVN Hand Vane (kPa)

PID Photo Ionisation Detector Results (ppm)

MEXE Mexecone CBR Result

#### **Drilling Records**

Depth to standing water level

Depth to water strike

TCR Total Core Recovery (%) SCR Solid Core Recovery (%) RQD Rock Quality Index (%)

FI Fracture Index

Backfill Symbo	ols	Pipe Symb	ools	Principal S	oil Types	Principal Roo	<u>:k Types</u>
Arisings		Plain Pipe		Topsoil		Mudstone/Claystone	
Concrete	٥.,	Slotted Pipe	Ħ	Made Ground		Siltstone	× × × × × × × × ×
Blacktop		Filter Tip		Clay		Sandstone	• • •
,		Ţ	ш	Silt	$\times \times$	Limestone	
Bentonite Seal	7.9 - 4.1			Sand		Chalk	
Gravel Filter	, , ,			Gravel			
Sand Filter				Peat	alk k ali		

Sout	hern Te	sting	g ST Co	onsult≡		Start - Er	nd Date		Pro	ject ID:	: Н	ole Type	e: BH	11
www.southerntes	ting.co.uk tel:0134	2 333100	www.stconsult.c	o.uk tel:01604 5000	20	10/09/	2018		J:	13 <b>7</b> 52		СР	Sheet	1 of 2
Project Nam	e: Land of	f Shaws	stead Road		Rema	rks:			linates: - 165 <b>7</b> 3			Level:	Logg JM	
ocation:	Hale, K	ent			Boreho	le dry. Co		Court Inc		100 800	t at 10n	n and 15		
Client:	KD Attv	wood &	Partners											
Water Water	Sam	ples and	Insitu Testing	- Se	Thicknes	Slogand	Depth			C+r	ratum Do	scription		Ĩ
Well Strikes	Depth (m bgl) 0.15 0.30 0.50 0.50 0.50 - 1.00  1.50 2.00  2.50 2.50 3.00  3.50 3.50 4.00  4.50 4.50 5.00  5.50 5.50  7.00 7.00 7.00 8.00  8.50 8.50  9.50	Type D ES D D	N=19 (5,4/3 N=30 (4,8/9 N=24 (4,6/6 N=26 (3,5/6 N=17 (3,3/4	3,5,5,6) 3,7,6,8) 5,7,6,7) 1,3,5,5)	(2.20)	Legend  Legend	2.80 - 5.00	Strue putte extra corar LEW	Y. Grave rse flint psoil). I light to dy sligh ak chalk AD m to 2.8n ite, grave ucturele ty chalk remely v nge bro VES NOI	ss CHAL. Chalk gweak, www.	angular ck and common specific characteristic chara	e slightly flint. Sar oarse sal ckled wh nd is coa orange brovel is fine to osed of g medium ned brov	gravelly sandy nd is fine to nd sized chalk nite slightly rse extremely own speckled to coarse flint.  gravelly silty sized, wn, veined	
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20.00	150	epth (m bgl)	Dia. (mm)	1000000000	epth Strike Depth	Casing Depth S	ealed Rose	to: Tir	me (mins)	From	То	Time	Remark	S

	outri	ern 1e	sting	ST Cons	uit		Start - Er	id Date		FIG	ject ID:		ole Type	e: D	H1
www.s	southerntestin	co.uk tel:0134	2 333100	www.stconsult.co.uk te	:01604 50002	0	10/09/			Name of the last o	13 <b>7</b> 52		СР	Sheet	2 of :
roject	t Name:	Land of	f Shaws	stead Road		Rema	rks:			dinates: - 16573			Level:		ger: //W
ocatio	on:	Hale, K	ent			Boreho	le dry. Co	onstant F	NOTE 1002		100 100	t at 10r	n and 15		
lient:				Partners		1									
Well	Water	Sam	ples and	Insitu Testing	Level (m AOD)	Thicknes	S Legend	Depth			C+-	atum De	scription		1
vveii	Strikes	Depth (m bgl)	Type SPT(S)	Results N=50 (9,7/50 fo		(m)	Legend	(m bgl)	D		DOM	A PASSENTAL SAVES OF	NACH ACKNOWN	d as white	
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		13.00 13.00	SPTLS SPT(S)	N=50 (5,8/50 fo 295mm)	r										1
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		15.50	D												
		16.00 16.00	SPTLS SPT(S)	N=50 (6,6/6,8,14,22)											
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	Artist Hall to the control of the co	19.00 19.00	SPTLS SPT(S)	50 (7,14/50 for 160mm)											1
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roject Nam	e lando	ff Shaw	stead Roa	ıd		Remar	ks.			dinates			Level:	Logge	er:
1554	200 200 200		occur noc		Б	. 22 00	e dry. Co		COURS NO	- 16572	10 10	t at 8m	and 13r	mhal	
ocation:	Hale, K	ent				orenor	e ui y. cc	mstarit	icau	test car	neu ou	t at offi	and 15	пові.	
ient:	KD Att	wood &	Partners												
Well Water Strikes			Insitu Testi Res		Level (m AOD)	Thickness (m)	Legend	Depth (m bgl)			Str	atum De	scription		
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Hole De	tails		Details		Ę.	Waters	trike (m	bøl)				Standi	ng/Chic	selling (m bgl)	
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South	iern T	esting	g ST (	Consu	lt■		Star	t - End	Date		Pro	ject ID:	Н	ole Typ	e: BH2	2
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roject Name	: Land	off Shaws	stead Roa	ad		Re	marks:				dinates: - 16572			Level:	Logge	er:
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lient:			Partners													
Tarage T					6		Ť									-
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	14.00	D							1	14	1.0m cha	ılk gravel ı	medium s	trength.		1
	14.50 14.50	SPTLS SPT(S)	N=20 (3,4	1/4,5,6,5)		(17.	00)									1
	15.50	D SPTLS														1
	16.00 17.00	SPT(S)	N=15 (2,7	(14,3,4,4)												1
	17.50 17.50	SPTLS SPT(S)		5/7,7,8,6)												
	19.00 19.00		N=26 (3,3	/2,5,10,9)												1
55117, CM	20.00	1 D	·	×		ar Spent			20.00			End o		e at 20.00i		20
Hole Deta	QLC-LT.		Details	<b>D</b> .		-	terstrik		_			Feer			selling (m bgl)	
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roject Nan	ne: Land o	off Shaws	stead Road		Rem	arks:			rdinates:			Level:	Logge	er:
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lient:	KD Att	wood &	Partners			200								
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20.00	Dia. (mm) 150	Depth (m bgl)	Dia. (mm)	Date	Depth Strike Dej	oth Casing Depti	sealed Rose	e to:	Time (mins)	From	То	Time	Remarks	

