[redacted]

From: [redacted] <[redacted]@wilson-bailey.co.uk>
Sent: 06 January 2020 13:12
To: [redacted]
Cc: [redacted]
Subject: RE: *EXTERNAL: Eastergate Winter Water Level Monitoring 2018-2019

Filed: -1
Filed Location: \\uk.wspgroup.com\central data\Projects\700607xx\70060779 - WSCC - A29 Phase 1 Planning Application\03 WIP\EI EIA and Flood Risk\07 Other Docs\01 Groundwater\200106 131208 - [redacted] - RE EXTERNAL Eastergate Winter Water Level Monit.msg
Filed Location Folder: \\uk.wspgroup.com\central data\Projects\700607xx\70060779 - WSCC - A29 Phase 1 Planning Application\03 WIP\EI EIA and Flood Risk\07 Other Docs\01 Groundwater

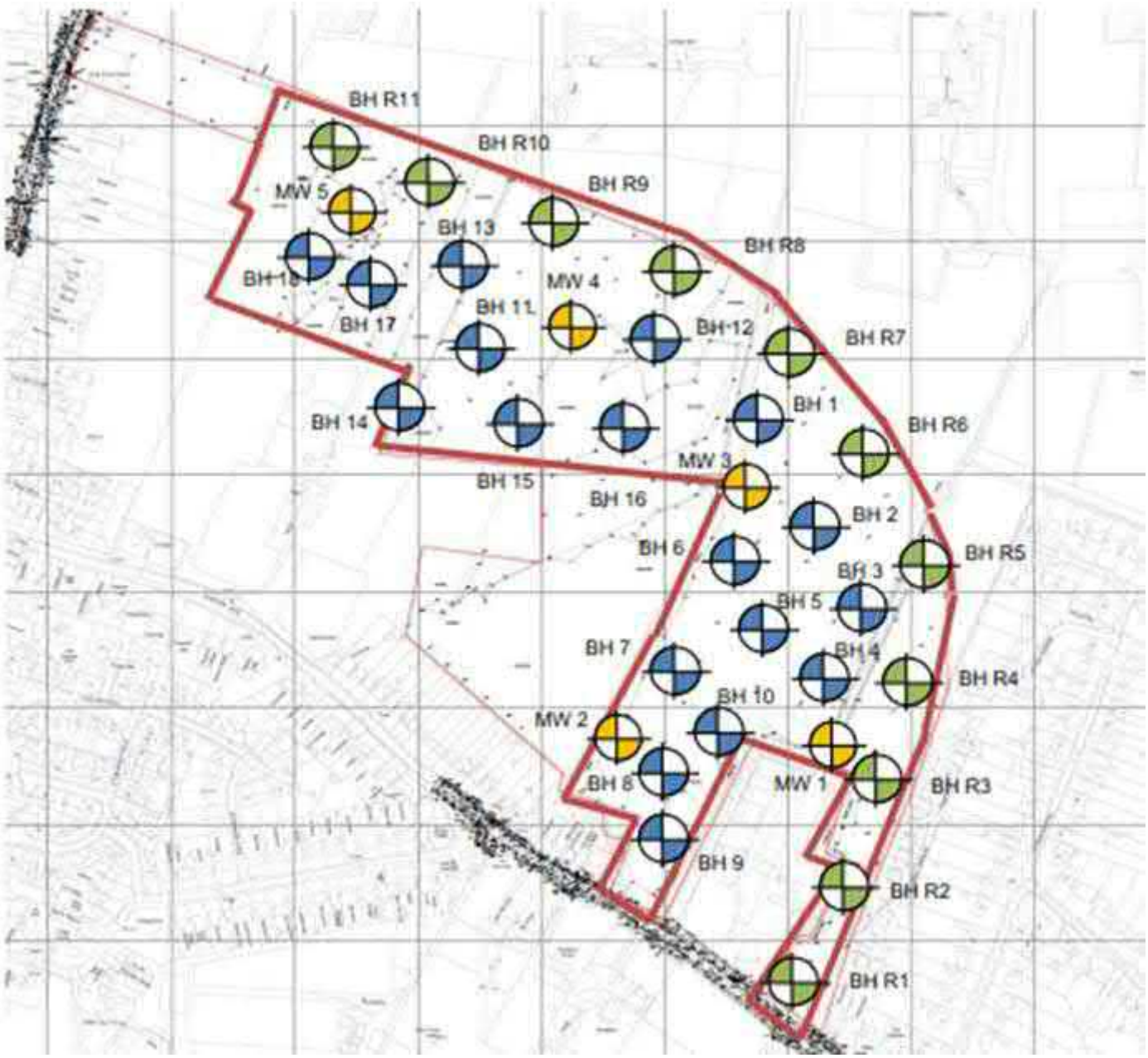
Confirmed – location 4 was updated and corrected on the plan excerpt that you sent over
Regards
[redacted]

[redacted]
Wilson Bailey Partnership - Geotechnical & Environmental
DD: [redacted]
Mob: [redacted]

From: S[redacted] <[redacted]@wsp.com>
Sent: 06 January 2020 12:57
To: [redacted]<[redacted]@wilson-bailey.co.uk>
Cc: [redacted]<[redacted]@wsp.com>; [redacted]<[redacted]@wsp.com>; [redacted] <[redacted]@westsussex.gov.uk>;[redacted] [redacted]@barratthomes.co.uk>
Subject: RE: *EXTERNAL: Eastergate Winter Water Level Monitoring 2018-2019

Hi [redacted],

Thank you very much for the groundwater monitoring data. Please could you confirm if the borehole locations BH1 to BH5 are the same as MW1 to MW5 in the plan below?



Kind regards,

[redacted]

Engineer - Water

wsp

T+[redacted]

Mountbatten House, Basing View
Basingstoke, Hampshire
RG21 4HJ

wsp.com

From: [redacted]
Sent: 03 January 2020 11:49
To: [redacted] <E[redacted]@wsp.com>
Subject: Fwd: *EXTERNAL: Eastergate Winter Water Level Monitoring 2018-2019

Begin forwarded message:

From: [redacted] <E[redacted]@westsussex.gov.uk>
Date: 3 January 2020 at 11:21:30 GMT
To: "[redacted] <[redacted]h@wsp.com>
Cc: "[redacted]" <[redacted]t@wsp.com>, [redacted]<[redacted]@jackson-civils.co.uk>
Subject: FW: *EXTERNAL: Eastergate Winter Water Level Monitoring 2018-2019

fyi

[redacted]
Engineering Project Manager - Major Projects
Highways, Transport and Planning
Highways and Transport
West Sussex County Council

CALL IM EMAIL
Location: 1st Floor Northleigh, County Hall, Chichester, West Sussex PO19 1RH
[redacted]

Report a problem with a road or pavement or raise a highways related enquiry
Follow us at @WSHighways

From: [redacted] [mailto:[redacted]@barratthomes.co.uk]
Sent: 18 December 2019 15:02
To: [redacted]
Subject: FW: *EXTERNAL: Eastergate Winter Water Level Monitoring 2018-2019

Hi [redacted]

Please see below – scroll down for the results. Will get formal version over as soon as Dominic is not on site

Kind regards

[redacted]

From: [redacted] <[redacted]@wilson-bailey.co.uk>
Sent: 18 December 2019 10:40
To: [redacted] <[redacted]@barratthomes.co.uk>
Cc: [redacted] <[redacted]@wilson-bailey.co.uk>
Subject: *EXTERNAL: Eastergate Winter Water Level Monitoring 2018-2019

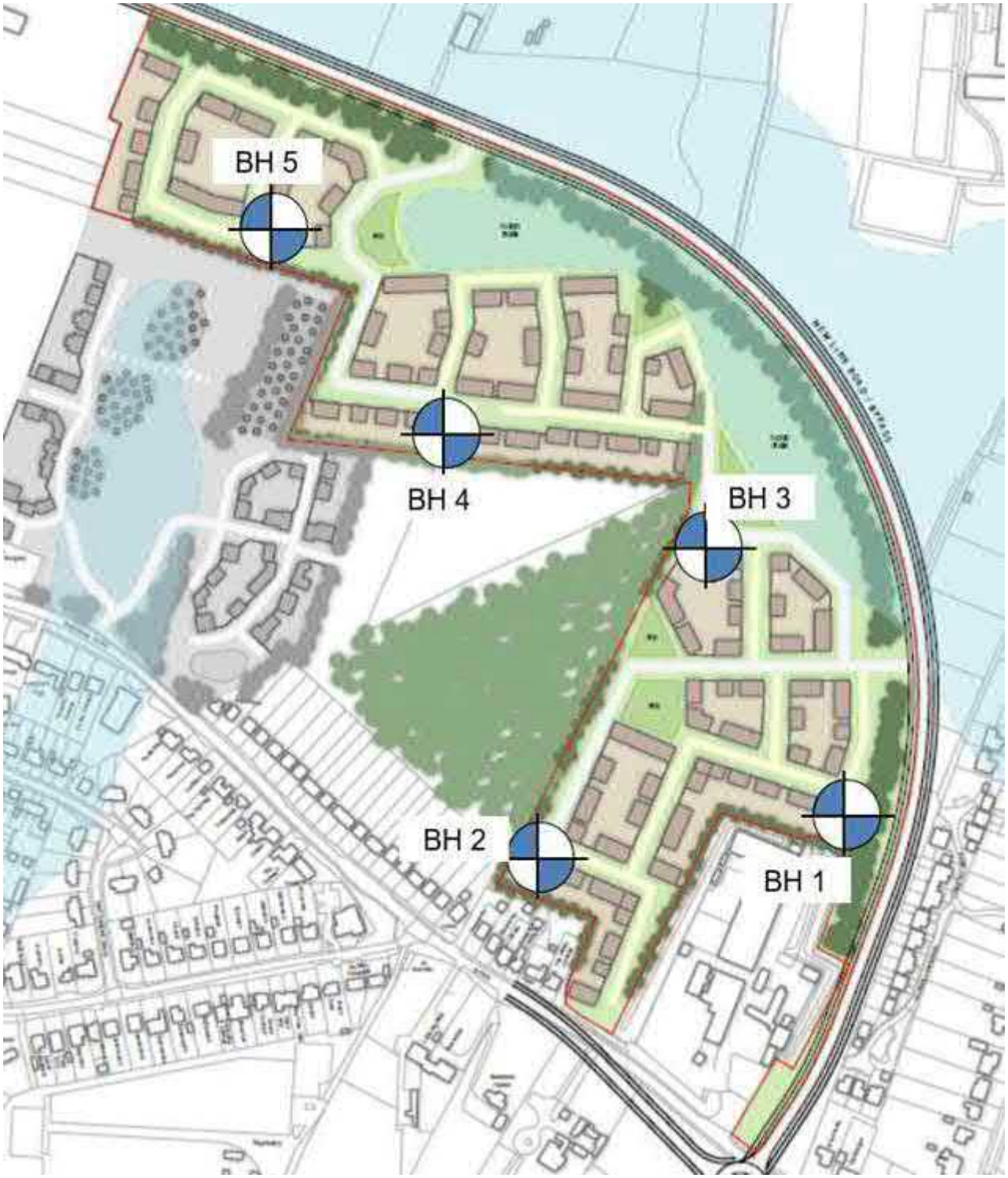
EXTERNAL EMAIL WARNING

[redacted]

Apologies for the delay.

