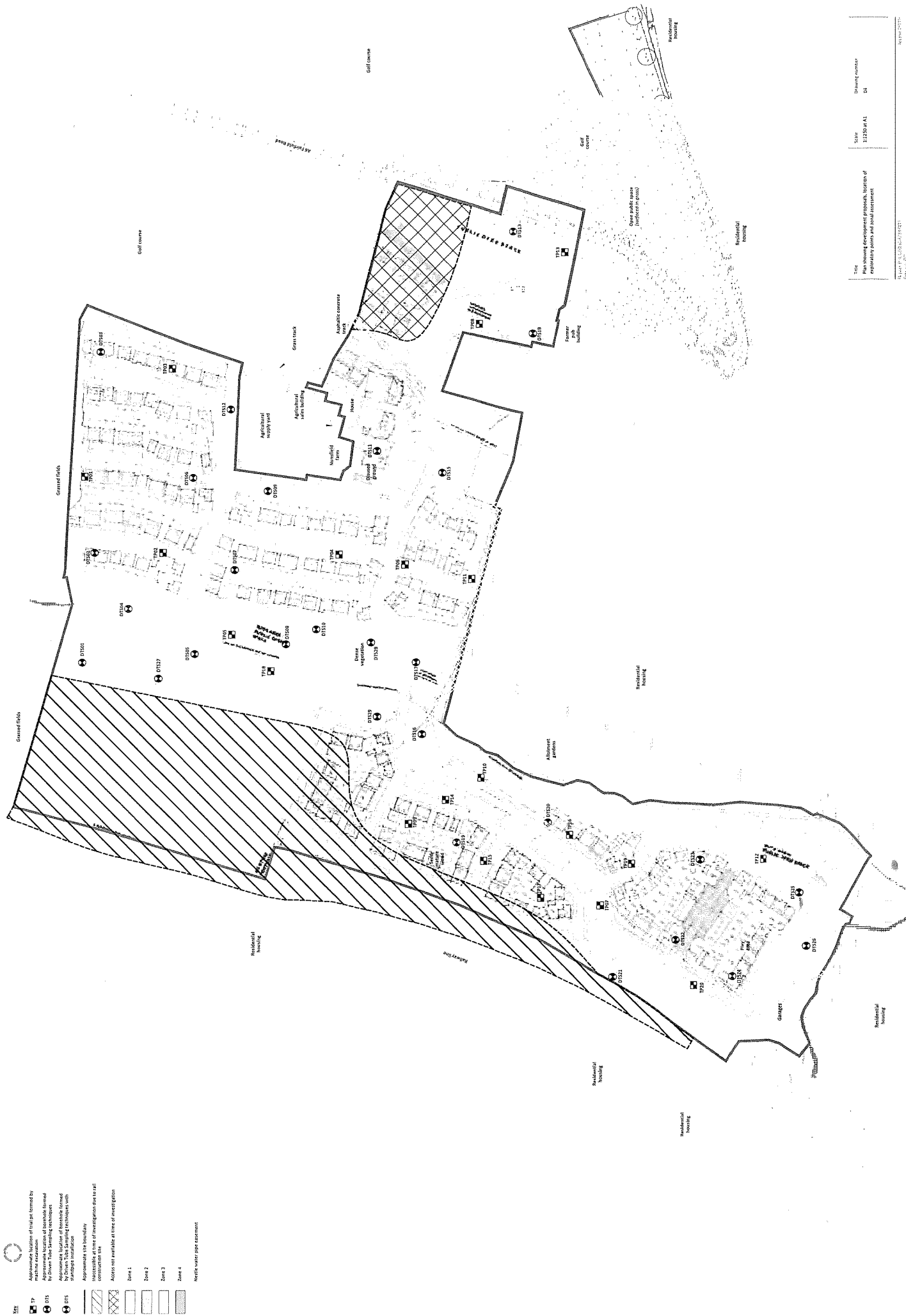
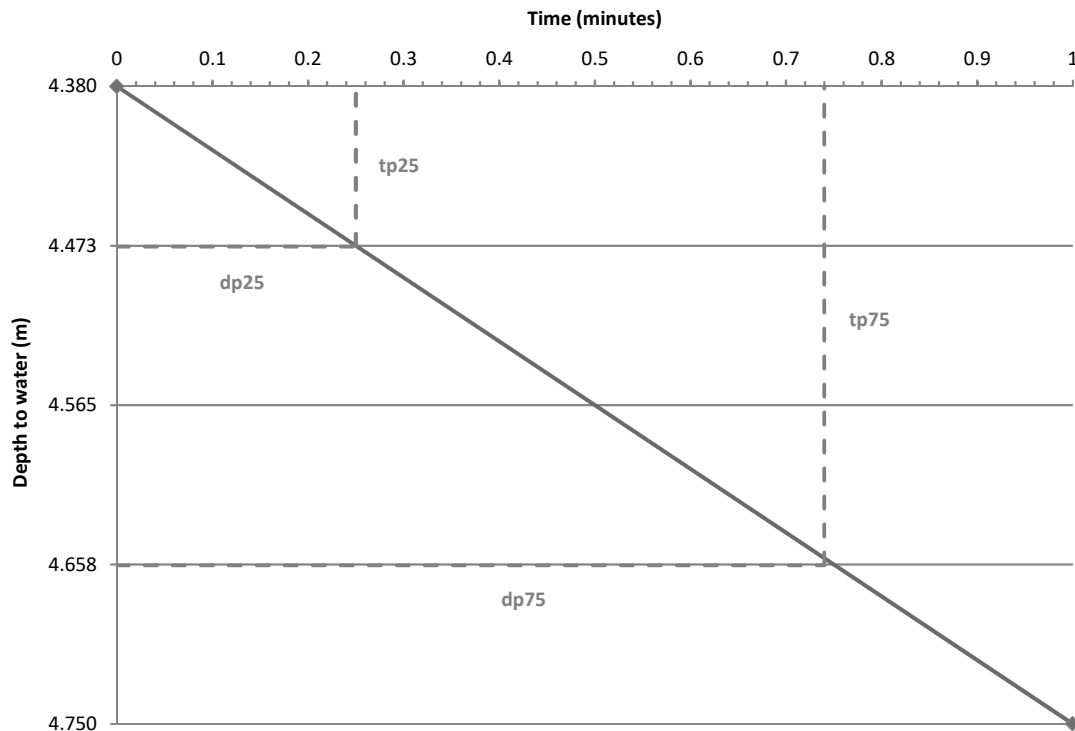




