Rolton Group Limited
The Charles Parker Building
Midland Road
Higham Ferrers
Northants
NN10 8DN

Trial Pit Log

Trialpit No
TPBH11E
Sheet 1 of 1

Project Name:	Willen Road, Newport Pagnell, Buckinghamshire	Project No. 19-0021.	Co-ords: - Level:	Date 23/04/2021
Location:	Willen Road, Newport Pagnell, Buckinghamshire	Dimensions (m): Depth 1.70	2 / 0.7	Scale 1:25
Client:	Bloor Homes South Midlands Ltd			Logged CFC

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.24			TOPSOIL. Reddish brown slightly clayey sand.
				0.45			MADE GROUND. Loosely compact orange brown gravelly sand. Gravel is of fine to medium sub-angular to sub-rounded sandstone, flint and quartz, with occasional brick.
							Medium dense sandy GRAVEL. Gravel is of medium to coarse sub-rounded to rounded sandstone, flint and quartz.
				1.40			Stiff blue grey mottled brown silty CLAY.
				1.70			End of pit at 1.70 m

Remarks: No groundwater encountered.

Stability: Pit walls remained stable.

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Trial Pit Log

Trialpit No
Loc. 1
Sheet 1 of 1

Project Name:	Willen Road, Newport Pagnell, Buckinghamshire	Project No. 19-0021.	Co-ords: - Level:	Date 06/08/2021
Location:	Willen Road, Newport Pagnell, Buckinghamshire		Dimensions (m): Depth 2.50	Scale 1:25
Client:	Bloor Homes South Midlands Ltd		3 × 0.6	Logged CFC

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	1.00 1.00	B ES					REWORKED TOPSOIL. Light brown slightly gravelly clayey sand. Gravel is of fine to medium quartz.
				2.50			End of pit at 2.50 m

Remarks: Trial pit excavated into bund approximately 3m in height. No groundwater encountered.

Stability: Pit walls remained stable.

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Trial Pit Log

Trialpit No
Loc. 2
Sheet 1 of 1

Project Name:	Willen Road, Newport Pagnell, Buckinghamshire	Project No. 19-0021.	Co-ords: - Level:	Date 06/08/2021
Location:	Willen Road, Newport Pagnell, Buckinghamshire	Dimensions (m): Depth 2.50	3 / 0.6	Scale 1:25
Client:	Bloor Homes South Midlands Ltd			Logged CFC

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	1.50 1.50	B ES					REWORKED TOPSOIL. Light brown slightly gravelly clayey sand. Gravel is of fine to medium quartz.
				2.50			End of pit at 2.50 m

Remarks: Trial pit excavated into bund approximately 3.5m in height. No groundwater encountered.

Stability: Pit walls remained stable.

Rolton Group Limited
The Charles Parker Building
Midland Road
Higham Ferrers
Northants
NN10 8DN

Trial Pit Log

Trialpit No
Loc. 3
Sheet 1 of 1

Project Name:	Willen Road, Newport Pagnell, Buckinghamshire	Project No. 19-0021.	Co-ords: - Level:	Date 06/08/2021
Location:	Willen Road, Newport Pagnell, Buckinghamshire	Dimensions (m): Depth 1.00	1.5 × 0.5	Scale 1:25
Client:	Bloor Homes South Midlands Ltd			Logged CFC

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.50 0.50	B ES		1.00			REWORKED TOPSOIL. Dark brown clayey gravelly sand. Gravel is of sub-angular to sub-rounded brick, sandstone and flint, with occasional plastic. End of pit at 1.00 m

1
2
3
4
5

Remarks: Trial pit excavated into bund approximately 1m in height. No groundwater encountered.

Stability: Pit walls remained stable.

Rolton Group Limited
The Charles Parker Building
Midland Road
Higham Ferrers
Northants
NN10 8DN

Trial Pit Log

Trialpit No
Loc. 4
Sheet 1 of 1

Project Name:	Willen Road, Newport Pagnell, Buckinghamshire	Project No. 19-0021.	Co-ords: - Level:	Date 06/08/2021
Location:	Willen Road, Newport Pagnell, Buckinghamshire	Dimensions (m): Depth 1.00	1.5 × 0.6	Scale 1:25
Client:	Bloor Homes South Midlands Ltd			Logged CFC

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.50 0.50	B ES		1.00			REWORKED TOPSOIL. Dark brown clayey gravelly sand. Gravel is of sub-angular to sub-rounded brick, sandstone, flint and glass, with occasional plastic. End of pit at 1.00 m

Remarks: Trial pit excavated into bund approximately 1m in height. No groundwater encountered.

Stability: Pit walls remained stable.

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Northants
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Trial Pit Log

Trialpit No
Loc. 5
Sheet 1 of 1

Project Name:	Willen Road, Newport Pagnell, Buckinghamshire	Project No. 19-0021.	Co-ords: - Level:	Date 06/08/2021
Location:	Willen Road, Newport Pagnell, Buckinghamshire	Dimensions (m): Depth 1.80	3 / 0.6	Scale 1:25
Client:	Bloor Homes South Midlands Ltd			Logged CFC

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.60 0.60	B ES					REWORKED SOILS. Medium dense orange brown clayey gravelly medium SAND. Gravel is of fine to medium sub-angular to sub-rounded flint and sandstone.
				1.20			RELIC TOPSOIL. Dark grey brown organic clay with frequent fine rootlets.
				1.45			Medium dense orange brown sandy GRAVEL. Gravel is of fine to medium sub-angular to sub-rounded flint and sandstone.
				1.80			End of pit at 1.80 m

Remarks: Trial pit excavated into bund approximately 1m in height. No groundwater encountered.

Stability: Pit walls remained stable.

Rolton Group Limited
The Charles Parker Building
Midland Road
Higham Ferrers
Northants
NN10 8DN

Trial Pit Log

Trialpit No
Loc. 6
Sheet 1 of 1

Project Name:	Willen Road, Newport Pagnell, Buckinghamshire	Project No. 19-0021.	Co-ords: - Level:	Date 06/08/2021
Location:	Willen Road, Newport Pagnell, Buckinghamshire	Dimensions (m): Depth 2.50	3 / 0.6	Scale 1:25
Client:	Bloor Homes South Midlands Ltd			Logged CFC

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.40 0.40	B ES		0.60			REWORKED SOILS. Medium dense orange brown gravelly medium SAND. Gravel is of fine to medium sub-rounded flint and sandstone.
	1.40 1.40	B ES		1.90			REWORKED SOILS. Medium dense brown clayey gravelly medium SAND. Gravel is of fine to medium sub-angular to sub-rounded flint.
▼				2.20			RELIC TOPSOIL. Dark grey brown organic clay with frequent fine rootlets.
				2.50			Medium dense orange brown sandy GRAVEL. Gravel is of fine to medium sub-angular to sub-rounded flint and sandstone. End of pit at 2.50 m

1 2 3 4 5

Remarks: Trial pit excavated into bund approximately 2m in height. Moderate seepage of perched water encountered at 2.2m depth.

Stability: Pit walls remained stable.

Rolton Group Limited
The Charles Parker Building
Midland Road
Higham Ferrers
Northants
NN10 8DN

Trial Pit Log

Trialpit No
Loc. 7
Sheet 1 of 1

Project Name:	Willen Road, Newport Pagnell, Buckinghamshire	Project No. 19-0021.	Co-ords: - Level:	Date 06/08/2021
Location:	Willen Road, Newport Pagnell, Buckinghamshire	Dimensions (m): Depth 3.50	3 / 0.6	Scale 1:25
Client:	Bloor Homes South Midlands Ltd			Logged CFC

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	1.50 1.50	B ES					REWORKED SOILS. Medium dense orange brown gravelly medium SAND. Gravel is of fine to medium sub-rounded flint and sandstone.
				3.50			End of pit at 3.50 m

Remarks: Trial pit excavated into bund approximately 3.5m in height. No groundwater encountered.

Stability: Pit walls remained stable.

Rolton Group Limited
The Charles Parker Building
Midland Road
Higham Ferrers
Northants
NN10 8DN

Trial Pit Log

Trialpit No
Loc. 8
Sheet 1 of 1

Project Name:	Willen Road, Newport Pagnell, Buckinghamshire	Project No. 19-0021.	Co-ords: - Level:	Date 06/08/2021
Location:	Willen Road, Newport Pagnell, Buckinghamshire	Dimensions (m): Depth 1.80	3 / 0.6	Scale 1:25
Client:	Bloor Homes South Midlands Ltd			Logged CFC

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.50 0.50	B ES					REWORKED SOILS. Medium dense orange brown clayey medium SAND.
				0.90			RELIC TOPSOIL. Dark grey brown organic clay with frequent fine rootlets.
				1.10			REWORKED SOILS. Firm orange brown sandy CLAY.
				1.80			End of pit at 1.80 m

Remarks: Trial pit excavated into bund approximately 1m in height. No groundwater encountered.

Stability: Pit walls remained stable.

BOREHOLE RECORD - Dynamic Sampler

Preliminary

Project **NEWPORT PAGNELL** Engineer **ROLTON GROUP** Borehole **BH01** Project No **PC218147**

Client **ROLTON GROUP**

Scale 1:50

Sampling Depth	Sample Type	Depth Cased & (to Water)	Properties Strength kPa	w %	SPT N	Strata Description	Depth	Legend
						TOPSOIL: Soft brown sandy clay with occasional rootlets.	G.L.	
0.40	B						0.30	
0.70	B					**Soft light brown slightly gravelly sandy CLAY. Gravel is angular to subrounded fine to medium flint, quartzite and sandstone.**	0.65	
1.20- 1.80	B					**Loose light brown and grey sandy silty GRAVEL. Gravel is angular to subrounded, fine to coarse flint, quartzite and sandstone.**		
1.20 2.00			TR=	80%				
1.20- 1.65	D	NIL (0.90)			S8			
							1.80	
2.00- 3.00	B					**FIrm grey thinly laminated slightly sandy CLAY with occasional fossil shell fragments (up to 20mm in diameter) and rare gypsum crystals (up to 2mm in size).**		
2.00 3.00			TR=	90%				
2.00- 2.45	D	2.00 (DRY)			S7			
3.00- 4.00	B					**Below 3.00m, stiff.**		
3.00 4.00			TR=	50%				
3.00- 3.45	D	2.00 (DRY)			S17			
4.00- 4.45	D	2.00 (DRY)			S21			
						End of Borehole	4.45	

Boring / Progress / Groundwater

Boring Depth	Hole Dia	Technique	Crew	Progress Depth of Hole	Depth Cased	Depth to Water	Date	Time	Groundwater Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
1.20	0.30	Inspection Pit	NS/BH	G.L.			12/04/21	08:00	0.90					Seepage
2.00	0.09	Windowless Sampler	NS/BH	4.45	2.00	DRY	12/04/21	18:00						
3.00	0.08	Windowless Sampler	NS/BH											
4.00	0.06	Windowless Sampler	NS/BH											

Remarks

Inspection pit hand excavated to 1.20m depth and no services were found.
ES sample = 2 x vial, 1 x plastic jar and 2 amber jar.
Backfill details from base of hole: bentonite up to ground level.

Logged by **MM**

Figure **1 of 1**

29/04/2021

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

geotechnics

BOREHOLE RECORD - Dynamic Sampler

Preliminary

Project **NEWPORT PAGNELL** Engineer **ROLTON GROUP** Borehole **BH02** Project No **PC218147**

Client **ROLTON GROUP**

Scale 1:50

Sampling Depth	Sample Type	Depth Cased & (to Water)	Properties Strength kPa	w %	SPT N	Strata Description	Depth	Legend
							G.L.	
0.15	ES					TOPSOIL: Soft brown sandy clay with many rootlets.	0.30	
0.40	B					Soft light brown mottled brown and grey slightly gravelly sandy CLAY. Gravel is angular to subrounded fine to medium flint, quartzite and sandstone.	0.60	
0.70	B							
1.20- 2.00	B					Soft to firm yellowish brown mottled brown slightly gravelly sandy CLAY. Gravel is angular to subrounded fine to coarse flint, quartzite and sandstone.	1.10	
1.20 2.00			TR=	100%				
1.20- 1.65	D	NIL			S13			
2.00- 3.00	B					Firm brown mottled grey mottled light brown slightly sandy slightly gravelly CLAY. Gravel is angular to rounded fine to medium flint and sandstone.	1.90	
2.00 3.00			TR=	90%				
2.00- 2.45	D	2.00 (DRY)			S6	Soft to firm grey thinly laminated CLAY with occasional fossil shell fragments (up to 30mm in size) and rare gypsum crystals (up to 2mm in size).		
3.00- 4.00	B							
3.00 4.00			TR=	90%				
3.00- 3.45	D	2.00 (DRY)			S11			
4.00- 4.45	D	2.00 (DRY)			S20	Below 4.00m, stiff.		
						End of Borehole	4.45	

Boring

Depth	Hole Dia	Technique	Crew
1.20	0.30	Inspection Pit	NS/BH
2.00	0.09	Dynamic Sampler	NS/BH
3.00	0.08	Dynamic Sampler	NS/BH
4.00	0.06	Dynamic Sampler	NS/BH

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
G.L.			12/04/21	08:00
4.45	2.00	DRY	12/04/21	18:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
0.90					Seepage

Remarks

AGS

Inspection pit hand excavated to 1.20m depth and no services were found.
ES sample = 2 x vial, 1 x plastic jar and 2 amber jar.
Backfill details from base of hole: bentonite up to ground level.

Logged by MM

Figure 1 of 1

29/04/2021

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

geotechnics

BOREHOLE RECORD - Dynamic Sampler

Preliminary

Project **NEWPORT PAGNELL** Engineer **ROLTON GROUP** Borehole **BH03** Project No **PC218147**

Client **ROLTON GROUP**

Scale 1:50

Sampling Depth	Sample Type	Depth Cased & (to Water)	Properties Strength kPa	w %	SPT N	Strata Description	Depth	Legend
							G.L.	
0.15	ES					**TOPSOIL: Soft brown sandy organic clay.**	0.25	
0.30	B					**Brown gravelly very clayey SAND. Gravel is angular to subrounded fine to coarse flint, quartzite and sandstone.**		
0.80	B					**Dense yellowish brown and grey very gravelly silty SAND. Gravel is angular to subrounded fine to coarse flint, sandstone and quartzite.**	0.70	
1.20- 2.00	B							
1.20 2.00			TR=	100%				
1.20- 1.65	D	NIL			S32			
2.00- 3.00	B							
2.00 3.00			TR=	80%				
2.00- 2.45		2.00 (2.00)			C44			
3.00- 3.45	D	2.00 (2.00)			S17	**Stiff grey thinly laminated CLAY.**	2.90	
						End of Borehole	3.45	

Boring

Depth	Hole Dia	Technique	Crew
1.20	0.30	Inspection Pit	NS/BH
2.00	0.09	Dynamic Sampler	NS/BH
3.00	0.08	Dynamic Sampler	NS/BH

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
G.L.			12/04/21	08:00
3.45	2.00	2.00	12/04/21	18:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
2.00	2.00	0.90	20		Seepage

Remarks

AGS

Inspection pit hand excavated to 1.20m depth and no services were found.
ES sample = 2 x vial, 1 x plastic jar and 2 amber jar.
Backfill details from base of hole: bentonite up to ground level.

Logged by **MM**

Figure **1 of 1**

29/04/2021

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

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BOREHOLE RECORD - Dynamic Sampler

Preliminary

Project **NEWPORT PAGNELL** Engineer **ROLTON GROUP** Borehole **BH04** Project No **PC218147**

Client **ROLTON GROUP**

Scale 1:50

Sampling Depth	Sample Type	Depth Cased & (to Water)	Properties Strength kPa	w %	SPT N	Strata Description	Depth	Legend
							G.L.	
0.20	ES					**TOPSOIL: Soft brown slightly gravelly sandy clay. Gravel is angular to subrounded fine flint, quartzite and sandstone.**	0.25	
0.30	B						0.40	
0.50	B					**Soft light brown slightly gravelly very sandy CLAY. Gravel is angular to subrounded fine to medium flint, quartzite and sandstone.**		
0.90	B						0.80	
1.20- 2.00	B					**Soft light brown gravelly sandy CLAY with occasional pockets (up to 30mm in size) of grey organic clay. Gravel is angular to subrounded fine to medium flint, quartzite and sandstone.**		
1.20 2.00			TR=	100%				
1.20- 1.65	D	NIL (0.80)			S7			
2.00- 3.00	B					**Loose yellowish brown sandy silty GRAVEL. Gravel is subangular to rounded fine to medium flint, quartzite and sandstone. One rounded cobble of quartzite.**		
2.00 3.00			TR=	50%				
2.00- 2.45		2.00 (0.80)			C8			
3.00- 4.00	B					**Firm to stiff grey thinly laminated CLAY with rare gypsum crystals and occasional fossil shell fragments (up to 20mm in size).**	2.90	
3.00 4.00			TR=	90%				
3.00- 3.45	D	3.00 (DRY)			S15			
4.00- 5.00	B							
4.00 5.00			TR=	70%				
4.00- 4.45	D	3.00 (DRY)			S27			
5.00- 5.45	D	3.00 (DRY)			S25			
						End of Borehole	5.45	

Boring

Depth	Hole Dia	Technique	Crew
1.20	0.30	Inspection Pit	NS/BH
2.00	0.09	Dynamic Sampler	NS/BH
3.00	0.09	Dynamic Sampler	NS/BH
4.00	0.08	Dynamic Sampler	NS/BH
5.00	0.06	Dynamic Sampler	NS/BH

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
G.L.			12/04/21	08:00
5.45	3.00	DRY	12/04/21	18:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
0.80					Seepage

Remarks

AGS

Inspection pit hand excavated to 1.20m depth and no services were found.
ES sample = 2 x vial, 1 x plastic jar and 2 amber jar.
Backfill details from base of hole: bentonite up to ground level.

Logged by **MM**

Figure **1 of 1**

29/04/2021

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

geotechnics

BOREHOLE RECORD - Dynamic Sampler

Preliminary

Project **NEWPORT PAGNELL** Engineer **ROLTON GROUP** **Borehole** **BH05** Project No **PC218147**

Client **ROLTON GROUP**

Scale 1:50

Sampling				Properties			Strata		
Depth		Sample Type	Depth Cased & (to Water)	Strength kPa	w %	SPT N	Description	Depth	Legend
								G.L.	
0.15		ES					TOPSOIL: Soft dark brown sandy clay with occasional rootlets.	0.30	
0.50		B					Soft to firm brown slightly gravelly sandy CLAY. Gravel is angular to subangular fine to coarse flint, quartzite and sandstone.	0.90	
1.00		B					Light brown gravelly very clayey SAND. Gravel is angular to subangular fine to coarse flint, quartzite and sandstone.	1.30	
1.20-	2.00	B							
1.20	2.00			TR=	80%				
1.20-	1.65	D	NIL (DRY)			S12	Firm grey mottled brown slightly sandy slightly gravelly CLAY. Gravel is angular to subrounded fine to coarse flint, sandstone and quartzite. With occasional lenses (up to 3mm thick) of decomposed rootlets.		
2.00-	2.45	D	NIL (DRY)			S20		2.30	
2.00	3.00			TR=	100%				
3.00-	4.00	B					Stiff grey slightly gravelly CLAY with occasional pockets (up to 10mm in size) of light grey silt. Gravel is angular to subrounded fine to medium flint and chalk.		
3.00	4.00			TR=	90%				
3.00-	3.45	D	NIL (DRY)			S17			
4.00-	4.45	D	NIL (DRY)			S16		4.45	
							End of Borehole		

Boring				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
1.20	0.30	Inspection Pit	NS/BH	G.L.			13/04/21	08:00						None encountered during sampling.
2.00	0.09	Dynamic Sampler	NS/BH	4.45	NIL	DRY	13/04/21	18:00						
3.00	0.08	Dynamic Sampler	NS/BH											
4.00	0.06	Dynamic Sampler	NS/BH											

Remarks

Inspection pit hand excavated to 1.20m depth and no services were found.
ES sample = 2 x vial, 1 x plastic jar and 2 amber jar.
Backfill details from base of hole: bentonite up to ground level.

Logged by **MM**

Figure **1 of 1**

29/04/2021

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

geotechnics

BOREHOLE RECORD - Dynamic Sampler

Preliminary

Project **NEWPORT PAGNELL** Engineer **ROLTON GROUP** Borehole **BH06** Project No **PC218147**

Client **ROLTON GROUP**

Scale 1:50

Sampling			Properties			Strata		
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	SPT N	Description	Depth	Legend
							G.L.	
0.15	ES					TOPSOIL: Soft dark brown sandy clay with occasional rootlets.	0.25	
0.50	B					Soft to firm brown mottled dark grey sandy CLAY.		
0.80	B					Orangish brown very gravelly silty SAND. Gravel is angular to subangular fine to coarse flint, quartzite and sandstone.	0.70	
1.20- 1.65	D	NIL (DAMP)			S9			
1.20 2.00			TR=	100%		Firm grey slightly gravelly CLAY. Gravel is angular to subangular fine to coarse limestone flint, quartzite.	1.40	
1.40- 2.00	B							
2.00- 3.00	B						2.00	
2.00 3.00			TR=	100%		Firm grey thinly laminated CLAY.		
2.00- 2.45	D	NIL (DRY)			S8			
						Below 2.50m, with some fossil shell fragments (up to 20mm in size) and occasional gypsum crystals (up to 2mm in size).		
3.00- 3.45	D	NIL (DRY)			S11			
3.00 4.00			TR=	100%				
4.00- 4.45	D	NIL (DRY)			S18	Below 4.00m, stiff.		
							4.45	
						End of Borehole		

Boring				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
1.20	0.30	Inspection Pit	NS/BH	G.L.			13/04/21	08:00	1.20					Damp
2.00	0.09	Dynamic Sampler	NS/BH	4.45	NIL	DRY	13/04/21	18:00						
3.00	0.08	Dynamic Sampler	NS/BH											
4.00	0.07	Dynamic Sampler	NS/BH											

Remarks

Inspection pit hand excavated to 1.20m depth and no services were found.
ES sample = 2 x vial, 1 x plastic jar and 2 amber jar.
Backfill details from base of hole: bentonite up to ground level.

Logged by **MM**

Figure **1 of 1**

29/04/2021

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

geotechnics

BOREHOLE RECORD - Dynamic Sampler

Preliminary

Project **NEWPORT PAGNELL** Engineer **ROLTON GROUP** Borehole **BH07** Project No **PC218147**

Client **ROLTON GROUP**

Scale 1:50

Sampling				Properties			Strata		
Depth		Sample Type	Depth Cased & (to Water)	Strength kPa	w %	SPT N	Description	Depth	Legend
								G.L.	
0.15		ES					TOPSOIL: Soft dark brown sandy clay with occasional rootlets.	0.20	
0.50		B					Soft to firm brown mottled grey sandy CLAY.		
1.00		B					Orangish brown and brown gravelly silty SAND. Gravel is angular to subangular fine to coarse flint, quartzite and sandstone.	0.90	
1.20-	1.80	B						1.20	
1.20	2.00			TR=	100%				
1.20-	1.65	D	NIL (WET)			S10	Loose to medium dense orangish brown and grey sandy slightly silty GRAVEL. Gravel is angular to subrounded fine to coarse flint, quartzite and sandstone.	1.80	
2.00-	3.00	B							
2.00	3.00			TR=	70%		Firm grey thinly laminated CLAY.		
2.00-	2.45	D	2.00 (DRY)			S11			
3.00-	4.00	B					Below 3.00m with some fossil shell fragments (up to 30mm in size) and occasional gypsum crystals (up to 2mm in size).		
3.00	4.00			TR=	100%				
3.00-	3.45	D	2.00 (DRY)			S15			
4.00-	4.45	D	2.00 (DRY)			S23	Below 4.00m, stiff.		
							End of Borehole	4.45	

Boring				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
1.20	0.30	Inspection Pit	NS/BH	G.L.			13/04/21	08:00	1.20					Seepage
2.00	0.09	Dynamic Sampler	NS/BH	4.45	NIL	DRY	13/04/21	18:00						
3.00	0.06	Dynamic Sampler	NS/BH											
4.00	0.06	Dynamic Sampler	NS/BH											

Remarks

Inspection pit hand excavated to 1.20m depth and no services were found.
ES sample = 2 x vial, 1 x plastic jar and 2 amber jar.
Backfill details from base of hole: bentonite up to ground level.

Logged by **MM**

Figure **1 of 1**

29/04/2021

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

geotechnics

BOREHOLE RECORD - Dynamic Sampler

Preliminary

Project **NEWPORT PAGNELL** Engineer **ROLTON GROUP** Borehole **BH08** Project No **PC218147**

Client **ROLTON GROUP**

Scale 1:50

Sampling Depth	Sample Type	Depth Cased & (to Water)	Properties Strength kPa	w %	SPT N	Strata Description	Depth	Legend
							G.L.	
0.15	ES					**TOPSOIL: Soft dark brown slightly gravelly sandy clay. Gravel is angular to subangular fine to medium flint and sandstone.**	0.20	
0.50	B					**Brown gravelly very clayey SAND with a low cobble content of angular sandstone. Gravel is angular to subangular fine to coarse flint, quartzite and sandstone.**	0.80	
1.00	B							
1.20- 2.00	B					**Medium dense orangish brown gravelly silty SAND. Gravel is angular to subangular fine to coarse flint, quartzite and sandstone.**		
1.20 2.00			TR=	100%				
1.20- 1.65	D				S26			
2.00- 3.00	B						2.00	
2.00 3.00			TR=	50%		**Loose orangish brown and grey very sandy slightly silty GRAVEL. Gravel is angular to subrounded fine to coarse flint, quartzite and sandstone.**		
2.00- 2.45	D	2.00 (WET)			S8			
3.00- 4.00	B						3.00	
3.00 4.00			TR=	50%		**Firm grey thinly laminated CLAY.**		
3.00- 3.45	D	3.00 (WET)			S7			
4.00- 4.45	D	3.00 (DRY)			S18	**Below 4.00m, stiff.**		
							4.45	
						End of Borehole		

Boring

Depth	Hole Dia	Technique	Crew
1.20	0.30	Inspection Pit	NS/BH
2.00	0.09	Dynamic Sampler	NS/BH
3.00	0.09	Dynamic Sampler	NS/BH
4.00	0.08	Dynamic Sampler	NS/BH

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
G.L.			13/04/21	08:00
4.45	3.00	DRY	13/04/21	18:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
1.20					Rose to 1 metre after pulling casing.

Remarks

Inspection pit hand excavated to 1.20m depth and no services were found.
ES sample = 2 x vial, 1 x plastic jar and 2 amber jar.
Backfill details from base of hole: bentonite up to ground level.

Logged by **MM**

Figure **1 of 1**

29/04/2021

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

geotechnics

BOREHOLE RECORD - Dynamic Sampler

Preliminary

Project **NEWPORT PAGNELL** Engineer **ROLTON GROUP** Borehole **BH09** Project No **PC218147**

Client **ROLTON GROUP**

Scale 1:50

Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	SPT N	Description	Depth
							G.L.
0.10	ES					MADE GROUND: Soft dark brown sandy clay with many rootlets.	0.15
0.30	B						
0.30	ES					MADE GROUND: Brown gravelly clayey sand with a low cobble content of angular concrete. Gravel is angular to subangular fine to coarse concrete, sandstone, flint and brick.	0.45
1.00	B						
1.20- 1.65	D	1.00 (DRY)			S1	Very soft to soft and firm orangish brown mottled grey sandy CLAY. Below 1.30m slightly gravelly. Gravel is angular to subangular fine to coarse flint, quartzite and chalk.	
1.20 2.00			TR=	100%			
2.00- 2.90	B					Between 1.90-2.20m, gravelly clayey sand. Gravel is angular to subrounded fine to coarse flint, quartzite and sandstone.	
2.00 3.00			TR=	100%			
2.00- 2.45	D	2.00 (DRY)			S10		
							2.70
3.00- 4.00	B					Grey gravelly clayey SAND. Gravel is angular to subrounded fine to coarse flint, quartzite and sandstone.	2.90
3.00 4.00			TR=	80%			
3.00- 4.00	B						
3.00- 3.45	D	3.00 (DRY)			S14	Firm to stiff grey thinly laminated CLAY.	
4.00- 4.45	D	3.00 (DRY)			S22		
							4.45
						End of Borehole	

Boring

Depth	Hole Dia	Technique	Crew
1.20	0.30	Inspection Pit	NC/WL
2.00	0.10	Dynamic Sampler	NC/WL
3.00	0.09	Dynamic Sampler	NC/WL
4.00	0.07	Dynamic Sampler	NC/WL

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
G.L.			14/04/21	08:00
4.45	3.00	DRY	14/04/21	18:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
					None encountered during sampling.