Update as follows – I will incorporate into formal letter and re-issue.

These are taken from site notes



Nov 2018
BH 1 – 1.72m bgl
BH 2 – 1.92m bgl
BH 3 – 2.12 m bgl
BH 4 – 2.64 m bgl
BH 5 – 3.05 m bgl

Dec 2018
BH 1 – 1.52m bgl
BH 2 – 1.64m bgl
BH 3 – 1.92 m bgl
BH 4 – 2.44 m bgl
BH 5 – 2.95 m bgl

Jan 2019
BH 1 – 1.36m bgl
BH 2 – 1.42m bgl
BH 3 – 1.87 m bgl
BH 4 – 2.46 m bgl
BH 5 – 3.65 m bgl

Feb 2019
BH 1 – 2.09m bgl
BH 2 – 2.11m bgl
BH 3 – 2.22 m bgl
BH 4 – 3.32 m bgl
BH 5 – 3.55 m bgl

March 2019
BH 1 – 1.72m bgl
BH 2 – 1.92m bgl
BH 3 – 2.12 m bgl
BH 4 – 2.64 m bgl
BH 5 – 3.05 m bgl

[redacted]
BSc MSc DIC FGS CGeol ARSM

Director
Wilson Bailey Partnership - Geotechnical & Environmental
[redacted]@wilson-bailey.co.uk
Web: www.wilson-bailey.co.uk
DD: [redacted]
Mob: [redacted]

WILSON BAILEY
GEOTECHNICAL & ENVIRONMENTAL

Northdown Farmhouse
Donhead St Mary
Wiltshire
SP7 9DD

Site Plan

Site Mrs Smiths Land East of A29, Eastergate, Chichester, West Sussex

Client BDW Southampton

Site Plan

WILSON BAILEY GEOTECHNICAL & ENVIRONMENTAL

Borehole Log

Borehole No. **BH1**

Sheet 1 of 1

Project Name: Roy Smith's Land	Project No. J20201	Co-ords:	Hole Type WLS
Location: Eastergate		Level:	Scale 1:50
Client: BDW Southampton		Dates: 09/01/2020	Logged By

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.30			TOPSOIL
		0.50	D					Firm pale brown silty CLAY
		1.00	D					
					1.30			Firm brown silty CLAY with occasional becoming abundant fine to medium flint gravel
		1.50	D		1.70			Pale brown silty locally slightly sandy very clayey fine to medium flint GRAVEL
		2.00	D					
		2.50	D					
		3.00	D					
		3.50	D					
					4.00			End of Borehole at 4.00m

Remarks

Groundwater not encountered. Standpipe installed with a response zone from 1.00m to 4.00m.

AGS

WILSON BAILEY GEOTECHNICAL & ENVIRONMENTAL

Borehole Log

Borehole No. **BH10**

Sheet 1 of 1

Project Name: Roy Smith's Land	Project No. J20201	Co-ords:	Hole Type WLS
Location: Eastergate		Level:	Scale 1:50
Client: BDW Southampton		Dates: 10/01/2020	Logged By

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.25			MADE GROUND (reworked topsoil with gravel)
		0.50	D					Firm brown silty CLAY
		1.00	D					
		1.50	D					
					1.80			Brown silty sandy clayey fine to medium flint GRAVEL
		2.00	D		2.00			Pale yellowish brown silty locally clayey chalk derived fine to medium flint GRAVEL
		2.50	D					
		3.00	D					
		3.50	D					
					4.00			End of Borehole at 4.00m

Remarks

Groundwater not encountered. Standpipe installed with a response zone from 1.00m to 4.00m.

AGS

WILSON BAILEY
GEOTECHNICAL & ENVIRONMENTAL

Borehole Log

Borehole No.
BH11
Sheet 1 of 1

Project Name: Roy Smith's Land	Project No. J20201	Co-ords:	Hole Type WLS
Location: Eastergate		Level:	Scale 1:50
Client: BDW Southampton		Dates: 10/01/2020	Logged By

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.20			TOPSOIL
		0.50	D					Firm brown silty CLAY
		1.00	D		1.00			Firm brown silty CLAY With abundant fine to medium flint gravel
		1.50	D		1.50			Pale yellowish brown and off white chalk derived fine to medium flint GRAVEL
		2.00	D					
		2.50	D					
					3.00			End of Borehole at 3.00m

Remarks
Groundwater not encountered. Standpipe installed with a response zone from 1.00m to 4.00m.

AGS

WILSON BAILEY GEOTECHNICAL & ENVIRONMENTAL

Borehole Log

Borehole No. **BH2**

Sheet 1 of 1

Project Name: Roy Smith's Land	Project No. J20201	Co-ords:	Hole Type WLS
Location: Eastergate		Level:	Scale 1:50
Client: BDW Southampton		Dates: 09/01/2020	Logged By

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.30			TOPSOIL
		0.50	D					Firm brown silty CLAY
		1.00	D					
					1.20			Brown CLAY with abundant fine to medium flint gravel
		1.50	D					
					1.70			Off white chalk derived silty sandy locally clayey fine to medium flint GRAVEL
		2.00	D					
		2.50	D					
	▼	3.00	D					
		3.50	D					
					4.00			End of Borehole at 4.00m

Remarks

Groundwater encountered at 3.00m.

AGS

WILSON BAILEY GEOTECHNICAL & ENVIRONMENTAL

Borehole Log

Borehole No. **BH3**

Sheet 1 of 1

Project Name: Roy Smith's Land	Project No. J20201	Co-ords:	Hole Type WLS
Location: Eastergate		Level:	Scale 1:50
Client: BDW Southampton		Dates: 09/01/2020	Logged By

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.20			TOPSOIL
		0.50	D					Firm brown silty CLAY with scattered fine to medium flint gravel
		1.00	D					
					1.20			Firm brown silty locally sandy clay with fine to medium flint GRAVEL
		1.50	D					
					1.70			Pale yellowish brown and off white chalk derived silty sandy locally clayey fine to medium flint GRAVEL
		2.00	D					
		2.50	D					
		3.00	D					
					3.45			End of Borehole at 3.45m

0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0 5.5 6.0 6.5 7.0 7.5 8.0 8.5 9.0 9.5 10

Remarks

Groundwater not encountered.

AGS

WILSON BAILEY
GEOTECHNICAL & ENVIRONMENTAL

Borehole Log

Borehole No.
BH4
Sheet 1 of 1

Project Name: Roy Smith's Land	Project No. J20201	Co-ords:	Hole Type WLS
Location: Eastergate		Level:	Scale 1:50
Client: BDW Southampton		Dates: 09/01/2020	Logged By

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.50	D		0.35			MADE GROUND (reworked topsoil with occasional fine brick fragments)
		1.00	D					Firm brown silty CLAY
		1.50	D					
		2.00	D		1.70 1.80			Brown silty sandy very clayey fine to medium flint GRAVEL Pale yellowish brown and off white chalk derived silty sandy locally clayey fine to medium flint GRAVEL
		2.50	D					
					3.00			End of Borehole at 3.00m

Remarks
Groundwater not encountered.

AGS

WILSON BAILEY GEOTECHNICAL & ENVIRONMENTAL

Borehole Log

Borehole No. **BH5**

Sheet 1 of 1

Project Name: Roy Smith's Land	Project No. J20201	Co-ords:	Hole Type WLS
Location: Eastergate		Level:	Scale 1:50
Client: BDW Southampton		Dates: 09/01/2020	Logged By

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.20			TOPSOIL
		0.50	D					Firm pale brown and brown silty CLAY
		1.00	D					
					1.20			Brown silty sandy clayey fine to medium flint GRAVEL
		1.45	D					
		2.00	D		2.00			Pale yellowish brown and off white silty sandy locally clayey fine to medium flint GRAVEL
		2.50	D					
		3.00	D					
					3.45			End of Borehole at 3.45m

0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0 5.5 6.0 6.5 7.0 7.5 8.0 8.5 9.0 9.5 10

Remarks

Groundwater not encountered. Poor recovery 1.00m to 2.00m.

AGS

WILSON BAILEY GEOTECHNICAL & ENVIRONMENTAL

Borehole Log

Borehole No.
BH6
Sheet 1 of 1

Project Name: Roy Smith's Land	Project No. J20201	Co-ords:	Hole Type WLS
Location: Eastergate		Level:	Scale 1:50
Client: BDW Southampton		Dates: 09/01/2020	Logged By

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.25			TOPSOIL
		0.50	D					Firm brown silty CLAY
		1.00	D					
		1.50	D		1.40			Brown silty very clayey fine to medium flint GRAVEL
		2.00	D		1.80			Pale yellowish brown and off white chalk derived silty sandy locally clayey fine to medium flint GRAVEL
		2.50	D					
		3.00	D					
					3.45			End of Borehole at 3.45m

Remarks
Groundwater not encountered

AGS

WILSON BAILEY
GEOTECHNICAL & ENVIRONMENTAL

Borehole Log

Borehole No.
BH7
Sheet 1 of 1

Project Name: Roy Smith's Land	Project No. J20201	Co-ords:	Hole Type WLS
Location: Eastergate		Level:	Scale 1:50
Client: BDW Southampton		Dates: 10/01/2020	Logged By

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.20			TOPSOIL
		0.50	D					Firm brown silty CLAY
		1.00	D					
		1.50	D		1.50			Brown silty locally slightly sandy very clayey fine to medium flint GRAVEL
		2.00	D		2.00			Pale yellowish brown and off white silty sandy locally clayey fine to medium flint GRAVEL
		2.50	D					
		3.00	D					
					3.45			End of Borehole at 3.45m

Remarks
Groundwater not encountered.

AGS

WILSON BAILEY GEOTECHNICAL & ENVIRONMENTAL

Borehole Log

Borehole No. **BH8**

Sheet 1 of 1

Project Name: Roy Smith's Land	Project No. J20201	Co-ords:	Hole Type WLS
Location: Eastergate		Level:	Scale 1:50
Client: BDW Southampton		Dates: 10/01/2020	Logged By

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.20			TOPSOIL
								Firm brown silty CLAY
		0.50						
		1.00	D					
		1.50	D					
					1.80			
		2.00	D		1.90			Firm brown silty CLAY with abundant fine to medium flint gravel
								Pale yellowish brown and off white chalk derived silty sandy locally clayey fine to medium flint GRAVEL
		2.50	D					
					3.00			End of Borehole at 3.00m

Remarks

Groundwater not encountered. Standpipe installed with a response zone from 1.00m to 3.00m.