Plot showing time against depth to water:



Test observations:

TIME (mins)	DEPTH TO WATER (m)	TIME (mins)	DEPTH TO WATER (m)
0	4.38		
1	4.75		

Calculations:

Soil infiltration rate (SIR), $f = \frac{V_{p75-25}}{a_{p50} \times t_{p75-25}}$

V_{p75-25} = effective storage volume of water in the borehole between 75% (d_{p75}) and 25% (d_{p25}) effective depth
= **0.00058m³**

a_{p50} = the internal surface area of the borehole up to 50% effective depth and including the base area
= **0.03973m²**

$t_{p75} - t_{p25}$ = the time for the water level to fall from 75% to 25% effective depth
= **0.49 (minutes)**
= **29.4 (seconds)**

$f = 4.97E-04 \text{ m/s}$

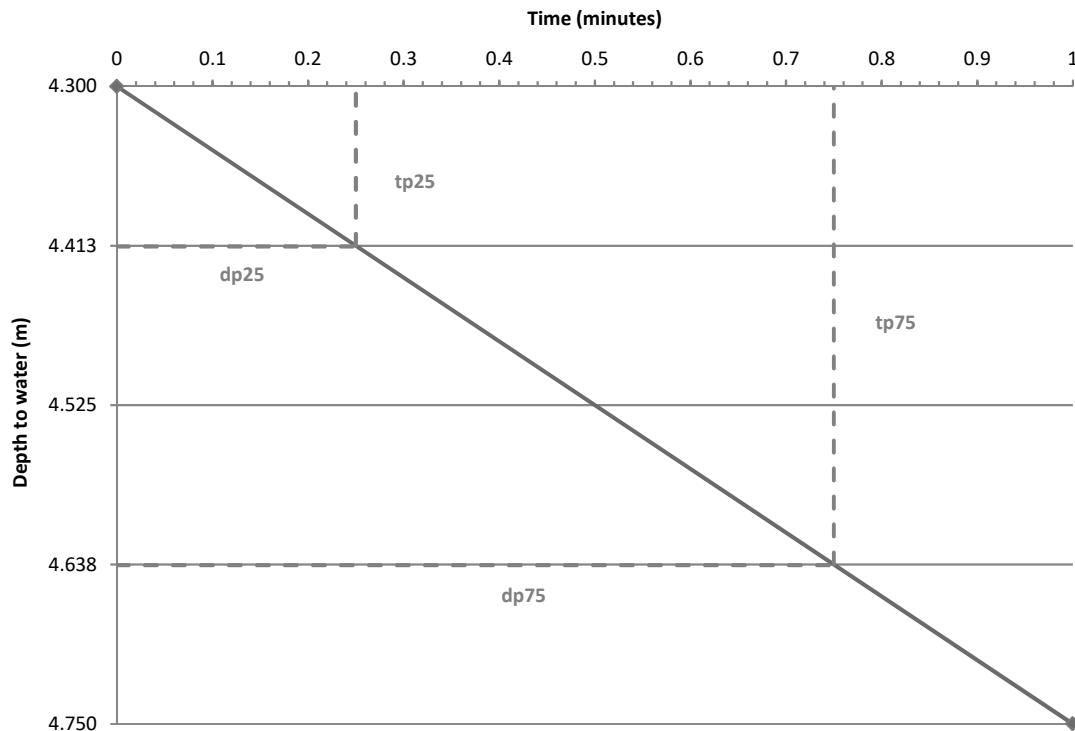
Groundwater observations
No groundwater encountered.

Geology unit under test
Possible Reworked Weathered Bee Low Limestone Formation
Depth of borehole at start of test (m)
4.75

Title
Soil infiltration test (following principles of BRE Digest 365 2016)

Diameter	Co-ordinates	Ground level
0.063m	-	N/A
Borehole no.	Cycle number	Date of excavation
DTS107	1	13/03/2019

Plot showing time against depth to water:



Test observations:

TIME (mins)	DEPTH TO WATER (m)	TIME (mins)	DEPTH TO WATER (m)
0	4.3		
1	4.75		

Calculations:

Soil infiltration rate (SIR), $f = \frac{V_{p75-25}}{a_{p50} \times t_{p75-25}}$

V_{p75-25} = effective storage volume of water in the borehole between 75% (d_{p75}) and 25% (d_{p25}) effective depth
= **0.0007m³**

a_{p50} = the internal surface area of the borehole up to 50% effective depth and including the base area
= **0.04765m²**

$t_{p75} - t_{p25}$ = the time for the water level to fall from 75% to 25% effective depth
= **0.5 (minutes)**
= **30 (seconds)**