Sout	hern T	esting	g ST Co	onsult	<b>S</b>	tart - En	d Date		Pro	ject ID:	H	ole Type	e:	BH3
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oject Nam	ne: Land	off Shaws	stead Road		Remai		(	Co-ordi				Level:		Logger:
ocation:	Hale,				Borehol			'531E - Head t		100 000	t at 15n	n and 20	)mbgl.	
			250.0											
ient:	-		Partners	-										
Well Water Strikes			Insitu Testing Result	S S	Thickness (m)	Legend	Depth (m bgl)			Str	atum De	scription		
Stines	11.00 11.50 12.50 13.00 13.00 14.50 14.50	D SPTLS SPT(S)  D SPTLS SPT(S)	N=24 (4,6/7	5,7,8,8) 5,5,5,6)	(18.00)		(III Uği)	vein putt crus	ed orar y chalk hed flir	nge brow with oc	vn grave casional	lly silt co	d as white mminuted to coarse	ı
	15.50 16.00 16.00	D SPTLS SPT(S)		5,6,5,6)										1
	17.00 17.50 17.50 18.00	D SPTLS SPT(S) D	N=26 (4,7/6	5,6,7,7)										1
	19.00 19.00	SPTLS SPT(S)	N=42 (6,6/10,10,		g <sub>e</sub>		20.00			Fnd o	of Borehol	e at 20.00n	n	1
Hole De	tails	Casing	Details		Waters	trike (m	bgl)			Lind			elling (m	
epth (m bgl)	Dia. (mm)			Date	Depth Strike Depth			to: Tim	ne (mins)	From	То	Time		marks
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<b>S</b>	outh	ern Te	sting	J ST Co	nsult≡	· :	Start - Er	nd Date		Pro	ject ID:	н	ole Type	e: BH	4
www.so	outherntesting	g.co.uk tel:01342	2 333100	www.stconsult.co.	uk tel:01604 5000	20	-22			J:	13 <b>7</b> 52		СР	Sheet 1	of 2
roject	Name:	Land of	f Shaws	stead Road		Rema	rks:			<b>inates</b> :			Level:	Logg	er:
ocatio	n:	Hale, Ke	ent			Boreho	le dry. Co	onstant l	Same Ma		100 800	t at 12n	n and 17	7mbgl.	
lient:		KD Attw	ood &	Partners											
	Water			Insitu Testing	Level	Thicknes	Legend	Depth			Str	atum De	scription		1
20125214	Strikes [	0.15	Type	Results	٤ - ا	(m)	X/11X/1	(m bgl)	Stiff	brown	00.63		NOTES AND A STATE OF THE STATE	ne to medium	+
		0.30	В			10.001			subr	rounde	d chalk a	and med	ium to co	oarse cobble	
		0.50	В			(0.90)			sized	d flint (	Ploughe	d Topsoi	l).		
		1.00	В					0.90	Stru	cturele	ss CHAI	K compo	sed of c	ream very	
		1.00				(0.60)			grav	elly sar	ndy silt v			rse gravel to	
		1.50	SPTLS					1.50		ble size	d flint. DULAR C	TIALV			
		1.50	SPT(S)	N=21 (4,4/5,	4,6,6)				$\overline{}$				recovere	d as white	-/
		2.00	D							tled mid brown black speckled slightly grave comminuted putty chalk with rare small to e sized flints.					
											omminuted putty chalk with rare small to				
		2.50	SPTLS						_						
		2.50	SPT(S)	N=13 (4,4/3,	+,5,5)										
		3.00	D												
		2.50	COTIC												
		3.50 3.50	SPTLS SPT(S)	N=19 (4,4/4,	5,4,5)										
		4.00	D	#2 N I	1,05										
		00													
		4.50	SPTLS												
		4.50	SPT(S)	N=13 (3,3/2,	4,4,3)										
		5.00	D												
			uses.												
		6.00	D SPTLS												
		6.00	SPT(S)	N=24 (3,4/5,	7,4,8)										
		7.00	D												
		7.50	SPTLS												
		7.50	SPT(S)	N=18 (4,4/4,	5,4,5)										
		8.00	D												
		9.00	6												
		9.00	D SPTLS				1 P								
		9.00	SPT(S)	N=15 (5,4/3,	3,4,5)										
t	s la	10.00	l <sub>D</sub>		Str	Str		1 L							_1
140000	le Detai			Details	B		strike (m		_	1	-			elling (m bgl)	
20.00		150 De	pur (m bgl)	Dia. (mm)	Date D	epth Strike Depth	Depth S	ealed Rose	to: Tin	ne (mins)	From	То	Time	Remarks	•

S	out	hern T	esting	g ST (	Consul	t	St	tart - En	d Date		Project I	D: F	lole Typ	e: BH4	1
5.000 Miles		ting.co.uk tel:01	1-7		ılt.co.uk tel:01604			-20			J13 <b>7</b> 52		СР	Sheet 2	of 2
roject	t Nam	e: Land	off Shaw	stead Roa	ad		Remarl	ks:		<b>o-ordina</b> 95E - 16			Level:	Logge	r:
ocatio	on:	Hale,	Kent				Borehole	dry. Co	10.000	100	t carried o	out at 12	m and 1	7mbgl.	
lient:		KD Att	twood &	Partners											
Well	Water	Sa	mples and	Insitu Testi	ng	Level (m AOD)	Thickness	Legend	Depth			Stratum De	scription		
VVCII	Strikes	Depth (m b	gl) Type	Res	ults	(i) Le	(m)	Legend	(m bgl)	Possibl		KAN BURUK IA LUWAS	310/2011 1 500/2011	ed as white	
		10.50 10.50 11.00	SPTLS SPT(S)		3/4,3,4,4)					mottle silty co large si LEWES	d mid brov	vn black s I putty cha	peckled : alk with r	slightly gravelly rare small to	1:
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		16.00	D												16
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		17.00	D												1
		18.00 18.00 18.00	D SPTLS SPT(S)		5/4,5,5,5)										18
		19.00	D												19
	8	19.50 19.50 20.00	SPTLS SPT(S)	N=17 (6,5	5/5,4,5,3)				20.00						3,
v.	ole Det		V	Details			Waterst	rike (m			En	d of Boreho Stand		m selling (m bgl)	20
epth (n	-			Dia. (mm)	Date	Dept	h Strike Depth C			o: Time (	mins) Fron		Time	Remarks	
20.0		150													

S	outl	hern Te	estino	ST C	Consul	t■		Start - E	nd Date		Pro	ject ID:	H	ole Type	e:	BH5	
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roject	Name	e: Land o	ff Shaw:	stead Roa	d		Rema	rks:			rdinates:			Level:		Logger:	
ocatio	on:	Hale, k	(ent				Boreho	e dry. C		2000	test car	100 (00)	t at 15n	n and 20	Ombgl.		_
lient:	Ceremon			Partners													
ment.	Targeton I	100000000000000000000000000000000000000				<u> </u>	<b>TI:</b> 1	Ī	5 .1								_
Well	Water Strikes	Depth (m bg		Insitu Testir Resi		Level (m AOD)	Thickness (m)	Legend	Depth (m bgl)			Str	atum De	scription			
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		1.00												recovere	d as white	 e	ľ
		1.50	SPTLS												slightly gra	avelly	
		1.50	SPT(S)	N=20 (4,3	/3,4,6,7)						ty commi			lk.			
		2.00	D							LE	WES NO	JULAK C	HALK				2
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		8.00	D														8
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		9.00	SPT(S)	N=26 (3,6	(6,9,7,4)				4								
į	8	10.00	l <sub>D</sub>		SI	9 9	į.										10
Н	ole Det	1	Casing	Details			Waters	trike (r	n bgl)				Standi	ng/Chis	elling (m		_
epth (n	n bgl) [	Dia. (mm)		Dia. (mm)	Date	Dept	h Strike Depth			to:	Time (mins)	From	То	Time		emarks	
20.0	0	150															