AGS

WILSON BAILEY GEOTECHNICAL & ENVIRONMENTAL

Borehole Log

Borehole No. **BH9**

Sheet 1 of 1

Project Name: Roy Smith's Land	Project No. J20201	Co-ords:	Hole Type WLS
Location: Eastergate		Level:	Scale 1:50
Client: BDW Southampton		Dates: 10/01/2020	Logged By

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.50	D		0.45			MADE GROUND (reworked topsoil with gravel and brick)
		1.00	D					Firm brown silty CLAY
		1.50	D		1.60			
		2.00	D		1.80			Firm brown silty CLAY with abundant fine to medium flint gravel
		2.50	D					Pale yellowish brown and off white chalk derived silty sandy locally clayey fine to medium flint GRAVEL
		3.00	D		3.45			End of Borehole at 3.45m

Remarks

Groundwater not encountered

AGS

WILSON BAILEY GEOTECHNICAL & ENVIRONMENTAL

Borehole Log

Borehole No. **BHR**

Sheet 1 of 1

Project Name: Roy Smith's Land	Project No. J20201	Co-ords:	Hole Type WLS
Location: Eastergate		Level:	Scale 1:50
Client: BDW Southampton		Dates: 09/01/2020	Logged By

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.20			TOPSOIL
		0.50	D					Firm brown and dark orange-brown slightly silty CLAY
		1.00	D					
					1.20			Dark brown very clayey silty slightly sandy fine to medium flint GRAVEL
		1.50	D					
					1.80			Off white and pale yellowish brown chalk derived silty sandy fine to medium flint GRAVEL with occasional flint cobbles
		2.00	D					
		2.50	D					
	▼	3.00	D					
		3.50	D					
		4.00	D					
		4.50	D					
					5.00			End of Borehole at 5.00m

0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0 5.5 6.0 6.5 7.0 7.5 8.0 8.5 9.0 9.5 10

Remarks

Groundwater seepage at 3.00m. Standpipe installed with a response zone from 1.00m to 4.50m.

AGS

WILSON BAILEY
GEOTECHNICAL & ENVIRONMENTAL

Trial Pit Log

Trialpit No
TP1
Sheet 1 of 1

Project Name: Roy Smith's Land	Project No. J20201	Co-ords: - Level:	Date 10/01/2020
Location: Eastergate		Dimensions (m): Depth 2.00	Scale 1:25
Client: BDW Southampton			Logged

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
							MADE GROUND (reworked topsoil with flint gravel, glass and concrete)
	0.50	D		0.40			Firm brown silty CLAY
	1.00	D					
				1.20			Firm brown silty CLAY with scattered fine to medium flint gravel
	1.50	D		1.40			Off white and pale yellowish brown chalk derived silty sandy locally clayey fine to medium flint GRAVEL
	2.00	D		2.00			End of pit at 2.00 m

1
2
3
4
5

Remarks: Groundwater not encountered. Trial pit used for soakage testing - result presented seperatley.

Stability:

AGS

WILSON BAILEY GEOTECHNICAL & ENVIRONMENTAL

Trial Pit Log

Trialpit No **TP2**

Sheet 1 of 1

Project Name: Roy Smith's Land	Project No. J20201	Co-ords: - Level:	Date 10/01/2020
Location: Eastergate		Dimensions (m): Depth 2.20	Scale 1:25
Client: BDW Southampton			Logged

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
	0.50	D		0.20			TOPSOIL
	1.00	D					Firm brown silty CLAY with scattered fine to medium flint gravel
	1.50	D					
	2.00	D		1.60			Off white and pale yellowish brown chalk derived silty sandy locally clayey fine to medium flint GRAVEL
				2.20			End of pit at 2.20 m

1 2 3 4 5

Remarks: Groundwater not encountered. Trial pit used for soakage testing - result presented seperatley.

Stability:

AGS

WILSON BAILEY GEOTECHNICAL & ENVIRONMENTAL

Trial Pit Log

Trialpit No
TPR
Sheet 1 of 1

Project Name: Roy Smith's Land	Project No. J20201	Co-ords: - Level:	Date 10/01/2020
Location: Eastergate		Dimensions (m): Depth 2.00	Scale 1:25
Client: BDW Southampton			Logged

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
				0.30			MADE GROUND (reworked topsoil with occasional gravel and tile)
	0.50	D					Firm brown silty CLAY with scattered and locally abundant fine to medium flint gravel
	1.00	D		0.90			Pale yellowish brown and off white silty, sandy chalk derived GRAVEL
	1.50	D					
	2.00	D		2.00			End of pit at 2.00 m

1
2
3
4
5

Remarks: Groundwater not encountered. Trial pit used for soakage testing - result presented seperatley.

Stability:

AGS

WILSON BAILEY
GEOTECHNICAL & ENVIRONMENTAL

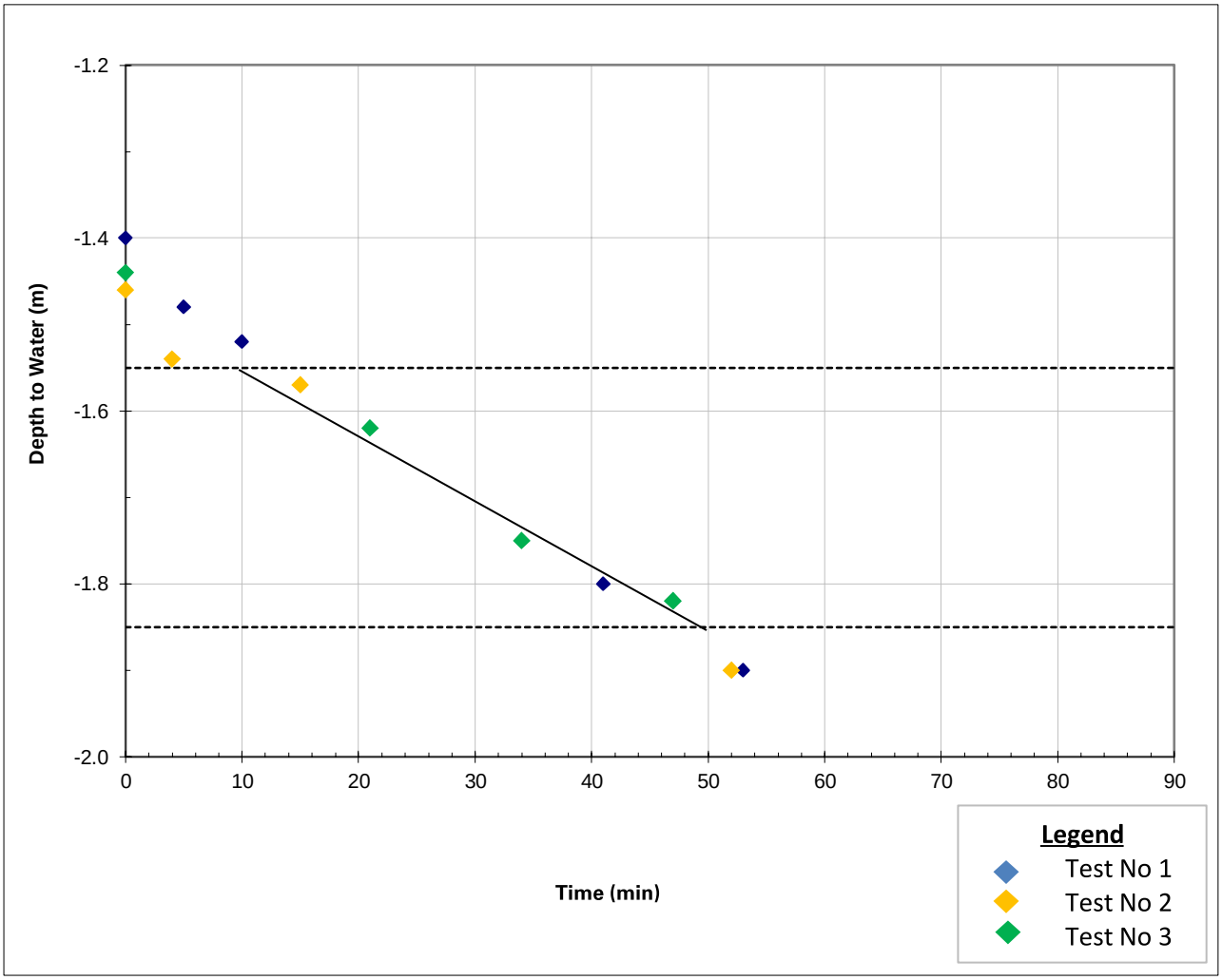
Northdown Farmhouse
Donhead St Mary
Wiltshire
SP7 9DD

Soakage Test Results

Site Mr Smiths Land, Fontwell Avenue, Eastergate

Client BDW Southampton

Trial Pit No.	TP1	Pit Length (m)	1.8
		Pit Width (m)	0.5
		Pit Depth (m)	1.8



Design Soakage Rate 4.8E-05 m/s (based on linear portion of graph as shown)
4.15 m/day

Notes

Soakage test carried out in accordance with requirements of BRE365 with three completed fills

Trial Pit Log presented separately

Groundwater not encountered

WILSON BAILEY
GEOTECHNICAL & ENVIRONMENTAL

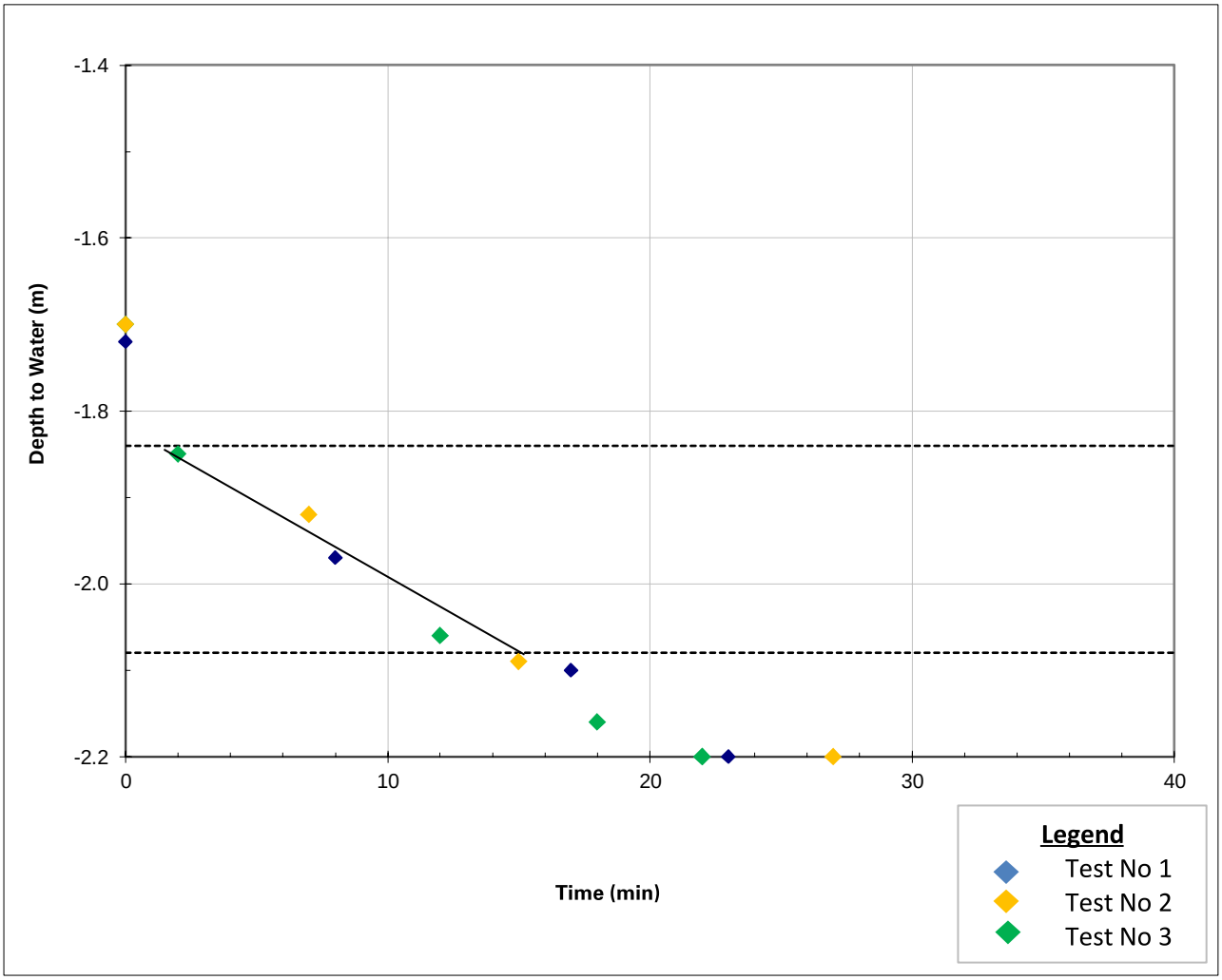
Northdown Farmhouse
Donhead St Mary
Wiltshire
SP7 9DD