$f = 4.90\text{E-}04 \text{ m/s}$

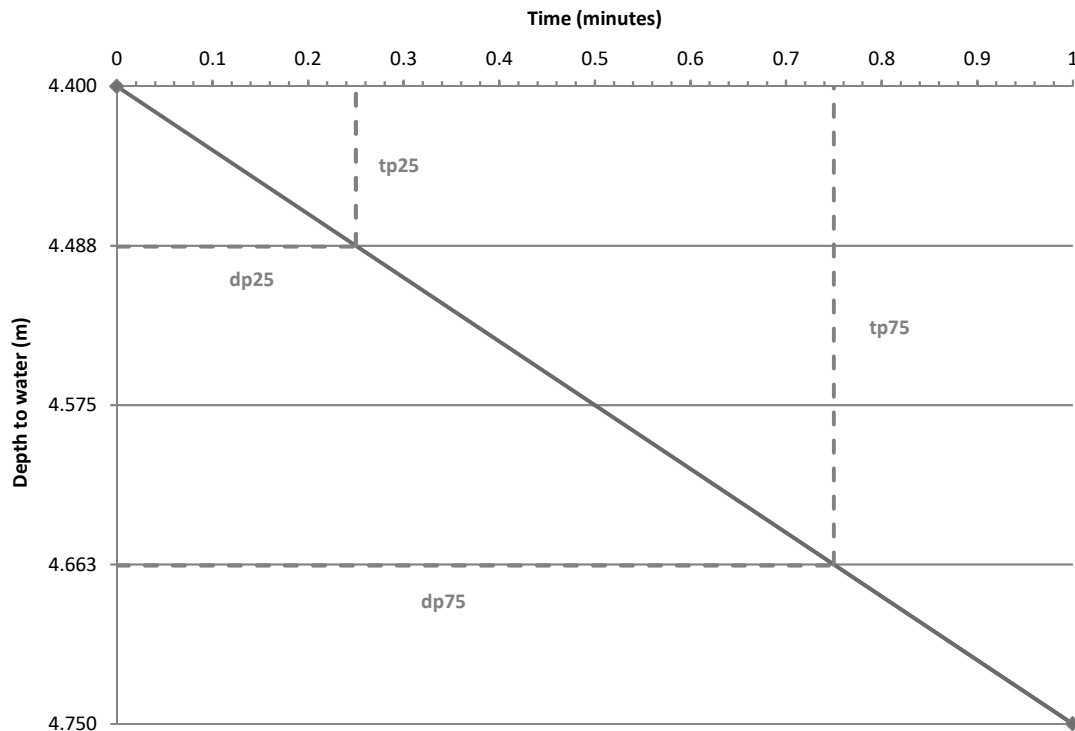
Groundwater observations
No groundwater encountered.

Geology unit under test
Possible Reworked Weathered Bee Low Limestone Formation
Depth of borehole at start of test (m)
4.75

Title
Soil infiltration test (following principles of BRE Digest 365 2016)

Diameter	Co-ordinates	Ground level
0.063m	-	N/A
Borehole no.	Cycle number	Date of excavation
DTS107	2	13/03/2019

Plot showing time against depth to water:



Test observations:

TIME (mins)	DEPTH TO WATER (m)	TIME (mins)	DEPTH TO WATER (m)
0	4.4		
1	4.75		

Calculations:

Soil infiltration rate (SIR), $f = \frac{V_{p75-25}}{a_{p50} \times t_{p75-25}}$

V_{p75-25} = effective storage volume of water in the borehole between 75% (d_{p75}) and 25% (d_{p25}) effective depth
= **0.00055m³**

a_{p50} = the internal surface area of the borehole up to 50% effective depth and including the base area
= **0.03775m²**

$t_{p75} - t_{p25}$ = the time for the water level to fall from 75% to 25% effective depth
= **0.5 (minutes)**
= **30 (seconds)**

$f = 4.86E-04 \text{ m/s}$

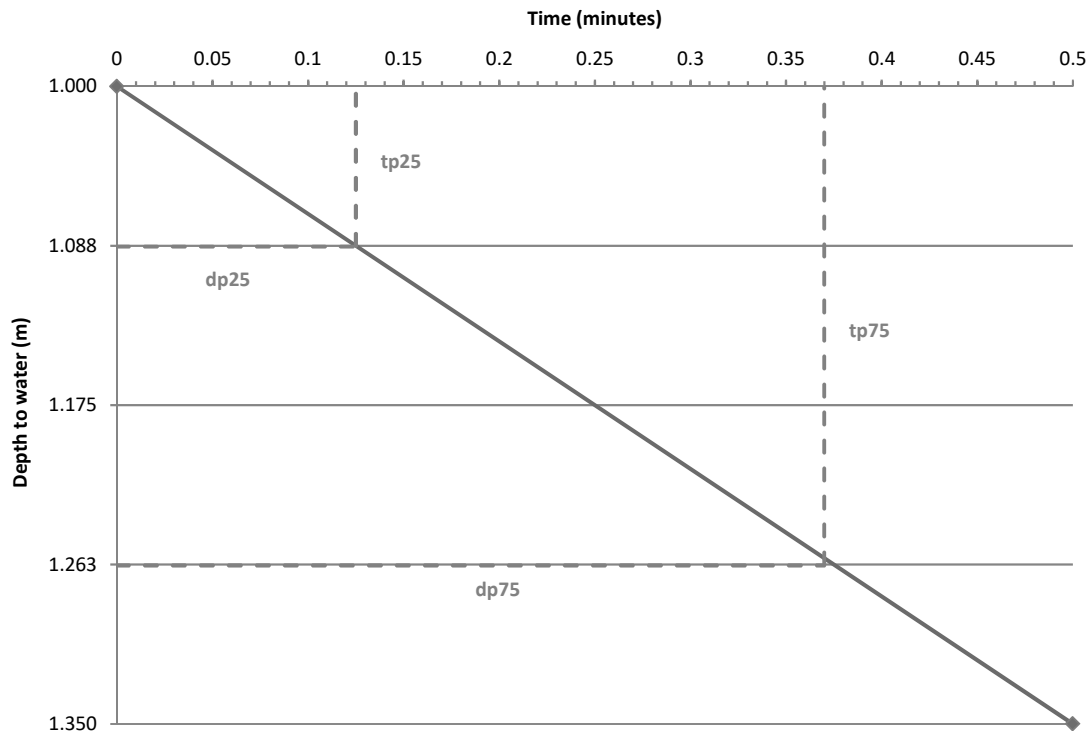
Groundwater observations
No groundwater encountered.