Remarks

Inspection pit hand excavated to 1.20m depth and no services were found.
ES sample = 2 x vial, 1 x plastic jar and 2 amber jar.
A 50mm standpipe was installed to 4.00m with a slotted section from 1.00m to 4.00m with upright lockable protective cover. Backfill details from base of hole: gravel filter up to 1.00m, bentonite up to 0.25m, concrete up to ground level.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

Logged by **MM**

Figure **1 of 1**

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geotechnics

BOREHOLE RECORD - Dynamic Sampler

Preliminary

Project **NEWPORT PAGNELL** Engineer **ROLTON GROUP** Borehole **BH10** Project No **PC218147**

Client **ROLTON GROUP**

Sampling			Properties			Strata		Scale 1:50
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	SPT N	Description	Depth	Legend
							G.L.	
0.10	ES					MADE GROUND: Firm dark brown slightly gravelly sandy organic clay with rare rootlets. Gravel is angular to subangular fine to coarse concrete and flint.	0.15	
0.30	B							
0.40	ES						0.50	
0.80	B					MADE GROUND: Dark brown gravelly clayey sand. Gravel is angular to subangular fine to coarse concrete, flint, sandstone and tiles.		
1.00- 1.20	B						1.00	
1.20- 2.00	B					Brown gravelly silty SAND. Gravel is angular to subrounded fine to coarse flint, quartzite and sandstone.		
1.20 2.00			TR=	75%				
1.20- 1.65	D	1.00 (DRY)			S8			
2.00- 2.45	D	2.00			S10	Loose orangish brown and grey sandy slightly silty GRAVEL. Gravel is angular to subrounded fine to coarse sandstone, flint and quartzite.		
2.10- 3.00	B	(DRY)				Between 1.80 to 1.90, clayey.	2.10	
2.00 3.00			TR=	100%		Firm to stiff grey thinly laminated CLAY with rare gypsum crystals (up to 20mm in size). Below 2.60m mottled light grey (silt dusting).		
3.00- 4.00	B							
3.00 4.00			TR=	100%				
3.00- 3.45	D	2.00 (DRY)			S16	At 3.50m with rare subangular fine gravel of chalk.		
4.00- 4.45	D	2.00 (DRY)			S17			
						End of Borehole	4.45	

Boring				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
1.20	0.30	Inspection Pit	NC/WL	G.L.			14/04/21	08:00						None encountered during sampling
2.00	0.09	Dynamic Sampler	NC/WL	4.45	2.00	DRY	14/04/21	18:00						
3.00	0.08	Dynamic Sampler	NC/WL											
4.00	0.07	Dynamic Sampler	NC/WL											

Remarks

Inspection pit hand excavated to 1.20m depth and no services were found.
ES sample = 2 x vial, 1 x plastic jar and 2 amber jar.
A 50mm standpipe was installed to 4.00m with a slotted section from 1.00m to 4.00m with upright lockable protective cover. Backfill details from base of hole: gravel filter up to 1.00m, bentonite up to 0.25m, concrete up to ground level.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

Logged by **MM**

Figure **1 of 1**

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geotechnics

BOREHOLE RECORD - Dynamic Sampler

Preliminary

Project **NEWPORT PAGNELL** Engineer **ROLTON GROUP** Borehole **BH11** Project No **PC218147**

Client **ROLTON GROUP**

Sampling			Properties			Strata		Scale 1:50
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	SPT N	Description	Depth	Legend
0.00- 0.80	B					MADE GROUND: Soft brown slightly sandy slightly gravelly clay. Gravel is angular to subangular fine to coarse quartzite, flint and brick fragments. With occasional cobbles (<240mm diameter) of brick.	G.L.	
0.10	ES							
1.20- 2.00	B					MADE GROUND: Very soft dark brownish black sandy gravelly clay, tending to very clayey slightly gravelly sand. Gravel is angular to subrounded fine to coarse quartzite and flint.	1.10	
1.20 2.00			TR=	100%				
1.20- 1.65	D				S7			
1.60	D						1.60	
2.00- 2.45	D	2.00 (2.00)			S6	Loose dark grey sandy GRAVEL of angular to subrounded fine to coarse quartzite and flint.		
2.00 3.00			TR=	100%				
2.60	D					Firm to stiff dark grey thinly laminated slightly sandy CLAY.	2.50	
3.00- 4.00	B							
3.00 4.00			TR=	100%				
3.00- 3.45	D	3.00 (DRY)			S9			
4.00- 4.45	D	3.00 (DRY)			S17			
						End of Borehole	4.45	

Boring				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
1.20	0.30	Inspection Pit	RC/LN	G.L.			14/04/21	08:00	2.00					Seepage
2.00	0.10	Dynamic Sampler	RC/LN	4.45	3.00	DRY	14/04/21	18:00						
3.00	0.09	Dynamic Sampler	RC/LN											
4.00	0.07	Dynamic Sampler	RC/LN											

Remarks

Inspection pit hand excavated to 1.20m depth and no services were found.
ES sample = 2 x vial, 1 x plastic jar and 2 amber jar.
A 50mm standpipe was installed to 4.00m with a slotted section from 1.00m to 4.00m with upright lockable protective cover. Backfill details from base of hole: gravel filter up to 1.00m, bentonite up to 0.25m, concrete up to ground level.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

Logged by **MM**

Figure **1 of 1**

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geotechnics

BOREHOLE RECORD - Dynamic Sampler

Preliminary

Project **NEWPORT PAGNELL** Engineer **ROLTON GROUP** Borehole **BH12** Project No **PC218147**

Client **ROLTON GROUP**

Scale 1:50

Sampling Depth	Sample Type	Depth Cased & (to Water)	Properties Strength kPa	w %	SPT N	Strata Description	Depth	Legend
							G.L.	
0.15	ES					**TOPSOIL: Soft brown slightly sandy slightly gravelly clay. Gravel is subangular to subrounded fine to coarse quartzite.**	0.30	
0.50- 1.00	B					**Soft brown mottled orange slightly sandy slightly gravelly CLAY. Gravel is subangular to subrounded fine to coarse quartzite.**	0.50	
1.20- 2.00	B					**Loose orangish brown sandy GRAVEL of subangular to subrounded fine to coarse quartzite and flint.**		
1.20 2.00			TR=	100%				
1.20- 1.65	D				S4			
2.00- 3.00	B					**At 2.00m, medium dense.**		
2.00 3.00			TR=	70%				
2.00- 2.45		2.00 (2.00)			C29			
3.00- 4.00	B							
3.00 4.00			TR=	100%				
3.00- 3.45		2.00 (2.00)			C8	**Firm grey thinly laminated slightly sandy CLAY.**	3.20	
4.00- 4.45	D	3.00			S15			
						End of Borehole	4.45	

Boring

Depth	Hole Dia	Technique	Crew
1.20	0.30	Inspection Pit	RC/LN
2.00	0.09	Dynamic Sampler	RC/LN
3.00	0.09	Dynamic Sampler	RC/LN
4.00	0.08	Dynamic Sampler	RC/LN

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
G.L.			14/04/21	08:00
4.45	3.00		14/04/21	18:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
2.00					Seepage

Remarks

Inspection pit hand excavated to 1.20m depth and no services were found.
ES sample = 1 x plastic jar and 2 amber jar.
A 50mm standpipe was installed to 4.00m with a slotted section from 1.00m to 4.00m with upright lockable protective cover. Backfill details from base of hole: gravel filter up to 1.00m, bentonite up to 0.25m, concrete up to ground level.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

Logged by **MM**

Figure **1 of 1**

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geotechnics

BOREHOLE RECORD - Dynamic Sampler

Preliminary

Project **NEWPORT PAGNELL** Engineer **ROLTON GROUP** Borehole **BH13** Project No **PC218147**

Client **ROLTON GROUP**

Scale 1:50

Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	SPT N	Description	Depth
							G.L.
0.10	ES					**TOPSOIL: Soft brown slightly sandy slightly gravelly clay. Gravel is angular to subrounded fine to coarse quartzite and flint.**	
0.30- 0.90	B						0.30
						Soft to firm orange brown slightly sandy slightly gravelly CLAY. Gravel is angular to subrounded fine to coarse quartzite and flint.	
							1.00
1.20- 2.00	B					**Soft to firm grey thinly laminated slightly sandy CLAY.**	
1.20 2.00			TR=	100%			
1.20- 1.65	D	NIL			S5		
2.00- 2.45	D	NIL (WET)			S5	**Between 2.00m and 2.40m no recovery.**	
2.00 3.00			TR=	60%			
2.40- 3.00	B						
3.00- 3.45	D	NIL (DRY)			S12		
3.00 4.00			TR=	100%			
3.80	D						
3.80	D						
4.00- 4.45		NIL (DRY)			S15		
							4.45
						End of Borehole	

Boring

Depth	Hole Dia	Technique	Crew
1.20	0.30	Inspection Pit	RC/LN
2.00	0.09	Dynamic Sampler	RC/LN
3.00	0.09	Dynamic Sampler	RC/LN
4.00	0.08	Dynamic Sampler	RC/LN

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
G.L.			14/04/21	08:00
4.45	NIL	DRY	14/04/21	18:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
2.00					Seepage

Remarks

AGS

Inspection pit hand excavated to 1.20m depth and no services were found.
ES sample = 1 x plastic jar and 2 amber jar.
A 50mm standpipe was installed to 4.00m with a slotted section from 1.00m to 4.00m with upright lockable protective cover. Backfill details from base of hole: gravel filter up to 1.00m, bentonite up to 0.25m, concrete up to ground level.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

Logged by **MM**

Figure **1 of 1**

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geotechnics

BOREHOLE RECORD - Dynamic Sampler

Preliminary

Project **NEWPORT PAGNELL** Engineer **ROLTON GROUP** Borehole **BH14** Project No **PC218147**

Client **ROLTON GROUP**

Scale 1:50

Sampling			Properties			Strata		
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	SPT N	Description	Depth	Legend
							G.L.	
0.10	ES					TOPSOIL: Soft brown slightly sandy slightly gravelly clay. Gravel is subangular to subrounded fine to coarse quartzite and flint.		
0.40- 1.00	B						0.30	
						Orange brown sandy GRAVEL of angular to subrounded fine to coarse quartzite and flint.		
						At 1.20m, dense.		
1.20- 2.00	B							
1.20 2.00			TR=	100%				
1.20- 1.65	D				S32			
2.00 3.00			TR=	100%				
2.00- 2.45		2.00			C11			
2.10- 3.00	B	(2.00)				Firm grey thinly laminated slightly sandy CLAY. Between 2.40 to 2.50 becomes very sandy.	2.10	
3.00- 4.00	B							
3.00 4.00			TR=	100%				
3.00- 3.45	D	3.00 (DRY)			S12			
4.00- 4.45	D	3.00 (DRY)			S13			
						End of Borehole	4.45	

Boring				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
1.20	0.30	Inspection Pit	RC/LN	G.L.			14/04/21	08:00	2.00					Seepage
2.00	0.09	Dynamic Sampler	RC/LN	4.45	3.00	DRY	14/04/21	18:00						
3.00	0.09	Dynamic Sampler	RC/LN											
4.00	0.08	Dynamic Sampler	RC/LN											

Remarks

Inspection pit hand excavated to 1.20m depth and no services were found.
ES sample = 1 x plastic jar and 2 amber jar.
A 50mm standpipe was installed to 4.00m with a slotted section from 1.00m to 4.00m with upright lockable protective cover. Backfill details from base of hole: gravel filter up to 1.00m, bentonite up to 0.25m, concrete up to ground level.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

Logged by **MM**

Figure **1 of 1**

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geotechnics

BOREHOLE RECORD - Dynamic Sampler

Preliminary

Project **NEWPORT PAGNELL** Engineer **ROLTON GROUP** Borehole **BH15** Project No **PC218147**

Client **ROLTON GROUP**

Scale 1:50

Sampling Depth	Sample Type	Depth Cased & (to Water)	Properties Strength kPa	w %	SPT N	Strata Description	Depth	Legend
							G.L.	
0.10	ES					**TOPSOIL: Soft brown slightly gravelly sandy organic clay. Gravel is angular to subangular fine to medium flint.**	0.20	
0.40	B					**Soft to firm brown slightly gravelly sandy CLAY. Gravel is angular to subrounded fine to coarse flint, quartzite and sandstone.**		
1.00	B							
1.20- 2.00	B							
1.20 2.00			TR=	100%			1.30	
1.20- 1.65	D	NIL (DRY)			S5	**Soft to firm grey mottled brown slightly sandy slightly gravelly CLAY. Gravel is angular to subrounded fine to coarse flint, quartzite and limestone.**	1.70	
2.00- 3.00	B							
2.00 3.00			TR=	90%		**Firm grey thinly laminated slightly gravelly CLAY. Gravel is angular to subrounded fine to medium limestone.**		
2.00- 2.45	D	NIL (DRY)			S6			
3.00- 4.00	B							
3.00 4.00			TR=	90%				
3.00- 3.45	D	NIL (DRY)			S14			
4.00- 4.45	D	NIL (DRY)			S19	**Below 4.00m, stiff.**		
						End of Borehole	4.45	

Boring

Depth	Hole Dia	Technique	Crew
1.20	0.30	Inspection Pit	
2.00	0.09	Dynamic Sampler	NS/BH
3.00	0.08	Dynamic Sampler	NS/BH
4.00	0.07	Dynamic Sampler	NS/BH

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
G.L.			15/04/21	08:00
4.45	NIL	DRY	15/04/21	18:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
1.00					Damp.

Remarks

ES sample = 2 x vial, 1 x plastic jar and 2 amber jar.
Inspection pit hand excavated to 1.20m depth and no services were found.
A 50mm standpipe was installed to 4.00m with a slotted section from 1.00m to 4.00m with upright lockable protective cover. Backfill details from base of hole: gravel filter up to 1.00m, bentonite up to 0.20m, concrete up to ground level.

Logged by **MM**

Figure **1 of 1**

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Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

geotechnics

BOREHOLE RECORD - Dynamic Sampler

Preliminary

Project **NEWPORT PAGNELL** Engineer **ROLTON GROUP** Borehole **BH16** Project No **PC218147**

Client **ROLTON GROUP**

Scale 1:50

Sampling Depth	Sample Type	Depth Cased & (to Water)	Properties Strength kPa	w %	SPT N	Strata Description	Depth	Legend
							G.L.	
0.15	ES					**TOPSOIL: Soft dark brown slightly gravelly slightly clay. Gravel is angular to subangular fine to medium flint, quartzite and sandstone.**		
0.20	B						0.40	
0.60	B					**Brown gravelly clayey SAND. Gravel is angular to rounded fine to medium quartzite, flint and sandstone.**		
						Below 1.20m loose, orangish brown, clay absent.		
1.20- 2.00	B							
1.20 2.00			TR=	100%				
1.20- 1.65	D	2.00 (WET)			S7			
							1.80	
2.00- 3.00	B					**Brown and grey sandy slightly silty GRAVEL. Gravel is angular to subrounded fine to coarse flint, quartzite and sandstone.**		
2.00 3.00			TR=	70%				
2.00- 2.45	D	2.00 (WET)			S14		2.20	
						Medium dense brown gravelly slightly silty SAND. Gravel is angular to subrounded fine to coarse flint, quartzite and sandstone.		
3.00- 4.00	B							
3.00 4.00			TR=	70%			3.05	
3.00- 3.45	D	3.00 (WET)			S13	**Firm grey CLAY with rare gypsum crystals (up to 2mm in size) and with silt dustings.**		
4.00- 4.45	D	3.00 (DRY)			S13			
							4.45	
						End of Borehole		

Boring / Progress / Groundwater

Boring Depth	Hole Dia	Technique	Crew	Progress Depth of Hole	Depth Cased	Depth to Water	Date	Time	Groundwater Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
1.20	0.30	Inspection Pit		G.L.			13/04/21	08:00	1.20	NIL	1.20	20		Seepage
2.00	0.09	Dynamic Sampler	NS/BH	4.45	3.00	DRY	13/04/21	18:00						
3.00	0.09	Dynamic Sampler	NS/BH											
4.00	0.08	Dynamic Sampler	NS/BH											

Remarks

ES sample = 2 x vial, 1 x plastic jar and 2 amber jar.
Inspection pit hand excavated to 1.20m depth and no services were found.
A 50mm standpipe was installed to 4.00m with a slotted section from 1.00m to 4.00m with upright lockable protective cover. Backfill details from base of hole: gravel filter up to 1.00m, bentonite up to 0.20m, concrete up to ground level.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

Logged by **MM**

Figure **1 of 1**

29/04/2021

geotechnics

BOREHOLE RECORD - Dynamic Sampler

Preliminary

Project **NEWPORT PAGNELL** Engineer **ROLTON GROUP** Borehole **BH17** Project No **PC218147**

Client **ROLTON GROUP**

Scale 1:50

Sampling Depth	Sample Type	Depth Cased & (to Water)	Properties Strength kPa	w %	SPT N	Strata Description	Depth	Legend
							G.L.	
0.10	ES					MADE GROUND: Soft dark grey slightly sandy slightly gravelly organic clay. Gravel is angular to subangular fine to medium flint and sandstone.	0.30	
0.50	B					MADE GROUND: Firm brown slightly sandy slightly gravelly clay. Gravel is angular to subangular fine to medium flint and sandstone.	0.70	
1.00	B					MADE GROUND: Firm brown mottled grey slightly sandy slightly gravelly clay. Gravel is angular to subrounded fine to coarse flint. limestone, brick and granite.	1.00	
1.00	ES							
1.20- 2.00	B							
1.20 2.00			TR=	100%				
1.20- 1.65	D	NIL (WET)			S16			
						MADE GROUND: Firm becoming soft and very soft brown mottled grey slightly gravelly slightly sandy clay.		
1.90	ES							
2.00 3.00			TR=	65%				
2.00- 3.00	B							
2.00- 2.45	D	NIL (WET)			S0/450			
2.60	ES					At 2.70m, plastic sheet fragment.		
							2.80	
3.00- 4.00	B					Firm grey thinly laminated CLAY.		
3.00 4.00			TR=	80%				
3.00- 3.45	D	NIL (DRY)			S11			
4.00- 4.45	D	NIL (DRY)			S22	Below 4.00m, stiff.		
						End of Borehole	4.45	

Boring / Progress / Groundwater

Depth	Hole Dia	Technique	Crew	Progress: Depth of Hole	Depth Cased	Depth to Water	Date	Time	Groundwater: Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
1.20	0.30	Inspection Pit		G.L.			15/04/21	08:00	2.00	NIL				Seepage
2.00	0.09	Dynamic Sampler	NS/BH	4.45	NIL	3.45	15/04/21	18:00						
3.00	0.08	Dynamic Sampler	NS/BH											
4.00	0.07	Dynamic Sampler	NS/BH											

Remarks

AGS

ES sample = 2 x vial, 1 x plastic jar and 2 amber jar.
Inspection pit hand excavated to 1.20m depth and no services were found.
A 50mm standpipe was installed to 4.00m with a slotted section from 1.00m to 4.00m with upright lockable protective cover. Backfill details from base of hole: gravel filter up to 1.00m, bentonite up to 0.20m, concrete up to ground level.

Logged by **MM**

Figure **1 of 1**

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Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

geotechnics

BOREHOLE RECORD - Dynamic Sampler

Preliminary

Project **NEWPORT PAGNELL** Engineer **ROLTON GROUP** Borehole **BH18** Project No **PC218147**

Client **ROLTON GROUP**

Scale 1:50

Sampling Depth	Sample Type	Depth Cased & (to Water)	Properties Strength kPa	w %	SPT N	Strata Description	Depth	Legend
							G.L.	
0.20	ES					MADE GROUND: Soft dark grey mottled brown slightly gravelly sandy organic clay. Gravel is angular to subangular fine to coarse flint, brick, sandstone.	0.20	
0.50	B					MADE GROUND: Firm brown mottled grey slightly gravelly sandy clay. Gravel is angular to subangular fine to coarse flint, brick, sandstone.		
1.10	B						1.00	
1.10	ES					MADE GROUND: Soft brown mottled grey slightly gravelly sandy clay with occasional pockets (up to 30mm in size) of soft dark grey organic clay. Gravel is angular to subangular fine to coarse flint, brick, sandstone.		
1.20 2.00			TR=	100%			1.40	
1.20- 2.00	B							
1.20- 1.65	D	NIL (DAMP)			S4			
2.00- 2.45	D	NIL (DRY)			S11	Soft to firm grey slightly gravelly CLAY. Gravel is angular to subrounded fine to medium limestone.		
2.00 3.00			TR=	60%			2.50	
						Firm grey thinly laminated CLAY.		
3.00- 4.00	B							
3.00 4.00			TR=	100%				
3.00- 3.45	D	NIL (DRY)			S15			
4.00- 4.45	D	NIL (DRY)			S13			
						End of Borehole	4.45	

Boring

Depth	Hole Dia	Technique	Crew
1.20	0.30	Inspection Pit	
2.00	0.09	Dynamic Sampler	NS/BH
3.00	0.08	Dynamic Sampler	NS/BH
4.00	0.07	Dynamic Sampler	NS/BH

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
G.L.			15/04/21	08:00
4.45	NIL	DRY	15/04/21	18:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
					None encountered during sampling.

Remarks

AGS

ES sample = 2 x vial, 1 x plastic jar and 2 amber jar.
Inspection pit hand excavated to 1.20m depth and no services were found.
A 50mm standpipe was installed to 4.00m with a slotted section from 1.00m to 4.00m with upright lockable protective cover. Backfill details from base of hole: gravel filter up to 1.00m, bentonite up to 0.20m, concrete up to ground level.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

Logged by **MM**

Figure **1 of 1**

29/04/2021

geotechnics

BOREHOLE RECORD - Dynamic Sampler

Preliminary

Project **NEWPORT PAGNELL** Engineer **ROLTON GROUP** Borehole **BH19** Project No **PC218147**

Client **ROLTON GROUP**

Scale 1:50

Sampling Depth	Sample Type	Depth Cased & (to Water)	Properties Strength kPa	w %	SPT N	Strata Description	Depth	Legend
							G.L.	
0.10	ES					**TOPSOIL: Soft dark brown slightly gravelly sandy clay with occasional rootlets. Gravel is angular to subangular fine to medium flint and sandstone.**	0.30	
0.50	B					**Soft brown slightly gravelly sandy CLAY. Gravel is angular to subangular fine to medium flint and sandstone.**	0.70	
1.00	B					**Medium dense grey very gravelly silty SAND. Gravel is angular to subrounded fine to coarse flint, quartzite and sandstone.**		
1.20- 2.00	B							
1.20 2.00			TR=	100%				
1.20- 1.65	D							
1.20- 1.65		NIL (1.05)			S13			
2.00- 3.00	B							
2.00 3.00			TR=	30%			2.10	
2.00- 2.45		2.00 (WET)			S5	**Soft to firm grey thinly laminated CLAY with occasional gypsum crystals (up to 2mm in size).**		
3.00- 4.00	B							
3.00 4.00			TR=	90%				
3.00- 3.45	D							
3.00- 3.45		3.00 (DRY)			S14			
						At 3.80m, with a rare subrounded medium gravel of limestone.		
4.00- 4.45	D					**Below 4.00m, stiff.**		
4.00- 4.45		3.00 (DRY)			S19			
							4.45	
						End of Borehole		

Boring

Depth	Hole Dia	Technique	Crew
1.20	0.30	Inspection Pit	
2.00	0.09	Dynamic Sampler	NS/BH
3.00	0.09	Dynamic Sampler	NS/BH
4.00	0.07	Dynamic Sampler	NS/BH

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
G.L.			16/04/21	08:00
4.45	3.00	DRY	16/04/21	18:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
1.05					Seepage

Remarks

ES sample = 2 x vial, 1 x plastic jar and 2 amber jar.
Inspection pit hand excavated to 1.20m depth and no services were found.
A 50mm standpipe was installed to 4.00m with a slotted section from 1.00m to 4.00m with upright lockable protective cover. Backfill details from base of hole: gravel filter up to 1.00m, bentonite up to 0.20m, concrete up to ground level.

Logged by **MM**

Figure **1 of 1**

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Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

geotechnics

BOREHOLE RECORD - Dynamic Sampler

Preliminary

Project **NEWPORT PAGNELL** Engineer **ROLTON GROUP** Borehole **BH22** Project No **PC218147**

Client **ROLTON GROUP**

Scale 1:50

Sampling Depth	Sample Type	Depth Cased & (to Water)	Properties Strength kPa	w %	SPT N	Strata Description	Depth	Legend
							G.L.	
0.15	ES					MADE GROUND: Soft dark brown slightly gravelly sandy clay. Gravel is angular to subangular fine to coarse concrete, flint and quartzite.		
0.20	B						0.30	
						MADE GROUND: Very soft to soft brown mottled grey slightly sandy slightly gravelly clay. Gravel is angular to subangular fine to coarse brick, concrete, flint, sandstone, limestone and clinker. Between 1.20-2.30m, with some pockets (up to 40mm in size) of dark grey organic clay with some decomposed roots (up to 20mm thick).		
1.00	B							
1.00	ES							
1.20- 2.00	B							
1.20 2.00			TR=	100%				
1.20- 1.65	D	NIL (DRY)			S4			
2.00- 2.70	B							
2.00 3.00			TR=	100%				
2.00- 2.45	D	NIL (DRY)			S3			
							2.70	
3.00- 4.00	B					Firm grey CLAY. Between 3.00-3.70m, with some pockets (up to 40mm in size) of brown sandy clay and rare subangular to subrounded fine gravel of chalk and flint.		
3.00 4.00			TR=	80%				
3.00- 3.45	D	NIL (DRY)			S11			
4.00- 4.45	D	NIL (DRY)			S18	Below 4.00m, stiff.		
							4.45	
						End of Borehole		

Boring

Depth	Hole Dia	Technique	Crew
1.20	0.30	Inspection Pit	
2.00	0.10	Dynamic Sampler	NC/WL
3.00	0.09	Dynamic Sampler	NC/WL
4.00	0.08	Dynamic Sampler	NC/WL

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
G.L.			14/04/21	08:00
4.45	NIl	DRY	14/04/21	18:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
					None encountered during sampling.