Soakage Test Results

Site Mr Smiths Land, Fontwell Avenue, Eastergate

Client BDW Southampton

Trial Pit No.	TP2	Pit Length (m)	1.8
		Pit Width (m)	0.5
		Pit Depth (m)	1.8



Design Soakage Rate 1.3E-04 m/s (based on linear portion of graph as shown)
11.66 m/day

Notes

Soakage test carried out in accordance with requirements of BRE365 with three completed fills

Trial Pit Log presented separately

Groundwater not encountered

WILSON BAILEY
GEOTECHNICAL & ENVIRONMENTAL

Northdown Farmhouse
Donhead St Mary
Wiltshire
SP7 9DD

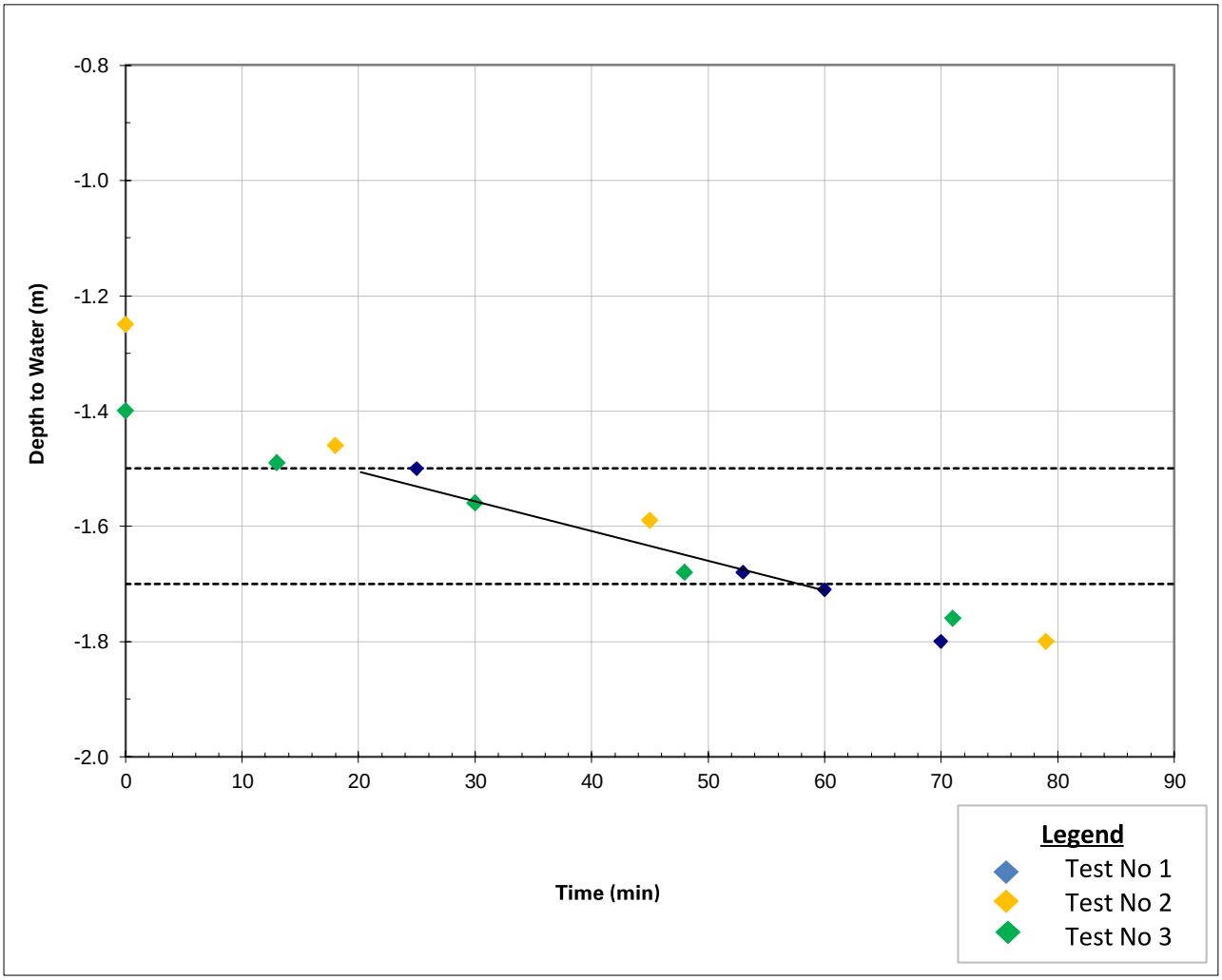
Soakage Test Results

Site Mr Smiths Land, Fontwell Avenue, Eastergate

Client BDW Southampton

Trial Pit No. R

Pit Length (m)	1.8
Pit Width (m)	0.5
Pit Depth (m)	1.8



Design Soakage Rate 4.0E-05 m/s (based on linear portion of graph as shown)
3.48 m/day

Notes

Soakage test carried out in accordance with requirements of BRE365 with three completed fills

Trial Pit Log presented separately

Groundwater not encountered

Appendix E.2

ADDITIONAL GROUND INVESTIGATION

TRIAL PIT LOG - TP201

Site: A29 Realignment Scheme

Client:	Method of Excavation:	Dimensions:	Project No.:
Jackson Civil Engineering	Mechanical Excavator	2.80m x 0.90m	G20107

Logged by: IJW	Ground Level: 15.504m AOD	Date: 02/01/2020	Location: - 494651E, 105963N	Scale: 1:25

Samples and In situ Tests			Water	Level (mAOD)	Depth (m)	Strata Description	Legend	Backfill
Ref:	Depth (m)	Result						
						MADE GROUND - Topsoil		
				15.20	0.30	MADE GROUND - Brown slightly sandy gravelly CLAY with occasional fragments of chicken wire, brick, ceramic, plastic and metal. Gravel is sub-angular to sub-rounded fine to coarse flint and mudstone *PID headspace test at 0.50m = 0ppm* *PID headspace test at 1.50m = 0ppm*		
				13.50	2.00	Brown gravelly CLAY. Gravel is angular to sub-angular fine to coarse flint		
				13.20	2.30	Light brown very clayey GRAVEL. Gravel is angular to sub-rounded fine to coarse flint and chalk		
				12.20	3.30			

Remarks and Water Observations

Sheet 1 of 1

1. Trial pit excavated with tracked machine. and utilised for soakaway testing.
2. Groundwater seepage encountered at 3.30m and rose to 2.90m upon completion of test pit.
3. Trial pit backfilled with 20mm gravel from 3.30m-2.50m.
4. Groundwater continued to rise to 2.66m after 60mins - water level monitored at 20 minute intervals - 2.57m, 2.60m, 2.58m, 2.58m.
5. Soakaway infiltration test undertaken within test zone of 0.50m-2.00m.
7. Test zone specification in accordance with Capita instructions.

TRIAL PIT LOG - TP202

Site: A29 Realignment Scheme

Client:	Method of Excavation:	Dimensions:	Project No.:
Jackson Civil Engineering	Mechanical Excavator	2.50m x 0.60m	G20107

Logged by: IJW	Ground Level: 15.352m AOD	Date: 02/01/2020	Location: - 494618E, 105915N	Scale: 1:25

Samples and In situ Tests			Water	Level (mAOD)	Depth (m)	Strata Description	Legend	Backfill
Ref:	Depth (m)	Result						
				15.05	0.30	MADE GROUND - Topsoil with frequent roots		
						MADE GROUND - Brown slightly sandy gravelly CLAY with occasional roots and fragments of brick and clay pipe. Gravel is sub-angular to sub-rounded fine to coarse flint and mudstone *PID headspace test at 0.50m = 0ppm*		
				14.35	1.00	Light brown very clayey GRAVEL. Gravel is angular to sub-rounded fine to coarse flint and chalk		
				13.45	1.90	Brown gravelly CLAY. Gravel is angular to sub-angular fine to coarse flint and chalk		
			▼					
			▽	12.35	3.00			

Remarks and Water Observations

Sheet 1 of 1

1. Trial pit excavated with tracked machine and utilised for soakaway testing.
2. Water seepage encountered at 2.98m, water rose to 2.71m after 40 minute duration,.
3. water level monitored at 10 minute intervals - 2.82m, 2.80m, 2.79m, 2.71m.
4. Soakaway infiltration test undertaken within test zone of 2.30m-2.71m.
5. Test zone specification in accordance with on-site Capita instructions.

TRIAL PIT LOG - TP203

Site: A29 Realignment Scheme

Client:	Method of Excavation:	Dimensions:	Project No.:
Jackson Civil Engineering	Mechanical Excavator	3.00m x 0.60m	G20107

Logged by: IJW	Ground Level: 15.59m AOD	Date: 02/01/2020	Location: - 494661E, 105927N	Scale: 1:25

Samples and In situ Tests			Water	Level (mAOD)	Depth (m)	Strata Description	Legend	Backfill
Ref:	Depth (m)	Result						
				15.29	0.30	MADE GROUND - Topsoil		
						MADE GROUND - Brown slightly sandy gravelly CLAY with occasional fragments of brick and clay pipe. Gravel is sub-angular to sub-rounded fine to coarse flint and mudstone *PID headspace test at 0.50m = 0ppm*		
				14.59	1.00	Brown very gravelly CLAY. Gravel is angular to sub-angular fine to coarse flint		
				13.79	1.80	Light brown very clayey GRAVEL. Gravel is angular to sub-rounded fine to coarse flint and chalk		
				12.49	3.10			

Remarks and Water Observations

Sheet 1 of 1

1. Trial pit excavated with tracked machine and utilised for soakaway testing.
2. No groundwater seepages encountered during excavation.
3. Soakaway infiltration test undertaken within test zone of 2.10m-3.10m.
4. Test zone specification in accordance with on-site Capita instructions.