S	out	hern T	esting	ST (	Consul	t■	S	tart - Er	nd Date	_	Pro	ject ID:	Н	ole Typ	e: BHS	5
		ting.co.uk tel:01	14.5	20.00.000.000.000.000.000.000.000	lt.co.uk tel:0160			-25			North.	13 <b>7</b> 52		СР	Sheet 2	of 2
roject	t Nam	e: Land	off Shaw	stead Roa	ıd		Remar	ks:			linates: - 16454			Level:	Logge	er:
ocatio	on:	Hale,	Kent				Borehol	e dry. Co	onstant l	301 To		10 00	at 15n	n and 20	Ombgl.	
lient:		KD At	twood &	Partners			_									
	Water	Sa	mples and	Insitu Testi	ng	oo)	Thickness		Depth			2				Ĩ
Well	Strikes	Depth (m b		Res		Level (m AOD)	(m)	Legend	(m bgl)	10-10-0		UCASI		scription		4
		10.50 10.50 11.00 12.00 12.00 12.00	SPTLS SPT(S) D D SPTLS SPT(S)	50 (3,18 150i	nm)					mot	ttled mi		black sp utty cha	peckled:	ed as white slightly gravelly	111
		13.00	D													13
		13.50	SPT(S)	0 (25,50/0	for 0mm)											
	14.00 D															1
		15.00 15.00 15.00	D SPTLS SPT(S)		56.50		(19.50)									1!
		16.00	D													10
		16.50 16.50 17.00	SPTLS SPT(S)	N=24 (3,4	1/6,6,5,7)											1
		18.00 18.00 18.00	D SPTLS SPT(S)	N= (5,7/14,												18
		19.50 19.50	SPTLS SPT(S)	N=26 (4,5	5/5,6,8,7)											
	ts	20.00	l D	<u></u>	st.		ŀ		20.00			End o		e at 20.00		20
2400	ole De	2000000		Details	If the appropriate	1		trike (m				_			selling (m bgl)	
epth (n 20.0		150	Depth (m bgl)	Dia. (mm)	Date	Dep	th Strike Depth	Casing Depth S	ealed Rose	to: Ti	me (mins)	From	То	Time	Remarks	

So	uthe	ern Testing	ST Co	nsult		Start -	End Date:	Project ID:	Machine Type:	TP1
www.south	erntesting.	co.uk tel:01342 333100 ww	w.stconsult.co	uk tel:01604 50	0020	10/0	09/2018	J13752	5T	Sheet 1 of 1
Project N	ame:	Land off Shawstea	d Road		Rema	arks:	<b>Co-ordi</b> E 5 <b>77</b> 932 -		Level (m AOD):	Logger: JMW
Location:		Hale, Kent			Sec. 100 Sec	2000	ge test carried ou	119	with BRE 365.	311111
Client:		KD Attwood & Part	ners		- E					
Sa	mples a	nd Insitu Testing	Level	Thickness	Legend	Depth		Stratum Des	orintian	Ť
Depth (m)	Туре	Results	(m AOD)	(m)	Legend	(m bgl)	Dark brown gr		. Gravel is fine to co	arco
0.10	ES			(0.35)		0.35	subrounded fli sized brick (Plo	int, fine chalk and oughed Topsoil). oeckled white gra	velly SILT. Gravel is t	sand
0.50	D			(0.85)	X X X X X X X X X X X X X X X X X X X		HEAD	CHUIK.		1
1.30 1.30	D HP	UCS(kPa)=270				1.20		r crushed flint. Sa	elly sandy CLAY. Gra and is fine to coarse	
1.60	D			(0.70)						
1.80	PPT	N=10(450)								
						1.90		Pit terminated	at 1.9m.	2
P	it Dim	ension (m)			Pit St.	ability			Water Strikes	3
		ension (m)			Pit Sta	ability:			Water Strikes:	
Width		0.65	Stable							
Length		1.80								
Depth	ı:	1.90								

Sou	uthe	ern Testing	ST Co	nsult≡		Start -	End Date:	Project ID:	Machine Type:	TP2	
		co.uk tel:01342 333100 w		.uk tel:01604 5000		10/	09/2018	J13752	5T	Sheet 1 of	1
Project Na	ame:	Land off Shawstea	ad Road		Rema	arks:	<b>Co-ordi</b> E 577772 -		Level (m AOD):	Logger: JMW	
Location:		Hale, Kent			Pit dr	y. Soaka	ge test carried ou	110	with BRE 365.		
Client:		KD Attwood & Pai	rtners								
Sa	mples ar	nd Insitu Testing	Level	Thickness		Depth		S	V (V)	Ĩ	
Depth (m)	Туре	Results	(m AOD)	(m)	Legend	(m bgl)		Stratum Des	e brown speckled v		
Samples and In			(1.60)		1.80	roots. Gravel is fine to coarse Structureless ( brown sandy s	s fine to medium chalk. CHALK composed iilty GRAVEL. Grav o subangular wea rade Dc).	a frequent fine to consubrounded chalk.  of cream mottled I well is fine to coarse is to medium strenged at 1.8m.	ight gth	2 — · · · · · · · · · · · · · · · · · ·	
											_
		ension (m)	6. 1:		Pit Sta	ability:			Water Strikes:		
Width		0.65	Stable								
Length	-	2.00	_								
Depth	:	1.80									

Sou	uthe	ern Testing	ST Co	nsult		Start -	End Date:	Project ID:	Machine Type:	TP3
				.uk tel:01604 500		10/0	09/2018	J13752	5T	Sheet 1 of 1
Project Na	ame:	Land off Shawstea	ad Road		Rema	arks:	<b>Co-ord</b> i E 5 <b>77</b> 563 -		Level (m AOD):	Logger: JMW
Location:		Hale, Kent			10000 1000	CORN DE	ge test carried ou	719 339	with BRE 365.	314144
Client:		KD Attwood & Par	rtners		ě					
Sa	mples a	nd Insitu Testing	Level	Thickness	Legend	Depth		Stratum Des	egription	Ī
1.00 1.10	ES PPT B	N=20(450)		(0.20)		0.20	Firm orange be subrounded to Structureless ( brown black sp coarse subrou	bangular flint (Plo rown gravelly CLA b angular flint. CHALK composed peckled gravelly s nded to subangu (CIRIA Grade Dm	AY. Gravel is fine to o of cream mottled r andy SILT. Gravel is lar weak to medium	oarse nid fine to
1.70 1.80	В	N=50(400)				1.80	1.3m becoming sai	ndy silty GRAVEL (CIF		
										3 -
D:	it Diss	ension (m)			Di+ C+-	ability:			Water Strikes:	
			Stable		r II 30	ability:			vvater strikes:	
Width		0.65	Stable							
Length	-	2.20								
Depth	:	1.80								