Geology unit under test
Possible Reworked Weathered Bee Low Limestone Formation
Depth of borehole at start of test (m)
4.75

Title
Soil infiltration test (following principles of BRE Digest 365 2016)

Diameter	Co-ordinates	Ground level
0.063m	-	N/A
Borehole no.	Cycle number	Date of excavation
DTS107	3	13/03/2019

Plot showing time against depth to water:



Test observations:

TIME (mins)	DEPTH TO WATER (m)	TIME (mins)	DEPTH TO WATER (m)
0	1		
0.5	1.35		

Calculations:

Soil infiltration rate (SIR), $f = \frac{V_{p75-25}}{a_{p50} \times t_{p75-25}}$

V_{p75-25} = effective storage volume of water in the borehole between 75% (d_{p75}) and 25% (d_{p25}) effective depth
= **0.00055m³**

a_{p50} = the internal surface area of the borehole up to 50% effective depth and including the base area
= **0.03775m²**

$t_{p75} - t_{p25}$ = the time for the water level to fall from 75% to 25% effective depth
= **0.245 (minutes)**
= **14.7 (seconds)**

$f = 9.91E-04 \text{ m/s}$

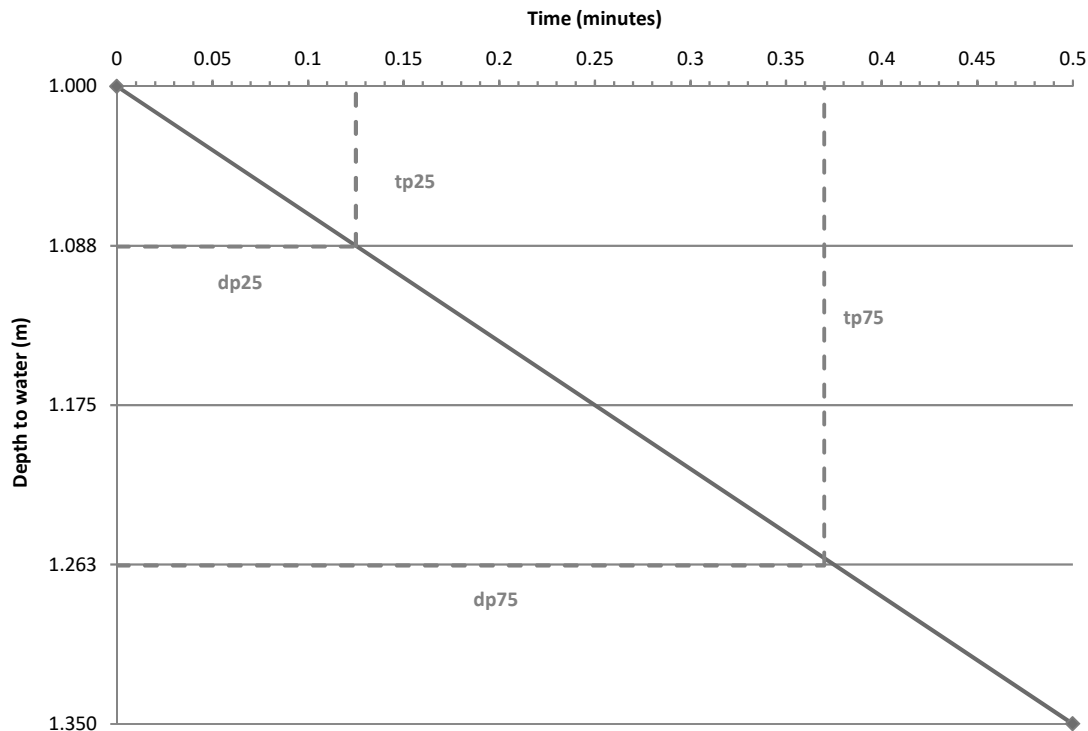
Groundwater observations
No groundwater encountered.

Geology unit under test
Possible Reworked Weathered Bee Low Limestone Formation
Depth of borehole at start of test (m)
1.35

Title
Soil infiltration test (following principles of BRE Digest 365 2016)

Diameter	Co-ordinates	Ground level
0.063m	-	N/A
Borehole no.	Cycle number	Date of excavation
DTS109	1	13/03/2019

Plot showing time against depth to water:



Test observations:

TIME (mins)	DEPTH TO WATER (m)	TIME (mins)	DEPTH TO WATER (m)
0	1		
0.5	1.35		

Calculations:

Soil infiltration rate (SIR), $f = \frac{V_{p75-25}}{a_{p50} \times t_{p75-25}}$

V_{p75-25} = effective storage volume of water in the borehole between 75% (d_{p75}) and 25% (d_{p25}) effective depth
= **0.00055m³**

a_{p50} = the internal surface area of the borehole up to 50% effective depth and including the base area
= **0.03775m²**

$t_{p75} - t_{p25}$ = the time for the water level to fall from 75% to 25% effective depth
= **0.245 (minutes)**
= **14.7 (seconds)**