INSITU SOAKAWAY TEST RESULTS

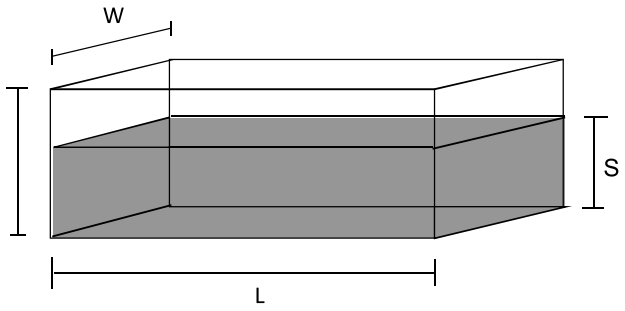
Trialpit No.: TP201

Soil Profile:

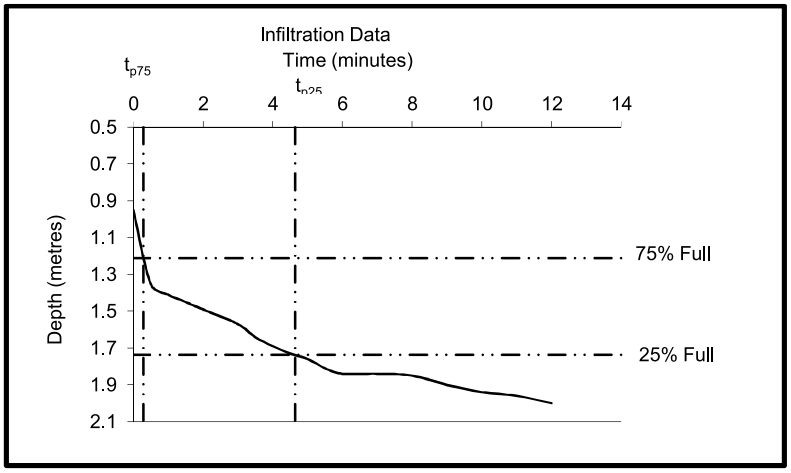
Depth (m) From:	To:	Description
0.00	0.30	MADE GROUND - Topsoil
0.30	2.00	MADE GROUND - Brown slightly sandy gravelly CLAY
2.00	2.30	Brown gravelly CLAY
2.30	3.35	Light brown very clayey GRAVEL

Sketch plan of test zone

Not to scale
All dimensions in metres.
D = Depth of test pit = 3.35
W = Width of test pit = 0.90
L = Length of test pit = 2.80
S= Storage depth (of water) = 1.05
N = Porosity = 0.42



Soakaway Test Run 1 Test Date: 02/02/2021



Time (minutes)	Depth (m)
0	0.95
1	1.35
1	1.41
2	1.45
2	1.49
3	1.57
4	1.64
4	1.69
5	1.73
5	1.76
6	1.84
7	1.85
8	1.90
9	1.85
10	1.94
12	2.00

Notes:

1. Trial pit excavated to 3.35m bgl - gravel backfill depth: 2.50m-3.30m bgl.
2. Groundwater level formed to 2.58m 1hr 20mins after completion of soakaway test pit. Test zone adjusted to 0.50m-2.00m (as Capita instructions).
3. 1000l of water added to test pit formed a level at 0.95m bgl.

Therefore:

S= 1.05 m a_{p50}= 6.41 m^2 V_{p75-25}= 1.323 m^3

From the above graph,

t_{p25}= 0.3 (min) $t_{p75=}$ 4.65 (min)

Soil Infiltration Rate: $f = \frac{V_{p75-25} \times N}{a_{p50} \times t_{p75-25}}$ = 3.32E-04 f_{run1}= **3.32×10^{-4}** m/s

or = 1.20E+00 or **1.20** m/hr

Test and analysis carried out in general accordance with BRE Digest 365 : 2016

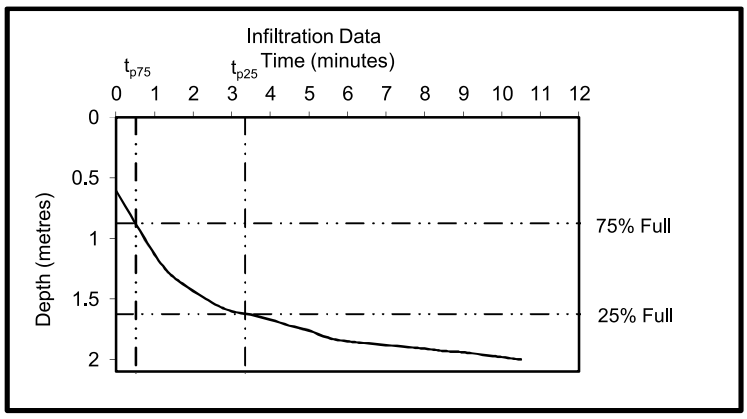
Job No.: G20107
Site: A29 Realignment Scheme
Client: Jacksons Civil Engineering

NICHOLLS COLTON GROUP

INSITU SOAKAWAY TEST RESULTS

Trialpit No.: TP201

Soakaway Test Run 2 Test Date: 03/02/2021



Time (minutes)	Depth (m)
0	0.60
1	0.87
1	1.13
2	1.32
3	1.53
3	1.60
4	1.63
5	1.72
5	1.76
6	1.82
6	1.85
9	1.93
9	1.94
12	2.00

Notes:

1. 1000l of water added to test pit formed a level at 0.60m bgl (storage depth 0.40m).

Therefore:

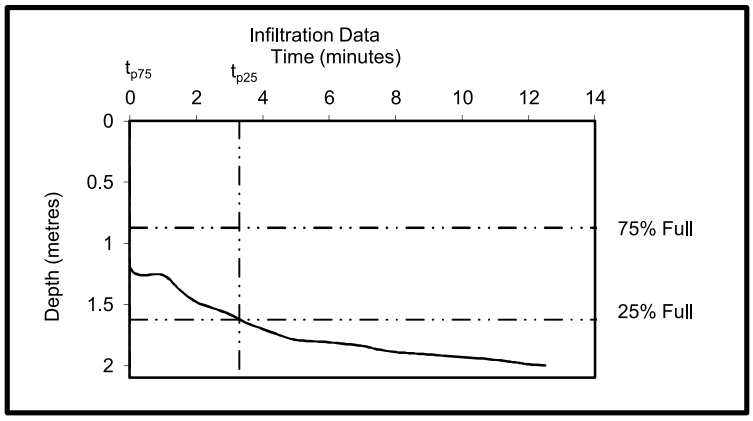
S= 1.50 m a_{p50}= 8.07 m^2 V_{p75-25}= 1.89 m^3

From the above graph,

t_{p25}= 0.52 (min) $t_{p75=}$ 3.35 (min)

Soil Infiltration Rate: $f = \frac{V_{p75-25} \times N}{a_{p50} \times t_{p75-25}}$ = 5.79E-04 or = 2.09E+00 f_{run2} = **5.79×10^{-4}** m/s or **2.09** m/hr

Soakaway Test Run 3 Test Date: 03/02/2021



Time (minutes)	Depth (m)
0	0.95
1	1.41
2	1.49
3	1.57
4	1.64
4	1.69
5	1.73
5	1.76
6	1.84
7	1.84
8	1.85
9	1.90
10	1.94
11	1.96
12	2.00

Notes:

1. 1000l of water added to test pit formed a level at 0.95m bgl (storage depth 1.05m).

Therefore:

S= 1.50 m a_{p50}= 8.07 m^2 V_{p75-25}= 1.89 m^3

From the above graph,

t_{p25}= 0 (min) $t_{p75=}$ 3.3 (min)

Soil Infiltration Rate: $f = \frac{V_{p75-25} \times N}{a_{p50} \times t_{p75-25}}$ = 4.97E-04 or = 1.79E+00 f_{run3}= **4.97×10^{-4}** m/s or **1.79** m/hr

Test and analysis carried out in general accordance with BRE Digest 365 : 2016

INSITU SOAKAWAY TEST RESULTS

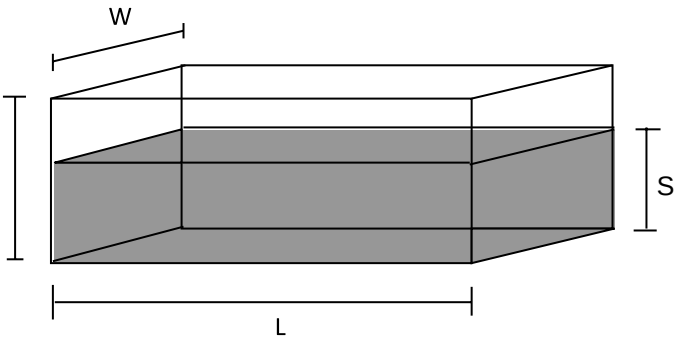
Trialpit No.: TP202

Soil Profile:

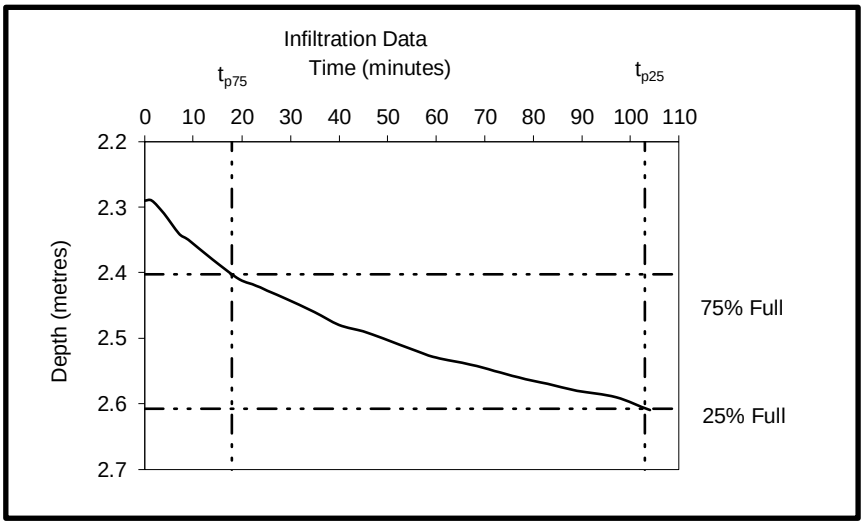
Depth (m) From:	To:	Description
0.00	0.30	MADE GROUND - Topsoil
0.30	1.00	MADE GROUND - Brown slightly sandy gravelly CLAY
1.00	1.90	Creamy brown very clayey gravel
1.90	3.00	Brown gravelly CLAY

Sketch plan of test zone

Not to scale
All dimensions in metres.
D = Depth of test pit = 3.00
W = Width of test pit = 0.60
L = Length of test pit = 2.50
S= Storage depth (of water) = 0.41
N = Porosity = 0.42



Soakaway Test Run 1 Test Date: 03/02/2021



Time (minutes)	Depth (m)
0	2.29
7	2.34
14	2.38
20	2.41
26	2.43
35	2.46
45	2.49
56	2.52
60	2.53
67	2.54
72	2.55
77	2.56
83	2.57
89	2.58
97	2.59
104	2.61