Remarks

AGS

ES sample = 2 x vial, 1 x plastic jar and 2 amber jar.
Inspection pit hand excavated to 1.20m depth and no services were found.
A 50mm standpipe was installed to 4.00m with a slotted section from 1.00m to 4.00m with upright lockable protective cover. Backfill details from base of hole: gravel filter up to 1.00m, bentonite up to 0.20m, concrete up to ground level.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

Logged by **MM**

Figure **1 of 1**

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geotechnics

BOREHOLE RECORD - Dynamic Sampler

Preliminary

Project **NEWPORT PAGNELL** Engineer **ROLTON GROUP** Borehole **BH23** Project No **PC218147**

Client **ROLTON GROUP**

Scale 1:50

Sampling Depth	Sample Type	Depth Cased & (to Water)	Properties Strength kPa	w %	SPT N	Strata Description	Depth	Legend
							G.L.	
0.15	ES					MADE GROUND: Dark grey slightly gravelly sandy clay with occasional rootlets and a low cobble content of angular concrete, Gravel is angular to subangular fine to medium.		
0.30	B						0.40	
0.50	B							
							0.60	
						MADE GROUND: Firm light brown slowly clay.		
1.00	B					MADE GROUND: Firm brown mottled grey and greenish grey slightly gravelly sandy clay with occasional pockets (upto 40mm in size) of soft organic clay and strong organic odour. Gravel is angular to subrounded fine to coarse concrete, brick, flint, clinker and sandstone. Below 1.80m, pockets of organic clay absent.		
1.00	ES							
1.20- 2.00	B							
1.20 2.00			TR=	100%				
1.20- 1.65	D	NIL (DRY)			S9			
1.90	ES							
2.00 3.00			TR=	90%				
2.00- 2.70	B							
2.00- 2.45	D	NIL (DRY)			S7			
							2.70	
						Firm to stiff grey thinly laminated CLAY.		
3.00- 4.00	B							
3.00 4.00			TR=	90%				
3.00- 3.45	D	NIL (DRY)			S0/450			
4.00- 4.45	D	NIL (DRY)			S16	Below 4.00m, stiff.		
							4.45	
						End of Borehole		

Boring

Depth	Hole Dia	Technique	Crew
1.20	0.30	Inspection Pit	
2.00	0.10	Dynamic Sampler	NC/WL
3.00	0.09	Dynamic Sampler	NC/WL
4.00	0.08	Dynamic Sampler	NC/WL

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
G.L.			14/04/21	08:00
4.45	NIL	DRY	14/04/21	18:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
					Damp

Remarks

ES sample = 2 x vial, 1 x plastic jar and 2 amber jar.
Inspection pit hand excavated to 1.20m depth and no services were found.
A 50mm standpipe was installed to 4.00m with a slotted section from 1.00m to 4.00m with upright lockable protective cover. Backfill details from base of hole: gravel filter up to 1.00m, bentonite up to 0.20m, concrete up to ground level.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

Logged by **MM**

Figure **1 of 1**

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geotechnics

BOREHOLE RECORD - Dynamic Sampler

Preliminary

Project **NEWPORT PAGNELL** Engineer **ROLTON GROUP** Borehole **BH24** Project No **PC218147**

Client **ROLTON GROUP**

Scale 1:50

Sampling				Properties			Strata		
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	SPT N	Description	Depth	Legend
							G.L.	
0.15	ES					MADE GROUND: Dark brown slightly gravelly sandy clay with occasional rootlets and a low cobble content of angular concrete, Gravel is angular to subangular fine to medium flint and brick.	0.30	
0.50	B							
						MADE GROUND: Soft brown mottled grey slightly gravelly sandy clay. Gravel is angular to subangular fine to medium flint, brick and sandstone.	0.70	
1.00	B							
1.00	ES						1.10	
1.20- 2.00	B							
1.20 2.00			TR=	100%		MADE GROUND: Soft to firm grey slightly gravellly sandy clay, Gravel is angular to subangular fine to medium flint.		
1.20- 1.65	D	NIL (DRY)			S9			
1.80	ES					MADE GROUND: Firm brown mottled grey slightly sandy slightly gravelly clay with occasional pockets (up to 30mm in size) of soft black organic clay. Gravel is angular to subrounded fine to coarse brick, concrete, sandstone and flint.	1.80	
2.00- 3.00	B							
2.00 3.00			TR=	100%				
2.00- 2.45	D	NIL (DRY)			S4			
						MADE GROUND: Soft greenish grey mottled brown slightly gravelly sandy clay with occasional pockets (up to 30mm in size) of soft black organic clay.		
2.80	ES							
3.00- 4.00	B							
3.00 4.00			TR=	100%				
3.00- 3.45	D	NIL (DRY)			S6			
						Firm grey thinly laminated CLAY.	3.40	
4.00- 4.45	D	NIL (DRY)			S15			
						End of Borehole	4.45	

Boring

Depth	Hole Dia	Technique	Crew
1.20	0.30	Inspection Pit	
2.00	0.09	Dynamic Sampler	NS/BH
3.00	0.08	Dynamic Sampler	NS/BH
4.00	0.07	Dynamic Sampler	NS/BH

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
G.L.			16/04/21	08:00
4.45	NIL	DRY	16/04/21	18:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
					None encountered during sampling.

Remarks

ES sample = 2 x vial, 1 x plastic jar and 2 amber jar.
Inspection pit hand excavated to 1.20m depth and no services were found.
A 50mm standpipe was installed to 4.00m with a slotted section from 1.00m to 4.00m with upright lockable protective cover. Backfill details from base of hole: gravel filter up to 1.00m, bentonite up to 0.20m, concrete up to ground level.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

Logged by **MM**

Figure **1 of 1**

29/04/2021

geotechnics

BOREHOLE RECORD - Dynamic Sampler

Preliminary

Project **NEWPORT PAGNELL** Engineer **ROLTON GROUP** Borehole **BH26** Project No **PC218147**

Client **ROLTON GROUP**

Scale 1:50

Sampling Depth	Sample Type	Depth Cased & (to Water)	Properties Strength kPa	w %	SPT N	Strata Description	Depth	Legend
							G.L.	
0.15	ES					**TOPSOIL: Soft dark brown slightly gravelly sandy organic clay. Gravel is angular to subangular fine to medium flint and sandstone.**	0.30	
0.50	B					**Soft to firm brown slightly gravelly sandy CLAY. Gravel is angular to subrounded fine to medium flint and sandstone.**	0.70	
1.00	B					**Medium dense very gravelly silty SAND. Gravel is angular to subrounded fine to coarse flint, sandstone and quartzite.**		
1.20- 2.00	B							
1.20 2.00			TR=	100%				
1.20- 1.65	D	NIL (WET)			S25			
2.00- 3.00	B						2.00	
2.00 3.00			TR=	70%		**Firm to stiff grey CLAY.**		
2.00- 2.45	D	2.00 (WET)			S8			
3.00- 4.00	B							
3.00 4.00			TR=	60%				
3.00- 3.45	D	2.00 (DRY)			S15			
4.00- 4.45	D	2.00 (DRY)			S15			
						End of Borehole	4.45	

Boring

Depth	Hole Dia	Technique	Crew
1.20	0.30	Inspection Pit	
2.00	0.09	Dynamic Sampler	NS/BH
3.00	0.08	Dynamic Sampler	NS/BH
4.00	0.07	Dynamic Sampler	NS/BH

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
G.L.			15/04/21	08:00
4.45	2.00	DRY	15/04/21	18:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
1.00					Seepage

Remarks

AGS

ES sample = 2 x vial, 1 x plastic jar and 2 amber jar.
Inspection pit hand excavated to 1.20m depth and no services were found.
A 50mm standpipe was installed to 4.00m with a slotted section from 1.00m to 4.00m with upright lockable protective cover. Backfill details from base of hole: gravel filter up to 1.00m, bentonite up to 0.20m, concrete up to ground level.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

Logged by **MM**

Figure **1 of 1**

29/04/2021

geotechnics

BOREHOLE RECORD - Dynamic Sampler

Preliminary

Project **NEWPORT PAGNELL** Engineer **ROLTON GROUP** Borehole **BH28** Project No **PC218147**

Client **ROLTON GROUP**

Scale 1:50

Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	SPT N	Description	Depth
							G.L.
0.20	ES					MADE GROUND: Soft to firm dark brown slightly gravelly sandy clay. Gravel is angular to subangular fine to medium flint, sandstone and limestone.	
0.30	B						0.40
1.00	B					MADE GROUND: Soft to firm brown mottled grey slightly sandy slightly gravelly clay with occasional pockets (up to 30mm in size) of soft black organic clay. Gravel is angular to subrounded fine to coarse brick, concrete, sandstone and flint.	
1.00	ES						
1.20- 2.00	B						
1.20 2.00			TR=	100%			
1.20- 1.65	D	NIL (DRY)			S4		
1.80	ES						
2.00- 2.38	D	NIL (DAMP)			S4		2.00
2.00 3.00			TR=	100%		MADE GROUND: Very soft to soft greenish grey mottled brown slightly sandy slightly gravelly clay with occasional pockets. Gravel is angular to subrounded fine to coarse limestone and brick.	
3.00- 4.00	B						
3.00 4.00			TR=	100%			
3.00- 3.45	D	NIL (DRY)			S3		
3.80	ES						
4.00- 5.00	B						
4.00 5.00			TR=	80%			4.10
4.00- 4.45	D	NIL (DRY)			S19	Stiff grey thinly laminated CLAY.	
5.00- 5.45	D	NIL (DRY)			S18		
						End of Borehole	5.45

Boring

Depth	Hole Dia	Technique	Crew
1.20	0.30	Inspection Pit	
2.00	0.09	Dynamic Sampler	NS/BH
3.00	0.08	Dynamic Sampler	NS/BH
4.00	0.07	Dynamic Sampler	NS/BH
5.00	0.06	Dynamic Sampler	NS/BH

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
G.L.			15/04/21	08:00
5.45	NIL	DRY	15/04/21	18:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
					None encountered during sampling

Remarks

AGS

ES sample = 2 x vial, 1 x plastic jar and 2 amber jar.
Inspection pit hand excavated to 1.20m depth and no services were found.
A 50mm standpipe was installed to 4.00m with a slotted section from 1.00m to 4.00m with upright lockable protective cover. Backfill details from base of hole: gravel filter up to 1.00m, bentonite up to 0.20m, concrete up to ground level.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

Logged by **MM**

Figure **1 of 1**

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geotechnics

BOREHOLE RECORD - Dynamic Sampler

Preliminary

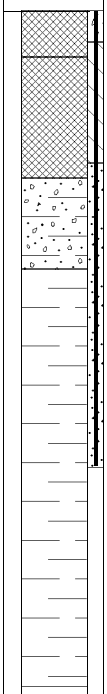
Project **NEWPORT PAGNELL** Engineer **ROLTON GROUP** Borehole **BH29** Project No **PC218147**

Client **ROLTON GROUP**

Scale 1:50

Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	SPT N	Description	Depth
							G.L.
0.20	B					MADE GROUND: Soft to firm dark brown slightly gravelly sandy clay. Gravel is angular to subangular fine to coarse flint and sandstone.	
0.20	ES						0.30
						MADE GROUND: Soft to firm brown mottled grey slightly sandy slightly gravelly clay. Gravel is angular to subrounded fine to coarse brick, concrete, flint and sandstone. Locally sandy.	
1.00	B						
1.00	ES						1.10
1.20- 2.00	B					Firm brown slightly gravelly sandy CLAY. Gravel is angular to subrounded fine to coarse flint and sandstone.	
1.20 2.00			TR=	100%			
1.20- 1.65	D	NIL (DRY)			S10		
							1.70
						Firm grey mottled light grey CLAY.	
2.00- 3.00	B						
2.00 3.00			TR=	100%			
2.00- 2.45	D	NIL (DAMP)			S12		
						Below 2.60m, grey in colour and thinly laminated.	
3.00- 3.45	D	NIL (DRY)			S10		
3.00 4.00			TR=	100%			
4.00- 4.45	D	NIL (DRY)			S15		
							4.45
						End of Borehole	

Legend



Boring

Depth	Hole Dia	Technique	Crew
1.20	0.30	Inspection Pit	
2.00	0.09	Dynamic Sampler	NS/BH
3.00	0.08	Dynamic Sampler	NS/BH
4.00	0.07	Dynamic Sampler	NS/BH

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
G.L.			15/04/21	08:00
4.45	NIL	DRY	15/04/21	18:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
					None encountered during sampling.

Remarks

ES sample = 2 x vial, 1 x plastic jar and 2 amber jar.
Inspection pit hand excavated to 1.20m depth and no services were found.
A 50mm standpipe was installed to 3.00m with a slotted section from 1.00m to 3.00m with upright lockable protective cover. Backfill details from base of hole: gravel filter up to 1.00m, bentonite up to 0.20m, concrete up to ground level.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

Logged by **MM**

Figure **1 of 1**

29/04/2021

geotechnics

BOREHOLE RECORD - Dynamic Sampler

Preliminary

Project **NEWPORT PAGNELL**

Engineer **ROLTON GROUP**

Borehole **BH30**
Project No **PC218147**

Client **ROLTON GROUP**

Scale 1:50

Sampling				Properties		Strata		
Depth		Sample Type	Depth Cased & (to Water)	Strength kPa	w %	Description	Depth	Legend
						TOPSOIL: Soft dark grey brown slightly gravelly sandy clay with occasional rootlets. Gravel is angular to subrounded fine to medium flint and sandstone.	**G.L.**	
						Soft to firm brown slightly gravelly sandy CLAY. Gravel is angular to subrounded fine to medium flint, quartzite and sandstone.	**0.30**	
1.20	**2.00**			**TR=**	**100%**	**Brown very gravelly silty SAND. Gravel is angular to subrounded fine to coarse flint, quartzite and sandstone.**	**0.80**	
2.00	**3.00**			**TR=**	**90%**			
						Firm grey slightly gravelly CLAY. Gravel is angular to subrounded fine to medium limestone.	**2.50**	
						End of Borehole	**3.00**	

Boring				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
1.20		**Inspection Pit**		**G.L.**			**15/04/21**	**08:00**	**1.20**					**Seepage**
2.00	**0.09**	**Dynamic Sampler**	**NS/BH**	**3.00**	**NIL**	**1.20**	**15/04/21**	**18:00**						
3.00	**0.08**	**Dynamic Sampler**	**NS/BH**											

Remarks

Inspection pit hand excavated to 1.20m depth and no services were found.
No sampling or testing required.
A 50mm standpipe was installed to 3.00m with a slotted section from 1.00m to 3.00m. Backfill details from base of hole: gravel filter up to 1.00m, bentonite up to 0.20m, concrete up to ground level.

Logged by **MM**

Figure **1 of 1**
29/04/2021

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

geotechnics

BOREHOLE RECORD - Dynamic Sampler

Preliminary

Project **NEWPORT PAGNELL** Engineer **ROLTON GROUP** Borehole **BH31** Project No **PC218147**

Client **ROLTON GROUP**

Scale 1:50

Sampling Depth	Sample Type	Depth Cased & (to Water)	Properties Strength kPa	w %	SPT N	Strata Description	Depth	Legend
							G.L.	
						TOPSOIL: Soft dark grey slightly gravelly sandy clay. Gravel is angular to subangular fine to medium flint and sandstone.	0.30	
						Soft to firm brown slightly gravelly sandy clay. Gravel is angular to subrounded fine to coarse flint and sandstone.	0.80	
1.00	B					**Medium dense very gravelly silty SAND. Gravel is angular to subrounded fine to coarse flint, sandstone and quartzite.**		
1.20- 1.65	D	NIL (1.20)			S10			
1.20 2.00			TR=	100%				
2.00- 2.45	D	2.00 (1.20)			S6			
2.00 3.00			TR=	70%				
						Soft to firm grey thinly laminated CLAY with occasional gypsum crystals (up to 2mm in size).	2.30	
3.00- 4.00	B							
3.00 4.00			TR=	100%				
3.00- 3.45	D	2.00 (1.20)			S12			
4.00- 4.45	D	2.00 (1.20)			S18	**Below 4.00m, stiff.**		
						End of Borehole	4.45	

Boring

Depth	Hole Dia	Technique	Crew
1.20	0.30	Inspection Pit	
2.00	0.09	Dynamic Sampler	NS/BH
3.00	0.08	Dynamic Sampler	NS/BH
4.00	0.07	Dynamic Sampler	NS/BH

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
G.L.			16/04/21	08:00
4.45	2.00	1.20	16/04/21	18:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
1.20					Seepage

Remarks

AGS **Inspection pit hand excavated to 1.20m depth and no services were found. A 50mm standpipe was installed to 4.00m with a geowrapped slotted section from 1.00m to 4.00m with upright lockable protective cover. Backfill details from base of hole: gravel filter up to 1.00m, bentonite up to 0.20m, concrete up to ground level.**

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

Logged by **MM**

Figure **1 of 1**

29/04/2021

geotechnics

BOREHOLE RECORD - Cable Percussion

Preliminary

Project **NEWPORT PAGNELL**

Engineer **ROLTON GROUP**

Borehole **CP01**
Project No **PC218147**

Client **ROLTON GROUP**

Scale 1:50

Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	SPT N	Description	Depth
							G.L.
0.20- 0.60	B					MADE GROUND: Dark brown mottled bluish grey gravelly slightly silty sand with many rootlets. Gravel is sub angular and sub rounded, fine to coarse quartzite, flint and brick.	
0.30- 0.40	D						
0.70- 0.80	D						0.70
0.80- 1.20	B					MADE GROUND: Dark orangish brown gravelly very clayey sand with occasional shell fragments (<2mm) and calcite nodules (<20mm). Gravel is sub angular and angular, fine to coarse quartzite, flint, glass and brick.	
1.30- 1.75	D	1.30 (DRY)			S5		
2.30- 2.40	D					Between 2.30 to 2.40m black organic matter and odour.	2.40
						Firm dark brownish grey silty CLAY with rare fossil shells (<10mm) and rare light grey sand lenses (<10mm in diameter).	
3.00- 3.50	B						
3.00- 3.45	D	2.80 (DRY)			S8		
4.00- 4.10	D						
4.50- 5.00	B						
4.50- 4.95	D	2.80 (DRY)			S9		
						Between 5.00 to 9.00m abundant fossil shell fragments (<1mm) and light grey sand lenses (<10mm).	
5.50- 5.60	D						
6.00- 6.50	B					Below 6.00m, stiff.	
6.00- 6.45	D	4.00 (DRY)			S19		
7.00- 7.10	D					Between 7.00m to 9.00m occasional calcite nodules (<25mm).	
7.60- 8.10	B						
7.60- 8.05	D						
7.66- 8.11		4.00 (DRY)			S23		
8.50- 8.60	D						
9.00- 9.50	B						
9.00- 9.45	D	4.00 (DRY)			S25		
10.00-10.10	D						10.00

Boring

Depth	Hole Dia	Technique	Crew
1.20		Inspection Pit	
12.70	0.15	Cable Percussion	DC/LC

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
G.L.	NIL	DRY	20/04/21	08:00
12.70	11.40	9.00	20/04/21	18:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
2.50	1.50	2.30	20	2.8	Slow inflow.
11.40	4.00	10.50	20	NS	Fast inflow.

Remarks

Inspection pit hand excavated to 1.20m depth and no services were found.
A 50mm standpipe was installed to 4.00m with a geowrapped slotted section from 1.00m to 4.00m with upright lockable protective cover. Backfill details from base of hole: arisings up to 5.00m, bentonite seal up to 4.00m, gravel filter up to 1.00m, bentonite seal up to 0.30m, concrete up to ground level.
Chiselling: 11.40-11.80m for 60 minutes and 12.50-12.70m for 60 minutes.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

Logged by **CR**

Figure **1 of 2**
29/04/2021

geotechnics

BOREHOLE RECORD - Cable Percussion

Preliminary

Project **NEWPORT PAGNELL**

Engineer **ROLTON GROUP**

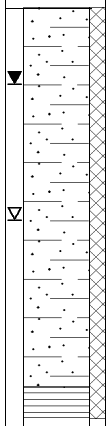
Borehole **CP01**
Project No **PC218147**

Client **ROLTON GROUP**

Scale 1:50

Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	SPT N	Description	Depth
						Stiff dark grey very sandy CLAY with rare fossil shell fragments (<1mm).	
10.50-11.00	**B**						
10.50-10.95	**D**	**4.00**			**S16**		
10.50	**W**	**(DRY)**					
10.50	**W**						
						Between 11.40 to 11.50m dark grey gravel. Gravel is sub angular and angular, medium to coarse limestone.	
11.40-11.50	**D**					**Between 11.50 to 12.50m many fossil shell fragments (<5mm) and calcite nodules (<20mm).**	
11.80-12.10	**D**	**11.40 (9.70)**			**S50/ 150**		
12.50-12.50	**D**	**11.40 (9.00)**			**C0/0**		**12.50**
12.70-12.70		**11.40 (9.00)**			**C0/0**	**Weak dark greyish black MUDSTONE. Recovered as angular, medium to coarse mudstone.**	**12.70**
						End of Borehole	

Legend



Boring

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

Logged by **CR**

Figure **2 of 2**
29/04/2021

geotechnics

BOREHOLE RECORD - Cable Percussion

Preliminary

Project **NEWPORT PAGNELL** Engineer **ROLTON GROUP** Borehole **CP02** Project No **PC218147**

Client **ROLTON GROUP**

Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	SPT N	Description	Depth
							G.L.
0.00- 0.20	B					MADE GROUND: Dark brown slightly gravelly silty sand with many rootlets. Gravel is sub angular and sub rounded, fine to coarse flint, quartzite and brick.	
0.10- 0.20	D						
0.50- 0.90	B						0.50
0.50- 0.60	D						
0.50- 0.60	D					Dark orangish brown gravelly very clayey SAND. Gravel is sub rounded to angular, fine to coarse quartzite and flint.	
1.20- 1.30	D						1.20
1.30- 1.80	B					Loose light yellowish brown very gravelly very clayey SAND. Gravel is sub rounded and sub angular, fine to coarse quartzite and flint.	
1.30- 1.75		1.30			S6		
1.40	W	(DRY)					
1.40	W						
2.00- 2.50	B						2.00
2.00- 2.45	D	2.00 (1.40)			S23	Medium dense light yellowish brown very sandy silty GRAVEL, with a low cobble content of sub angular flint. Gravel is subrounded to subangular fine to coarse quartzite and flint.	
2.50- 2.60	D						
3.30- 3.60	B						3.30
3.30- 3.40	D					Firm grey sandy CLAY with rare fossil shell fragments (<1mm in size) and lenses of light grey sand (<1mm in diameter).	
3.60- 4.10	B						
3.60- 4.05	D	3.20 (DRY)			S12		
4.60- 4.70	D						
5.00- 5.50	B						
5.00- 5.45	D	4.00 (DRY)			S17		
6.00- 6.10	D						
6.40	W						6.50
6.40	W					Stiff fissured dark grey slightly sandy CLAY with rare fossil shell fragments (<1mm). Fissures are very closely to closely spaced, randomly orientated, planar, stepped and clean.	
6.50- 7.00	B						
6.50- 6.95	D	4.00 (DRY)			S21		
7.50- 7.60	D						
8.00- 8.50	B						
8.00- 8.45	D	4.00 (DRY)			S24		
						Between 8.40 to 10.60m there are many fossil shell fragments (<10mm in size) and calcitic nodules (<15mm in size).	
9.00- 9.10	D					Between 9.00 to 9.10m pyritic fossil shells (<20mm).	
9.50-10.00	B						
9.50- 9.95	D	4.00 (DRY)			S19		

Boring

Depth	Hole Dia	Technique	Crew
1.20		Inspection Pit	
14.98	0.15	Cable Percussion	DC/LC

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
G.L.	NIL	DRY	19/04/21	08:00
14.98	11.50	DRY	19/04/21	18:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
2.00	2.00	1.40	20	3.20	Fast inflow.
8.00	4.00			11.50	Seepage.
11.00	11.50	6.40	20	11.50	Fast inflow.

Remarks Inspection pit hand excavated to 1.20m depth and no services were found. A 50mm standpipe was installed to 4.00m with a geowrapped slotted section from 1.00m to 4.00m with upright lockable protective cover. Backfill details from base of hole: arisings up to 5.00m, bentonite seal up to 4.00m, gravel filter up to 1.00m, bentonite seal up to 0.30m, concrete up to ground level.

Logged by **CR**

Figure **1 of 2**

29/04/2021

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

geotechnics

BOREHOLE RECORD - Cable Percussion

Preliminary

Project **NEWPORT PAGNELL**

Engineer **ROLTON GROUP**

Borehole **CP02**
Project No **PC218147**

Client **ROLTON GROUP**

Scale 1:50

Sampling			Properties			Strata		
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	SPT N	Description	Depth	Legend
10.50-10.60	D							
11.00-11.50	B							
11.00-11.45	D	4.00 (6.40)			S36	Very stiff grey slightly sandy very gravelly CLAY with a high cobble content. Gravel is blueish grey, angular, fine to coarse limestone.	11.00	
12.00-12.10	D					Stiff dark blackish grey slightly sandy CLAY.	12.00	
12.30-12.80	B							
12.30-12.75	D	11.50 (DRY)			S22			
13.50-13.60	D							
14.00-14.50	B							
14.00-14.45	D	11.50 (DRY)			S34	Very stiff dark grey mottled brown silty CLAY with rare fossil shell fragments (<1mm). Fissures are very closely to closely spaced, randomly orientated, planar, stepped and clean.	14.00	
14.90-14.98	D	11.50 (DRY)			S50*/ 75	Very weak to weak grey MUDSTONE. Recovered as gravel with a medium cobble content (<100mm). Gravel is angular, fine to coarse mudstone.	14.90 14.98	
						End of Borehole		

Boring				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

Logged by **CR**

Figure **2 of 2**
29/04/2021

geotechnics

BOREHOLE RECORD - Cable Percussion

Preliminary

Project **NEWPORT PAGNELL** Engineer **ROLTON GROUP** Borehole **CP03** Project No **PC218147**

Client **ROLTON GROUP**

Scale 1:50

Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	SPT N	Description	Depth
							G.L.
0.00- 0.20	B					TOPSOIL: Dark brown slightly gravelly silty sand with occasional rootlets and rare wood fragments (<1mm in diameter). Gravel is subangular to angular fine to coarse flint.	0.40
0.10- 0.20	D						
0.40- 0.70	B						
0.40- 0.50	D						
0.80	W					Very soft light orangish brown mottled dark brown slightly gravelly sandy CLAY with a low cobble content of subangular flint. Gravel is subrounded to subangular fine to coarse flint and quartzite.	
0.80	W						1.00
1.00- 1.10	D						
1.20- 1.40	B						
1.20- 1.65		1.20			C8	Light orangish brown gravelly slightly clayey SAND with low cobble content of subrounded to subangular quartzite and flint. Gravel is subrounded and subangular fine to coarse quartzite and flint.	1.40
1.40- 1.70	B	(0.90)					
1.40- 1.50	D						
1.70- 1.80	D						1.70
2.00- 2.50	B					Soft orangish brown mottled grey slightly gravelly slightly sandy CLAY with rare rootlets and occasional shell fragments (<1mm in size). Gravel is subrounded to subangular fine to coarse quartzite, flint and chalk.	
2.00- 2.45	D	1.50 (DRY)			S9		
3.00- 3.10	D					Firm greyish brown slightly sandy CLAY. Below 2.0m, with occasional pyritised fossil shell fragments (<10mm in size) and rare decomposing organic matter.	3.00
3.50- 4.00	B					Stiff grey slightly sandy CLAY with rare pyritised fossil shell fragments (<1mm in size).	
3.50- 3.95	D	3.00 (DRY)			S17		
4.50- 4.60	D					Between 4.5-5.0m, many fossil shell fragments (<20mm in size), rare crinoid fossils (<10mm in size) and rare pockets of light grey silty sand (<10mm in size).	
5.00- 5.50	B					Between 5.0-5.50m, becomes sandy clay with rare fossil shell fragments (<1mm in size).	
5.00- 5.45	D	3.00 (DRY)			S25		
5.60- 5.70	D						
6.50- 7.00	B					Below 6.5m, becomes dark bluish grey.	
6.50- 6.95	D	3.00 (DRY)			S15		
7.50	W						
7.50	W						7.60
7.60- 7.70	D					Firm dark bluish grey sandy CLAY with rare pyritised fossil shell fragments (<29mm in size). Between 7.9-8.4m, very weak to weak light grey highly calcareous limestone, recovered as slightly sandy gravel. Gravel is angular fine to coarse limestone.	
7.90- 8.00	D						
8.00- 8.15	D						
8.00- 8.16		3.00 (DRY)			S50/10		8.40
8.40- 9.00	B					Stiff fissured grey slightly sandy CLAY with many fossil shell fragments (<30mm in size). Fissures are extremely closely to very closely spaced, randomly orientated, rough, planar and stepped with light grey sand partings.	
8.40- 8.50	D						9.00
9.50	D					Very weak to weak light grey slightly calcareous LIMESTONE, recovered as slightly sandy gravel. Gravel is angular fine to coarse limestone.	9.50
						End of Borehole	

Boring

Depth	Hole Dia	Technique	Crew
1.20		Inspection Pit	
9.50	0.15	Cable Percussion	DC/LC

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
G.L.	NIL	DRY	13/04/21	08:00
9.50	3.0	6.0	13/04/21	18:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
1.00	NIL			NIL	Seepage.
1.20	NIL	0.80	20	1.40	Fast inflow.
9.50	3.00	7.50	20	NS	Fast inflow.

Remarks

Inspection pit hand excavated to 1.20m depth and no services were found.
A 50mm standpipe was installed to 4.00m with a geowrapped slotted section from 1.00m to 4.00m with upright lockable protective cover. Backfill details from base of hole: arisings up to 5.00m, bentonite seal up to 4.00m, gravel filter up to 0.20m, concrete up to ground level.
Chiselling: 8.15-8.40m for 60 minutes and 9.50-9.50m for 60 minutes.