Sou	uthe	ern Testing	ST Co	nsult		Start -	End Date:	Project ID:	Machine Type:	TP4	
		5.75.		uk tel:01604 500	Mark Cont	10/0	9/2018	J13752	5T	Sheet 1	of 1
roject Na	ame:	Land off Shawstea	d Road		Rema	arke:	<b>Co-ord</b> E 5 <b>77</b> 553 -		Level (m AOD):	Logge JMW	
ocation:		Hale, Kent					ge test carried ou	119	with BRE 365.	JIVIVV	
lient:		KD Attwood & Part	tners								
Sa	amples ar	nd Insitu Testing	Level	Thickness		Depth		20 20			
Depth (m)	Туре	Results	(m AOD)	(m)	Legend	(m bgl)		Stratum Des			
				(0.25)			Dark brown gr subangular flir		el is fine to medium		
0.20	ES			,5.25/		0.25					
0.30	HP	UCS(kPa)=200				0.25			AY with medium cob		]
0.40	ES								o coarse flint. Cobbl	es are	
							subangular fli				
							CLAY WITH FL	INIS			
						]					
				(1.15)		-					
				(1.13)							
4.00											
1.00	B PPT	N = F0(200)									
1.00	PPI	N=50(300)									
1.30	PPT	N=12(450)									
1.50		14-12(450)									
					<del></del>	1.40	Structureless	CHALK composed	of cream veined m	id	1
						1	brown speckle	ed black gravelly S	SILT. Gravel is fine to		
				(0.40)	T   T		medium round	ded weak chalk (	CIRIA Grade Dm).		
1.70	В				<del>,                                    </del>	-	LEWES NODU	LAR CHALK			
1.70	"				1 1 1	4 00					
						1.80		Pit terminated	d at 1.8m.		1
											:
											J
Pi	it Dim	ension (m)			Pit Sta	ability:			Water Strikes:		
Width		0.65	Stable			,-					
Length		2.20	1								
Depth	1:	1.80	1								
	h:		Stable								

Sou	uthe	ern Testing	ST Co	nsult		Start -	End Date:	Project ID:	Machine Type:	TP5	
www.south	erntesting.	co.uk tel:01342 333100 ww	w.stconsult.co	.uk tel:01604 500	0020	10/0	09/2018	J13752	5T	Sheet 1 of 1	
Project Na	ame:	Land off Shawstea	d Road		Rema	arks:	<b>Co-ordi</b> E 577547 -		Level (m AOD):	Logger: JMW	
Location:		Hale, Kent				1000 TO 1000	age test carried ou	245	with BRE 365.	31111	
Client:		KD Attwood & Part	tners								
Sa	mples ar	nd Insitu Testing	Level	Thickness		Depth		129 229	0.101		_
Depth (m)	Туре	Results	(m AOD)	(m)	Legend	(m bgl)		Stratum Des	A. 10 PAGE 110 U.S.		
Samples and Ins   Depth (m)   Type	UCS(kPa)=400  N=32(450) UCS(kPa)=580  UCS(kPa)=330		(1.80)		2.10	subangular to Stiff orange brocobble conten	subrounded flint own very gravelly t. Gravel is mediu are subangular flii NTS	silty CLAY with me im to coarse subang nt.	dium gular		
										4	ļ —
Pi	it Dim	ension (m)		1	Pit Sta	ability:	ı		Water Strikes:		
Width	1:	0.65	Stable								
Length		2.10									
Depth	:	2.10	1								

Sou	uthe	ern Testing	ST Co	nsult■		Start -	End Date:	Project ID:	Machine Type:	TP6	
				uk tel:01604 5000		11/	09/2018	J13752	5T	Sheet 1	of 1
Project Na	ame:	Land off Shawstea	d Road		Rema	rke.	Co-ordi		Level (m AOD):	Logge	
Location:		Hale, Kent					E 5 <b>77</b> 339 -	115	with BRE 365.	JMW	
					-	•					
Client:		KD Attwood & Part	100 Eg 1	TI: 1		D 11					î
Depth (m)	Type	nd Insitu Testing Results	(m AOD)	Thickness (m)	Legend	Depth (m bgl)		Stratum Des	54.59 * 54.00 to 50.00		
				(0.25)				avelly CLAY. Grave angular flint (Plo	el is fine to coarse ughed Topsoil).		
0.20	D			(0.25)		0.25					
0.20	ES					0.25			ed ironstained very g		
							flint.	cobble content.	Graver and Copples o	are	
0.50	HP	UCS(kPa)=540				7	CLAY WITH FLII	NTS			
0.80	В					· ·					
0.80	HP	UCS(kPa)=540		(1.15)							
1.00	PPT	N=450(450)					1.0m with frequent	fine to modium cha	ılk graval		1
							J.om with frequent	. Illie to mediam cha	iik gravei.		
1.20	D										
1.30	HP	UCS(kPa)=410		•							
				, T		1.40	Structureless C	HALK composed	of cream mottled n	nid	1
								sandy SILT (CIRIA	A Grade Dm).		
1.60	В						LEWES NODUL	AR CHALK			
				(0.70)		-					
				<u> </u>	<u> </u>	-					
						-					2
						2.10		Pit terminated	1 at 2 1 m		
								Fit terminated	1 41 2.1111.		
											3
											`
											]
					D: -	1 00.					
		ension (m)	Ca-L1		Pit Sta	ability:			Water Strikes:		
Width		2.00	Stable								
Length			-								
Depth	:	2.10	1								

Sou	uthe	rn Testing	ST Co	nsult		Start -	End Date:	Project ID:	Machine Type:	TP7	
				uk tel:01604 500		11/0	09/2018	J13752	5T	Sheet 1	of 1
Project Na	ame:	Land off Shawstea	d Road		Rema	arka.	Co-ordi		Level (m AOD):	Logge	
Location:		Hale, Kent					E 577284 - ge test carried ou	115	with BRE 365.	JMW	
Client:		KD Attwood & Par	tnors		-						
ACRES ESTATE AND AND ADDRESS OF THE		nd Insitu Testing	Level	Thickness		Depth			No viter		
Depth (m)	Туре	Results	(m AOD)	(m)	Legend	(m bgl)		Stratum Des	50.00 <b>500</b> 000 50 50		
0.15 0.15	D ES			(0.35)		0.35	silty CLAY. Grav chalk.	el is fine crushed	velly slightly sandy s d chalk. Sand is crusl of of extremely we	hed	
				(0.45)		0.80	Grade Dc). LEWES NODUL	AR CHALK	wn silty GRAVEL (CIF		
1.00 1.00	B PPT	N=19(450)		1		0.80	Extremely wea brown CHALK. LEWES NODUL		ed cream stained m	id	1
1.30	НР	UCS(kPa)=270		(1.00)							
1.60	В			T T		1.80		Pit terminated	l at 1.8m.		-
											2
											3
											4
Pi	t Dim	ension (m)			Pit St	ability:			Water Strikes:		
Width	:	0.65	Stable								
Length	:	2.10	1								
Depth	.	1.80	1								