$f = 9.91E-04 \text{ m/s}$

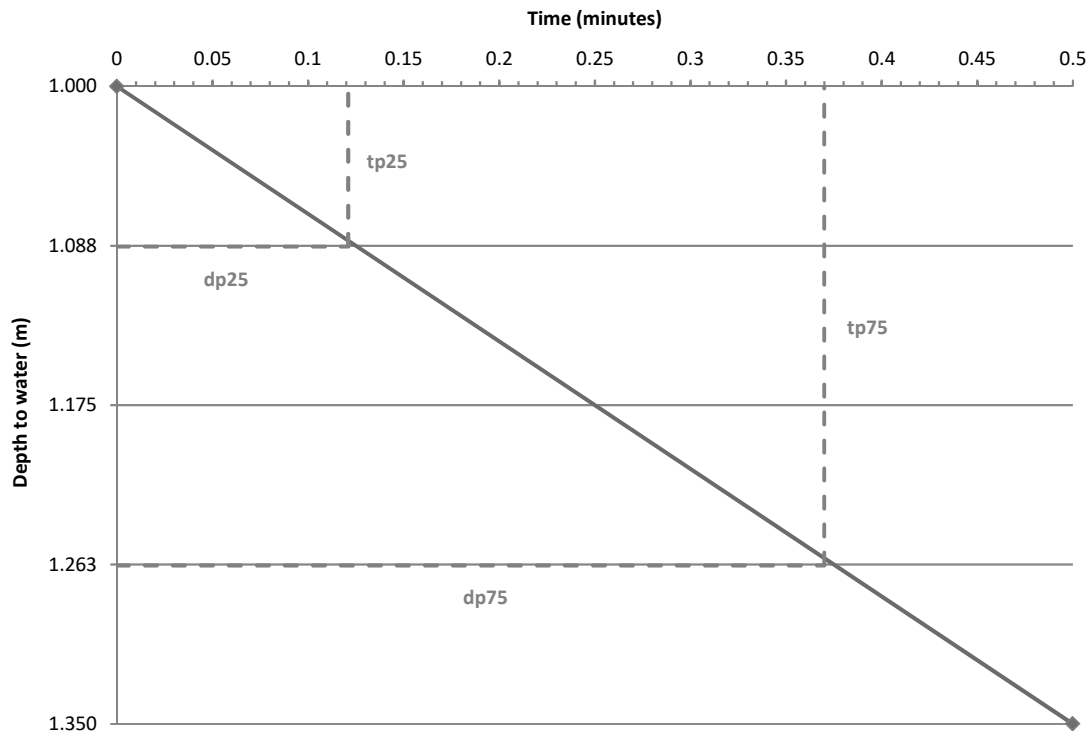
Groundwater observations
No groundwater encountered.

Geology unit under test
Possible Reworked Weathered Bee Low Limestone Formation
Depth of borehole at start of test (m)
1.35

Title
Soil infiltration test (following principles of BRE Digest 365 2016)

Diameter	Co-ordinates	Ground level
0.063m	-	N/A
Borehole no.	Cycle number	Date of excavation
DTS109	2	13/03/2019

Plot showing time against depth to water:



Test observations:

TIME (mins)	DEPTH TO WATER (m)	TIME (mins)	DEPTH TO WATER (m)
0	1		
0.5	1.35		

Calculations:

Soil infiltration rate (SIR), $f = \frac{V_{p75-25}}{a_{p50} \times t_{p75-25}}$

V_{p75-25} = effective storage volume of water in the borehole between 75% (d_{p75}) and 25% (d_{p25}) effective depth
= **0.00055m³**

a_{p50} = the internal surface area of the borehole up to 50% effective depth and including the base area
= **0.03775m²**

$t_{p75} - t_{p25}$ = the time for the water level to fall from 75% to 25% effective depth
= **0.249 (minutes)**
= **14.94 (seconds)**

$f = 9.75E-04 \text{ m/s}$

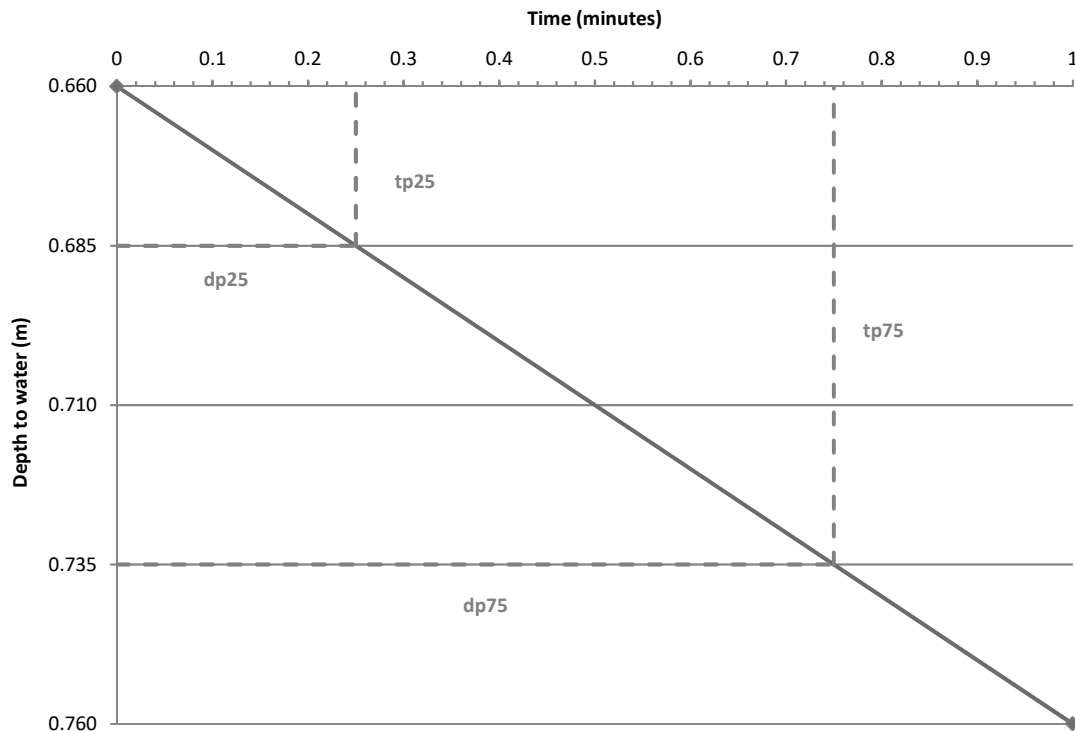
Groundwater observations
No groundwater encountered.