Logged by **RH/CR**

Figure **1 of 1**

29/04/2021

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

geotechnics

BOREHOLE RECORD - Cable Percussion

Preliminary

Project **NEWPORT PAGNELL**

Engineer **ROLTON GROUP**

Borehole **CP04**
Project No **PC218147**

Client **ROLTON GROUP**

Scale 1:50

Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	SPT N	Description	Depth
							G.L.
0.00- 0.20	B					**TOPSOIL: Dark brown slightly gravelly silty sand with many rootlets. Gravel is sub rounded to angular, fine to coarse flint and quartzite. Below 0.2m becomes dark orange/ brown with occasional rootlets.**	
0.10- 0.20	D						
0.20- 0.40	B						
0.20- 0.30	D						
0.80- 1.20	B					**Orangish brown gravelly silty SAND. Gravel is sub rounded to angular, fine to coarse flint and quartzite.**	0.80
0.80- 0.90	D						
1.30- 1.80	B					**Dense light orangish brown sandy GRAVEL. Gravel is sub rounded to angular, fine to coarse flint, quartz and quartzite.**	1.30
1.30- 1.40	D						
1.30	W						
1.30	W						
1.30- 1.75		1.30 (DRY)			C31		
2.30- 2.40	D						
2.80- 3.30	B						
2.80- 3.25		2.80 (1.80)			C38		
3.30- 3.40	D					**Stiff dark grey slightly sandy CLAY with rare fossil shell fragments (<15mm in size) and lenses of light grey sand (<15mm in diameter).**	3.30
4.00- 4.50	B						
4.00- 4.45	D	4.00 (DRY)			S18		
5.00- 5.10	D						
5.50- 6.00	B					**Between 5.5 to 7.5m many pyritised fossil shell fragments (<40mm in size).**	
5.50- 5.95	D	4.00 (DRY)			S30		
6.50- 6.60	D						
7.00- 7.45	D	4.00 (DRY)			S18		
7.50- 8.00	B					**Below 7.5m becomes very stiff dark bluish grey with rare fossil shell fragments (<5mm in size).**	
8.00- 8.10	D						
8.50- 8.66	D	4.00 (DAMP)			S50/10		
						End of Borehole	8.66

Boring

Depth	Hole Dia	Technique	Crew
1.20		Inspection Pit	
8.66	0.15	Cable Percussion	DC/LC

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
G.L.	NIL	DRY	14/04/21	08:00
8.66	4.00	8.00	14/04/21	18:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
1.50	NIL	1.30	20	4.0	Fast inflow.

Remarks

Inspection pit hand excavated to 1.20m depth and no services were found.
The Borehole was terminated at a depth of 9m on the instruction of the Client, Rolton, due to the tools becoming jammed in the borehole (delay 1.50hrs).
A 50mm standpipe was installed to 4.00m with a geowrapped slotted section from 1.00m to 4.00m with upright lockable protective cover. Backfill details from base of hole: arisings up to 5.00m, bentonite seal up to 4.00m, gravel filter up to 1.00m, bentonite seal up to 0.20m, concrete up to ground level.
Chiselling: 8.80-9.00m for 60 minutes.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

Logged by **RH/CR**

Figure **1 of 1**

29/04/2021

geotechnics

BOREHOLE RECORD - Cable Percussion

Preliminary

Project **NEWPORT PAGNELL** Engineer **ROLTON GROUP** Borehole **CP05** Project No **PC218147**

Client **ROLTON GROUP**

Sampling			Properties			Strata		Scale 1:50
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	SPT N	Description	Depth	Legend
							G.L.	
0.30- 0.70	B					MADE GROUND: Dark brown slightly gravelly silty sand with many rootlets. Gravel is sub angular and sub rounded, fine to coarse flint, quartzite and brick.	0.30	
0.30- 0.40	D							
0.80- 0.90	D					Dark orangish brown gravelly very clayey sand with a low cobble content and occasional rootlets. Gravel is sub rounded to angular, fine to coarse quartzite, flint and brick.	0.80	
0.90- 1.00	D						0.90	
1.10- 1.20	D						1.10	
1.20- 1.70	B							
1.20- 1.65	D	1.20 (DRY)			S29	Orangish brown very gravelly very clayey SAND with occasional rootlets. Gravel is sub rounded to angular, fine to coarse flint and quartzite.		
1.70- 2.10	B						1.70	
1.70- 1.80	D					Light orangish brown slightly very gravelly clayey SAND. Gravel is sub rounded to angular, fine to coarse quartzite and flint.		
2.10- 2.50	B						2.10	
2.10- 2.20	D							
2.30	W					Stiff, dark brown slightly sandy gravelly CLAY with some calcite nodules (<5mm) and some fossil shell fragments (<1mm). Gravel is sub rounded to angular, fine to coarse flint and quartzite.		
2.30	W						2.50	
2.50- 3.00	B							
2.50- 2.95	D	2.50 (DAMP)			S11			
						Light brown very gravelly slightly silty SAND. Gravel is sub rounded and sub angular, fine to coarse flint and quartzite.		
3.50- 3.60	D					Stiff dark brownish grey slightly sandy CLAY with many fossil shell fragments (<5mm).	3.50	
4.00- 4.50	B					Firm dark grey sandy CLAY with many fossil shell fragments (<5mm), rare sand lenses (<2mm) and some calcite nodules (<5mm).		
4.00- 4.45	D	3.00 (DAMP)			S34			
						Very stiff dark grey silty sandy CLAY.		
5.10- 5.20	D							
5.70- 6.20	B							
5.70- 6.15	D	5.70 (3.70)			S42			
						Between 6.90 to 7.00m there is a gravel. Gravel is sub rounded to angular, fine to coarse flint and quartzite.		
6.90- 7.00	D						7.00	
7.00- 7.50	B							
7.00- 7.45	D	7.00 (5.30)			S15	Firm dark grey sandy gravelly CLAY with many fossil shell fragments (<2mm) and abundant calcite nodules (<20mm). Gravel is sub rounded and sub angular, fine to coarse quartzite and flint.		
7.70- 7.80	D						7.70	
8.00- 8.10	D					Stiff dark grey silty slightly sandy CLAY with some fossil shell fragments (<2mm).		
8.50- 9.00	B							
8.50- 8.95	D	7.50 (DRY)			S22			
						Between 9.30 to 9.60m there is a hard, light grey gravel with a high cobble content (<200mm). Gravel is sub rounded to angular, fine to coarse, mudstone.		
9.30- 9.60	B							
9.30- 9.40	D							
10.00-10.45	D	7.50 (DRY)			S23			

Boring

Depth	Hole Dia	Technique	Crew
1.20		Inspection Pit	
13.58	0.15	Cable Percussion	DC/LC

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
G.L.	NIL	DRY	23/04/21	08:00
13.58	7.50	DRY	23/04/21	18:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
4.00	3.00	2.30	20	7.30	Fast inflow.

Remarks

Inspection pit hand excavated to 1.20m depth and no services were found.
A 50mm standpipe was installed to 4.00m with a geowrapped slotted section from 1.00m to 4.00m with upright lockable protective cover. Backfill details from base of hole: arisings up to 5.00m, bentonite seal up to 4.00m, gravel filter up to 1.00m, bentonite seal up to 0.30m, concrete up to ground level.
Chiselling: 13.50-13.60m for 60 minutes.

Logged by **CR**

Figure **1 of 2**

29/04/2021

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

geotechnics

BOREHOLE RECORD - Cable Percussion

Preliminary

Project **NEWPORT PAGNELL**

Engineer **ROLTON GROUP**

Borehole **CP05**
Project No **PC218147**

Client **ROLTON GROUP**

Scale 1:50

Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	SPT N	Description	Depth	Legend
10.50-11.00	B							
10.50-10.60	D					Stiff light bluish grey mottled orangish brown silty CLAY.	10.50	
11.50-11.95	D	7.50 (DRY)			S26			
12.80-12.90	D						12.80	
13.00-13.50	B					Weak light grey MUDSTONE. Recovered as sub angular and angular, fine to coarse mudstone.		
13.00-13.45	D	7.50 (DRY)			S25			
13.50-13.58	D	7.50 (DRY)			S50*/ 75			
						End of Borehole	13.58	

Boring

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

Logged by **CR**

Figure **2 of 2**
29/04/2021

geotechnics

BOREHOLE RECORD - Cable Percussion

Preliminary

Project **NEWPORT PAGNELL**

Engineer **ROLTON GROUP**

Borehole **CP06**
Project No **PC218147**

Client **ROLTON GROUP**

Scale 1:50

Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	SPT N	Description	Depth
						TOPSOIL: Brown slightly gravelly clayey sand with many rootlets. Gravel is sub rounded to angular, fine to coarse flint and quartzite.	G.L.
0.30- 0.60	B						
0.30- 0.40	D						
0.60- 0.80	B						0.60
0.60- 0.70	D					**Orangish brown gravelly very clayey SAND with rare organic matter (<20mm). Gravel is sub rounded and sub angular, fine to coarse, quartzite and flint.**	
0.80- 0.90	D						0.80
1.30- 1.80	B					**Soft to firm light orangish brown sandy gravelly CLAY with a low cobble content (<90mm), calcite nodules (<10mm) and rare sand lenses (<5mm). Gravel is sub rounded to angular, fine to coarse flint and quartzite.**	
1.30- 1.75	D	1.30 (DRY)			S7		
2.00- 2.10	D						2.00
						Firm, grey slightly sandy CLAY with rare fossil shell fragments (<2mm) and rare light grey sand lenses (<5mm diameter).	
2.80- 3.30	B					**Between 2.80 to 3.00m many, light grey sand lenses (<30mm in diameter).**	
2.80- 3.25	D	1.50 (DRY)			S8		
3.90- 4.00	D						
4.30- 4.80	B						
4.30- 4.75	D	1.50 (DRY)			S11		
5.30- 5.40	D						
5.80- 6.30	B						
5.80- 6.25	D	1.50 (DRY)			S14		
6.80- 6.90	D						6.80
7.10- 7.60	B					**Stiff dark brownish grey slightly sandy CLAY with many fossil shell fragments (<30mm) and rare calcite nodules (<10mm).**	
7.10- 7.55	D	1.50 (DRY)			S20		
8.00- 8.10	D					**Between 8.00 to 8.75 abundant calcite nodules (<10mm).**	
8.30- 8.75	D	1.50 (DRY)			S23		
8.40- 8.90	B						
8.90	W						
8.90	W						
9.50- 9.60	D						
10.00-10.50	B						

Boring

Depth	Hole Dia	Technique	Crew
1.20		Inspection Pit	
13.95	0.15	Cable Percussion	DC/LC

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
G.L.	NIL	DRY	22/04/21	08:00
13.95	13.50	11.00	22/04/21	18:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
12.30	1.50	8.90	20	N/A	Fast inflow.

Remarks

AGS

Inspection pit hand excavated to 1.20m depth and no services were found.
The Borehole was terminated at a depth of 14m on the instruction of the Client due to casing jamming.
A 50mm standpipe was installed to 4.00m with a geowrapped slotted section from 1.00m to 4.00m with upright lockable protective cover. Backfill details from base of hole: arisings up to 5.00m, bentonite seal up to 4.00m, gravel filter up to 1.00m, bentonite seal up to 0.30m, concrete up to ground level.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

Logged by **CR**

Figure **1 of 2**

29/04/2021

geotechnics

BOREHOLE RECORD - Cable Percussion

Preliminary

Project **NEWPORT PAGNELL**

Engineer **ROLTON GROUP**

Borehole **CP06**
Project No **PC218147**

Client **ROLTON GROUP**

Scale 1:50

Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	SPT N	Description	Depth
10.00-10.45	D	1.50 (DRY)			S23		
11.00-11.10	D						
11.50-12.00	B						11.50
11.50-11.95	D	1.50 (DRY)			S26	Stiff dark grey sandy CLAY.	
12.80-13.40	B						12.80
12.80-12.90	D					Dark grey silty SAND.	
13.50-13.95	D	13.50 (10.50)			S25		13.60
						Stiff dark grey very sandy CLAY with some calcite nodules (<45mm), some fossil shell fragments (<2mm) and some sand lenses (<5mm in diameter).	13.95
						End of Borehole	

Legend

Boring

Depth	Hole Dia	Technique	Crew

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

Logged by **CR**

Figure **2 of 2**
29/04/2021

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BOREHOLE RECORD - Cable Percussion

Preliminary

Project **NEWPORT PAGNELL** Engineer **ROLTON GROUP** Borehole **CP07** Project No **PC218147**

Client **ROLTON GROUP**

Scale 1:50

Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	SPT N	Description	Depth
							G.L.
0.20- 0.30	D					TOPSOIL: Dark brown slightly gravelly silty sand with occasional rootlets. Gravel is sub rounded and sub angular, fine to coarse flint and quartzite.	
0.50- 0.90	B						0.50
0.50- 0.60	D					Orangish brown gravelly silty SAND with a low cobble content (<200mm). Gravel is sub rounded to angular flint and quartzite.	
1.20- 1.30	D						1.20
1.30- 1.70	B					Loose orangish brown sandy GRAVEL with a low cobble content (<80mm). Gravel is sub rounded and sub angular, fine to coarse flint and quartzite.	
1.30- 1.75		1.30 (DRY)			C9		
1.70- 1.80	D						1.70
1.80	W					Firm dark brown slightly sandy CLAY with some fossil shell fragments (<5mm) and light grey sand lenses (<10mm in diameter).	
1.80	W						
2.00- 2.50	B						
2.00- 2.45	D	2.00 (DRY)			S10	Between 2.00 to 2.50m many fossil shell fragments (<5mm).	
3.00- 3.10	D						3.00
3.50- 4.00	B					Firm to stiff dark grey slightly sandy CLAY with rare fossil shell fragments (<10mm).	
3.50- 3.95	D	3.00 (DRY)			S15		
4.30	W						
4.30	W						
4.80- 4.90	D						4.80
5.00- 5.45	D	5.00 (1.80)			S13	Medium dense dark grey silty SAND with rare fossil shell fragments (<10mm). From 5.00m fossil shell fragments become occasional (<30mm)	
5.70- 5.80	D						5.70
6.00- 6.10	D					Grey sandy GRAVEL with a low cobble content (<70mm). Gravel is sub angular and sub rounded, fine to coarse quartzite and flint.	6.00
6.10- 6.60	B						
6.10- 6.55	D	6.00 (DRY)			S21	Stiff dark grey slightly gravelly sandy CLAY with a low cobble content (<75mm) and many fossil shell fragments (<5mm). Gravel is sub rounded and sub angular, fine to coarse, quartzite and flint.	
7.00- 7.10	D						7.00
7.50- 8.00	B					Medium dense dark grey gravelly SAND with some fossil shell fragments (<2mm). Gravel is sub angular and sub rounded, fine to coarse quartzite and flint.	
7.50- 7.95	D	6.00 (DRY)			S41		7.60
7.80	W					Stiff grey sandy slightly gravelly CLAY with a low cobble content (<67mm), many fossil shell fragments (<5mm) and many calcite nodules (<15mm). Gravel is sub angular to sub rounded, fine to coarse quartzite and flint.	
7.80	W						
9.00- 9.50	B					Between 9.00 to 9.45m orangish brown mottling.	
9.00- 9.45	D	6.00 (7.80)			S21		
10.00-10.10	D						

Boring

Depth	Hole Dia	Technique	Crew
1.20		Inspection Pit	
12.00	0.15	Cable Percussion	DC/LC

Progress

Depth of Hole	Depth Cased	Depth to Water	Date	Time
G.L.	NIL	DRY	21/04/21	08:00
12.00	10.50	DAMP	21/04/21	18:00

Groundwater

Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
5.00	5.00	1.80	20	6.00	Fast inflow.
7.60	6.00	4.30	20	8.50	Fast inflow.
9.00	8.50	7.80	20	10.50	Fast inflow.

Remarks

Inspection pit hand excavated to 1.20m depth and no services were found.
A 50mm standpipe was installed to 5.00m with a geowrapped slotted section from 1.00m to 5.00m with upright lockable protective cover. Backfill details from base of hole: arisings up to 6.00m, bentonite seal up to 5.00m, gravel filter up to 1.00m, bentonite seal up to 0.30m, concrete up to ground level.
Chiselling: 11.90-12.00m for 60 minutes.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

Logged by **CR**

Figure **1 of 2**

29/04/2021

geotechnics

BOREHOLE RECORD - Cable Percussion

Preliminary

Project **NEWPORT PAGNELL**

Engineer **ROLTON GROUP**

Borehole **CP07**
Project No **PC218147**

Client **ROLTON GROUP**

Scale 1:50

Sampling			Properties			Strata		
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	SPT N	Description	Depth	Legend
10.50-11.00	B							
10.50-10.95	D	10.50 (DRY)			S29			
11.20-11.30	D					Stiff dark bluish grey silty CLAY with rare fossil shell fragments (<2mm). Fissures are very closely spaced, randomly orientated, planar and stepped. Between 11.40 and 11.90m green mottling and many fossil shell fragments (<2mm).	11.20	
11.40-11.90	B							
11.40-11.85	D	10.50 (DRY)			S27		11.90	
11.90-11.90	D	10.50 (DRY)			S0/0	Weak bluish grey MUDSTONE. Recovered as sub angular and angular, medium to coarse mudstone.	12.00	
						End of Borehole		

Boring				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater

Remarks

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015 + A1:2020

Logged by **CR**

Figure **2 of 2**
29/04/2021

geotechnics

APPENDIX D – SOAKAWAY INFILTRATION TEST RESULTS

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SOAKWAY TESTING SCHEDULE

PROJECT NO	19-0021
PROJECT NAME	Land off Willen Road, Newport Pagnell
DOC REF	190021-RGL-ZZ-XX-SH-G-500-0001

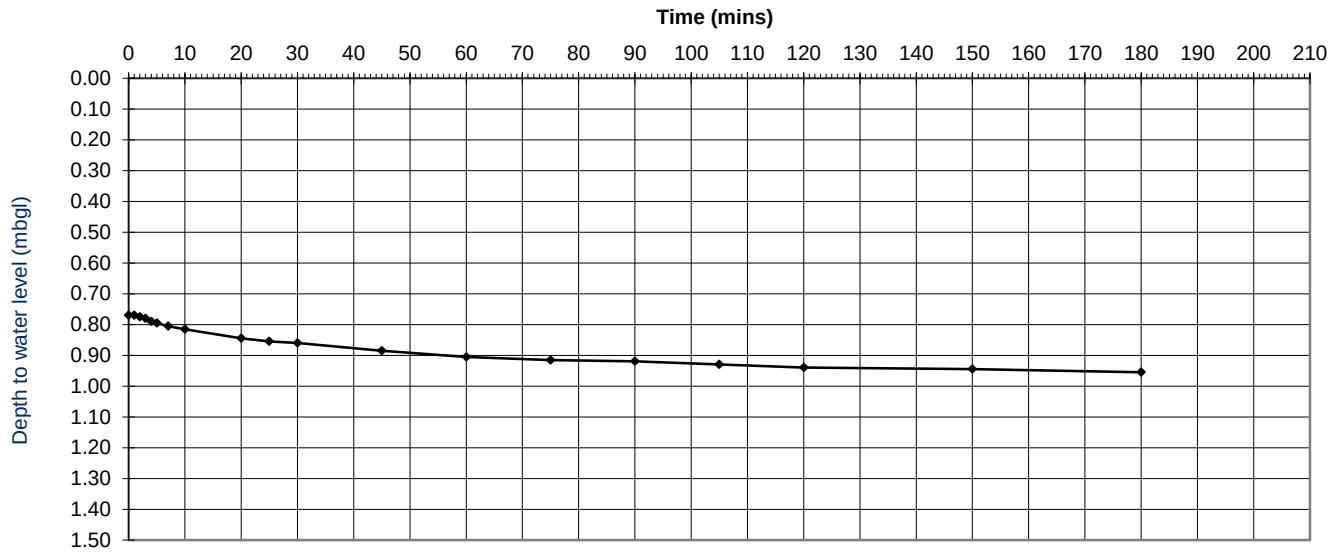
Trial Pit Dimensions (m)	Width	Length	Depth to Base
	0.55	1.50	1.60

Test Date 28/09/2020

Soakaway No. SA01 R1

Calculation of Infiltration Rate in Accordance with BRE Digest 365.

SOAKAWAY TEST RESULTS



From above graph;

0.0925	m	= Depth drop between 75% and 25% of maximum depth to final depth
55	mins	= Time for outflow between 75% and 25% of maximum depth to final depth

Calculation of Soil Infiltration Rate (f):

where

$$f = \frac{VP75\text{-}25}{ap50 \times tp75\text{-}25}$$

using

VP75-25 = Volume outflowing between 75% and 25% of effective depth.
ap50 = Mean surface area through which the outflow occurs.
tp75-25 = Time for the outflow between 75% and 25% of the effective depth.

VP75-25 =	0.0763125	m^3
ap50 =	3.84875	m^2
tp75-25 =	55.0	mins

General Geological Profile :

0.00-0.45m	TOPSOIL: Brown slightly gravelly very clayey sand. Gravel is medium to coarse subangular to subrounded chalk and flint.
0.45-1.00m	Firm to stiff brown sandy CLAY.
1.00-1.45m	Firm to stiff grey mottled brown sandy gravelly CLAY. Gravel is fine to coarse subangular to subrounded flint.
1.45-1.60m	Medium dense brown gravelly SAND. Gravel is fine to coarse subangular to subrounded flint and quartz.

Notes : Slight groundwater seepage in base of soakaway.

			Permeability Guideline (m/s)		
Soil Infiltration Rate (f) =	**6.01E-06**	m/s	Good	Poor	Practically Impervious
			10^{-3} - 10^{-5}	10^{-6} - 10^{-7}	10^{-8} - 10^{-10}

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SOAKWAY TESTING SCHEDULE

PROJECT NO	19-0021
PROJECT NAME	Land off Willen Road, Newport Pagnell
DOC REF	190021-RGL-ZZ-XX-SH-G-500-0001

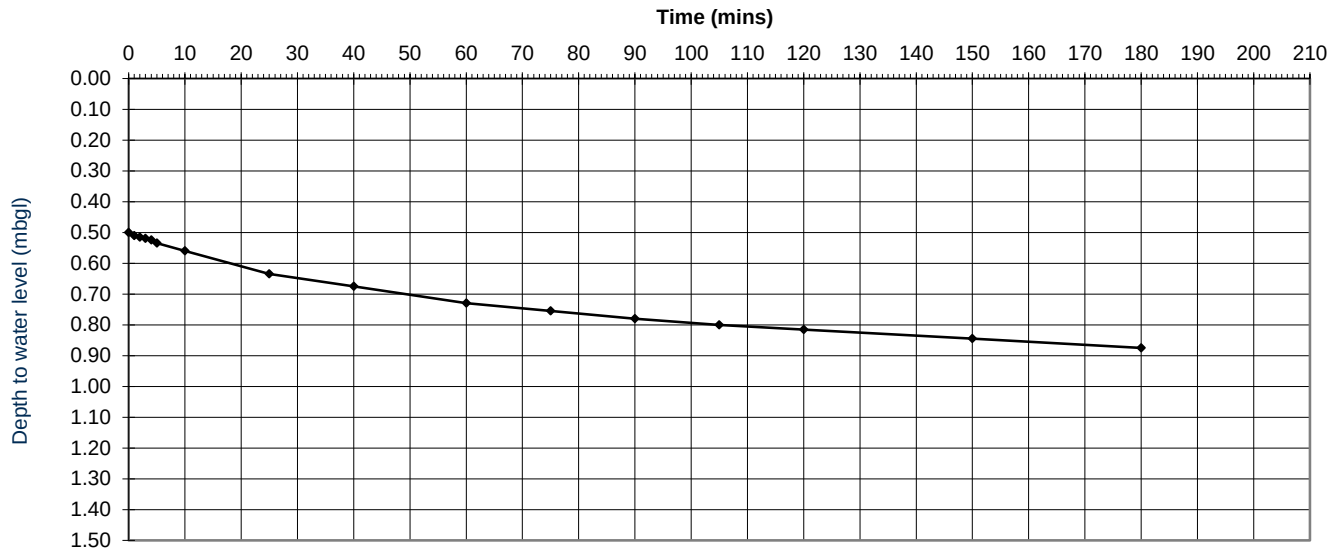
Trial Pit Dimensions (m)	Width	Length	Depth to Base
	0.55	1.50	1.60

Test Date 28/09/2020

Soakaway No. SA01 R2

Calculation of Infiltration Rate in Accordance with BRE Digest 365.

SOAKAWAY TEST RESULTS



From above graph;

0.1875	m	= Depth drop between 75% and 25% of maximum depth to final depth
74.5	mins	= Time for outflow between 75% and 25% of maximum depth to final depth

Calculation of Soil Infiltration Rate (f):

where

$$f = \frac{VP75\text{-}25}{ap50 \times tp75\text{-}25}$$

using

VP75-25 = Volume outflowing between 75% and 25% of effective depth.
ap50 = Mean surface area through which the outflow occurs.
tp75-25 = Time for the outflow between 75% and 25% of the effective depth.

VP75-25 =	0.1546875 m^3
ap50 =	4.56625 m^2
tp75-25 =	74.5 mins

General Geological Profile :

0.00-0.45m	TOPSOIL: Brown slightly gravelly very clayey sand. Gravel is medium to coarse subangular to subrounded chalk and flint.
0.45-1.00m	Firm to stiff brown sandy CLAY.
1.00-1.45m	Firm to stiff grey mottled brown sandy gravelly CLAY. Gravel is fine to coarse subangular to subrounded flint.
1.45-1.60m	Medium dense brown gravelly SAND. Gravel is fine to coarse subangular to subrounded flint and quartz.

Notes : Slight groundwater seepage in base of soakaway.

			Permeability Guideline (m/s)		
Soil Infiltration Rate (f) =	**7.58E-06**	m/s	Good	Poor	Practically Impervious
			10^{-3} - 10^{-5}	10^{-6} - 10^{-7}	10^{-8} - 10^{-10}

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SOAKWAY TESTING SCHEDULE

PROJECT NO	19-0021
PROJECT NAME	Land off Willen Road, Newport Pagnell
DOC REF	190021-RGL-ZZ-XX-SH-G-500-0001

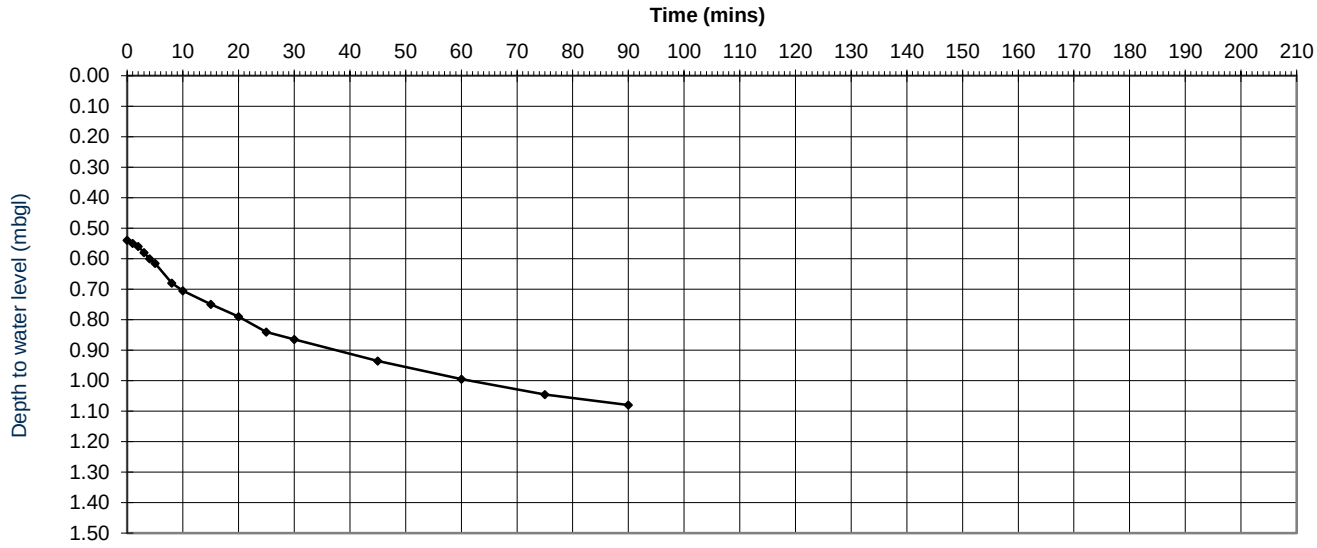
Trial Pit Dimensions (m)	Width	Length	Depth to Base
	0.55	1.50	1.08

Test Date 28/09/2020

Soakaway No. SA02 R1

Calculation of Infiltration Rate in Accordance with BRE Digest 365.