S	out	hern T	esting	g ST (	Consu	lt■		Star	t - End	Date		roject ID	: Н	ole Type	: WLS	1
www.s	outherntes	ting.co.uk tel:0:	1342 333100	www.stconsu	ılt.co.uk tel:016	04 500020		10	/09/20			J13 <b>7</b> 52		WLS	Sheet 1	
roject	Nam	e: Land	off Shaw	stead Roa	ad		Rem	arks:			<b>-ordinat</b> 55E - 165			Level:	<b>Logge</b> NCH	
ocatio	n:	Hale,	Kent				Boreh	ole dr	y.	37700	,52 100	11.11			11011	
lient:		KD At	twood &	Partners												
Well	Water Strikes	Sa Depth (m b		Insitu Testi		Level (m AOD)	Thicknown (m)	Le		epth n bgl)		St	ratum De	scription		
		0.15	ES	inco	uito		(0.40	)			Gravels a	re fine to rare fine	medium	angular	ravelly CLAY. to subangular fragments.	
		0.50 0.50	D HP	UCS(kPa	a)=280.0		(0.20	-X	<u> </u>	0.60	coarse a medium Light bro cream fi	ngular to s chalk. wn to cre ne to med	ubangul am silty ium extr	ar flint ar clayey GR emely we	AVEL. Gravel is eak chalk with	_/
		1.00 1.00	D SPT(S)	N=15 (4,6	5/5,4,3,3)				1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1.10	HEAD Structur GRAVEL on grave	with occas I surfaces.	K recove sional or Gravels	ered as cr angish bro are extre	eam silty putty own staining mely weak fine	1
		1.50	D				(1.45	) -			LEWES N	e subround ODULAR ( - Small pool gravels enc	CHALK ket of light		y gravelly CLAY	
		2.00 2.00	D SPT(S)					2	At 2.35m	- Flint enco	untered, r	ecovered as	s very angular to			
		2.50	D						2	2.55	Structure gravelly staining fine to m chalk.	ine to medic ed cream ( chalk putte and occas ledium ex	CHALK re with ra onal bla tremely	d flint. ecovered re orangi ck speckli	as white silty	
		3.00	SPT(S)	N=21 (3,5	5/5,5,6,5)						At 2.80m	ODULAR ( - Signs of st with 12-16m	ructure in		esting 5-8mm	
		3.50	D				(2.45	T.			thick. At 3.60m angular j	- Flint enco	ntered, re	covered as shards of fli	tered, 24mm very angular to int. peckling on chalk	
		4.00 4.00	D SPT(S)	N=22 (5,4	4/5,6,6,5)					17.	gravel su	rfaces.				2
		4.50	D					 								
		5.00	l <sub>D</sub>					1		5.00	At 4.90m	- Flint enco	untered, r	ecovered as	s very angular to	5
	ole De			Details					e (m b	_				ing/Chis	elling (m bgl)	
epth (n	n bgl)	Dia. (mm)	Depth (m bgl)	Dia. (mm)	Date	Dept	th Strike De	pth Casing	Depth Sealed	Rose to	Time (mi	ns) From	То	Time	Remarks	

S	outl	nern T	estin	g ST (	Consu	lt■		Sta	art - Er	nd Da	ite	Pro	oject ID	: Н	ole Typ	e: V	VLS1
www.so	outherntes	ting.co.uk tel:0:	1342 333100	www.stconsu	ult.co.uk tel:016	04 500020			10/09/	2018			13 <b>7</b> 52		WLS	013/01/05/0	et 2 of 2
Project	Name	e: Land	off Shaw	stead Roa	ad		Ren	nark	s:	5		ordinates 5E - 1651			Level:		ogger: NCH
Locatio	n:	Hale,	Kent				Borel	nole	dry.								
Client:		KD At	twood &	Partners													
Well	Water					Level (m AOD)	Thickn		Legend	Dept			Str	ratum De	scription		
Well	Water Strikes						Thickn (m)		Legend	Dept (m bg	gl)	gravelly ch staining an ine to me chalk. EWES NO	cream ( alk putty d occasi dium ext DULAR ( Flint enco	CHALK re with ra onal bla cremely v	ecovered re orang ck speck weak to ecovered d flint.	l as white silt gish brown ding. Gravels very weak as very angular	are -
Ho	ole Det	ails	Casing Details  mm) Depth (m bgl) Dia. (mm) Da				Wat	erstr	rike (m	bgl)				Standi	ing/Chi	selling (m b	10 -
Depth (m	bgl) [	Dia. (mm)						epth Cas	ing Depth S	ealed R	ose to:	Time (mins)	From	То	Time	Rem	

	Sout	hern 1	esting	y SI (	Consul	t■	1	Start -	End D	ate	Pro	ject ID:	Н	ole Typ	e: WLS	2
www.s	southernte	sting.co.uk tel:0	1342 333100	www.stconsu	lt.co.uk tel:0160	4 500020	)	10/0	9/201		1000	13 <b>7</b> 52		WLS	Sheet 1	200 1 ( 200)
roject	t Nam	e: Land	off Shaw	stead Roa	ıd		Rema	rks:			ordinates: BE - 16502			Level:	Logge NCH	
ocatio	on:	Hale,	Kent				Boreho	le dry.								
lient:		KD At	twood &	Partners												
Well	Water Strikes	-		Insitu Testi		Level (m AOD)	Thicknes (m)	Legen	d Dep			Str	atum De	scription		
	Strikes	0.20 0.50 0.50	ES ES HP	Res UCS(kPa		μ)	(0.45)		0.4	6 ff (*)	Gravels are lint with ra Topsoil). Firm to stiff Gravels are	fine to rare fine b	medium orick and own fine medium	angular d clinker sandy g subango	gravelly CLAY. to subangular fragments. gravelly CLAY. ular to angular	-
		1.00 1.00 1.00	D HP SPT(S)	UCS(kPa N=15 (3,2			(0.75)		1.2	0 S		- Becomin	og whiter ottled cr medium	with depti eam gra subrour	h. velly silty CLAY. nded extremely	1
	2.00 D D SPT(S) N=11 (3,4/3,3,3,2) 2.50 D						(1.00)			s H	ubangular HEAD Structurele GRAVEL wit on gravel su o coarse su EWES NOI	flint. ss CHALI th occasi urfaces. ubround DULAR C	K recove ional ora Gravels ed chall HALK	ered as c angish bi are extre	cream silty putty rown staining emely weak fine ite silty chalk	
		3.00 3.00	5/9,8,6,4)					C L	GRAVEL. Gr halk. EWES NOI	Tavels are  DULAR C	e fine to  HALK  tered, rec  n crushed	mediun  overed as  I flint.	n, very weak very angular to	3		
		4.00 4.00	D SPT(S)	N=18 (4,5	5/4,5,4,5)		(2.60)									2
Н	ole De	5.00	Casing	Details			Water	strike (	5.0 m bgl				Standi	ng/Chis	selling (m bgl)	
epth (n	n bgl)	Dia. (mm)		Dia. (mm)	Date	Dept	th Strike Dept			Rose to:	Time (mins)	From	То	Time	Remarks	