Notes:

1. Groundwater seepage encountered at 2.98m, rising to 2.71m after 40 minutes.
2. Response zone: 2.30 to 2.71m (as instructed by Capita)

Therefore:

S= 0.41 m a_{p50}= 2.77 m^2 V_{p75-25}= 0.3075

From the above graph,

tp75= 18 (min) tp25= 103 (min)

Soil Infiltration Rate: $f = \frac{V_{p75-25} \times N}{a_{p50} \times t_{p75-25}}$ = 9.14E-06 f_{run1}= **9.14×10^{-6}** m/s

or = 3.29E-02 or **3.29×10^{-2}** m/hr

Test and analysis carried out in general accordance with BRE Digest 365 : 2016

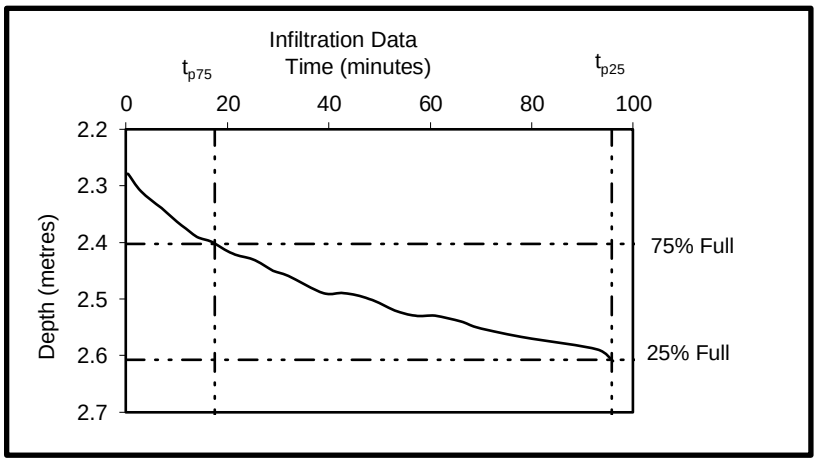
Job No.: G20107
Site: A29 Eastergate
Client: Jacksons Civil Engineering

NICHOLLS COLTON GROUP

INSITU SOAKAWAY TEST RESULTS

Trialpit No.: TP202

Soakaway Test Run 2 Test Date: 03/02/2021



Time (minutes)	Depth (m)
0	2.28
3	2.31
7	2.34
7	2.34
14	2.39
21	2.42
32	2.46
43	2.49
53	2.52
61	2.53
74	2.56
80	2.57
96	2.61

Therefore:

S= 0.41 m a_{p50}= 2.77 m^2 V_{p75-25}= 0.3075 m^3

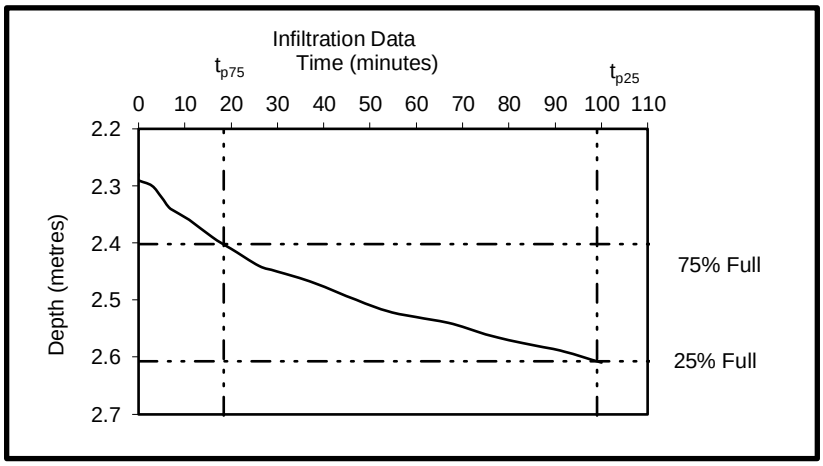
From the above graph,

t_{p75}= 17.5 (min) $t_{p25=}$ 95.75 (min)

Soil Infiltration Rate: $f = \frac{V_{p75-25} \times N}{a_{p50} \times t_{p75-25}}$ = 9.93E-06 f_{run2} = **9.93×10^{-6}** m/s

or = 3.57E-02 or **3.57×10^{-2}** m/hr

Soakaway Test Run 3 Test Date: 03/02/2021



Time (minutes)	Depth (m)
3	2.30
5	2.32
7	2.34
11	2.36
16	2.39
20	2.41
26	2.44
30	2.45
38	2.47
47	2.50
54	2.52
60	2.53
67	2.54
86	2.58
100	2.61

Therefore:

S= 0.41 m a_{p50}= 2.77 m^2 V_{p75-25}= 0.3075 m^3

From the above graph,

t_{p75}= 18.5 (min) $t_{p25=}$ 99 (min)

Soil Infiltration Rate: $f = \frac{V_{p75-25} \times N}{a_{p50} \times t_{p75-25}}$ = 9.65E-06 f_{run3}= **9.65×10^{-6}** m/s

or = 3.47E-02 or **3.47×10^{-2}** m/hr

Test and analysis carried out in general accordance with BRE Digest 365 : 2016

Job No.: G20107
Site: A29 Eastergate
Client: Jacksons Civil Engineering

NICHOLLS COLTON GROUP

INSITU SOAKAWAY TEST RESULTS

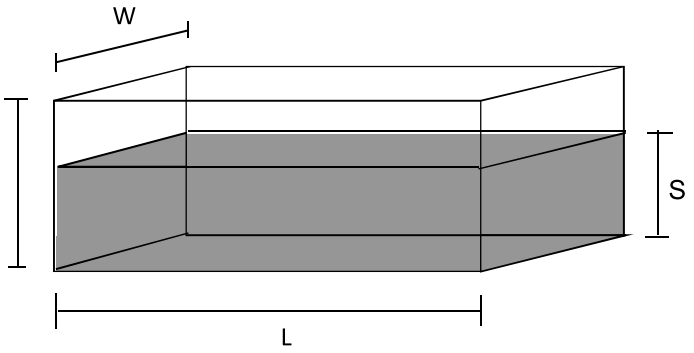
Trialpit No.: TP203

Soil Profile:

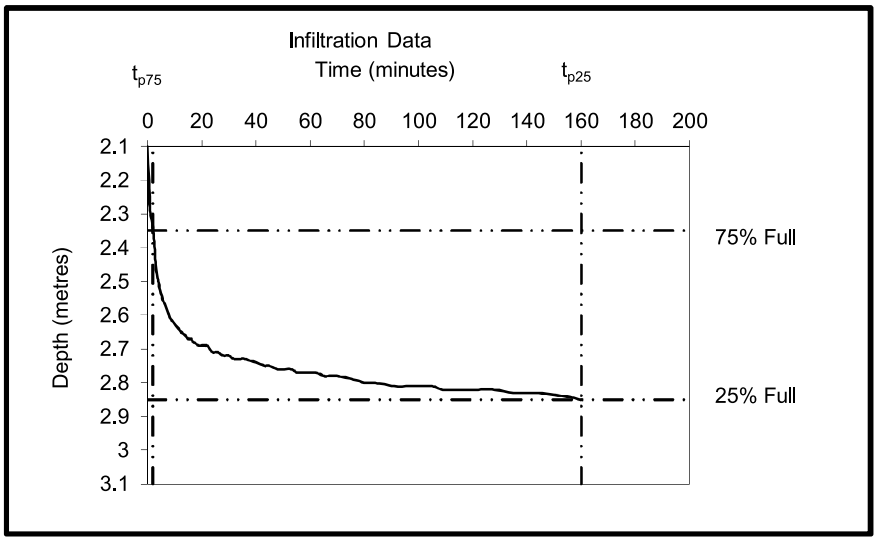
Depth (m) From:	To:	Description
0.00	0.30	MADE GROUND - Topsoil
0.30	1.00	MADE GROUND - Brown slightly sandy slightly gravelly CLAY
1.00	1.80	Brown very gravelly CLAY
1.80	3.10	Light brown very clayey GRAVEL

Sketch plan of test zone

Not to scale
All dimensions in metres.
D = Depth of test pit = 3.10
W = Width of test pit = 0.60
L = Length of test pit = 3.00
S= Storage depth (of water) = 1.00
N = Porosity = 0.42



Soakaway Test Run 1 Test Date: 01/02/2021



Time (minutes)	Depth (m)
0	2.10
1	2.65
2	2.34
5	2.52
10	2.62
17	2.68
30	2.72
40	2.74
53	2.76
58	2.77
67	2.78
80	2.80
91	2.81
109	2.82
135	2.83
160	2.85

Therefore:

S= 1.00 m a_{p50}= 5.40 m^2 V_{p75-25}= 0.9 m^3

From the above graph,

t_{p75}= 2 (min) $t_{p25=}$ 160 (min)

Soil Infiltration Rate: $f = \frac{V_{p75-25} \times N}{a_{p50} \times t_{p75-25}}$ = 7.38E-06 f_{run1}= **7.38×10^{-6}** m/s

or = 2.66E-02 or **2.66×10^{-2}** m/hr

Test and analysis carried out in general accordance with BRE Digest 365 : 2016

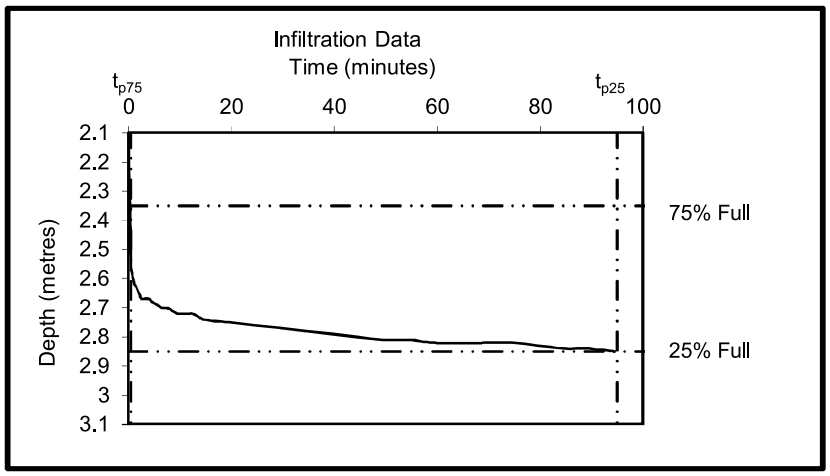
Job No.: G20107
Site: A29 Realignment Scheme
Client: Jacksons Civil Engineering

NICHOLLS COLTON GROUP

INSITU SOAKAWAY TEST RESULTS

Trialpit No.: TP203

Soakaway Test Run 2 **Test Date: 02/02/2021**



Time (minutes)	Depth (m)
0	2.10
1	2.55
3	2.67
5	2.68
7	2.70
9	2.71
11	2.72
13	2.72
20	2.75
35	2.78
50	2.81
70	2.82
85	2.84
95	2.85

Therefore:

S= 1.00 m a_{p50}= 5.40 m^2 V_{p75-25}= 0.9 m^3

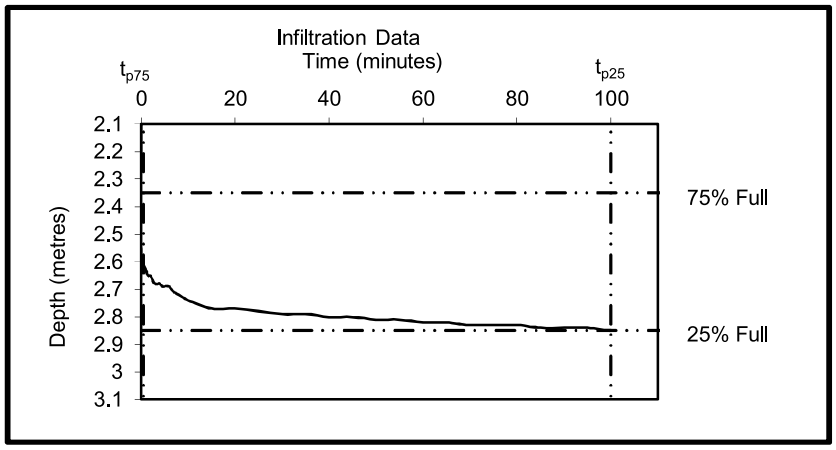
From the above graph,

t_{p75}= 0.5 (min) $t_{p25=}$ 95 (min)

Soil Infiltration Rate: $f = \frac{V_{p75-25} \times N}{a_{p50} \times t_{p75-25}}$ = 1.23E-05 f_{run2} = **1.23×10^{-5}** m/s

or = 4.44E-02 or **4.44×10^{-2}** m/hr

Soakaway Test Run 3 **Test Date: 02/02/2021**



Time (minutes)	Depth (m)
0	2.10
1	2.56
2	2.65
3	2.67
4	2.68
5	2.69
7	2.71
10	2.74
20	2.77
25	2.78
60	2.82
80	2.83
90	2.84
100	2.85

Therefore:

S= 1.00 m a_{p50}= 5.40 m^2 V_{p75-25}= 0.9 m^3

From the above graph,

t_{p75}= 0.5 (min) $t_{p25=}$ 100 (min)

Soil Infiltration Rate: $f = \frac{V_{p75-25} \times N}{a_{p50} \times t_{p75-25}}$ = 1.17E-05 f_{run3}= **1.17×10^{-5}** m/s

or = 4.22E-02 or **4.22×10^{-2}** m/hr

Test and analysis carried out in general accordance with BRE Digest 365 : 2016

Job No.: **G20107**

Site: **A29 Realignment Scheme**

Client: **Jacksons Civil Engineering**

NICHOLLS COLTON GROUP

NICHOLLS COLTON GROUP	Client: Jackson Civil Engineering
Project: A29 Realignment Scheme	

Drawing No: G20107-FR/03	Title: Exploratory Hole Location Plan -Soakaways	Date: February 2020

CAPITA

Jackson

Commercial in Confidence

File Note

09 March 2021

A29 Realignment Scheme – Review of the Winter Infiltration Testing Results

A29-CAP-HDG-00-AN-D-0078

Issue/Revision S3-P02

Prepared by: Rob Prior

Checked by: Kim Still

Authorised by: Andrew Burrows

1. Catchment 1 - Fontwell Avenue Roundabout

Further to the meeting with Arun DC held on 16th June 2020, additional ground investigation work was undertaken for soakaway tests during the winter period.

This Technical Note reviews the impact on the current design and storage volume provisions with regards to the latest infiltration rates recovered from site.

Three trial pits, TP201, TP202 and TP203 were excavated on 02/02/21 at the location of the proposed storage installations as shown in Figure 1. The level of the TP relative to the proposed IL of the storage cells is provided in table 2.

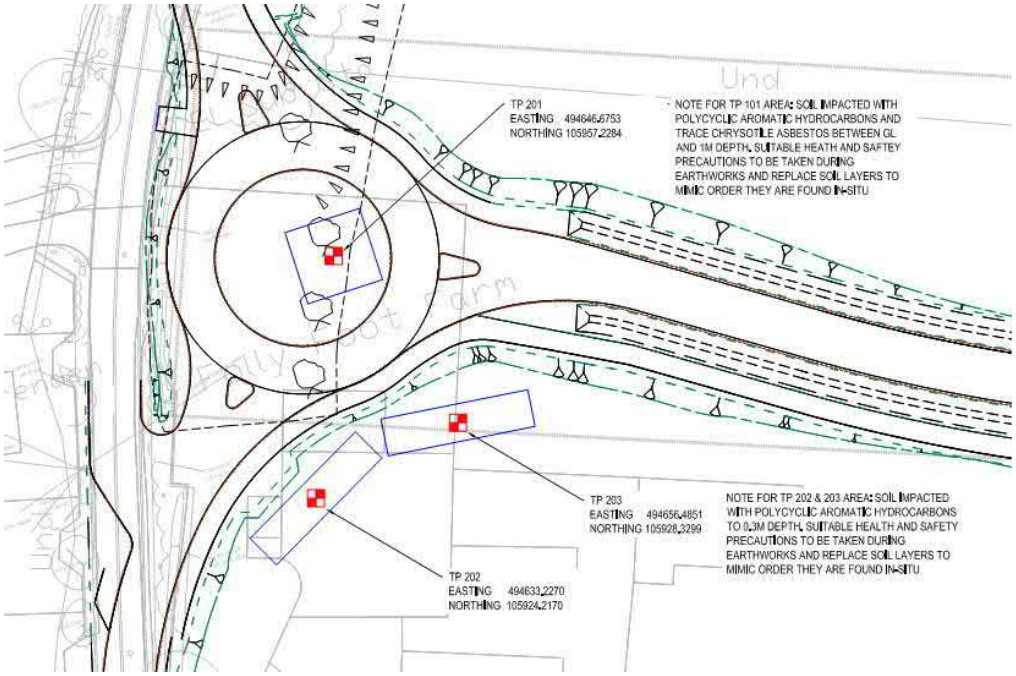


Figure 1. Location of Trial Pits

Property and infrastructure

Capita Symonds House, Wood Street, East Grinstead, West Sussex, RH19 1UU
Tel +44 (0)1342 327161 Fax +44 (0)1342 315 927 www.capita.co.uk/property
Capita Property and Infrastructure Ltd

2. Infiltration Tests Results and Recorded Ground Water Levels

Three infiltration tests were undertaken within each trial hole, the results are summarised in Table 1 below. Worst case infiltration rates are highlighted in yellow. Groundwater level data is summarised in Table 2. Detailed Trial Pit Logs can be found in Appendix A.

TP	Infiltration Rate m/s	Infiltration Rate m/hr	Infiltration Tank Locations	Infiltration rate used in design (TN Drainage Strategy)
201	Test 1: 3.32 x 10-4 m/s Test 2: 5.59 x 10-4 m/s Test 3: 4.97 x 10-4 m/s	Test 1: 1.20 m/hr Test 2: 2.09 m/hr Test 3: 1.79 m/hr	Roundabout central island	0.144 m/hr
202	Test 1: 9.14 x 10-6 m/s Test 2: 9.93 x 10-6 m/s Test 3: 9.65 x 10-6 m/s	Test 1: 3.29 x 10^{-2} m/hr Test 2: 3.57 x 10^{-2} m/hr Test 3: 3.47 x 10^{-2} m/hr	South of the roundabout	0.144 m/hr
203	Test 1: 7.38 x 10-6 m/s Test 2: 1.23 x 10-5 m/s Test 3: 1.17 x 10-5 m/s	Test 1: 2.66 x 10^{-2} m/hr Test 2: 4.44 x 10^{-2} m/hr Test 3: 4.22 x 10^{-2} m/hr	South of the roundabout	0.144 m/hr

Table 1 - Summary of Infiltration Test Results

TP	Depth to Groundwater (m)	Groundwater level m AOD	Groundwater Level previously assumed m AOD	Base level of the TP for testing m AOD	Invert Level of Storage Cells m AOD
201	2.580	12.925	12.700	13.004 (Excavated to 12.200 but backfilled due to the GWL)	13.000
202	2.710	12.640	12.700	12.350	13.000
203	Not encountered	Not encountered	12.700	12.490	13.000

Table 2 - Groundwater Levels

3. Assessment on the impact on the proposed installation volumes

3.1. Design Parameter used in the FLOW model design

- Rainfall Data – FEH-13
- CV – value 1.0
- Safety factor – 2
- Infiltration rate - base only

3.2. Centre of Roundabout Installation

It can be seen that the lowest infiltration rate at TP201 (1.20m/hr), within the centre of the proposed roundabout, is higher than the assumed design value of (0.144m/hr). The groundwater level, however, was higher than anticipated at 12.925m AOD (0.075m below the invert of the tank). It is proposed that the size of the installation remains unchanged at 125 m^3 as the spare capacity can be utilised to offset the risk of associated with high groundwater level.

Invert level: 13.000 m AOD
Storage Plan area: 125 m^2
Storage depth: 1 m

Based on critical 1 in 100 yr + 40% C.C. storm

For Infiltration rate: 1.44 x 10-1 m/hr (Assumed design)		For Infiltration rate: 1.2 m/hr (New Result)	
Runoff stored Vol. (m^3)	Water level	Runoff stored Vol. (m^3)	Water level
94.32	13.755	45.95	13.368

Based on critical 1 in 100 yr + 20% C.C. storm

For Infiltration rate: 1.44 x 10-1 m/hr (Assumed design)		For Infiltration rate: 1.2 m/hr (New Result)	
Runoff stored Vol. (m^3)	Water level	Runoff stored Vol. (m^3)	Water level
77.35	13.619	36.78	13.294

Based on critical 1 in 30 yr storm

For Infiltration rate: 1.44 x 10-1 m/hr (Assumed design)		For Infiltration rate: 1.2 m/hr (New Result)	
Runoff stored Vol. (m^3)	Water level	Runoff stored Vol. (m^3)	Water level
49.29	13.394	20.3	13.162

Hence, the spare capacity in the storage cells for each storm event is as follows:-

Storm Event	Water Level mAOD	Percentage Full (%)	Spare Capacity (%)
1 in 30 yr	13.162	16.2	83.8
1 in 100 yr + 20% C.C	13.294	29.4	70.6
1 in 100 yr + 40% C.C	13.368	36.8	63.2

3.3. South of Roundabout Installation

To the south of the roundabout the lowest infiltration results obtained in TP202 and TP203 are less than that assumed in design but are above the threshold for infiltration systems. The groundwater level recorded in TP202 was 12.640m AOD, below the value assumed for the design (12.700m AOD). Groundwater was not encountered in TP203.