SOAKAWAY TEST RESULTS



From above graph;

0.27	m	= Depth drop between 75% and 25% of maximum depth to final depth
39	mins	= Time for outflow between 75% and 25% of maximum depth to final depth

Calculation of Soil Infiltration Rate (f):

where

$$f = \frac{VP75\text{-}25}{ap50 \times tp75\text{-}25}$$

using

VP75-25 = Volume outflowing between 75% and 25% of effective depth.
ap50 = Mean surface area through which the outflow occurs.
tp75-25 = Time for the outflow between 75% and 25% of the effective depth.

VP75-25 =	0.22275 m³
ap50 =	2.7643 m²
tp75-25 =	39.0 mins

General Geological Profile :

0.00-0.49m	TOPSOIL. Light brown slightly clayey slightly gravelly sand. Gravel is of medium to coarse subrounded flint, quartz and occasional chalk.
0.49-1.08m	Medium dense orange brown slightly clayey gravelly medium SAND. Gravel is of medium to coarse subrounded flint, quartz, sandstone and occasional chalk.

Notes : No standing water noted.

			Permeability Guideline (m/s)		
Soil Infiltration Rate (f) =	**3.44E-05**	m/s	Good	Poor	Practically Impervious
			10^{-3} - 10^{-5}	10^{-6} - 10^{-7}	10^{-8} - 10^{-10}

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SOAKWAY TESTING SCHEDULE

PROJECT NO	19-0021
PROJECT NAME	Land off Willen Road, Newport Pagnell
DOC REF	190021-RGL-ZZ-XX-SH-G-500-0001

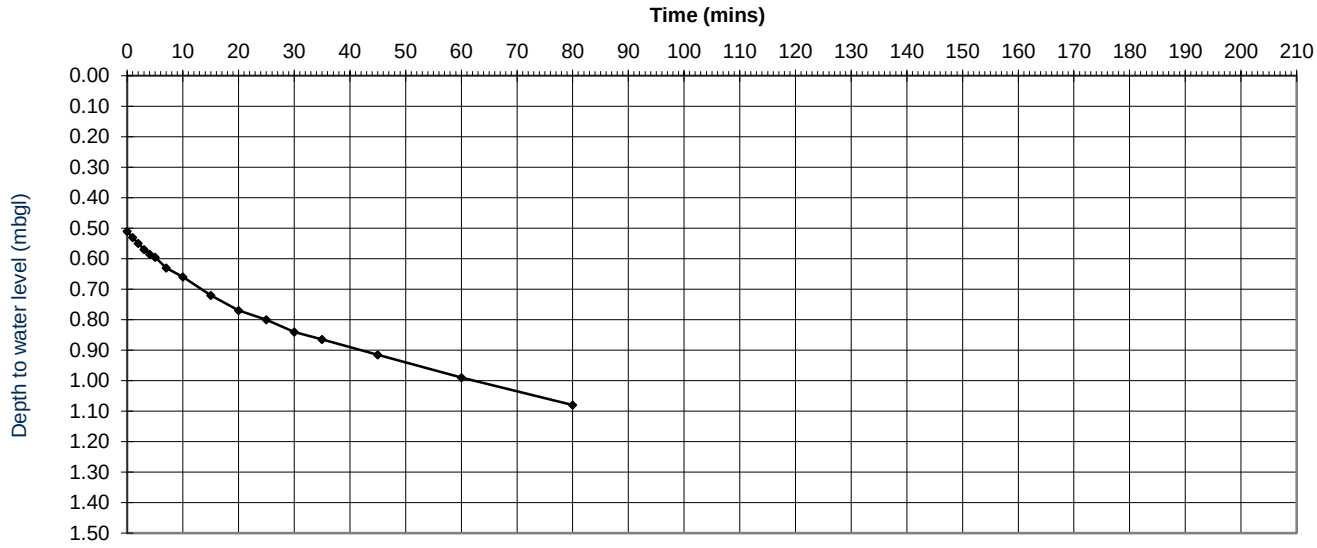
Trial Pit Dimensions (m)	Width	Length	Depth to Base
	0.55	1.50	1.08

Test Date 28/09/2020

Soakaway No. SA02 R2

Calculation of Infiltration Rate in Accordance with BRE Digest 365.

SOAKAWAY TEST RESULTS



From above graph;

0.285	m	= Depth drop between 75% and 25% of maximum depth to final depth
40	mins	= Time for outflow between 75% and 25% of maximum depth to final depth

Calculation of Soil Infiltration Rate (f):

where

$$f = \frac{VP75\text{-}25}{ap50 \times tp75\text{-}25}$$

using

VP75-25 = Volume outflowing between 75% and 25% of effective depth.
ap50 = Mean surface area through which the outflow occurs.
tp75-25 = Time for the outflow between 75% and 25% of the effective depth.

VP75-25 =	0.235125 m³
ap50 =	2.7643 m²
tp75-25 =	40.0 mins

General Geological Profile :

0.00-0.49m	TOPSOIL. Light brown slightly clayey slightly gravelly sand. Gravel is of medium to coarse subrounded flint, quartz and occasional chalk.
0.49-1.08m	Medium dense orange brown slightly clayey gravelly medium SAND. Gravel is of medium to coarse subrounded flint, quartz, sandstone and occasional chalk.

Notes : No standing water noted.

			Permeability Guideline (m/s)		
Soil Infiltration Rate (f) =	**3.54E-05**	m/s	Good	Poor	Practically Impervious
			10^{-3} - 10^{-5}	10^{-6} - 10^{-7}	10^{-8} - 10^{-10}

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SOAKWAY TESTING SCHEDULE

PROJECT NO	19-0021
PROJECT NAME	Land off Willen Road, Newport Pagnell
DOC REF	190021-RGL-ZZ-XX-SH-G-500-0001

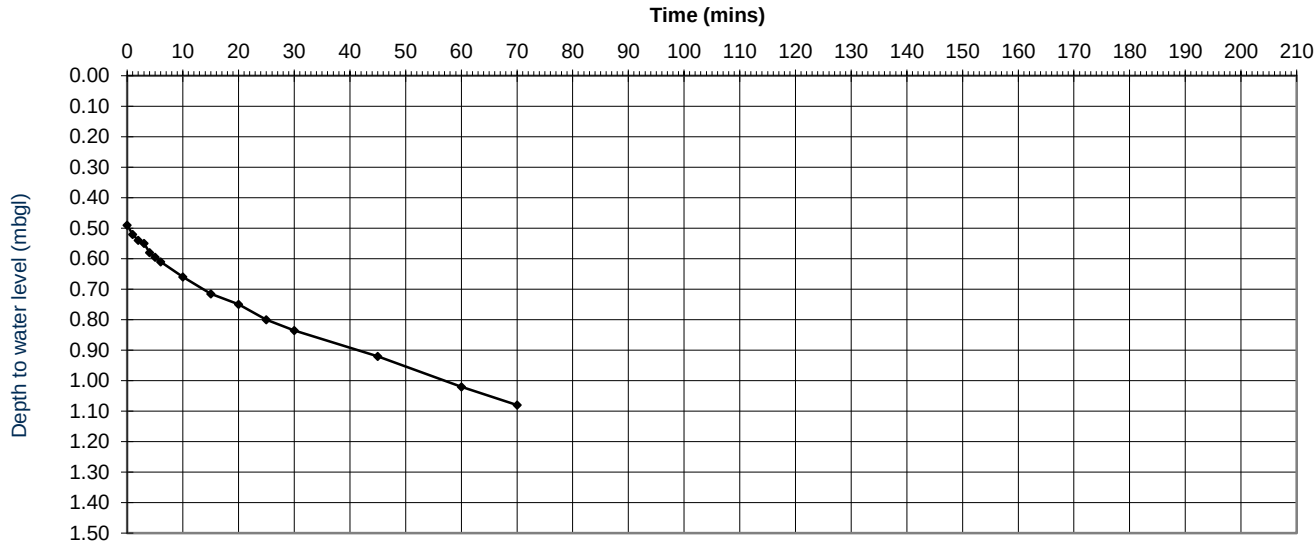
Trial Pit Dimensions (m)	Width	Length	Depth to Base
	0.55	1.50	1.08

Test Date 28/09/2020

Soakaway No. SA02 R3

Calculation of Infiltration Rate in Accordance with BRE Digest 365.

SOAKAWAY TEST RESULTS



From above graph;

0.295	m	= Depth drop between 75% and 25% of maximum depth to final depth
39	mins	= Time for outflow between 75% and 25% of maximum depth to final depth

Calculation of Soil Infiltration Rate (f):

where

$$f = \frac{VP75\text{-}25}{ap50 \times tp75\text{-}25}$$

using

VP75-25 = Volume outflowing between 75% and 25% of effective depth.
ap50 = Mean surface area through which the outflow occurs.
tp75-25 = Time for the outflow between 75% and 25% of the effective depth.

VP75-25 =	0.243375 m³
ap50 =	2.7643 m²
tp75-25 =	39.0 mins

General Geological Profile :

0.00-0.49m	TOPSOIL. Light brown slightly clayey slightly gravelly sand. Gravel is of medium to coarse subrounded flint, quartz and occasional chalk.
0.49-1.08m	Medium dense orange brown slightly clayey gravelly medium SAND. Gravel is of medium to coarse subrounded flint, quartz, sandstone and occasional chalk.

Notes : No standing water noted.

			Permeability Guideline (m/s)		
Soil Infiltration Rate (f) =	**3.76E-05**	m/s	Good	Poor	Practically Impervious
			10^{-3} - 10^{-5}	10^{-6} - 10^{-7}	10^{-8} - 10^{-10}

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SOAKWAY TESTING SCHEDULE

PROJECT NO	19-0021
PROJECT NAME	Land off Willen Road, Newport Pagnell
DOC REF	190021-RGL-ZZ-XX-SH-G-500-0001

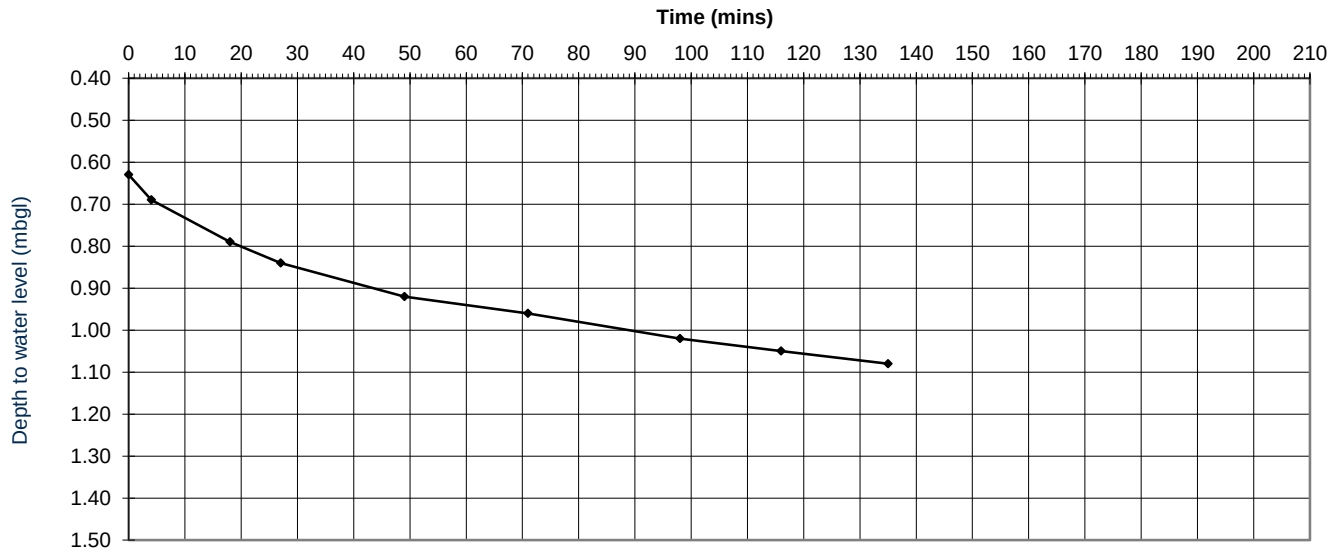
Trial Pit Dimensions (m)	Width	Length	Depth to Base
	0.55	1.60	1.36

Test Date 30/09/2020

Soakaway No. SA03 R1

Calculation of Infiltration Rate in Accordance with BRE Digest 365.

SOAKAWAY TEST RESULTS



From above graph;

0.225	m	= Depth drop between 75% and 25% of maximum depth to final depth
64	mins	= Time for outflow between 75% and 25% of maximum depth to final depth

Calculation of Soil Infiltration Rate (f):

where

$$f = \frac{VP75\text{-}25}{ap50 \times tp75\text{-}25}$$

using

VP75-25 = Volume outflowing between 75% and 25% of effective depth.
ap50 = Mean surface area through which the outflow occurs.
tp75-25 = Time for the outflow between 75% and 25% of the effective depth.

VP75-25 =	0.198	m^3
ap50 =	3.0515	m^2
tp75-25 =	64.0	mins

General Geological Profile :

0.00-0.39m	TOPSOIL: Brown slightly gravelly very clayey sand. Gravel is medium to coarse subangular to subrounded chalk and flint.
0.39-1.30m	Medium dense light brown clayey gravelly SAND. Gravel is of medium to coarse subangular to subrounded flint, quartz and sandstone.
1.30-1.36m	Medium dense orange brown sandy GRAVEL. Gravel is of medium to coarse subangular to subrounded flint, sandstone and quartz.

Notes :

			Permeability Guideline (m/s)		
Soil Infiltration Rate (f) =	**1.69E-05**	m/s	Good	Poor	Practically Impervious
			10^{-3} - 10^{-5}	10^{-6} - 10^{-7}	10^{-8} - 10^{-10}

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SOAKWAY TESTING SCHEDULE

PROJECT NO	19-0021
PROJECT NAME	Land off Willen Road, Newport Pagnell
DOC REF	190021-RGL-ZZ-XX-SH-G-500-0001

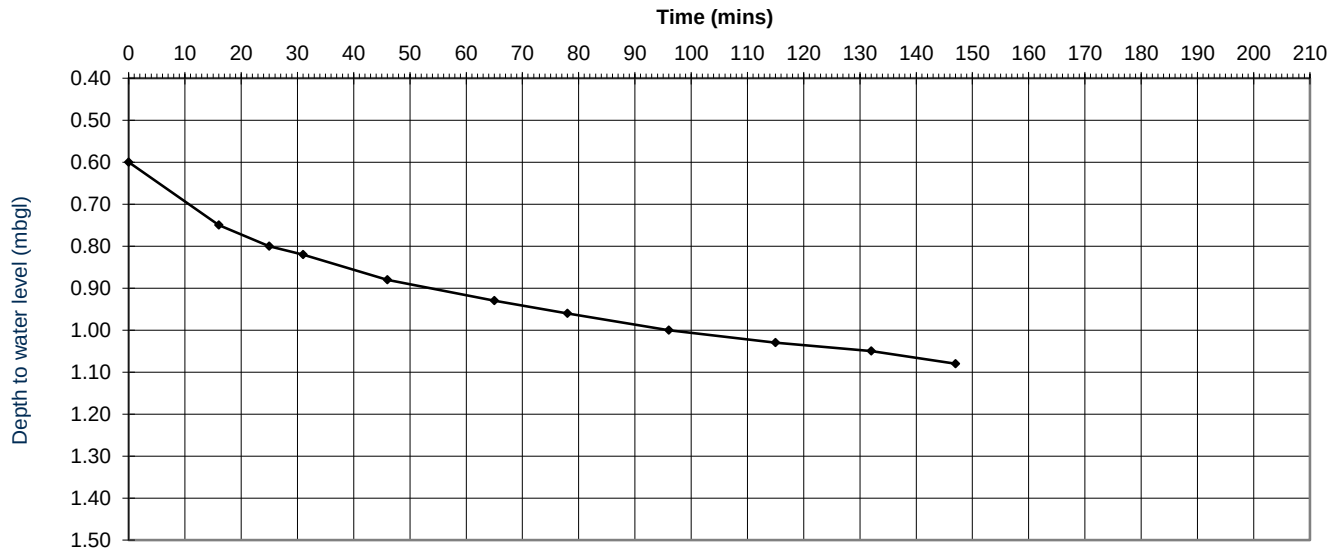
Trial Pit Dimensions (m)	Width	Length	Depth to Base
	0.55	1.60	1.25

Test Date 30/09/2020

Soakaway No. SA03 R2

Calculation of Infiltration Rate in Accordance with BRE Digest 365.

SOAKAWAY TEST RESULTS



From above graph;

0.24	m	= Depth drop between 75% and 25% of maximum depth to final depth
66	mins	= Time for outflow between 75% and 25% of maximum depth to final depth

Calculation of Soil Infiltration Rate (f):

where

$$f = \frac{VP75\text{-}25}{ap50 \times tp75\text{-}25}$$

using

VP75-25 = Volume outflowing between 75% and 25% of effective depth.
ap50 = Mean surface area through which the outflow occurs.
tp75-25 = Time for the outflow between 75% and 25% of the effective depth.

VP75-25 = 0.2112 m³
ap50 = 2.643 m²
tp75-25 = 66.0 mins

General Geological Profile :

0.00-0.39m	TOPSOIL: Brown slightly gravelly very clayey sand. Gravel is medium to coarse subangular to subrounded chalk and flint.
0.39-1.30m	Medium dense light brown clayey gravelly SAND. Gravel is of medium to coarse subangular to subrounded flint, quartz and sandstone.
1.30-1.36m	Medium dense orange brown sandy GRAVEL. Gravel is of medium to coarse subangular to subrounded flint, sandstone and quartz.

Notes : Partial pit wall collapse has resulted in base of pit becoming shallower.

			Permeability Guideline (m/s)		
			Good	Poor	Practically Impervious
Soil Infiltration Rate (f) =	**2.02E-05**	m/s	10^{-3} - 10^{-5}	10^{-6} - 10^{-7}	10^{-8} - 10^{-10}

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SOAKWAY TESTING SCHEDULE

PROJECT NO	19-0021
PROJECT NAME	Land off Willen Road, Newport Pagnell
DOC REF	190021-RGL-ZZ-XX-SH-G-500-0001

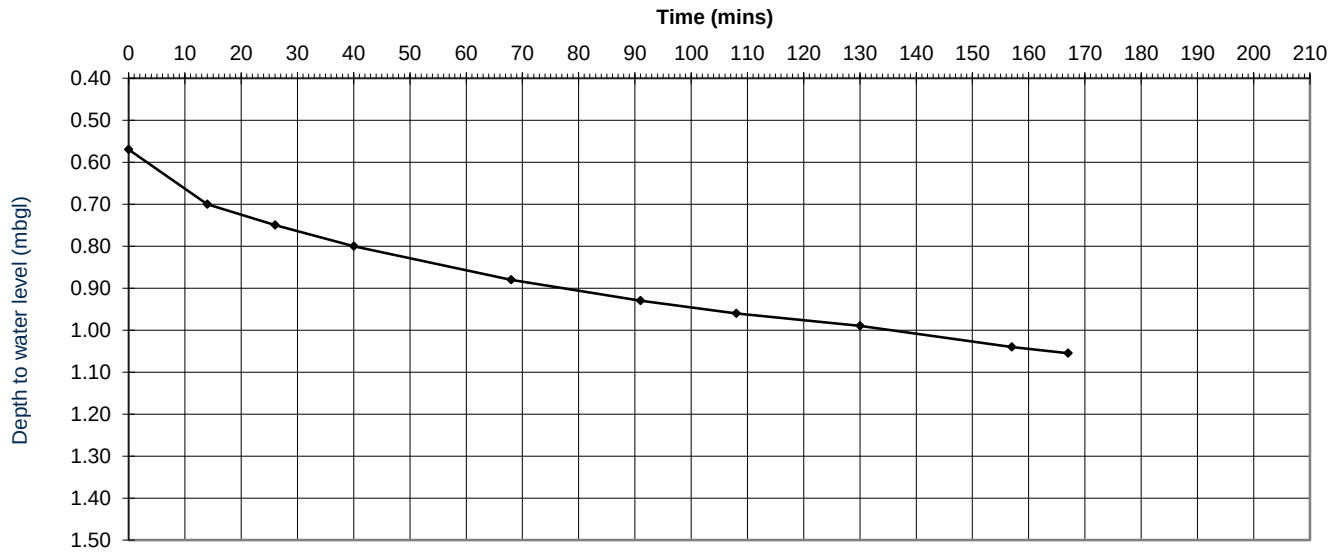
Trial Pit Dimensions (m)	Width	Length	Depth to Base
	0.55	1.60	1.23

Test Date 30/09/2020

Soakaway No. SA03 R3

Calculation of Infiltration Rate in Accordance with BRE Digest 365.

SOAKAWAY TEST RESULTS



From above graph;

0.2425	m	= Depth drop between 75% and 25% of maximum depth to final depth
80	mins	= Time for outflow between 75% and 25% of maximum depth to final depth

Calculation of Soil Infiltration Rate (f):

where

$$f = \frac{VP75\text{-}25}{ap50 \times tp75\text{-}25}$$

using

VP75-25 = Volume outflowing between 75% and 25% of effective depth.
ap50 = Mean surface area through which the outflow occurs.
tp75-25 = Time for the outflow between 75% and 25% of the effective depth.

VP75-25 = 0.2134 m³
ap50 = 2.67525 m²
tp75-25 = 80.0 mins

General Geological Profile :

0.00-0.39m	TOPSOIL: Brown slightly gravelly very clayey sand. Gravel is medium to coarse subangular to subrounded chalk and flint.
0.39-1.30m	Medium dense light brown clayey gravelly SAND. Gravel is of medium to coarse subangular to subrounded flint, quartz and sandstone.
1.30-1.36m	Medium dense orange brown sandy GRAVEL. Gravel is of medium to coarse subangular to subrounded flint, sandstone and quartz.

Notes : Partial pit wall collapse has resulted in base of pit becoming shallower.

			Permeability Guideline (m/s)		
			Good	Poor	Practically Impervious
Soil Infiltration Rate (f) =	**1.66E-05**	m/s	10^{-3} - 10^{-5}	10^{-6} - 10^{-7}	10^{-8} - 10^{-10}

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SOAKWAY TESTING SCHEDULE

PROJECT NO	19-0021
PROJECT NAME	Land off Willen Road, Newport Pagnell
DOC REF	190021-RGL-ZZ-XX-SH-G-500-0001

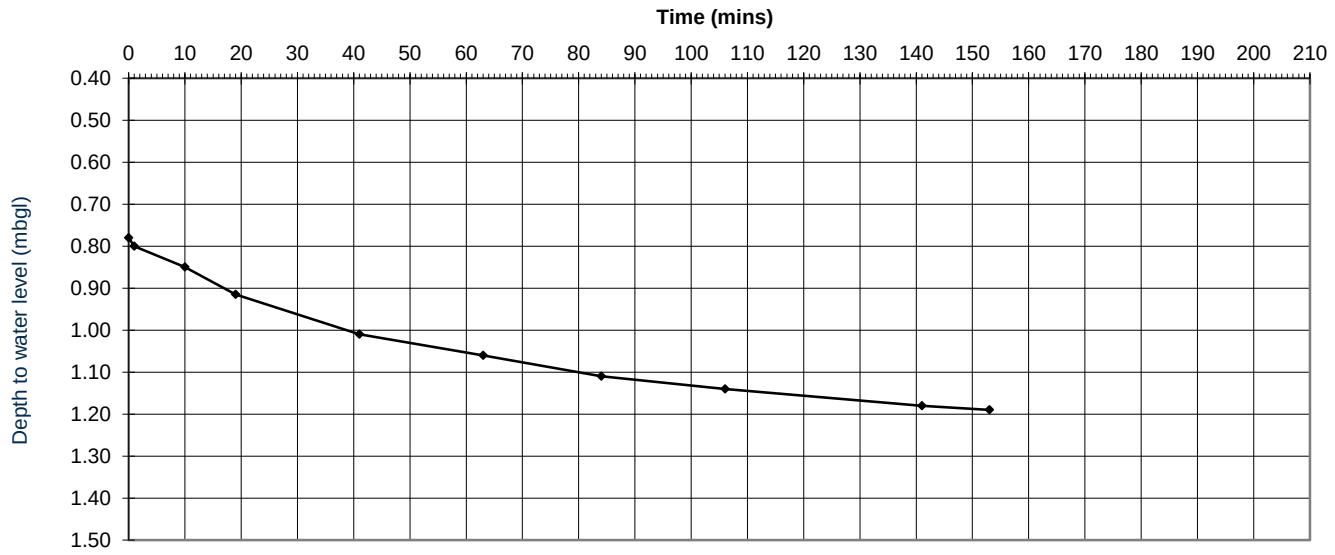
Trial Pit Dimensions (m)	Width	Length	Depth to Base
	0.55	1.72	1.50

Test Date 30/09/2020

Soakaway No. SA04 R1

Calculation of Infiltration Rate in Accordance with BRE Digest 365.

SOAKAWAY TEST RESULTS



From above graph;

0.205	m	= Depth drop between 75% and 25% of maximum depth to final depth
60.5	mins	= Time for outflow between 75% and 25% of maximum depth to final depth

Calculation of Soil Infiltration Rate (f):

where

$$f = \frac{VP75\text{-}25}{ap50 \times tp75\text{-}25}$$

using

VP75-25 = Volume outflowing between 75% and 25% of effective depth.
ap50 = Mean surface area through which the outflow occurs.
tp75-25 = Time for the outflow between 75% and 25% of the effective depth.

VP75-25 = 0.19393 m³
ap50 = 3.2841 m²
tp75-25 = 60.5 mins

General Geological Profile :

0.00-0.50m	TOPSOIL: Brown slightly clayey slightly gravelly sand. Gravel is medium to coarse subangular to subrounded chalk and flint.
0.50-1.00m	Medium dense brown clayey gravelly SAND. Gravel is medium to coarse subangular to subrounded chalk and flint.
1.00-1.45m	Medium dense brown slightly clayey gravelly SAND. Gravel is medium to coarse subangular to subrounded chalk and flint.
1.45-1.50m	Firm to stiff grey slightly gravelly CLAY. Gravel is fine subrounded chalk.

Notes : Slight groundwater seepage at base of pit.

			Permeability Guideline (m/s)		
Soil Infiltration Rate (f) =	**1.63E-05**	m/s	Good	Poor	Practically Impervious
			10^{-3} - 10^{-5}	10^{-6} - 10^{-7}	10^{-8} - 10^{-10}

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SOAKWAY TESTING SCHEDULE

PROJECT NO	19-0021
PROJECT NAME	Land off Willen Road, Newport Pagnell
DOC REF	190021-RGL-ZZ-XX-SH-G-500-0001

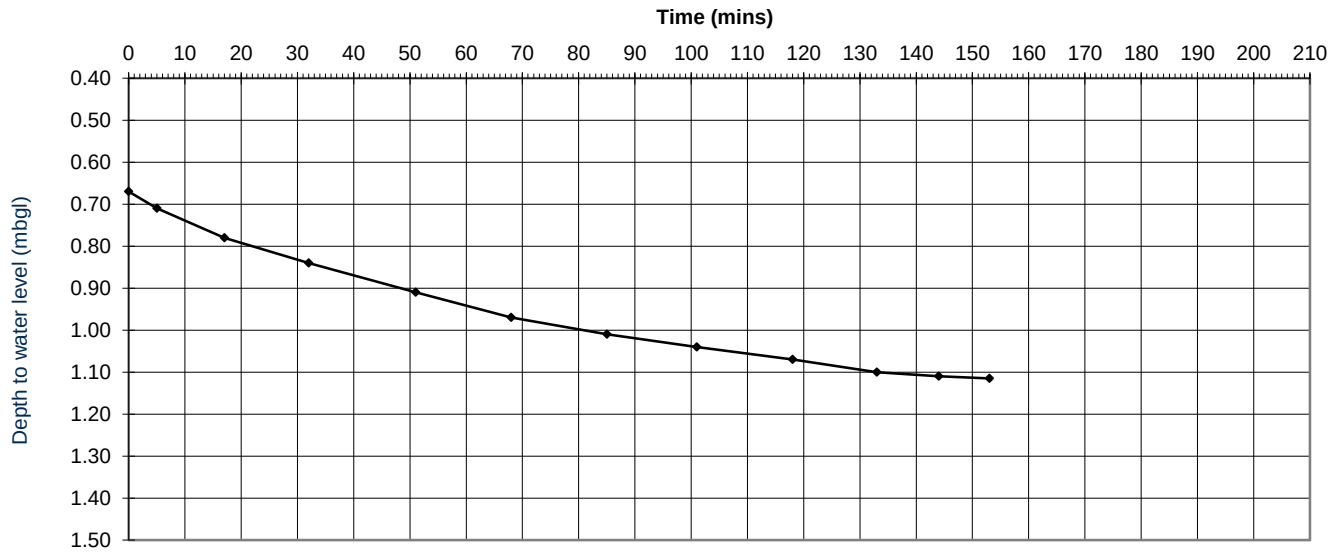
Trial Pit Dimensions (m)	Width	Length	Depth to Base
	0.55	1.72	1.50

Test Date 30/09/2020

Soakaway No. SA04 R2

Calculation of Infiltration Rate in Accordance with BRE Digest 365.