S	outh	nern T	esting	ST (	Consu	lt■		Start	- End	d Date		Pro	ject ID:	: Н	ole Typ	e: W	LS2
		ting.co.uk tel:01			ult.co.uk tel:016			10	/09/2	2018		J:	13 <b>7</b> 52		WLS	Shee	t 2 of 2
Project	Name	e: Land	off Shaw	stead Roa	ad		Rema	arks:				rdinates E - 16502			Level:		gger: ICH
Locatio	n:	Hale,	Kent				Boreho	ole dr	y.	377	0431	L = 10302	.511	8			CII
Client:		KD Att	twood &	Partners			1										
)A/-II	Water	Sa	mples and	Insitu Testi	ng	oD)	Thicknes	ss		Depth			Chi	D			1
Well	Strikes	Depth (m b	gl) Type SPT(S)		ults 5/6,6,4,5)	Level (m AOD)	(m)	Leg	gend	(m bgl)				of Boreho	scription le at 5.00r	n	
		3.00	31 1(3)	14-21 (2).	,,0,0,4,5												
																	=
																	6 -
														-			
															7 -		
																	-
																	=
																	=
																	8 -
																	-
																	9 -
																	-
																	=
												_		_	_		
н	ole Det	ails	Casing		Water	strik	e (m	høl)				Standi	ng/Chic	selling (m bg			
Depth (n			Depth (m bgl)	th Strike Dept				e to:	Time (mins)	From	To	Time	Rema				

S	Soutl	nern T	esting	g ST (	Consu	lt■		Start - I	nd Date		Pro	ject ID:	Н	ole Typ	e: WLS	53
www.	southerntes	ting.co.uk tel:01	342 333100	www.stconsu	lt.co.uk tel:016	04 500020	)	10/09	9/2018		J1	L3 <b>7</b> 52		WLS	Sheet 1	of 2
rojec	t Nam	e: Land o	off Shaw	stead Roa	ıd		Rema	rks:			ordinates: 7E - 16493			Level:	Logge NCI	
ocatio	on:	Hale, I	Kent				Boreho	le dry.	37.	, 00,	2 10155		S		110	
lient:		KD Att	wood &	Partners			_									
Well	Water	Sar	nples and	Insitu Testi	ng	Level (m AOD)	Thicknes	s Legen	Depth			Str	ratum De	scription		1
	Strikes	Depth (m bg	ES ES	Res	ults	J (E)	(m) (0.60)		(m bgl)	f		e over s fine to re fine l	oft dark medium orick, cli	brown g	gravelly CLAY. r to subangular d glass	
		0.50 0.50 0.70	D HP ES	UCS(kPa	)=210.0 i)=430.0		(0.40)	* · · · · · · · · · · · · · · · · · · ·	0.60	S		iravels a	re fine t	to mediu	eam gravelly um subrounded nt.	
		1.00 1.00 1.20	D SPT(S) D				(1.10)		1.00	o t	RAVEL wit	th occas urfaces. ubround	ional or Gravels led chall	angish b are extr	cream silty putty rown staining emely weak fine	
	2.00 D SPT(S) N=17 (2,3/4,4,5,4) 2.50 D						(1.10)		2.10	s p t	peckled Cl	HALK red els are fi ik chalk.	covered ine to m	as silty g	rown and black gravelly chalk extremely weak	
		3.00 3.00 3.30	D SPT(S)	N=17 (2,5	3/3,5,5,4)											:
		4.00 4.00	D SPT(S)	N=15 (1,5		(2.90)				At 3.60m - S bedding with				gesting 5mm	2	
		5.00	D						5.00	L	flint gravel.				ns angular coarse	
	ole Det			Details			Water						Standi	ing/Chi	selling (m bgl)	
epth (r	n bgl) [	Dia. (mm)	Depth (m bgl)	Dia. (mm)	Date	Dept	th Strike Depth	o Casing Depti	sealed Ros	e to:	Time (mins)	From	То	Time	Remarks	

Sc	outh	ern To	esting	ST (	Consu	lt■		St	art - E	nd [	Date		Pro	ject ID:	: Н	ole Typ	e:	WLS3	3
www.sou	therntesting	g.co.uk tel:013	342 333100	www.stconsu	ult.co.uk tel:016	04 500020			10/09	/201				13 <b>7</b> 52		WLS		heet 2 o	f2
Project I	Name:	Land o	off Shaw	stead Roa	ad		Rer	nark	cs:				dinates: - 16493			Level:		Logger NCH	<u>:</u>
Location	1:	Hale, k	Kent				Bore	hole	dry.						·				
Client:		KD Att	wood &	Partners															
	Water			Insitu Testi		Level (m AOD)	Thickr		Legend		epth bgl)			Str	ratum De	scription			
	strikes c	5.00 5.00	SPT(S)		ults 5/7,6,6,7)	a) (m)	(m			(m	bgl)	pu to LE	eckled Cl itty. Grave very wea WES NOI	cream s HALK red els are fi ak chalk. DULAR C	tained o covered ine to m CHALK	range bi as silty g edium e	rown and gravelly ch extremely intered, 1.5m	aalk weak	6
	e Detai			Details	Date	T			rike (n	Ť							selling (n		
Depth (m	bgl) Dia	a. (mm)	Depth (m bgl)	Dia. (mm)	Dep	th Strike C	Oepth Ca	sing Depth	Sealed	Rose to	to: 1	Time (mins)	From	То	Time	R	emarks		

	Soutl	nern T	esting	g ST C	consul	t■		Start - E	nd Date		Pro	ject ID:	Н	ole Type	e: WL	54
www.	southerntes	ting.co.uk tel:013	42 333100	www.stconsul	t.co.uk tel:0160	4 500020	10/09/2018			Na Ch	13 <b>7</b> 52		WLS	Sheet :	of 2	
rojec	t Nam	e: Land o	ff Shaw:	stead Roa	d		Rema	rks:		Co-ordinates:         Level:         Log           7497E - 164833N         N						
ocatio	on:	Hale, I	(ent				Borehole dry.					,511	S		110	
Client:		KD Att	wood &	Partners												
Well	Water	17.		Insitu Testir	g	Level (m AOD)	Thicknes	s Legend	Depth			Str	atum De	scription		Ĩ
	Strikes	Depth (m bg	Type D	Resu	ilts	3 <u>E</u>	(m)		(m bgl)	G fli	ravel is fin int. (Topso	le over s ne to me oil).	ver soft dark brown gravelly CLAY. o medium angular to subangular			
		1.00	D				(0.50)	X	1.00	gr su H	EAD	AY. Grave d chalk a	els are fi and angu	ne to me ular to su	edium Ibangular flint.	1
		1.00	SPT(S)	N=22 (4,3	/7,7,4,4)					G oi to	RAVEL wit n gravel su o coarse su	ess CHALK recovered as cream silty putty th occasional orangish brown staining urfaces. Gravels are extremely weak fine ubrounded chalk. DULAR CHALK				
		2.00 2.00	D SPT(S)	N=12 (4,3	/4,2,3,3)		(2.00)									:
		2.50	D													
		3.00 3.00	D SPT(S)	N=14 (2,3	/4,4,3,3)				3.00	cł w		. Gravels ry weak	are fine chalk.		as silty gravelly ium extremely	:
		3.50	D													
		4.00 4.00	D SPT(S)	N=18 (3,3	/4,5,5,4)		(2.00)									4
		4.50	D													
		5.00	l <sub>D</sub>						5.00							5
	ole Det			Details				strike (r							elling (m bgl)	
Pepth (r	m bgl) [	Dia. (mm)	Depth (m bgl)	Dia. (mm)	Date	Dept	h Strike Depth	Casing Depth	Sealed Rose	to:	Time (mins)	From	То	Time	Remark	5