Geology unit under test
Possible Reworked Weathered Bee Low Limestone Formation
Depth of borehole at start of test (m)
1.35

Title
Soil infiltration test (following principles of BRE Digest 365 2016)

Diameter	Co-ordinates	Ground level
0.063m	-	N/A
Borehole no.	Cycle number	Date of excavation
DTS109	3	13/03/2019

Plot showing time against depth to water:



Test observations:

TIME (mins)	DEPTH TO WATER (m)	TIME (mins)	DEPTH TO WATER (m)
0	0.66		
1	0.76		

Calculations:

Soil infiltration rate (SIR), $f = \frac{V_{p75-25}}{a_{p50} \times t_{p75-25}}$

V_{p75-25} = effective storage volume of water in the borehole between 75% (d_{p75}) and 25% (d_{p25}) effective depth
= **0.00016m³**

a_{p50} = the internal surface area of the borehole up to 50% effective depth and including the base area
= **0.01301m²**

$t_{p75} - t_{p25}$ = the time for the water level to fall from 75% to 25% effective depth
= **0.5 (minutes)**
= **30 (seconds)**

$f = 4.10E-04 \text{ m/s}$

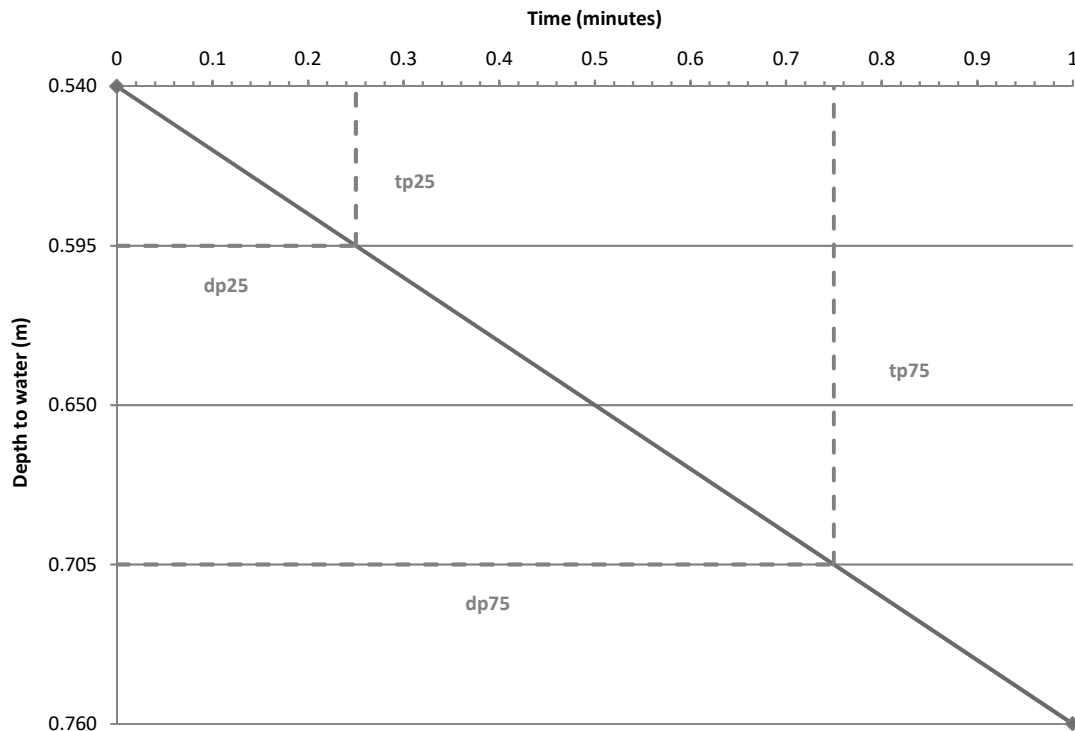
Groundwater observations
No groundwater encountered.

Geology unit under test
Possible Reworked Weathered Bee Low Limestone Formation
Depth of borehole at start of test (m)
0.76

Title
Soil infiltration test (following principles of BRE Digest 365 2016)

Diameter	Co-ordinates	Ground level
0.063m	-	N/A
Borehole no.	Cycle number	Date of excavation
DTS111	1	13/03/2019

Plot showing time against depth to water:



Test observations:

TIME (mins)	DEPTH TO WATER (m)	TIME (mins)	DEPTH TO WATER (m)
0	0.54		
1	0.76		

Calculations:

Soil infiltration rate (SIR), $f = \frac{V_{p75-25}}{a_{p50} \times t_{p75-25}}$

V_{p75-25} = effective storage volume of water in the borehole between 75% (d_{p75}) and 25% (d_{p25}) effective depth
= **0.00034m³**

a_{p50} = the internal surface area of the borehole up to 50% effective depth and including the base area
= **0.02489m²**

$t_{p75} - t_{p25}$ = the time for the water level to fall from 75% to 25% effective depth
= **0.5 (minutes)**
= **30 (seconds)**

$f = 4.55E-04 \text{ m/s}$

Groundwater observations
No groundwater encountered.

Geology unit under test
Possible Reworked Weathered Bee Low Limestone Formation
Depth of borehole at start of test (m)
0.76

Title
Soil infiltration test (following principles of BRE Digest 365 2016)

Diameter	Co-ordinates	Ground level
0.063m	-	N/A
Borehole no.	Cycle number	Date of excavation
DTS111	2	13/03/2019