SOAKAWAY TEST RESULTS



From above graph;

0.2225	m	= Depth drop between 75% and 25% of maximum depth to final depth
64	mins	= Time for outflow between 75% and 25% of maximum depth to final depth

Calculation of Soil Infiltration Rate (f):

where

$$f = \frac{VP75\text{-}25}{ap50 \times tp75\text{-}25}$$

using

VP75-25 = Volume outflowing between 75% and 25% of effective depth.
ap50 = Mean surface area through which the outflow occurs.
tp75-25 = Time for the outflow between 75% and 25% of the effective depth.

VP75-25 = 0.210485 m³
ap50 = 3.70405 m²
tp75-25 = 64.0 mins

General Geological Profile :

0.00-0.50m	TOPSOIL: Brown slightly clayey slightly gravelly sand. Gravel is medium to coarse subangular to subrounded chalk and flint.
0.50-1.00m	Medium dense brown clayey gravelly SAND. Gravel is medium to coarse subangular to subrounded chalk and flint.
1.00-1.45m	Medium dense brown slightly clayey gravelly SAND. Gravel is medium to coarse subangular to subrounded chalk and flint.
1.45-1.50m	Firm to stiff grey slightly gravelly CLAY. Gravel is fine subrounded chalk.

Notes : Slight groundwater seepage at base of pit.

			Permeability Guideline (m/s)		
Soil Infiltration Rate (f) =	**1.48E-05**	m/s	Good	Poor	Practically Impervious
			10^{-3} - 10^{-5}	10^{-6} - 10^{-7}	10^{-8} - 10^{-10}

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SOAKWAY TESTING SCHEDULE

PROJECT NO	19-0021
PROJECT NAME	Land off Willen Road, Newport Pagnell
DOC REF	190021-RGL-ZZ-XX-SH-G-500-0001

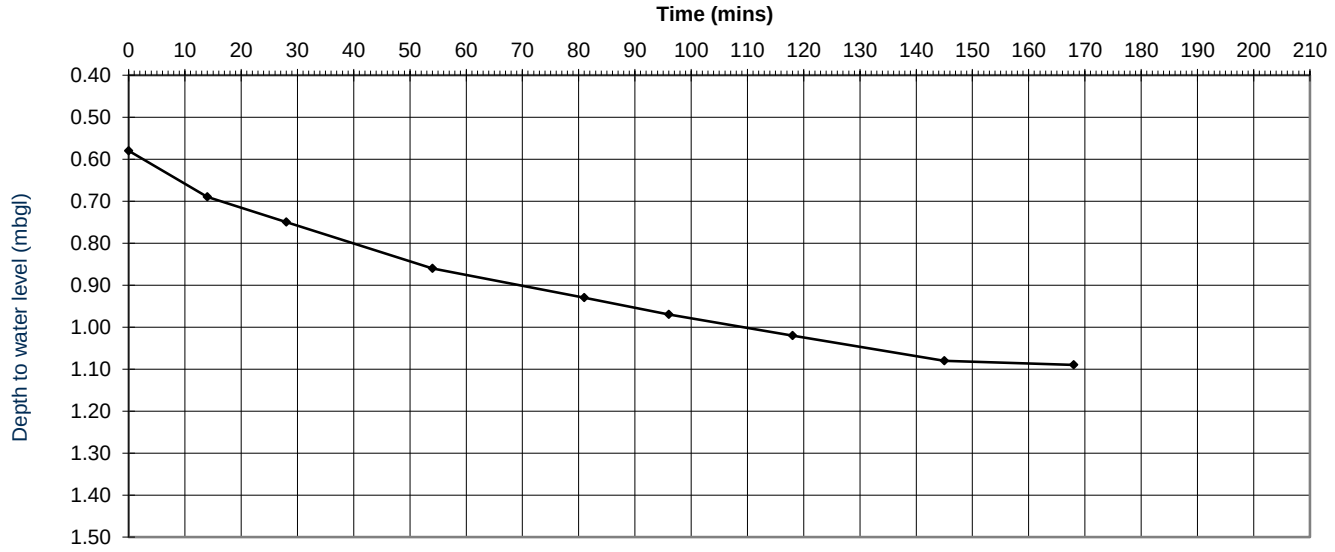
Trial Pit Dimensions (m)	Width	Length	Depth to Base
	0.55	1.72	1.50

Test Date 30/09/2020

Soakaway No. SA04 R3

Calculation of Infiltration Rate in Accordance with BRE Digest 365.

SOAKAWAY TEST RESULTS



From above graph;

0.255	m	= Depth drop between 75% and 25% of maximum depth to final depth
78	mins	= Time for outflow between 75% and 25% of maximum depth to final depth

Calculation of Soil Infiltration Rate (f):

where

$$f = \frac{VP75\text{-}25}{ap50 \times tp75\text{-}25}$$

using

VP75-25 = Volume outflowing between 75% and 25% of effective depth.
ap50 = Mean surface area through which the outflow occurs.
tp75-25 = Time for the outflow between 75% and 25% of the effective depth.

VP75-25 =	0.24123	m^3
ap50 =	3.9651	m^2
tp75-25 =	78.0	mins

General Geological Profile :

0.00-0.50m	TOPSOIL: Brown slightly clayey slightly gravelly sand. Gravel is medium to coarse subangular to subrounded chalk and flint.
0.50-1.00m	Medium dense brown clayey gravelly SAND. Gravel is medium to coarse subangular to subrounded chalk and flint.
1.00-1.45m	Medium dense brown slightly clayey gravelly SAND. Gravel is medium to coarse subangular to subrounded chalk and flint.
1.45-1.50m	Firm to stiff grey slightly gravelly CLAY. Gravel is fine subrounded chalk.

Notes : Slight groundwater seepage at base of pit.

			Permeability Guideline (m/s)		
Soil Infiltration Rate (f) =	**1.30E-05**	m/s	Good	Poor	Practically Impervious
			10^{-3} - 10^{-5}	10^{-6} - 10^{-7}	10^{-8} - 10^{-10}

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SOAKWAY TESTING SCHEDULE

PROJECT NO	19-0021
PROJECT NAME	Land off Willen Road, Newport Pagnell
DOC REF	190021-RGL-ZZ-XX-SH-G-500-0001

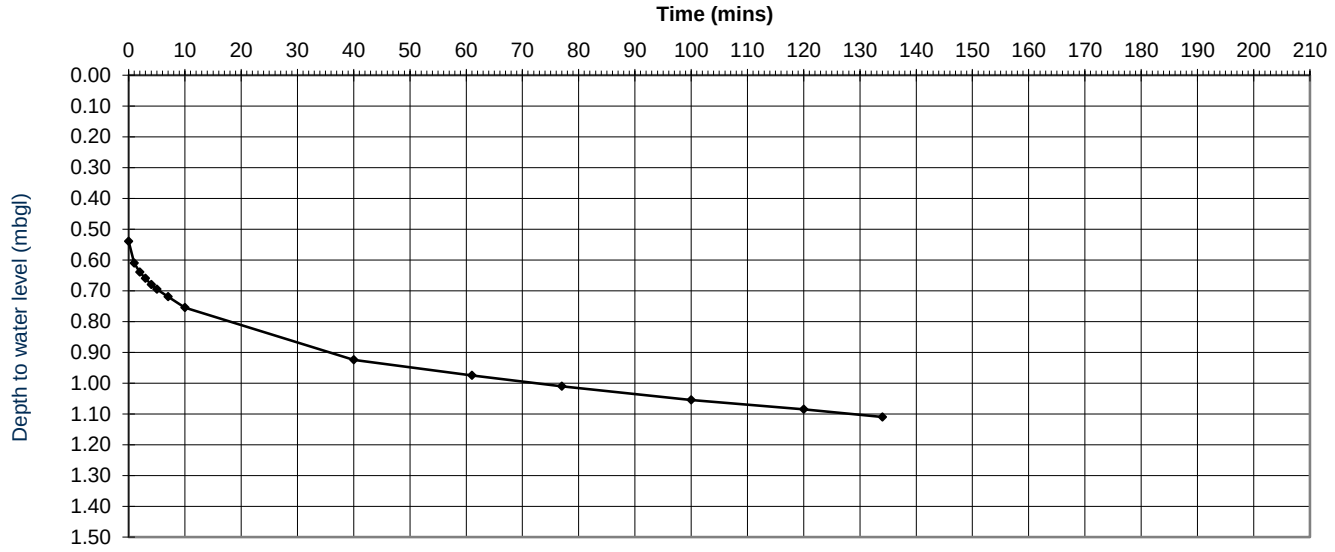
Trial Pit Dimensions (m)	Width	Length	Depth to Base
	0.55	1.70	1.20

Test Date 30/09/2020

Soakaway No. SA05 R1

Calculation of Infiltration Rate in Accordance with BRE Digest 365.

SOAKAWAY TEST RESULTS



From above graph;

0.285	m	= Depth drop between 75% and 25% of maximum depth to final depth
53	mins	= Time for outflow between 75% and 25% of maximum depth to final depth

Calculation of Soil Infiltration Rate (f):

where

$$f = \frac{VP75\text{-}25}{ap50 \times tp75\text{-}25}$$

using

VP75-25 = Volume outflowing between 75% and 25% of effective depth.
ap50 = Mean surface area through which the outflow occurs.
tp75-25 = Time for the outflow between 75% and 25% of the effective depth.

VP75-25 = 0.266475 m³
ap50 = 2.6225 m²
tp75-25 = 53.0 mins

General Geological Profile :

0.00-0.35m TOPSOIL: Brown slightly clayey slightly gravelly sand. Gravel is medium to coarse subangular to subrounded chalk and flint.

0.35-1.20m Medium dense brown gravelly SAND. Gravel is fine to coarse subangular to subrounded flint and quartz.

Notes : Soils slightly damp below 1.1m depth however no standing water noted.

			Permeability Guideline (m/s)		
Soil Infiltration Rate (f) =	**3.20E-05**	m/s	Good	Poor	Practically Impervious
			10^{-3} - 10^{-5}	10^{-6} - 10^{-7}	10^{-8} - 10^{-10}

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SOAKWAY TESTING SCHEDULE

PROJECT NO	19-0021
PROJECT NAME	Land off Willen Road, Newport Pagnell
DOC REF	190021-RGL-ZZ-XX-SH-G-500-0001

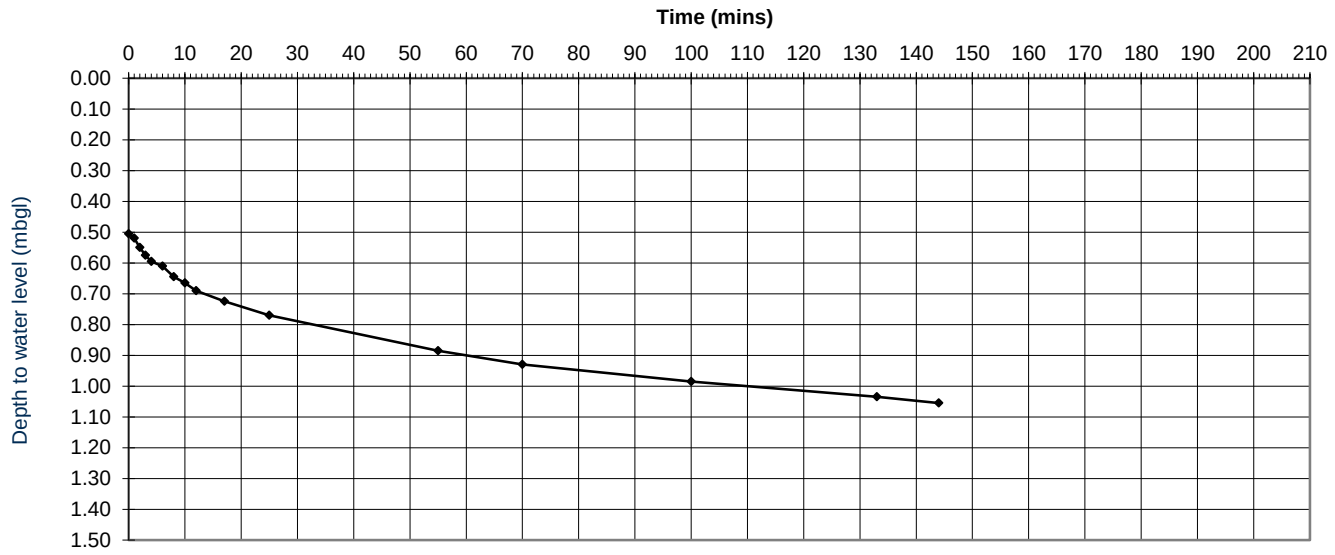
Trial Pit Dimensions (m)	Width	Length	Depth to Base
	0.55	1.70	1.20

Test Date 30/09/2020

Soakaway No. SA05 R2

Calculation of Infiltration Rate in Accordance with BRE Digest 365.

SOAKAWAY TEST RESULTS



From above graph;

0.275	m	= Depth drop between 75% and 25% of maximum depth to final depth
57	mins	= Time for outflow between 75% and 25% of maximum depth to final depth

Calculation of Soil Infiltration Rate (f):

where

$$f = \frac{VP75\text{-}25}{ap50 \times tp75\text{-}25}$$

using

VP75-25 = Volume outflowing between 75% and 25% of effective depth.
ap50 = Mean surface area through which the outflow occurs.
tp75-25 = Time for the outflow between 75% and 25% of the effective depth.

VP75-25 = 0.257125 m³
ap50 = 2.825 m²
tp75-25 = 57.0 mins

General Geological Profile :

0.00-0.35m TOPSOIL: Brown slightly clayey slightly gravelly sand. Gravel is medium to coarse subangular to subrounded chalk and flint.

0.35-1.20m Medium dense brown gravelly SAND. Gravel is fine to coarse subangular to subrounded flint and quartz.

Notes : Soils slightly damp below 1.1m depth however no standing water noted.

			Permeability Guideline (m/s)		
Soil Infiltration Rate (f) =	**2.66E-05**	m/s	Good	Poor	Practically Impervious
			10^{-3} - 10^{-5}	10^{-6} - 10^{-7}	10^{-8} - 10^{-10}

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SOAKWAY TESTING SCHEDULE

PROJECT NO	19-0021
PROJECT NAME	Land off Willen Road, Newport Pagnell
DOC REF	190021-RGL-ZZ-XX-SH-G-500-0001

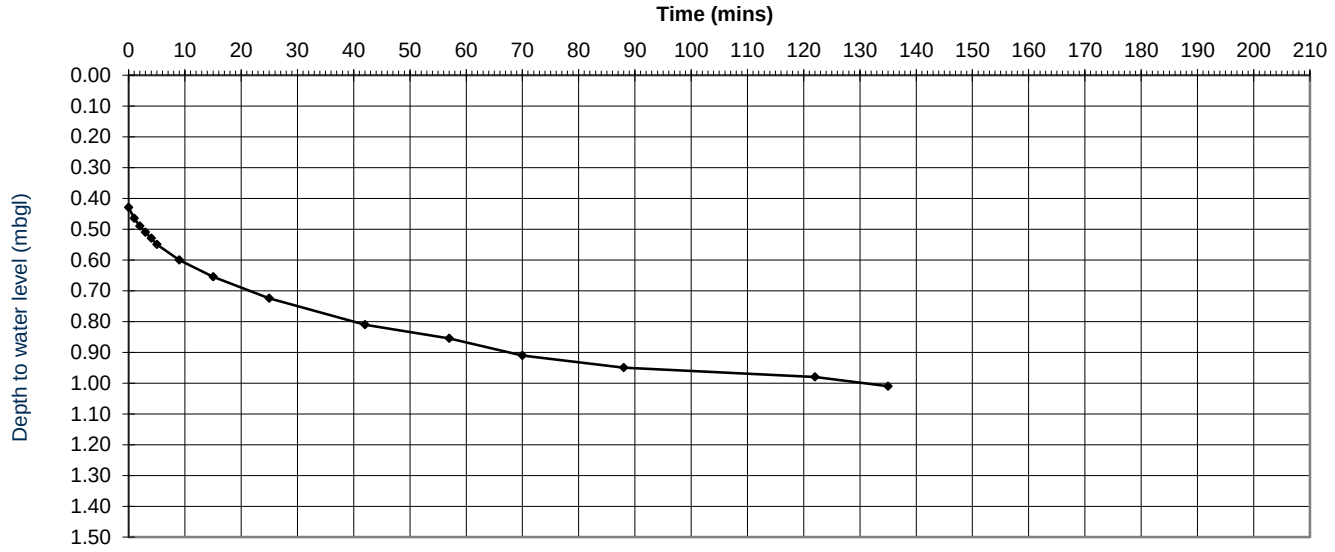
Trial Pit Dimensions (m)	Width	Length	Depth to Base
	0.55	1.70	1.20

Test Date 30/09/2020

Soakaway No. SA05 R3

Calculation of Infiltration Rate in Accordance with BRE Digest 365.

SOAKAWAY TEST RESULTS



From above graph;

0.29	m	= Depth drop between 75% and 25% of maximum depth to final depth
53.5	mins	= Time for outflow between 75% and 25% of maximum depth to final depth

Calculation of Soil Infiltration Rate (f):

where

$$f = \frac{VP75\text{-}25}{ap50 \times tp75\text{-}25}$$

using

VP75-25 = Volume outflowing between 75% and 25% of effective depth.
ap50 = Mean surface area through which the outflow occurs.
tp75-25 = Time for the outflow between 75% and 25% of the effective depth.

VP75-25 = 0.27115 m³
ap50 = 3.095 m²
tp75-25 = 53.5 mins

General Geological Profile :

0.00-0.35m TOPSOIL: Brown slightly clayey slightly gravelly sand. Gravel is medium to coarse subangular to subrounded chalk and flint.

0.35-1.20m Medium dense brown gravelly SAND. Gravel is fine to coarse subangular to subrounded flint and quartz.

Notes : Soils slightly damp below 1.1m depth however no standing water noted.

			Permeability Guideline (m/s)		
Soil Infiltration Rate (f) =	**2.73E-05**	m/s	Good	Poor	Practically Impervious
			10^{-3} - 10^{-5}	10^{-6} - 10^{-7}	10^{-8} - 10^{-10}

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SOAKWAY TESTING SCHEDULE

PROJECT NO	19-0021
PROJECT NAME	Land off Willen Road, Newport Pagnell
DOC REF	190021-RGL-ZZ-XX-SH-G-500-0001

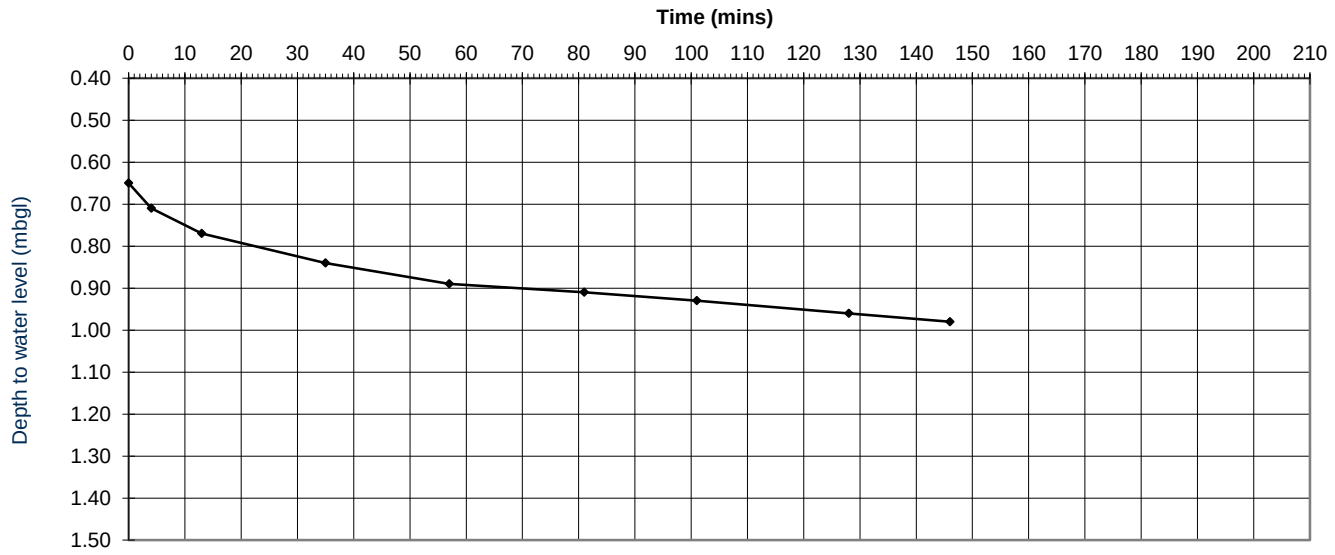
Trial Pit Dimensions (m)	Width	Length	Depth to Base
	0.55	1.75	1.20

Test Date 30/09/2020

Soakaway No. SA06 R1

Calculation of Infiltration Rate in Accordance with BRE Digest 365.

SOAKAWAY TEST RESULTS



From above graph;

0.165	m	= Depth drop between 75% and 25% of maximum depth to final depth
57	mins	= Time for outflow between 75% and 25% of maximum depth to final depth

Calculation of Soil Infiltration Rate (f):

where

$$f = \frac{VP75\text{-}25}{ap50 \times tp75\text{-}25}$$

using

VP75-25 = Volume outflowing between 75% and 25% of effective depth.
ap50 = Mean surface area through which the outflow occurs.
tp75-25 = Time for the outflow between 75% and 25% of the effective depth.

VP75-25 = 0.1588125 m³
ap50 = 2.7335 m²
tp75-25 = 57.0 mins

General Geological Profile :

0.00-0.35m	TOPSOIL: Brown slightly clayey slightly gravelly sand. Gravel is medium to coarse subangular to subrounded chalk and flint.
0.35-1.15m	Medium dense brown gravelly SAND. Gravel is fine to coarse subangular to subrounded flint and quartz.
1.15-1.20m	Firm to stiff grey slightly gravelly CLAY. Gravel is fine subrounded chalk.

Notes :

			Permeability Guideline (m/s)		
			Good	Poor	Practically Impervious
Soil Infiltration Rate (f) =	**1.70E-05**	m/s	10^{-3} - 10^{-5}	10^{-6} - 10^{-7}	10^{-8} - 10^{-10}

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SOAKWAY TESTING SCHEDULE

PROJECT NO	19-0021
PROJECT NAME	Land off Willen Road, Newport Pagnell
DOC REF	190021-RGL-ZZ-XX-SH-G-500-0001

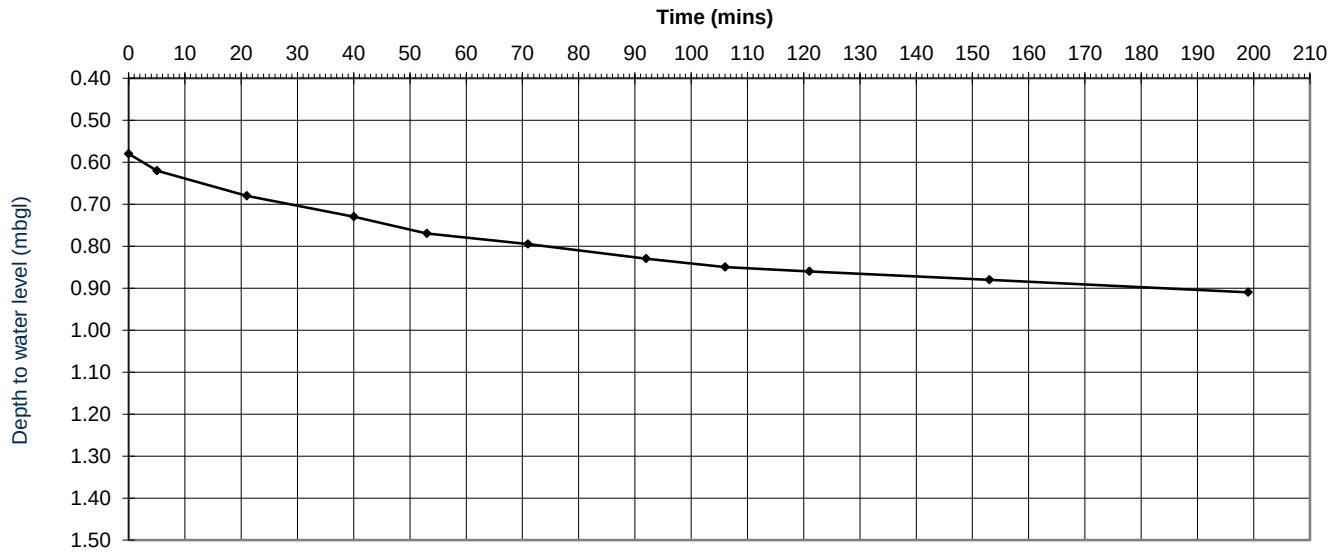
Trial Pit Dimensions (m)	Width	Length	Depth to Base
	0.55	1.75	1.20

Test Date 30/09/2020

Soakaway No. SA06 R2

Calculation of Infiltration Rate in Accordance with BRE Digest 365.

SOAKAWAY TEST RESULTS



From above graph;

0.165	m	= Depth drop between 75% and 25% of maximum depth to final depth
76	mins	= Time for outflow between 75% and 25% of maximum depth to final depth

Calculation of Soil Infiltration Rate (f):

where

$$f = \frac{VP75\text{-}25}{ap50 \times tp75\text{-}25}$$

using

VP75-25 = Volume outflowing between 75% and 25% of effective depth.
ap50 = Mean surface area through which the outflow occurs.
tp75-25 = Time for the outflow between 75% and 25% of the effective depth.

VP75-25 = 0.1588125 m³
ap50 = 3.0555 m²
tp75-25 = 76.0 mins

General Geological Profile :

0.00-0.35m	TOPSOIL: Brown slightly clayey slightly gravelly sand. Gravel is medium to coarse subangular to subrounded chalk and flint.
0.35-1.15m	Medium dense brown gravelly SAND. Gravel is fine to coarse subangular to subrounded flint and quartz.
1.15-1.20m	Firm to stiff grey slightly gravelly CLAY. Gravel is fine subrounded chalk.

Notes :

			Permeability Guideline (m/s)		
			Good	Poor	Practically Impervious
Soil Infiltration Rate (f) =	**1.14E-05**	m/s	10^{-3} - 10^{-5}	10^{-6} - 10^{-7}	10^{-8} - 10^{-10}

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SOAKWAY TESTING SCHEDULE

PROJECT NO	19-0021
PROJECT NAME	Land off Willen Road, Newport Pagnell
DOC REF	190021-RGL-ZZ-XX-SH-G-500-0001

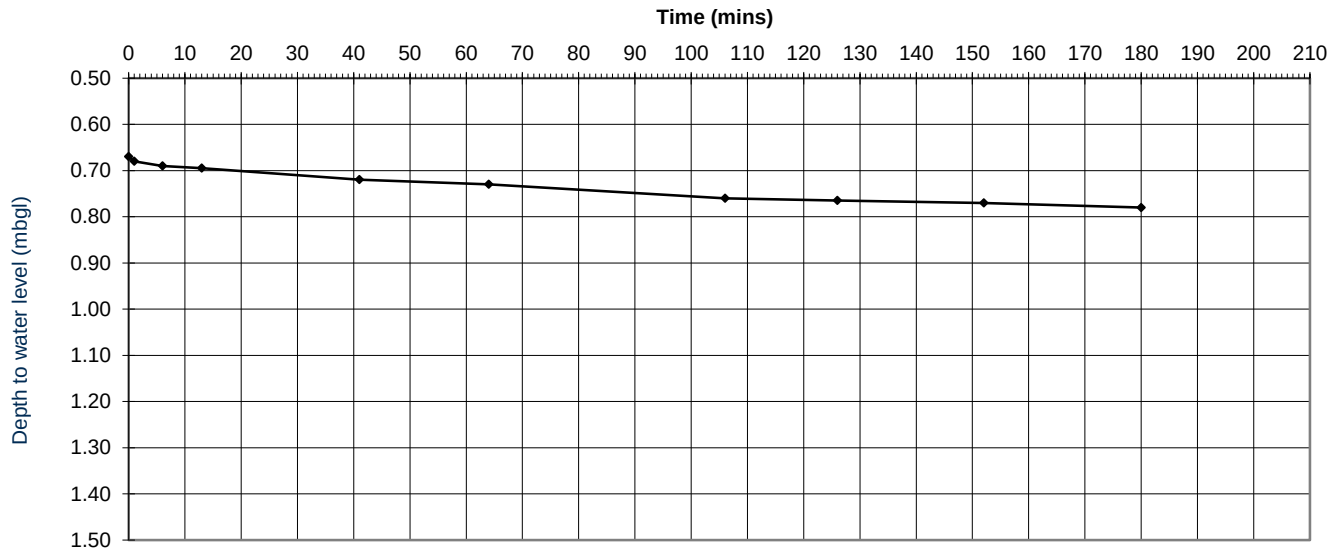
Trial Pit Dimensions (m)	Width	Length	Depth to Base
	0.55	1.60	1.20

Test Date 28/09/2020

Soakaway No. SA07 R1

Calculation of Infiltration Rate in Accordance with BRE Digest 365.