The design of the storage cell installations has been checked using the latest infiltration rate as follows:-

Invert level: 13.000 m AOD
Storage Plan area: 220 m2
Storage depth: 1 m

Based on critical 1 in 100 yr + 40% C.C. storm

For Infiltration rate: 1.44 x 10-1 m/hr (Assumed design)		For Infiltration rate: 2.66 x 10-2 m/hr (New Result)	
Runoff stored Vol.	Water level	Runoff stored Vol.	Water level
196.9	13.895	208.63	13.948

Based on critical 1 in 100 yr + 20% C.C. storm

For Infiltration rate: 1.44 x 10-1 m/hr (Assumed design)		For Infiltration rate: 2.66 x 10-2 m/hr (New Result)	
Runoff stored Vol.	Water level	Runoff stored Vol.	Water level
177.27	13.806	203.4	13.925

Based on critical 1 in 30 yr storm

For Infiltration rate: 1.44 x 10-1 m/hr (Assumed design)		For Infiltration rate: 2.66 x 10-2 m/hr (New Result)	
Runoff stored Vol.	Water level	Runoff stored Vol.	Water level
108.52	13.493	163.31	13.742

Hence, the spare capacity in the storage cells for each storm event is as follows:-

Storm Event	Water Level mAOD	Percentage Full (%)	Spare Capacity (%)
1 in 30 yr	13.742	74.2	25.8
1 in 100 yr + 20% C.C	13.925	92.5	7.5
1 in 100 yr + 40% C.C	13.948	94.8	5.2

With a view to improving the spare capacity, the plan area of the cells was increased slightly, the layout being predominately constrained by the site red line boundary. The results for this revised layout (revised layout shown in figure 2 below) are as follows.

Invert level: 13.000 m AOD
Storage Plan area: 242 m^2 (Width increased from 5.5m to 6m as per the red outline)
Storage depth: 1m

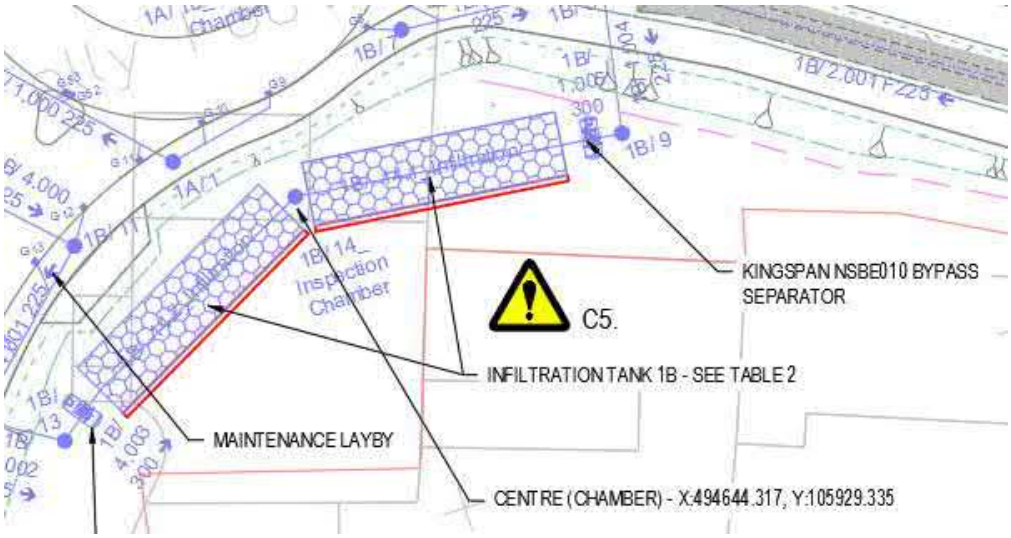


Figure 2. Revised storage plan areas

Based on critical 1 in 100 yr + 40% C.C. storm

For Infiltration rate: 1.44 x 10-1 m/hr (Assumed design)		For Infiltration rate: 2.66 x 10-2 m/hr (New Result)	
Runoff stored Vol.	Water level	Runoff stored Vol.	Water level
196.9	13.895	225.46	13.932

Based on critical 1 in 100 yr + 20% C.C. storm

For Infiltration rate: 1.44 x 10-1 m/hr (Assumed design)		For Infiltration rate: 2.66 x 10-2 m/hr (New Result)	
Runoff stored Vol.	Water level	Runoff stored Vol.	Water level
177.27	13.806	220.2	13.910

Based on critical 1 in 30 yr storm

For Infiltration rate: 1.44 x 10-1 m/hr (Assumed design)		For Infiltration rate: 2.66 x 10-2 m/hr (New Result)	
Runoff stored Vol.	Water level	Runoff stored Vol.	Water level
108.52	13.493	161.24	13.666

Hence, the spare capacity in the storage cells for each storm event is as follows:-

Storm Event	Water Level m AOD	Percentage Full (%)	Spare Capacity (%)
1 in 30 yr	13.666	66.6	33.4
1 in 100 yr + 20% C.C	13.910	91.0	9.0
1 in 100 yr + 40% C.C	13.932	93.2	6.8

The revised layout has improved spare capacity for the 1 in 30yr event, but only a little additional spare capacity for both the 1 in 100yr events.

4. Conclusions

The latest investigation work has shown that infiltration rates in the centre of the roundabout are reasonable and exceed the values assumed in the design. Recorded groundwater levels are higher than previously assumed. The design of the storage cells in the centre of the roundabout as previously presented will include spare capacity to reduce the risk associated with fluctuating groundwater levels.

Infiltration rates to the south of the roundabout however are above the threshold for infiltration systems but were lower than the values assumed in the design. The plan area of the storage cells has been increased within the constraints of the site red line boundary and the storage volume provided is now 242m^3. Groundwater levels recorded were slightly lower than that assumed for the design.

The results show that, while the distance between the invert of the tanks and the ground water level is less than expected the infiltration rates are still sufficient to enable the 100yr + 40% event to be fully managed within the proposed system.

5. Summary

Centre of Roundabout Installation:

Invert level:	13.000 m AOD
Storage Plan area:	125 m^2
Storage depth:	1 m
Storage Volume:	125 m^3
Infiltration Rate:	1.20 m/hr (3.32 x 10-4 m/s)
Groundwater Level:	12.925 m AOD

South of Roundabout Installation:

Invert level:	13.000 m AOD
Storage Plan area:	242 m^2
Storage depth:	1m
Storage Volume	242 m^3
Infiltration Rate:	2.66 x 10-2 m/hr (7.38 x 10-6 m/s)
Groundwater Level:	12.640 m AOD

The above is presented to WSCC and ADC for further discussion and agreement with our proposals.

APPENDIX A - TRIAL PIT LOGS

NICHOLLS COLTON GROUP

TRIAL PIT LOG - TP201

Site: A29 Realignment Scheme

Client: Jackson Civil Engineering

Method of Excavation: Mechanical Excavator

Dimensions: 2.80m x 0.90m

Project No.: G20107

Logged by: UW

Ground Level: 15.504m ADD

Date: 02/01/2020

Location: - 494651E, 105963N

Scale: 1:25

Samples and In situ Tests Ref:	Depth (m)	Result	Water	Level (mAOD)	Depth (m)	Strata Description	Legend	Backfill
						MADE GROUND - Topsoil		
				15.20	0.30	MADE GROUND - Brown slightly sandy gravelly CLAY with occasional fragments of chicken wire, brick, ceramic, plastic and metal. Gravel is sub-angular to sub-rounded fine to coarse flint and mudstone *PID headspace test at 0.50m = 0ppm* *PID headspace test at 1.50m = 0ppm*		
				13.50	2.00	Brown gravelly CLAY. Gravel is angular to sub-angular fine to coarse flint		
				13.20	2.30	Light brown very clayey GRAVEL. Gravel is angular to sub-rounded fine to coarse flint and chalk		
			▽					
			▽	12.20	3.30			

Remarks and Water Observations

Sheet 1 of 1

1. Trial pit excavated with tracked machine. and utilised for soakaway testing.
2. Groundwater seepage encountered at 3.30m and rose to 2.90m upon completion of test pit.
3. Trial pit backfilled with 20mm gravel from 3.30m-2.50m.
4. Groundwater continued to rise to 2.66m after 60mins - water level monitored at 20 minute intervals - 2.57m, 2.60m, 2.58m, 2.58m.
5. Soakaway infiltration test undertaken within test zone of 0.50m-2.00m.
7. Test zone specification in accordance with Capita instructions.

AGS

NICHOLLS COLTON GROUP

TRIAL PIT LOG - TP202

Site: A29 Realignment Scheme

Client: Jackson Civil Engineering

Method of Excavation: Mechanical Excavator

Dimensions: 2.50m x 0.60m

Project No.: G20107

Logged by: UW | Ground Level: 15.352m AOD | Date: 02/01/2020 | Location: - 494618E, 105915N | Scale: 1:25

Samples and In situ Tests Ref:	Depth (m)	Result	Water	Level (mAOD)	Depth (m)	Strata Description	Legend	Backfill
				15.05	0.30	MADE GROUND - Topsoil with frequent roots		
						MADE GROUND - Brown slightly sandy gravelly CLAY with occasional roots and fragments of brick and clay pipe. Gravel is sub-angular to sub-rounded fine to coarse flint and mudstone *PID headspace test at 0.50m = 0ppm*		
				14.35	1.00	Light brown very clayey GRAVEL. Gravel is angular to sub-rounded fine to coarse flint and chalk		
				13.45	1.90	Brown gravelly CLAY. Gravel is angular to sub-angular fine to coarse flint and chalk		
				12.35	3.00			

Remarks and Water Observations

Sheet 1 of 1

1. Trial pit excavated with tracked machine and utilised for soakaway testing.
2. Water seepage encountered at 2.98m, water rose to 2.71m after 40 minute duration,.
3. water level monitored at 10 minute intervals - 2.82m, 2.80m, 2.79m, 2.71m.
4. Soakaway infiltration test undertaken within test zone of 2.30m-2.71m.
5. Test zone specification in accordance with on-site Capita instructions.

AGS

NICHOLLS COLTON GROUP

TRIAL PIT LOG - TP203

Site: A29 Realignment Scheme

Client:	Method of Excavation:	Dimensions:	Project No.:
Jackson Civil Engineering	Mechanical Excavator	3.00m x 0.60m	G20107

Logged by:	Ground Level:	Date:	Location: -	Scale:
UW	15.59m AOD	02/01/2020	494661E, 105927N	1:25

Samples and In situ Tests Ref:	Depth (m)	Result	Water	Level (mAOD)	Depth (m)	Strata Description	Legend	Backfill
						MADE GROUND - Topsoil		
				15.29	0.30	MADE GROUND - Brown slightly sandy gravelly CLAY with occasional fragments of brick and clay pipe. Gravel is sub-angular to sub-rounded fine to coarse flint and mudstone *PID headspace test at 0.50m = 0ppm*		
				14.59	1.00	Brown very gravelly CLAY. Gravel is angular to sub-angular fine to coarse flint		
				13.79	1.80	Light brown very clayey GRAVEL. Gravel is angular to sub-rounded fine to coarse flint and chalk		
				12.49	3.10			

Remarks and Water Observations

Sheet 1 of 1

1. Trial pit excavated with tracked machine and utilised for soakaway testing.
2. No groundwater seepages encountered during excavation.
3. Soakaway infiltration test undertaken within test zone of 2.10m-3.10m.
4. Test zone specification in accordance with on-site Capita instructions.

AGS