STRATA										WATER STRIKES		IN SITU TESTING		SAMPLING	
DESCRIPTION	DEPTH (m)	REDUCED LVL (m OD)	LEGEND	TYPE / DEPTH (m)		RESULT	FROM (m)	TO (m)	TYPE						
Grass over dark brown SAND with frequent rootlets. (TOP SOIL) Medium dense brown slightly clayey silty very sandy GRAVEL with rare cobbles. Gravel and cobbles consist of medium to coarse angular mudstone. (WEATHERED EYAM LIMESTONE FORMATION) Soft very low strength brown gravelly slightly sandy CLAY. Gravel consists of medium to coarse angular mudstone. (WEATHERED EYAM LIMESTONE FORMATION) Soft light grey gravelly CLAY. Gravel consists of fine to medium angular limestone. (WEATHERED EYAM LIMESTONE FORMATION)	0.20	309.40					0.20		D						
	0.70	308.90				PP 0.80	0.50		D						
	1.00	308.60				PP=17	0.80		D						
	1.20	308.40					1.20		D						
	TRIAL PIT TERMINATED AT 1.20m														

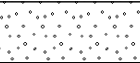
Key D Small Disturbed Sample B Bulk Disturbed Sample ES Environmental Sample W Water Sample C Core sample U1 Undisturbed Sample S Standard Penetration Test C Standard Penetration Test (solid cone) PP Pocket Penetrometer test SV Shear Vane test PID Photo Ionisation Detector test	Notes		Dimensions (w x l)	
	Trial pit terminated due to obstruction. Backfilled with arisings. Trial pit terminated due to competency of deposits (likely bedrock).	Title	1.30m x 1.50m	
		Method	Logged by TO	
	Groundwater observations No groundwater encountered.	Level (m OD) 309.60	Compiled by SA	Date(s) 24/01/2019
Co-ordinates 406640mE, 374562mN		Checked by SD	Sheet number Sheet 1 of 1	
Report ref: STQ642M-G01			TP01	
Revision: 0				

STRATA											
DESCRIPTION	DEPTH (m)	REDUCED LVL (m OD)	LEGEND	WATER STRIKES	IN SITU TESTING		SAMPLING				
					TYPE / DEPTH (m)	RESULT	FROM (m)	TO (m)	TYPE		
Grass onto dark brown SAND with frequent rootlets. (TOP SOIL - MADE GROUND)	0.20	300.39						0.20		D	
Medium dense brown slightly gravelly slightly silty SAND. Gravel consists of fine angular limestone. (WEATHERED EYAM LIMESTONE FORMATION)								0.30		D	
								0.50		D	
								0.80		D	
Stiff high strength very dark grey gravelly slightly sandy CLAY. Gravel consists of fine to medium angular mudstone. (WEATHERED EYAM LIMESTONE FORMATION)	1.10	299.49				PP 1.20		PP=100		D	
Dense very dark grey slightly sandy GRAVEL. Gravel consists of medium to coarse angular limestone. (WEATHERED EYAM LIMESTONE FORMATION)	2.20	298.39				PP 1.50		PP=100			
	2.60	297.99				PP 1.90		PP=100		D	
TRIAL PIT TERMINATED AT 2.60m											

Key D Small Disturbed Sample B Bulk Disturbed Sample ES Environmental Sample W Water Sample C Core sample UT Undisturbed Sample S Standard Penetration Test C Standard Penetration Test (solid cone) PP Pocket Penetrometer test SV Shear Vane test PID Photo Ionisation Detector test	Notes Backfilled with arisings. Trial pit terminated due to competency of deposits (likely bedrock).	Title Trial pit record	Dimensions (w x l) 0.90m x 2.20m	
		Method Tracked excavator	Logged by TO	Date(s) 24/01/2019
	Groundwater observations No groundwater encountered.	Level (m OD) 300.59	Compiled by SA	Sheet number Sheet 1 of 1
		Co-ordinates 406582mE, 374502mN	Checked by SD	TP02

Report ref: STQ642M-G01

Revision: 0

STRATA					WATER STRIKES		IN SITU TESTING		SAMPLING	
DESCRIPTION	DEPTH (m)	REDUCED LVL (m OD)	LEGEND		TYPE / DEPTH (m)	RESULT	FROM (m)	TO (m)	TYPE	
Grass over dark brown SAND with frequent rootlets. (TOPSOIL)	0.20	318.81					0.20		D	
Loose brown very sandy GRAVEL. Gravel consists of medium to coarse angular limestone. (WEATHERED EYAM LIMESTONE FORMATION)	0.70	318.31				PP 0.80	0.80		D	
Soft very low to low strength gravelly slightly sandy CLAY. Gravel consists of medium to coarse angular limestone. (WEATHERED EYAM LIMESTONE FORMATION)	1.70	317.31				PP 1.30 PP 1.40	1.20		D	
TRIAL PIT TERMINATED AT 1.70m							1.70		D	

Key	Notes		Dimensions (w x l)	
	Backfilled with arisings. Trial pit terminated due competency of deposits (likely bedrock). Collapse of trial pit sides from 0.4m to 0.7m depth on eastern wall widening trial pit by 0.3m.	Title	1.20m x 2.70m	
		Method	Logged by	Date(s)
D Small Disturbed Sample B Bulk Disturbed Sample ES Environmental Sample W Water Sample C Core sample UT Undisturbed Sample	Groundwater observations No groundwater encountered.	Tracked excavator	TO	24/01/2019
S Standard Penetration Test C Standard Penetration Test (solid cone)		Level (m OD)	Compiled by	Sheet number
PP Pocket Penetrometer test SV Shear Vane test PID Photo Ionisation Detector test		319.01	SA	Sheet 1 of 1
Report ref: STQ642M-G01			Co-ordinates	Checked by
		406722mE, 374495mN	SD	TP03
				Revision: 0