SOAKAWAY TEST RESULTS



From above graph;

0.055	m	= Depth drop between 75% and 25% of maximum depth to final depth
75	mins	= Time for outflow between 75% and 25% of maximum depth to final depth

Calculation of Soil Infiltration Rate (f):

where

$$f = \frac{VP75\text{-}25}{ap50 \times tp75\text{-}25}$$

using

VP75-25 = Volume outflowing between 75% and 25% of effective depth.
ap50 = Mean surface area through which the outflow occurs.
tp75-25 = Time for the outflow between 75% and 25% of the effective depth.

VP75-25 =	0.0484	m^3
ap50 =	2.9225	m^2
tp75-25 =	75.0	mins

General Geological Profile :

0.00-0.28m	TOPSOIL: Brown slightly gravelly very clayey sand. Gravel is medium to coarse subangular to subrounded chalk and flint.
0.28-1.20m	Medium dense brown gravelly SAND with frequent pockets of clay. Gravel is fine to coarse subangular to subrounded flint and quartz.

Notes :

			Permeability Guideline (m/s)		
Soil Infiltration Rate (f) =	**3.68E-06**	m/s	Good	Poor	Practically Impervious
			10^{-3} - 10^{-5}	10^{-6} - 10^{-7}	10^{-8} - 10^{-10}

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SOAKWAY TESTING SCHEDULE

PROJECT NO	19-0021
PROJECT NAME	Land off Willen Road, Newport Pagnell
DOC REF	190021-RGL-ZZ-XX-SH-G-500-0001

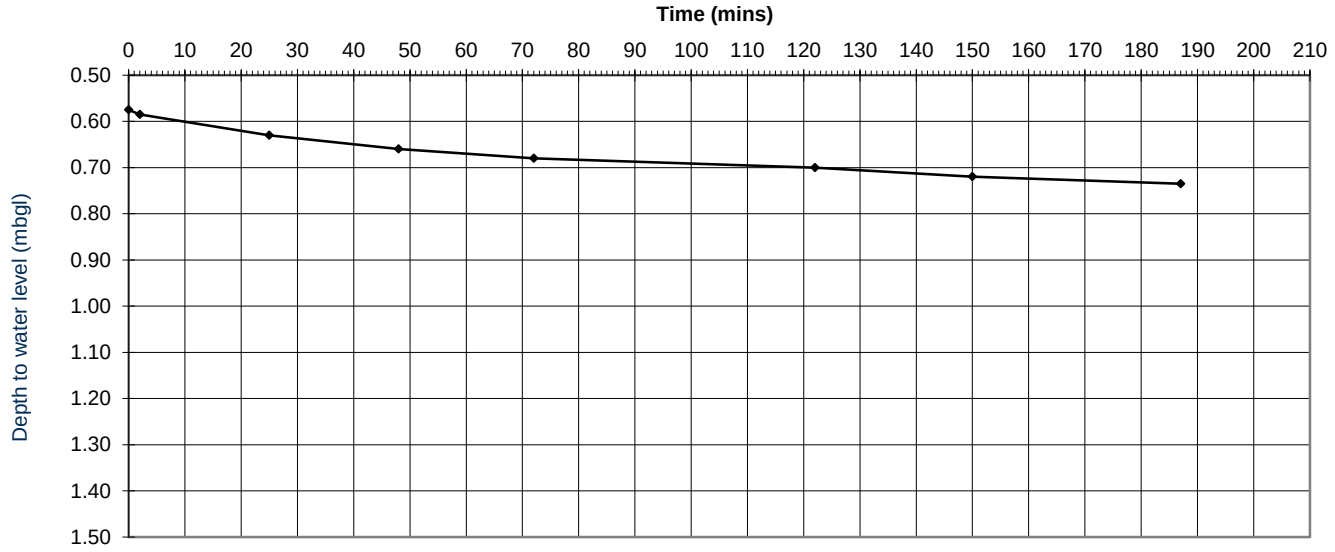
Trial Pit Dimensions (m)	Width	Length	Depth to Base
	0.55	1.60	1.20

Test Date 28/09/2020

Soakaway No. SA07 R2

Calculation of Infiltration Rate in Accordance with BRE Digest 365.

SOAKAWAY TEST RESULTS



From above graph;

0.08	m	= Depth drop between 75% and 25% of maximum depth to final depth
94	mins	= Time for outflow between 75% and 25% of maximum depth to final depth

Calculation of Soil Infiltration Rate (f):

where

$$f = \frac{VP75\text{-}25}{ap50 \times tp75\text{-}25}$$

using

VP75-25 = Volume outflowing between 75% and 25% of effective depth.
ap50 = Mean surface area through which the outflow occurs.
tp75-25 = Time for the outflow between 75% and 25% of the effective depth.

VP75-25 = 0.0704 m³
ap50 = 3.2235 m²
tp75-25 = 94.0 mins

General Geological Profile :

0.00-0.28m TOPSOIL: Brown slightly gravelly very clayey sand. Gravel is medium to coarse subangular to subrounded chalk and flint.

0.28-1.2m Medium dense brown gravelly SAND with frequent pockets of clay.. Gravel is fine to coarse subangular to subrounded flint and quartz.

Notes :

			Permeability Guideline (m/s)		
Soil Infiltration Rate (f) =	**3.87E-06**	m/s	Good	Poor	Practically Impervious
			10^{-3} - 10^{-5}	10^{-6} - 10^{-7}	10^{-8} - 10^{-10}

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SOAKWAY TESTING SCHEDULE

PROJECT NO	19-0021
PROJECT NAME	Land off Willen Road, Newport Pagnell
DOC REF	190021-RGL-ZZ-XX-SH-G-500-0001

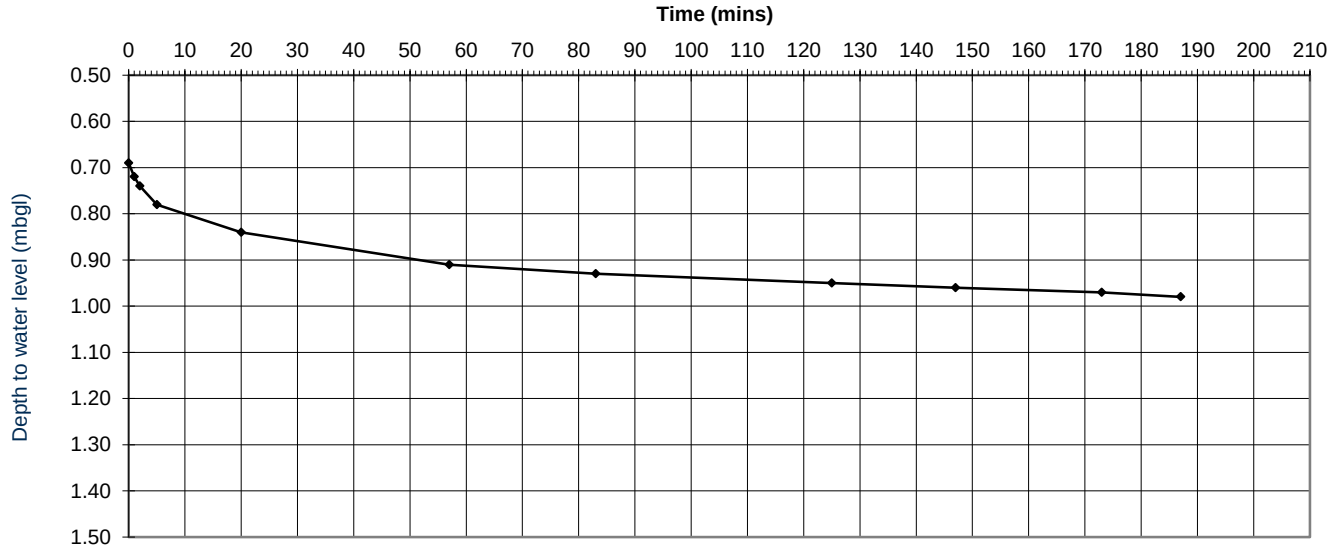
Trial Pit Dimensions (m)	Width	Length	Depth to Base
	0.55	1.60	1.30

Test Date 28/09/2020

Soakaway No. SA08 R1

Calculation of Infiltration Rate in Accordance with BRE Digest 365.

SOAKAWAY TEST RESULTS



From above graph;

0.145	m	= Depth drop between 75% and 25% of maximum depth to final depth
53	mins	= Time for outflow between 75% and 25% of maximum depth to final depth

Calculation of Soil Infiltration Rate (f):

where

$$f = \frac{VP75\text{-}25}{ap50 \times tp75\text{-}25}$$

using

VP75-25 = Volume outflowing between 75% and 25% of effective depth.
ap50 = Mean surface area through which the outflow occurs.
tp75-25 = Time for the outflow between 75% and 25% of the effective depth.

VP75-25 = 0.1276 m³
ap50 = 2.8795 m²
tp75-25 = 53.0 mins

General Geological Profile :

0.00-0.37m	TOPSOIL: Brown slightly gravelly very clayey sand. Gravel is medium to coarse subangular to subrounded chalk and flint.
0.37-0.98m	Medium dense brown gravelly SAND. Gravel is fine to coarse subangular to subrounded flint and quartz.
0.98-1.30m	Firm to stiff grey mottled brown sandy gravelly CLAY with frequent pockets of gravel. Gravel is fine to coarse subangular to subrounded flint.

Notes : Slight groundwater seepage in base of soakaway.

			Permeability Guideline (m/s)		
Soil Infiltration Rate (f) =	**1.39E-05**	m/s	Good	Poor	Practically Impervious
			10^{-3} - 10^{-5}	10^{-6} - 10^{-7}	10^{-8} - 10^{-10}

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SOAKWAY TESTING SCHEDULE

PROJECT NO	19-0021
PROJECT NAME	Land off Willen Road, Newport Pagnell
DOC REF	190021-RGL-ZZ-XX-SH-G-500-0001

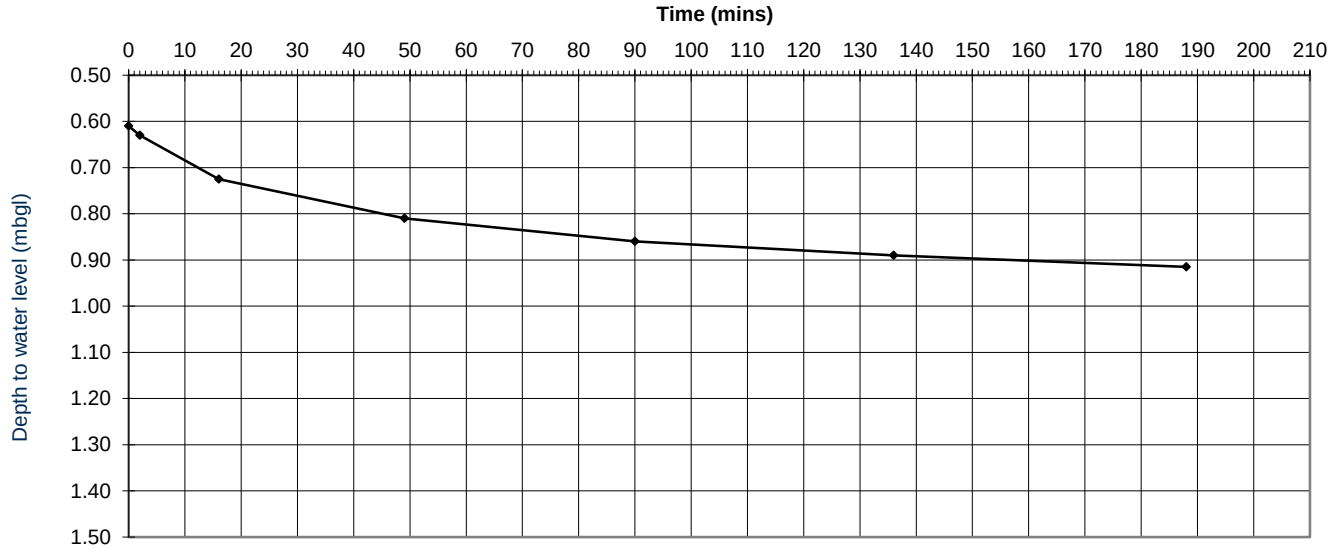
Trial Pit Dimensions (m)	Width	Length	Depth to Base
	0.55	1.60	1.30

Test Date 28/09/2020

Soakaway No. SA08 R2

Calculation of Infiltration Rate in Accordance with BRE Digest 365.

SOAKAWAY TEST RESULTS



From above graph;

0.1525	m	= Depth drop between 75% and 25% of maximum depth to final depth
60	mins	= Time for outflow between 75% and 25% of maximum depth to final depth

Calculation of Soil Infiltration Rate (f):

where

$$f = \frac{VP75\text{-}25}{ap50 \times tp75\text{-}25}$$

using

VP75-25 = Volume outflowing between 75% and 25% of effective depth.
ap50 = Mean surface area through which the outflow occurs.
tp75-25 = Time for the outflow between 75% and 25% of the effective depth.

VP75-25 = 0.1342 m³
ap50 = 3.19125 m²
tp75-25 = 60.0 mins

General Geological Profile :

0.00-0.37m	TOPSOIL: Brown slightly gravelly very clayey sand. Gravel is medium to coarse subangular to subrounded chalk and flint.
0.37-0.98m	Medium dense brown gravelly SAND. Gravel is fine to coarse subangular to subrounded flint and quartz.
0.98-1.30m	Firm to stiff grey mottled brown sandy gravelly CLAY with frequent pockets of gravel. Gravel is fine to coarse subangular to subrounded flint.

Notes : Slight groundwater seepage in base of soakaway.

			Permeability Guideline (m/s)		
Soil Infiltration Rate (f) =	**1.17E-05**	m/s	Good	Poor	Practically Impervious
			10^{-3} - 10^{-5}	10^{-6} - 10^{-7}	10^{-8} - 10^{-10}

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SOAKWAY TESTING SCHEDULE

PROJECT NO	19-0021
PROJECT NAME	Land off Willen Road, Newport Pagnell
DOC REF	190021-RGL-ZZ-XX-SH-G-500-0001

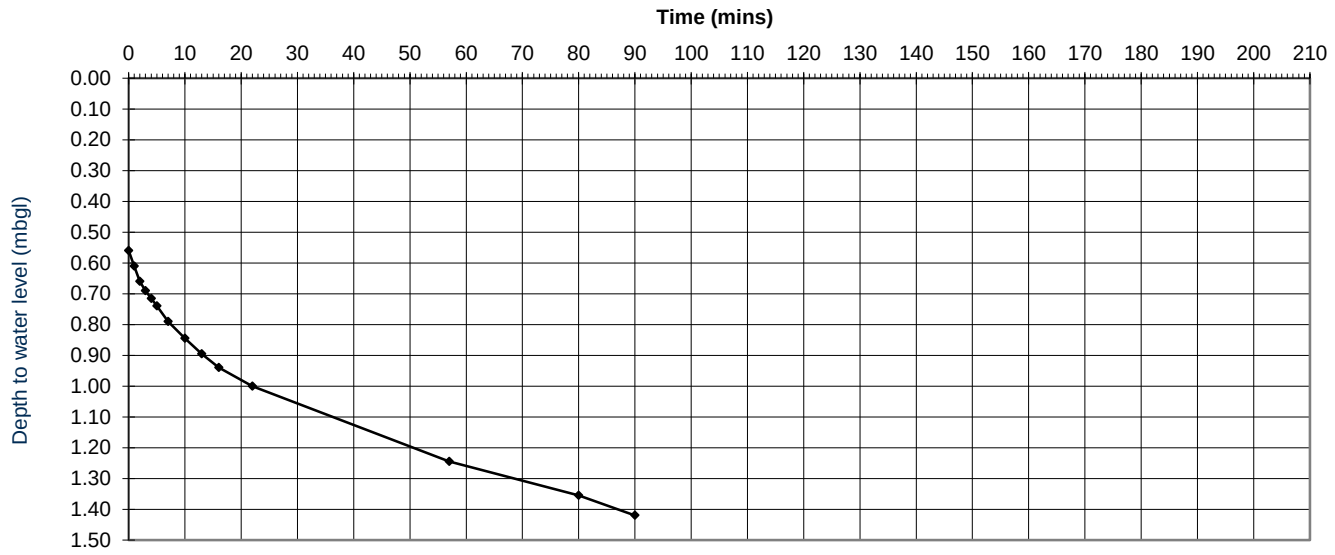
Trial Pit Dimensions (m)	Width	Length	Depth to Base
	0.55	1.90	1.42

Test Date 30/09/2020

Soakaway No. SA09 R1

Calculation of Infiltration Rate in Accordance with BRE Digest 365.

SOAKAWAY TEST RESULTS



From above graph;

0.43	m	= Depth drop between 75% and 25% of maximum depth to final depth
45	mins	= Time for outflow between 75% and 25% of maximum depth to final depth

Calculation of Soil Infiltration Rate (f):

where

$$f = \frac{VP75\text{-}25}{ap50 \times tp75\text{-}25}$$

using

VP75-25 = Volume outflowing between 75% and 25% of effective depth.
ap50 = Mean surface area through which the outflow occurs.
tp75-25 = Time for the outflow between 75% and 25% of the effective depth.

VP75-25 = 0.44935 m³
ap50 = 3.152 m²
tp75-25 = 45.0 mins

General Geological Profile :

0.00-0.30m TOPSOIL: Brown slightly clayey slightly gravelly sand. Gravel is medium to coarse subangular to subrounded chalk and flint.

0.30-1.20m Medium dense brown gravelly SAND. Gravel is fine to coarse subangular to subrounded flint and quartz.

1.20-1.42m Medium dense orange gravelly SAND. Gravel is fine to coarse subangular to subrounded flint and quartz.

Notes : No standing water noted.

			Permeability Guideline (m/s)		
Soil Infiltration Rate (f) =	**5.28E-05**	m/s	Good	Poor	Practically Impervious
			10^{-3} - 10^{-5}	10^{-6} - 10^{-7}	10^{-8} - 10^{-10}

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SOAKWAY TESTING SCHEDULE

PROJECT NO	19-0021
PROJECT NAME	Land off Willen Road, Newport Pagnell
DOC REF	190021-RGL-ZZ-XX-SH-G-500-0001

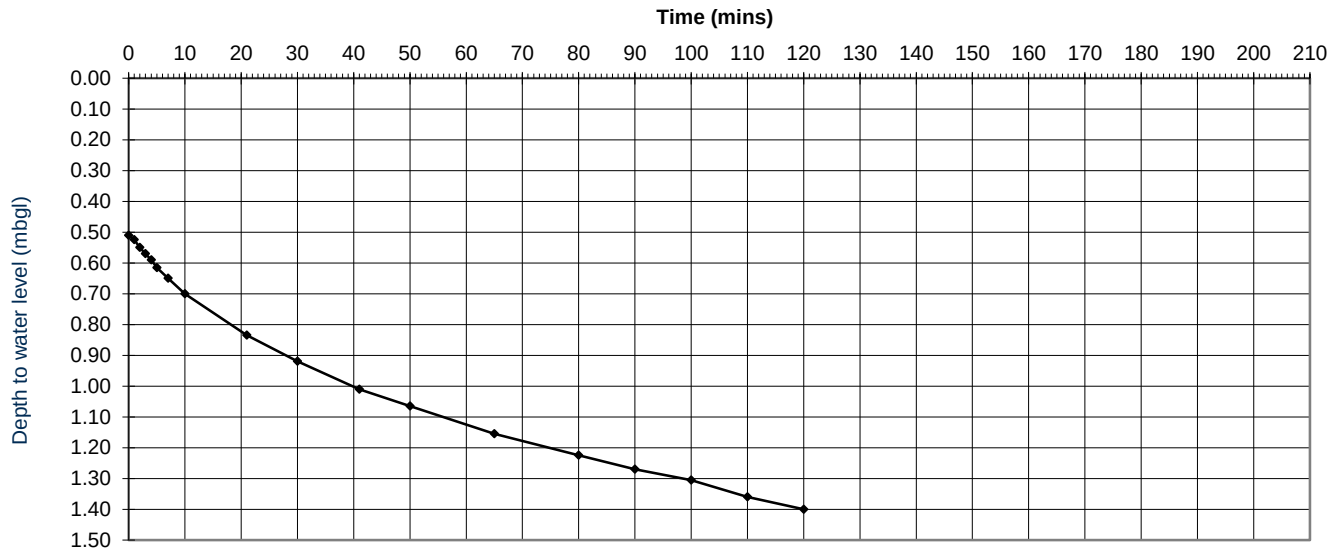
Trial Pit Dimensions (m)	Width	Length	Depth to Base
	0.55	1.90	1.42

Test Date 30/09/2020

Soakaway No. SA09 R2

Calculation of Infiltration Rate in Accordance with BRE Digest 365.

SOAKAWAY TEST RESULTS



From above graph;

0.445	m	= Depth drop between 75% and 25% of maximum depth to final depth
57	mins	= Time for outflow between 75% and 25% of maximum depth to final depth

Calculation of Soil Infiltration Rate (f):

where

$$f = \frac{VP75\text{-}25}{ap50 \times tp75\text{-}25}$$

using

VP75-25 = Volume outflowing between 75% and 25% of effective depth.
ap50 = Mean surface area through which the outflow occurs.
tp75-25 = Time for the outflow between 75% and 25% of the effective depth.

VP75-25 =	0.465025	m^3
ap50 =	3.3235	m^2
tp75-25 =	57.0	mins

General Geological Profile :

0.00-0.30m	TOPSOIL: Brown slightly clayey slightly gravelly sand. Gravel is medium to coarse subangular to subrounded chalk and flint.
0.30-1.20m	Medium dense brown gravelly SAND. Gravel is fine to coarse subangular to subrounded flint and quartz.
1.20-1.42m	Medium dense orange gravelly SAND. Gravel is fine to coarse subangular to subrounded flint and quartz.

Notes : No standing water noted.

			Permeability Guideline (m/s)		
			Good	Poor	Practically Impervious
Soil Infiltration Rate (f) =	**4.09E-05**	m/s	10^{-3} - 10^{-5}	10^{-6} - 10^{-7}	10^{-8} - 10^{-10}

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SOAKWAY TESTING SCHEDULE

PROJECT NO	19-0021
PROJECT NAME	Land off Willen Road, Newport Pagnell
DOC REF	190021-RGL-ZZ-XX-SH-G-500-0001

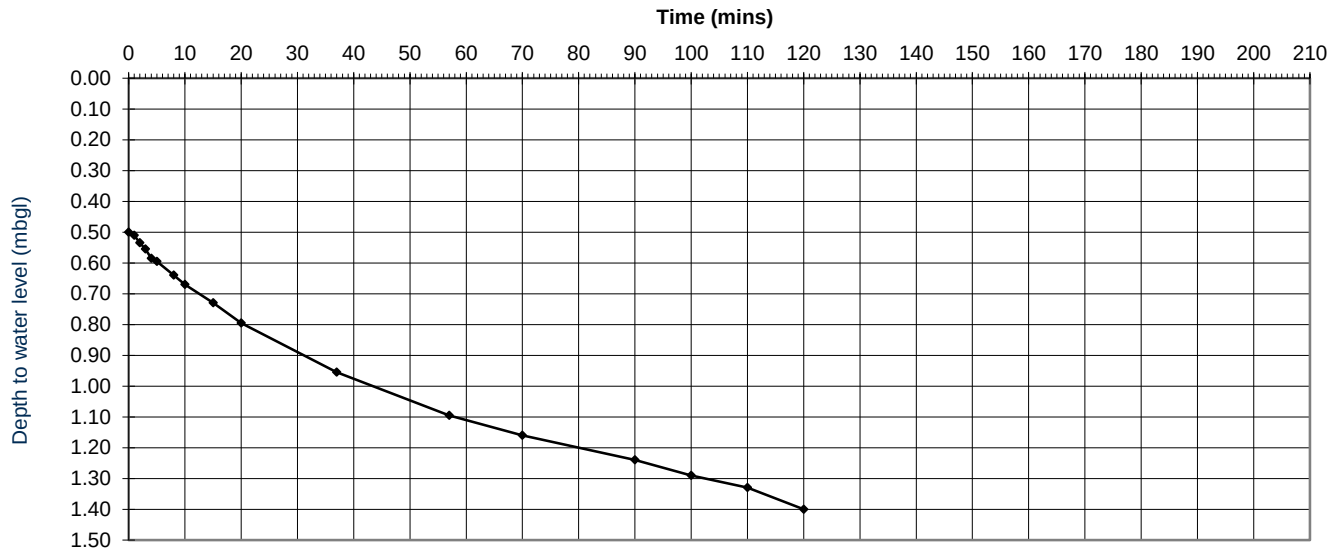
Trial Pit Dimensions (m)	Width	Length	Depth to Base
	0.55	1.90	1.42

Test Date 30/09/2020

Soakaway No. SA09 R3

Calculation of Infiltration Rate in Accordance with BRE Digest 365.

SOAKAWAY TEST RESULTS



From above graph;

0.45	m	= Depth drop between 75% and 25% of maximum depth to final depth
59	mins	= Time for outflow between 75% and 25% of maximum depth to final depth

Calculation of Soil Infiltration Rate (f):

where

$$f = \frac{VP75\text{-}25}{ap50 \times tp75\text{-}25}$$

using

VP75-25 = Volume outflowing between 75% and 25% of effective depth.
ap50 = Mean surface area through which the outflow occurs.
tp75-25 = Time for the outflow between 75% and 25% of the effective depth.

VP75-25 = 0.47025 m³
ap50 = 3.348 m²
tp75-25 = 59.0 mins

General Geological Profile :

0.00-0.30m TOPSOIL: Brown slightly clayey slightly gravelly sand. Gravel is medium to coarse subangular to subrounded chalk and flint.

0.30-1.20m Medium dense brown gravelly SAND. Gravel is fine to coarse subangular to subrounded flint and quartz.

1.20-1.42m Medium dense orange gravelly SAND. Gravel is fine to coarse subangular to subrounded flint and quartz.

Notes : No standing water noted.