S	outh	nern T	esting	ST (	Consu	lt■	Start - End Date			Pro	ject ID:	: Н	ole Typ	e: W	LS4		
	www.southerntesting.co.uk tel:01342 333100 www.stconsult.co.uk tel:01604 500020							J:	13 <b>7</b> 52	8	WLS	Shee	t 2 of 2				
Project	Name	Land	off Shaws	stead Roa	ad		Rema	arks:				rdinates			Level:		gger: ICH
Locatio	n:	Hale,	Kent				Boreho	577497E - 164833N sorehole dry.									
Client:		KD Att	twood &	Partners													
Mall	Water	Sa	mples and	Insitu Testi	ng	Level (m AOD)	Thickne	ss Le	gend	Depth			Str	ratum De	scription		
100000000	Strikes	Depth (m b)	gl) Type SPT(S)		ults 7/4,4,4,4)		(m)			(m bgl)					le at 5.00n	n	_
																	-
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Ho	le Det	ails	Casing	Details			Wate	rstrik	ce (m	bgl)				Standi	ng/Chis	selling (m bg	
Depth (m	bgl) D	ia. (mm)		Dia. (mm)	Date	Dep	th Strike Dep				e to:	Time (mins)	From	То	Time	Rema	

Southern Testing ST Consult						lt■	Start - End Date				Pro	Project ID:		ole Typ	e: W	WLS5	
www.sc	outherntesti	ng.co.uk tel:01	342 333100	www.stconsu	ilt.co.uk tel:016	504 500020		10/0	9/2018		J:	13 <b>7</b> 52		WLS	Shee	t 1 of 1	
Project	Name	: Land	off Shaw	stead Roa	ad		Rema	rks:	57		dinates			Level:		gger: ICH	
Locatio	n:	Hale,	Kent				Boreho	le dry.	3,	74002	10472	2314	ļs.				
Client:		KD Att	wood &	Partners													
Well	Water Strikes			Insitu Testi	A CALL	Level (m AOD)	Thicknes	Legen	d Depth			Str	ratum De	scription			
Well	Strikes	0.15  0.50 0.50 0.50 0.60  1.00 1.00 1.40 1.50 1.60		UCS(kPa UCS(kPa N=12 (3,3 UCS(kPa	ults a)=480.0 a)=600.0 a/4,3,3,2) a)=600.0	(m AOI	(0.60) (0.90) (0.15)	S Legen	0.60  0.60  1.50  1.65	Stir with are sul HE  Very grassar HE Str GR on to LEN Str cha	ay with rigular to a gular to a nker, tile of the very the rare of a fine to brounder AD  ry stiff mavelly CLA and Grave AD ructurele AVEL with gravel se coarse se wes NOI ructured alk putty and to ve wes NOI we were NoI wes NoI we were NoI wes NoI we were NoI we were NoI we were NoI we were NoI we we were NoI we we were not	le over stare clinical subanguand pot and pot	d brown soubangular flint tery fraged brown soubangular flint. (Sular flint) fraged fr	s brown rels are f with rar gments.  I sandy gandy palar flint whosoil).  The sandy gandy palar flint whosoil.  The sandy gandy palar flint whosoil wh	gravelly sandy fine to mediur e fine brick, (Topsoil).  gravelly CLAY tches. Gravels with occasiona n sandy silty brangish brow lium chalk.  cream silty put brown staining emely weak fi d as silty grave dium extremel	tty 2 -	
		3.00 3.00	D SPT(S)	N=30 (3,4	1/7,6,8,9)											3 -	
		3.70 4.00	SPT(C)	50 (2 110mm 86n	/50 for		(2.70)									4 -	
Ho Depth (m	ole Deta			Details Dia. (mm)	Date	Dep	Water	strike (		se to: 1	Fime (mins)	End	of Boreho Standi		m selling (m bg Rema		

### **APPENDIX B**

Field Sampling and in-situ Test Methods & Results

#### Field Sampling and in-situ Test Methods

#### Disturbed Samples

Disturbed samples were taken from the trial holes at intervals and stored in sealed glass jars and polythene bags, as appropriate.

#### **Undisturbed U100 Samples**

Undisturbed U100 samples were taken in the clay soils at appropriate intervals. These samples are taken in a 100 mm diameter, 450 mm long, thin-walled steel tube, and are sealed with paraffin wax and tightly fitting end caps for transporting to the laboratory.

#### Standard Penetration Test

The Standard Penetration (SPT) Test is specified in BS EN ISO 22476-3:2005+A1:2011. In this test, a 51mm diameter open-ended tube is driven into the ground by a 63.5 kg hammer falling freely through 760 mm. The tube is seated by driving to a penetration of 150mm, or by 25 standard blows, whichever occurs first. It is then driven for a maximum of a further 300mm and the number of blows is termed the penetration resistance (N). If 300mm penetration cannot be achieved in 50 blows (100 blows in soft rock), the test drive is terminated.

When testing in gravels, a conical end piece is attached to the tube. The test is then called an SPT(C).

This test provides an indirect method of assessing the properties of cohesionless soils, and the following table (after Terzaghi and Peck) gives the approximate condition:-

Number Blows (N)	Density				
0 - 4	Very Loose				
4 - 10	Loose				
10 - 30	Medium Dense				
30 - 50	Dense				
Over 50	Very Dense				

#### Clay

An approximate value for the shear strength of clay may be obtained using Stroud (1974), which paper indicates that the cohesive strength is a function of plasticity and SPT 'N' value. The relation is:

 $C_{ii} = f_i \times N kPa$ 

C<sub>u</sub> = undrained shear strength

f<sub>i</sub> = factor related to plasticity index and ranging from 4 to more than 6

The SPT test is not generally accepted as giving a reliable indication of the strength of cohesive soils but it does give a guide; often the following table:-

Number Blows (N)	Soil Strength
Less than 2	Very Soft (Very Low Strength)
2 - 5	Soft (Low Strength)
5 - 10	Firm (Medium Strength)
<mark>10</mark> – 15	Stiff (High Strength)
15 - 30	Very Stiff (Very High Strength)

#### Perth Penetrometer Test

Perth Penetrometer tests were carried out. The Perth Penetrometer is a device used for measuring the relative density of sands. It consists of a 16 mm diameter hardened steel probe, which is driven into the soil by successive blows of a 9 kg weight, which freely falls over a distance of 600 mm. The number of blows required for each 50 mm of penetration is recorded, and the test is continued for a depth of 450 mm, according to soil type. Useful information can be obtained by carrying the test past the standard depth, and 2,000 mm and 3,000 mm extensions are used to probe the depth of loose fill or other soil, or to make an estimate of the strength of soils or rock in an auger hole or in the base of an unsupported test pit.