Report ref: STQ4642M-G01

STRATA										
DESCRIPTION	DEPTH (m)	REDUCED LVL (m OD)	LEGEND	WATER STRIKES	IN SITU TESTING		SAMPLING			
					TYPE / DEPTH (m)	RESULT	FROM (m)	TO (m)	TYPE	
Rough vegetation over loose dark brown very gravelly SAND. Gravel consists of glass, brick, concrete, plastic, plastic bottles, metal, wire, car parts, shoes, paper, timber, ceramic tiles and roof tiles. Hydrocarbon odour observed between 1.9m and 3.4m depth. (MADE GROUND)										
								0.30		D
								0.50		D
								0.80		D
								1.20		D
								1.80		D
								2.50		D
CONTINUED ON NEXT SHEET										
Key D Small Disturbed Sample B Bulk Disturbed Sample ES Environmental Sample W Water Sample C Core sample UT Undisturbed Sample S Standard Penetration Test C Standard Penetration Test (solid cone) PP Pocket Penetrometer test SV Shear Vane test PID Photo Ionisation Detector test	Notes Backfilled with arisings. Collapse of trial pit sides from surface to 1.9m depth on eastern wall widening trial pit by 0.25m.		Title Trial pit record	Dimensions (w x l) 1.30m x 3.10m						
			Method Tracked excavator	Logged by TO	Date(s) 23/01/2019					
	Groundwater observations No groundwater encountered.		Level (m OD) 301.00	Compiled by SA		Sheet number Sheet 1 of 2				
			Co-ordinates 406520mE, 374449mN	Checked by SD		TP05				
Report ref: STQ642M-G01										
Revision: 0										

Report ref: STQ4642M-G01

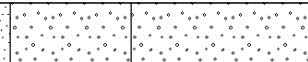
STRATA									
DESCRIPTION	DEPTH (m)	REDUCED LVL (m OD)	LEGEND	WATER STRIKES	IN SITU TESTING		SAMPLING		
					TYPE / DEPTH (m)	RESULT	FROM (m)	TO (m)	TYPE
Medium dense dark brown to dark grey slightly clayey slightly sandy GRAVEL. Gravel consists of fine to coarse angular mudstone. (WEATHERED BOWLAND SHALE FORMATION)	— —<								

STRATA				WATER STRIKES		IN SITU TESTING		SAMPLING	
DESCRIPTION	DEPTH (m)	REDUCED LVL (m OD)	LEGEND	TYPE / DEPTH (m)	RESULT	FROM (m)	TO (m)	TYPE	
Grass onto brown slightly clayey SAND. (TOP SOIL - MADE GROUND)	0.20	323.80				0.20		D	
								0.30	D
Medium dense dark brown mottled orangish and reddish brown very gravelly SAND. Gravel consists of fine to coarse glass, brick, plastic, metal pipe, timber, shoes, slag, coal, clinker, tiles, car parts, wire and porcelain. (MADE GROUND)						0.50		D	
								0.80	D
Medium dense orangish brown clayey very silty very gravelly SAND. Gravel consists of fine to medium sub-angular limestone and mudstone. (WEATHERED BEE LOW LIMESTONE FORMATION)	1.60	322.40				1.20		D	
								1.80	D
...from 2.5m depth, becoming grey.						2.60		D	
CONTINUED ON NEXT SHEET									
Key D Small Disturbed Sample B Bulk Disturbed Sample ES Environmental Sample W Water Sample C Core sample U1 Undisturbed Sample S Standard Penetration Test C Standard Penetration Test (solid cone) PP Pocket Penetrometer test SV Shear Vane test PID Photo Ionisation Detector test	Notes Backfilled with arisings. Trial pit terminated due to competency of deposits (likely bedrock).		Title Trial pit record		Dimensions (w x l) 1.30m x 2.40m				
	Groundwater observations No groundwater encountered.		Method Tracked excavator	Logged by TO		Date(s) 24/01/2019			
			Level (m OD) 324.00	Compiled by SA		Sheet number Sheet 1 of 2			
			Co-ordinates 406756mE, 374261mN	Checked by SD		TP08			
Report ref: STQ4642M-G01		Revision: 0							

Report ref: STQ4642M-G01

Report ref: STQ4642M-G01

Report ref: STQ4642M-G01

WELL	STRATA				WATER STRIKES	SPT TESTING			OTHER IN SITU TESTING			SAMPLING		
	DESCRIPTION	DEPTH (m)	REDUCED LVL (m OD)	LEGEND		TYPE / DEPTH (m)	RESULT	CASING DEPTH (m)	WATER LEVEL (m)	TYPE / DEPTH (m)	RESULT	FROM (m)	TO (m)	TYPE
	Grass over dark brown slightly clayey SAND. (TOPSOIL)	0.30	301.69			C 1.00-1.45	(4) 11				0.30		D	
	Medium dense brown slightly clayey SAND. (WEATHERED EYAM LIMESTONE FORMATION)										0.50		D	
											0.80		D	
	Medium dense brown GRAVEL. Gravel consists of medium angular sandstone. (WEATHERED EYAM LIMESTONE FORMATION)	1.90	300.09								1.20		D	
	Medium dense dark grey to dark brown GRAVEL. Gravel consists of angular shale. (WEATHERED EYAM LIMESTONE FORMATION)	2.30	299.69								1.80		D	
	CONTINUED ON NEXT SHEET													

Key D Small Disturbed Sample B Bulk Disturbed Sample ES Environmental Sample W Water Sample C Core sample U1 Undisturbed Sample S Standard Penetration Test C Standard Penetration Test (solid cone) PP Pocket Penetrometer test SV Shear Vane test PHD Photo Ionisation Detector test	Notes Backfilled with arisings. Borehole terminated due to competency of deposits (likely bedrock). Groundwater observations Groundwater encountered at 1.9m depth, filling borehole to 1.3m in 10 minutes.	Title Driven tube sampler record				
		Recovery details		Method Driven tube sampler	Logged by TO	Date(s) 08/02/2019
		Range (m)	Recovery (%)			
				0.00 - 1.00 1.00 - 2.00 2.00 - 3.00 3.00 - 3.90	30 80 80 80	Level (m OD) 301.99
Report ref: STQ4642M-G01				Co-ordinates 406582mE, 374554mN	Checked by SD	DTS02
Revision: 0						

Report ref: STQ4642M-G01

Report ref: STQ4642M-G01

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Report ref: STQ4642M-G01