The energy input per square metre is roughly the same as the energy input from the Standard Penetration Test (SPT), and the blow counts recorded in sand are roughly the same as SPT blow counts (but this relationship does not hold for coarse soils). The SPT test is a similar type of test except that much heavier driving weights (63.5 kg) are used. The relative density relationship given for the SPT test is:

Number of Blows (N)	Density			
0 - 4	Very Loose			
4 - 10	Loose			
10 - 30	Medium Dense			
30 - 50	Dense			
Over 50	Very Dense			





## Summary Sheet Results of BRE Digest 365 Soakage Tests

Site: Land off Shawstead Road, Hale, ME5 Job No: J13752

Client: KD Attwood & Partners O S Reference:

Client :	KD	Attwood	& Partners			O S Reference :				
Tested	Ву:	OS/GC		Engineer:	JMW	Test Date :	10/Sep/2018			
Hole No	Test No	Hole Depth	Soakage Rate for Each Test	Soakag for Eac		Water Level at Finish of Test	Remarks			
TP1	No 1	1.90	0.157	0.152	2.54E-6	Nearly empty pit.				
TP1	No 2	1.90	0.152			Nearly empty pit.				
TP1	No 3	1.90	0.190			Pit was not emptied; Non compliant value was calculated.				
TP2	No 1	1.80	30.90	22.47	3.75E-4	Nearly empty pit.				
TP2	No 2	1.80	39.96			Nearly empty pit.				
TP2	No 3	1.80	22.47			Nearly empty pit.				
TP3	No 1	1.80	6.01	4.75	7.92E-5	Nearly empty pit.				
TP3	No 2	1.80	5.41			Nearly empty pit.				
TP3	No 3	1.80	4.75			Nearly empty pit.				
TP4	No 1	1.80	6.35	4.56	7.60E-5	Empty pit.				
TP4	No 2	1.80	5.61			Nearly empty pit.				





## Summary Sheet Results of BRE Digest 365 Soakage Tests

Site: Land off Shawstead Road, Hale, ME5 Job No: J13752

Client: KD Attwood & Partners O S Reference:

Tested By: OS/GC | Engineer: JMW | Test Date: 10/Sep/2018

Tested	By:	OS/GC		Engineer:	JMW	Test Date :	10/Sep/2018
Hole No	Test No	Hole Depth	Soakage Rate for Each Test	Soakag for Eacl litre/m²/min		Water Level at Finish of Test	Remarks
TP4	No 3	1.80	4.56			Nearly empty pit.	
TP5	No 1	2.10	0.165	0.165	2.75E-6	Pit was not emptied; Non compliant value was calculated.	
TP6	No 1	2.10	0.065	0.065	1.08E-6	Pit was not emptied; Non compliant value was calculated.	
TP6	No 2	2.10	0.157			Pit was not emptied; Non compliant value was calculated.	
TP7	No 1	1.80	4.16	2.84	4.73E-5	Nearly empty pit.	
TP7	No 2	1.80	3.56			Nearly empty pit.	
TP7	No 3	1.80	2.84			Nearly empty pit.	
Mean Value of All Calculated Soakage Rates :				5.00 litre/m²/min	8.33E-5 m/sec		



Site:

Land off Shawstead Road, Hale, ME5



#### **BRE Digest 365 Soakage Test Test Hole No:** TP1 Test No 1 Test No: (Initial) Time from Filling to Maximum Water Depth, minute 200 400 800 1200 1400 0.0 0.2 Test Results 0.4 Max Water Depth 0.6 Depth below Ground Surface, m 8.0 75% Max Water 1.0 50% Max Water 1.2 1.4 1.6 1.8 **Bottom of Hole** 2.0 Depth to Water at Start of Test, m Pit Length, m 1.800 0.490 Pit Width, m 0.650 Max Water Dropdown during Test, m 1.120 Depth to Pit Base, m 1.900 Total Soakage Test Time, min 1324.0 Depth to Top of Permeable Soils, m Mean Internal Discharge Area, m<sup>2</sup> 4.625 Discharge Rate, litre/min Depth to Groundwater Surface, m 0.724 Soakage Rate, litre/m<sup>2</sup>/min Depth to Top of Granular Fill, m 0.157 BRE Soil Infiltration Rate, m/sec 2.61E-06 Voids Assumed for Granular Fill, % 100% Comments: Pit was nearly emptied at finish of test. 10/Sep/2018 **KD Attwood & Partners** J13752 Client: Job No: Test Date:

OS/GC

Tested By:

**JMW** 

Fig. S1

Engineer:





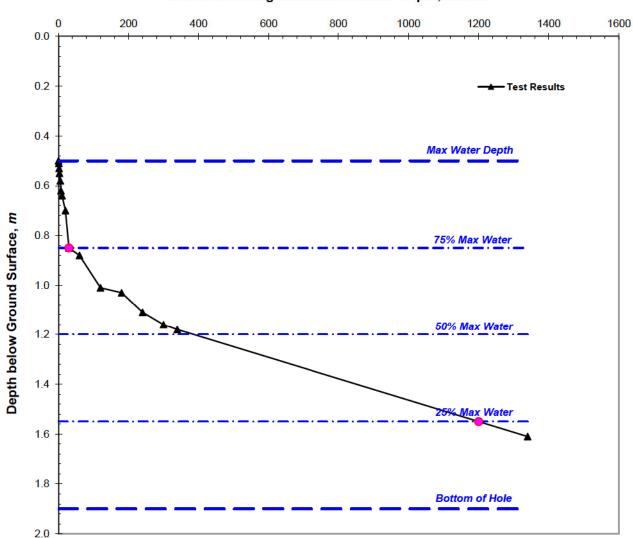
# BRE Digest 365 Soakage Test Test Hole No: TP1

Test No:

Time from Filling to Maximum Water Depth, minute

Test No 2

(Repeated)



Pit Length, m	1.800	Depth to Water at Start of Test, m	0.500
Pit Width, m	0.650	Max Water Dropdown during Test, m	1.110
Depth to Pit Base, m	1.900	Total Soakage Test Time, min	1340.0
Depth to Top of Permeable Soils, m		Mean Internal Discharge Area, m <sup>2</sup>	4.600
Depth to Groundwater Surface, m		Discharge Rate, litre/min	0.700
Depth to Top of Granular Fill, m		Soakage Rate, litre/m <sup>2</sup> /min	0.152
Voids Assumed for Granular Fill, %	100%	BRE Soil Infiltration Rate, m/sec	2.54E-06

#### Comments:

Pit was nearly emptied at finish of test.

Client:	KD Attwood & Partners	Job No:	J13752	<b>Test Date:</b> 11/Sep/2018			
Site:	Land off Shawstead Road, Hale, ME5	Tested By:	OS/GC	Engineer:	JMW	Fig. S2	