			Permeability Guideline (m/s)		
Soil Infiltration Rate (f) =	**3.97E-05**	m/s	Good	Poor	Practically Impervious
			10^{-3} - 10^{-5}	10^{-6} - 10^{-7}	10^{-8} - 10^{-10}

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SOAKWAY TESTING SCHEDULE

PROJECT NO	19-0021
PROJECT NAME	Land off Willen Road, Newport Pagnell
DOC REF	190021-RGL-ZZ-XX-SH-G-500-0001

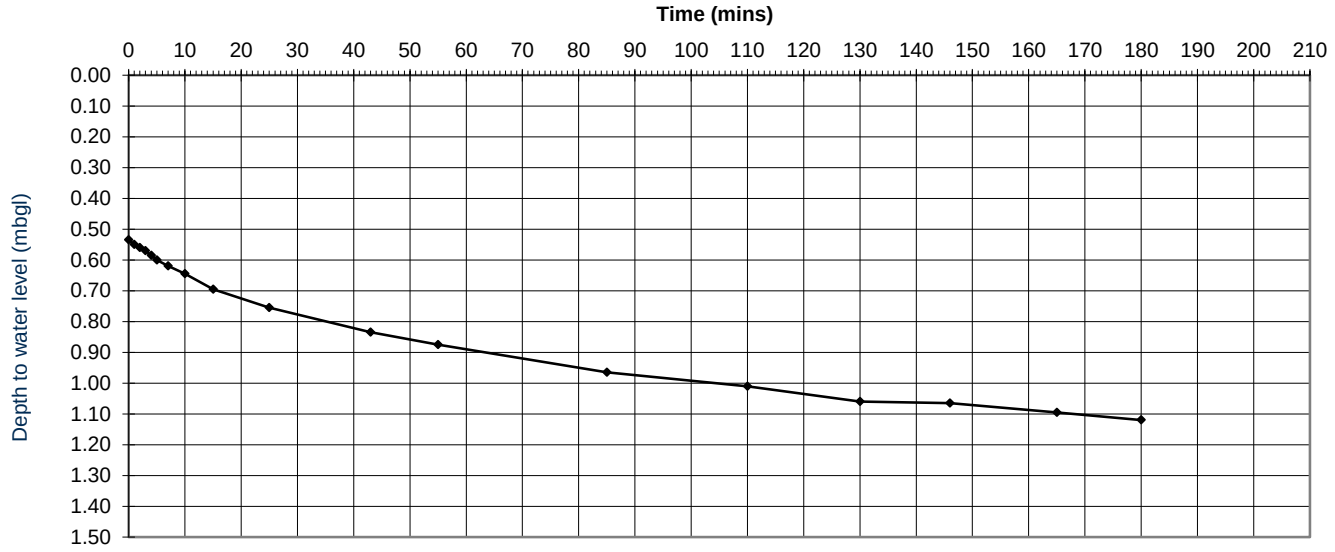
Trial Pit Dimensions (m)	Width	Length	Depth to Base
	0.55	1.50	1.50

Test Date 29/09/2020

Soakaway No. SA10 R1

Calculation of Infiltration Rate in Accordance with BRE Digest 365.

SOAKAWAY TEST RESULTS



From above graph;

0.2925	m	= Depth drop between 75% and 25% of maximum depth to final depth
76	mins	= Time for outflow between 75% and 25% of maximum depth to final depth

Calculation of Soil Infiltration Rate (f):

where

$$f = \frac{VP75\text{-}25}{ap50 \times tp75\text{-}25}$$

using

VP75-25 = Volume outflowing between 75% and 25% of effective depth.
ap50 = Mean surface area through which the outflow occurs.
tp75-25 = Time for the outflow between 75% and 25% of the effective depth.

VP75-25 =	0.2413125	m^3
ap50 =	4.36125	m^2
tp75-25 =	76.0	mins

General Geological Profile :

0.00-0.50m	TOPSOIL: Brown slightly clayey gravelly sand. Gravel is medium to coarse subangular to subrounded chalk and flint.
0.50-1.50m	Medium dense yellow brown slightly clayey gravelly SAND. Gravel is fine to coarse subangular to subrounded flint and quartz.

Notes : Slight groundwater seepage at base of soakaway.

			Permeability Guideline (m/s)		
			Good	Poor	Practically Impervious
Soil Infiltration Rate (f) =	**1.21E-05**	m/s	10^{-3} - 10^{-5}	10^{-6} - 10^{-7}	10^{-8} - 10^{-10}

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SOAKWAY TESTING SCHEDULE

PROJECT NO	19-0021
PROJECT NAME	Land off Willen Road, Newport Pagnell
DOC REF	190021-RGL-ZZ-XX-SH-G-500-0001

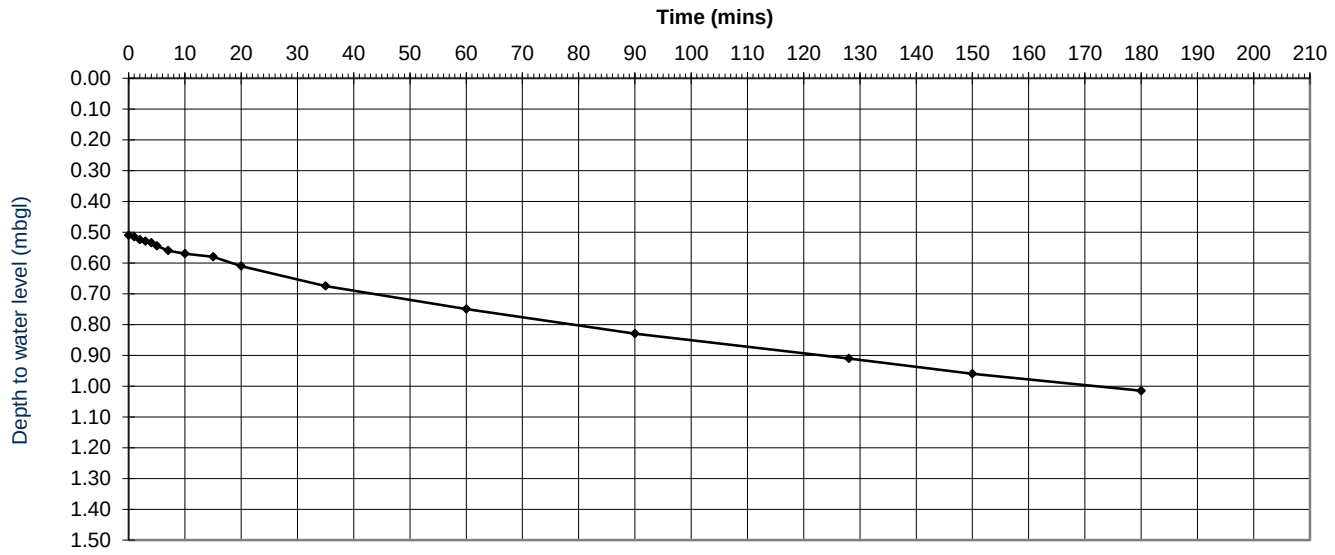
Trial Pit Dimensions (m)	Width	Length	Depth to Base
	0.55	1.50	1.50

Test Date 29/09/2020

Soakaway No. SA10 R2

Calculation of Infiltration Rate in Accordance with BRE Digest 365.

SOAKAWAY TEST RESULTS



From above graph;

0.2525	m	= Depth drop between 75% and 25% of maximum depth to final depth
92.5	mins	= Time for outflow between 75% and 25% of maximum depth to final depth

Calculation of Soil Infiltration Rate (f):

where

$$f = \frac{VP75\text{-}25}{ap50 \times tp75\text{-}25}$$

using

VP75-25 = Volume outflowing between 75% and 25% of effective depth.
ap50 = Mean surface area through which the outflow occurs.
tp75-25 = Time for the outflow between 75% and 25% of the effective depth.

VP75-25 = 0.2083125 m³
ap50 = 3.84875 m²
tp75-25 = 92.5 mins

General Geological Profile :

0.00-0.50m TOPSOIL: Brown slightly clayey gravelly sand. Gravel is medium to coarse subangular to subrounded chalk and flint.

0.50-1.50m Medium dense yellow brown slightly clayey gravelly SAND. Gravel is fine to coarse subangular to subrounded flint and quartz.

Notes : Slight groundwater seepage at base of soakaway.

Soil Infiltration Rate (f) =	**9.75E-06**	m/s

Permeability Guideline (m/s)		
Good	Poor	Practically Impervious
10^{-3} - 10^{-5}	10^{-6} - 10^{-7}	10^{-8} - 10^{-10}

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SOAKWAY TESTING SCHEDULE

PROJECT NO	19-0021
PROJECT NAME	Land off Willen Road, Newport Pagnell
DOC REF	190021-RGL-ZZ-XX-SH-G-500-0001

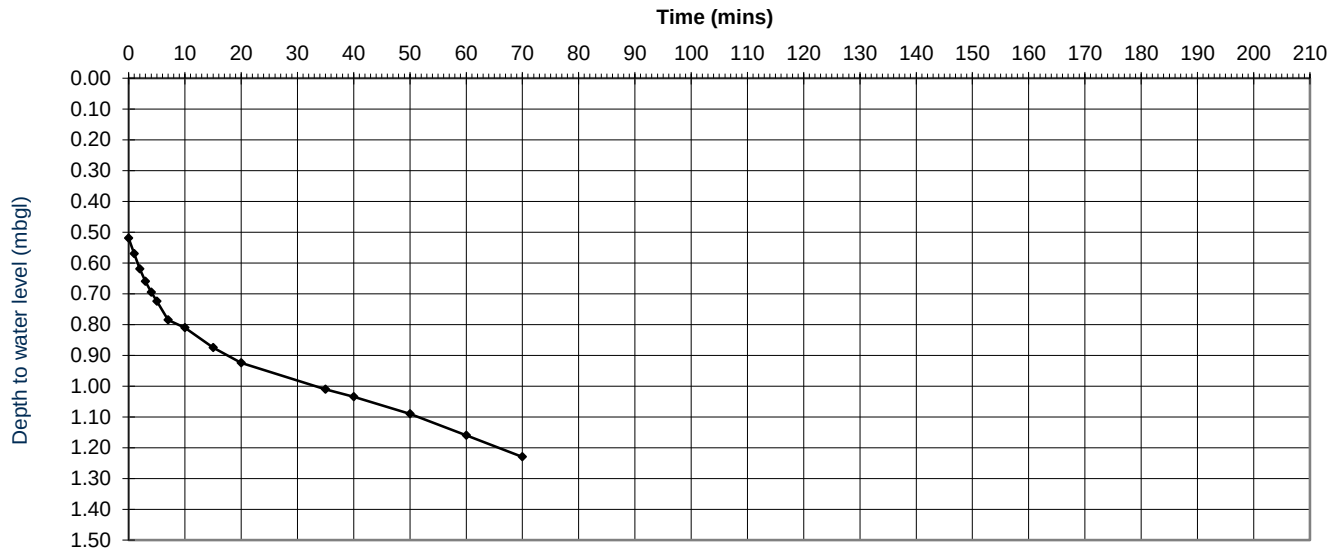
Trial Pit Dimensions (m)	Width	Length	Depth to Base
	0.55	1.50	1.24

Test Date 29/09/2020

Soakaway No. SA11 R1

Calculation of Infiltration Rate in Accordance with BRE Digest 365.

SOAKAWAY TEST RESULTS



From above graph;

0.355	m	= Depth drop between 75% and 25% of maximum depth to final depth
40	mins	= Time for outflow between 75% and 25% of maximum depth to final depth

Calculation of Soil Infiltration Rate (f):

where

$$f = \frac{VP75\text{-}25}{ap50 \times tp75\text{-}25}$$

using

VP75-25 = Volume outflowing between 75% and 25% of effective depth.
ap50 = Mean surface area through which the outflow occurs.
tp75-25 = Time for the outflow between 75% and 25% of the effective depth.

VP75-25 = 0.292875 m³
ap50 = 2.3215 m²
tp75-25 = 40.0 mins

General Geological Profile :

0.00-0.40m	TOPSOIL: Brown slightly clayey gravelly sand. Gravel is medium to coarse subangular to subrounded chalk and flint.
0.40-1.05m	Medium dense brown and yellow brown gravelly SAND. Gravel is fine to coarse subangular to subrounded flint and quartz.
1.05-1.24m	Medium dense light brown gravelly SAND. Gravel is fine to coarse subangular to subrounded flint and quartz.

Notes : No standing water noted.

			Permeability Guideline (m/s)		
			Good	Poor	Practically Impervious
Soil Infiltration Rate (f) =	**5.26E-05**	m/s	10^{-3} - 10^{-5}	10^{-6} - 10^{-7}	10^{-8} - 10^{-10}

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SOAKWAY TESTING SCHEDULE

PROJECT NO	19-0021
PROJECT NAME	Land off Willen Road, Newport Pagnell
DOC REF	190021-RGL-ZZ-XX-SH-G-500-0001

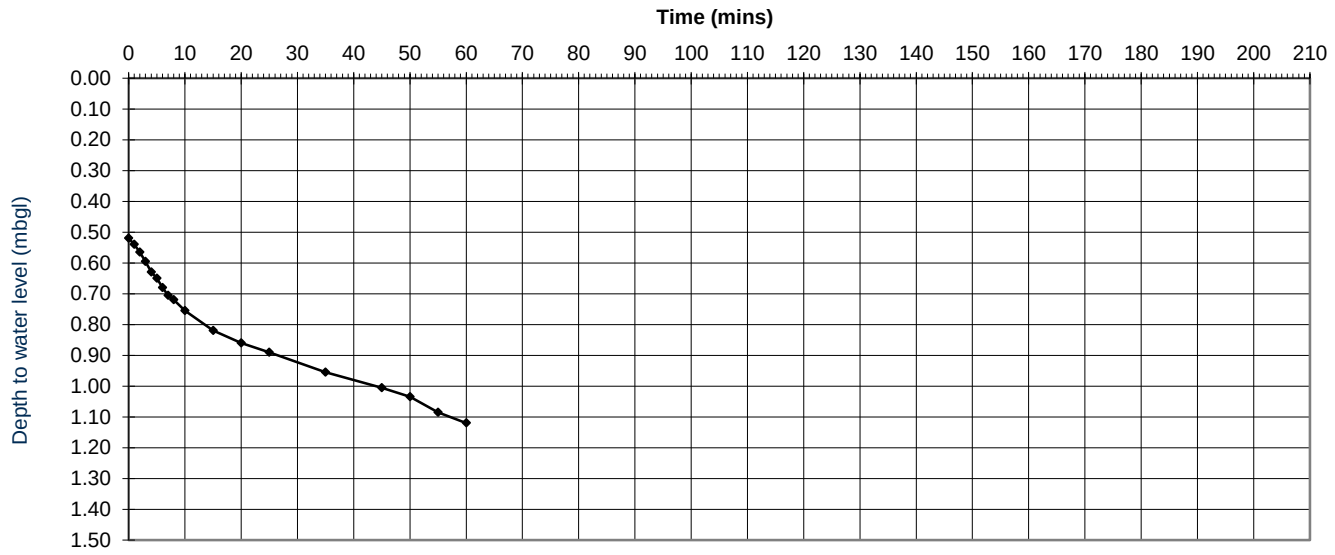
Trial Pit Dimensions (m)	Width	Length	Depth to Base
	0.55	1.50	1.12

Test Date 29/09/2020

Soakaway No. SA11 R2

Calculation of Infiltration Rate in Accordance with BRE Digest 365.

SOAKAWAY TEST RESULTS



From above graph;

0.3	m	= Depth drop between 75% and 25% of maximum depth to final depth
32	mins	= Time for outflow between 75% and 25% of maximum depth to final depth

Calculation of Soil Infiltration Rate (f):

where

$$f = \frac{VP75\text{-}25}{ap50 \times tp75\text{-}25}$$

using

VP75-25 = Volume outflowing between 75% and 25% of effective depth.
ap50 = Mean surface area through which the outflow occurs.
tp75-25 = Time for the outflow between 75% and 25% of the effective depth.

VP75-25 =	0.2475	m^3
ap50 =	2.055	m^2
tp75-25 =	32.0	mins

General Geological Profile :

0.00-0.40m	TOPSOIL: Brown slightly clayey gravelly sand. Gravel is medium to coarse subangular to subrounded chalk and flint.
0.40-1.05m	Medium dense brown and yellow brown gravelly SAND. Gravel is fine to coarse subangular to subrounded flint and quartz.
1.05-1.12m	Medium dense light brown gravelly SAND. Gravel is fine to coarse subangular to subrounded flint and quartz.

Notes : No standing water noted. Partial pit wall collapse at 19 minutes resulting in pit becoming shallower.

			Permeability Guideline (m/s)		
			Good	Poor	Practically Impervious
Soil Infiltration Rate (f) =	**6.27E-05**	m/s	10^{-3} - 10^{-5}	10^{-6} - 10^{-7}	10^{-8} - 10^{-10}

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SOAKWAY TESTING SCHEDULE

PROJECT NO	19-0021
PROJECT NAME	Land off Willen Road, Newport Pagnell
DOC REF	190021-RGL-ZZ-XX-SH-G-500-0001

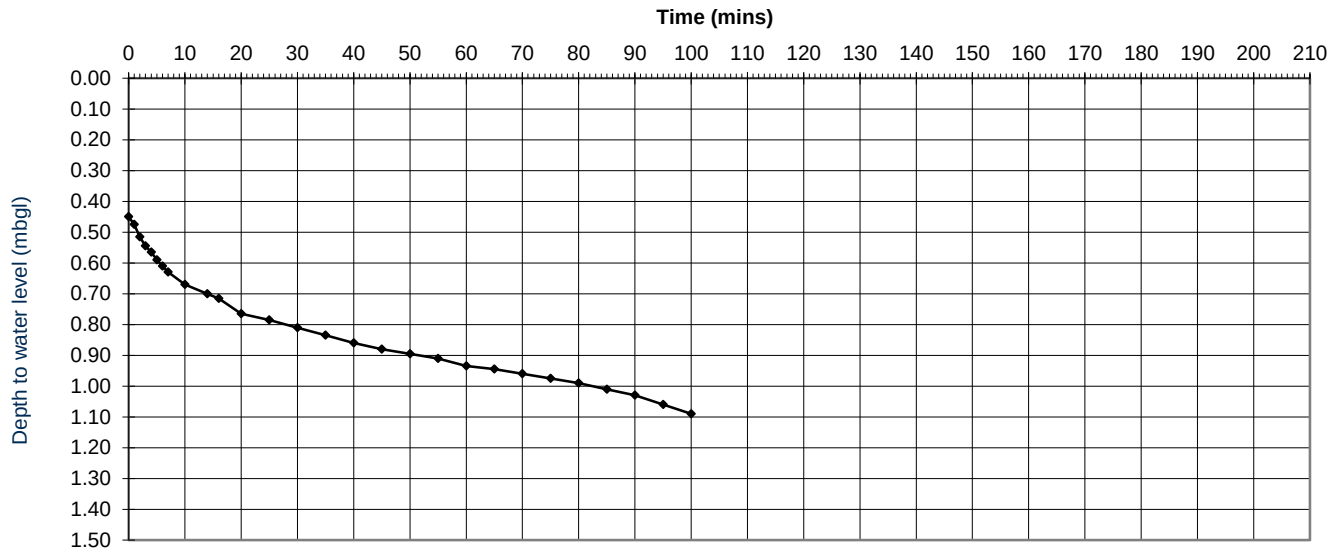
Trial Pit Dimensions (m)	Width	Length	Depth to Base
	0.55	1.50	1.09

Test Date 29/09/2020

Soakaway No. SA11 R3

Calculation of Infiltration Rate in Accordance with BRE Digest 365.

SOAKAWAY TEST RESULTS



From above graph;

0.32	m	= Depth drop between 75% and 25% of maximum depth to final depth
53	mins	= Time for outflow between 75% and 25% of maximum depth to final depth

Calculation of Soil Infiltration Rate (f):

where

$$f = \frac{VP75\text{-}25}{ap50 \times tp75\text{-}25}$$

using

VP75-25 = Volume outflowing between 75% and 25% of effective depth.
ap50 = Mean surface area through which the outflow occurs.
tp75-25 = Time for the outflow between 75% and 25% of the effective depth.

VP75-25 = 0.264 m³
ap50 = 2.137 m²
tp75-25 = 53.0 mins

General Geological Profile :

0.00-0.40m	TOPSOIL: Brown slightly clayey gravelly sand. Gravel is medium to coarse subangular to subrounded chalk and flint.
0.40-1.05m	Medium dense brown and yellow brown gravelly SAND. Gravel is fine to coarse subangular to subrounded flint and quartz.
1.05-1.09m	Medium dense light brown gravelly SAND. Gravel is fine to coarse subangular to subrounded flint and quartz.

Notes : No standing water noted. Partial pit wall collapse at 15 minutes resulting in pit becoming shallower.

			Permeability Guideline (m/s)		
Soil Infiltration Rate (f) =	**3.88E-05**	m/s	Good	Poor	Practically Impervious
			10^{-3} - 10^{-5}	10^{-6} - 10^{-7}	10^{-8} - 10^{-10}

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SOAKWAY TESTING SCHEDULE

PROJECT NO	19-0021
PROJECT NAME	Land off Willen Road, Newport Pagnell
DOC REF	190021-RGL-ZZ-XX-SH-G-500-0001

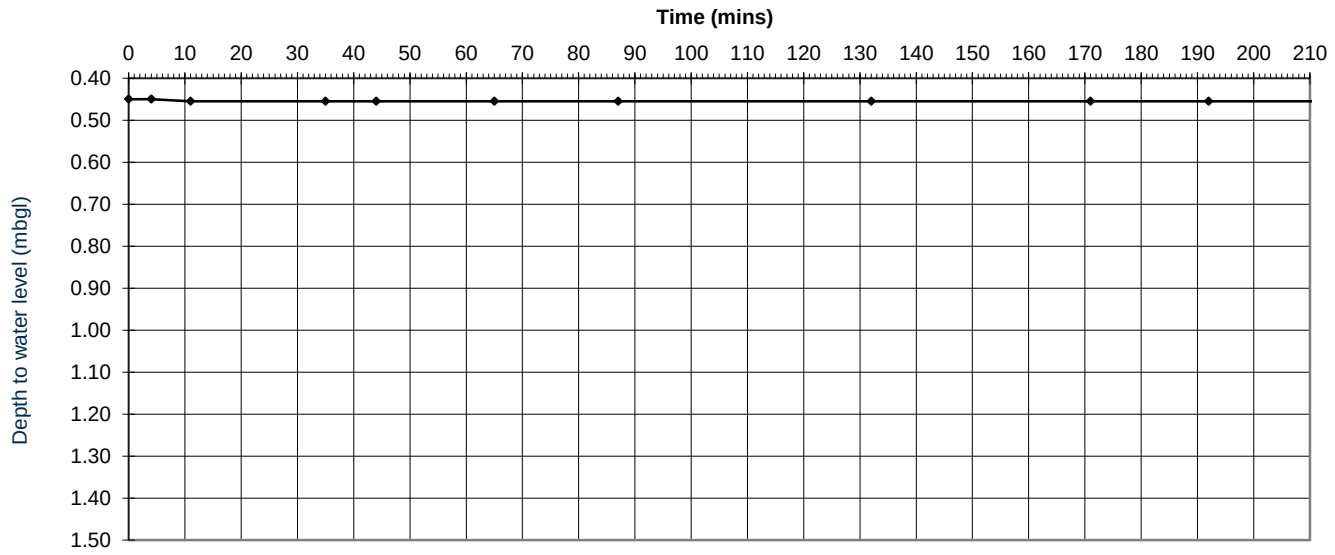
Trial Pit Dimensions (m)	Width	Length	Depth to Base
	0.55	1.40	1.68

Test Date 29/09/2020

Soakaway No. SA12 R1

Calculation of Infiltration Rate in Accordance with BRE Digest 365.

SOAKAWAY TEST RESULTS



From above graph;

0.0025	m	= Depth drop between 75% and 25% of maximum depth to final depth
5	mins	= Time for outflow between 75% and 25% of maximum depth to final depth

Calculation of Soil Infiltration Rate (f):

where

$$f = \frac{VP75\text{-}25}{ap50 \times tp75\text{-}25}$$

using

VP75-25 = Volume outflowing between 75% and 25% of effective depth.
ap50 = Mean surface area through which the outflow occurs.
tp75-25 = Time for the outflow between 75% and 25% of the effective depth.

VP75-25 =	0.001925 m³
ap50 =	5.55725 m²
tp75-25 =	5.0 mins

General Geological Profile :

0.00-0.33m	TOPSOIL: Brown slightly gravelly very clayey sand. Gravel is medium to coarse subangular to subrounded chalk and flint.
0.33-0.63m	Medium dense brown very clayey SAND with frequent pockets of clay.
0.63-1.51m	Stiff blue grey slightly gravelly sandy CLAY with occasional pockets of gravelly sand. Gravel is of medium to coarse subangular to subrounded flint, sandstone and chalk.
1.51-1.68m	Stiff blue grey fissured CLAY.

Notes : Negligible soakage recorded.

Soil Infiltration Rate (f) =	**N/A**	m/s

Permeability Guideline (m/s)		
Good	Poor	Practically Impervious
10^{-3} - 10^{-5}	10^{-6} - 10^{-7}	10^{-8} - 10^{-10}

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SOAKWAY TESTING SCHEDULE

PROJECT NO	19-0021
PROJECT NAME	Land off Willen Road, Newport Pagnell
DOC REF	190021-RGL-ZZ-XX-SH-G-500-0001

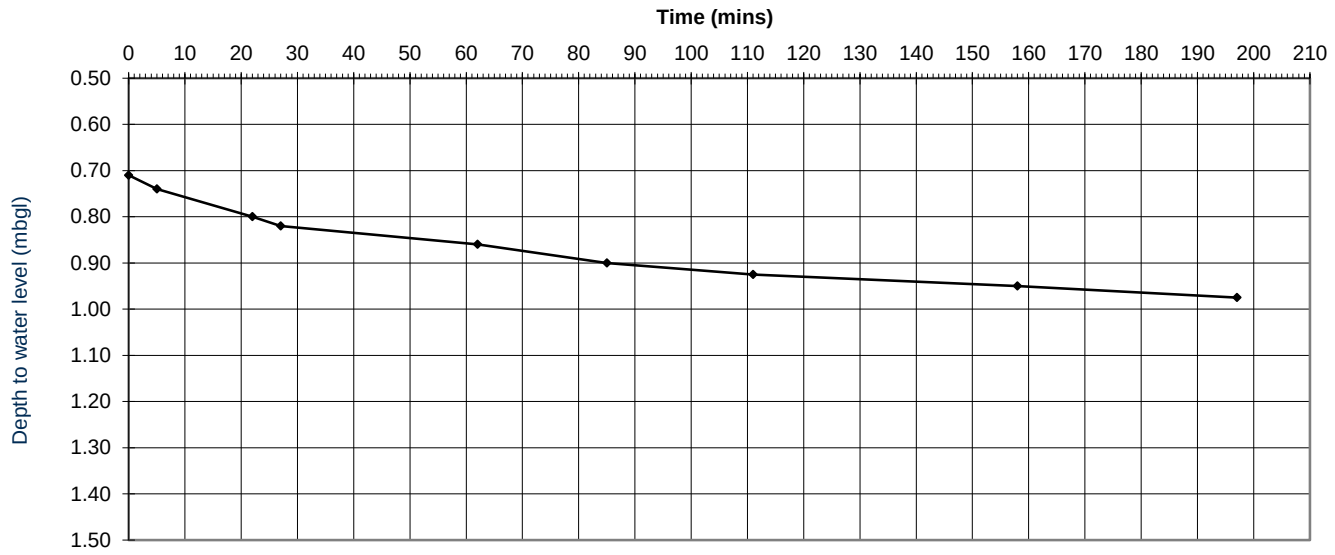
Trial Pit Dimensions (m)	Width	Length	Depth to Base
	0.55	1.85	2.00

Test Date 28/09/2020

Soakaway No. SA13 R1

Calculation of Infiltration Rate in Accordance with BRE Digest 365.

SOAKAWAY TEST RESULTS



From above graph;

0.1325	m	= Depth drop between 75% and 25% of maximum depth to final depth
76	mins	= Time for outflow between 75% and 25% of maximum depth to final depth

Calculation of Soil Infiltration Rate (f):

where

$$f = \frac{VP75\text{-}25}{ap50 \times tp75\text{-}25}$$

using

VP75-25 = Volume outflowing between 75% and 25% of effective depth.
ap50 = Mean surface area through which the outflow occurs.
tp75-25 = Time for the outflow between 75% and 25% of the effective depth.

VP75-25 = 0.1348188 m³
ap50 = 6.5735 m²
tp75-25 = 76.0 mins

General Geological Profile :

0.00-0.33m	TOPSOIL: Brown slightly gravelly very clayey sand. Gravel is medium to coarse subangular to subrounded chalk and flint.
0.33-0.62m	Medium dense brown gravelly SAND with frequent pockets of clay. Gravel is fine to coarse subangular to subrounded flint and quartz.
0.62-1.60m	Firm light brown mottled light grey sandy CLAY with frequent pockets of gravelly sand.
1.60-2.00m	Stiff blue grey fissured CLAY.

Notes :

			Permeability Guideline (m/s)		
Soil Infiltration Rate (f) =	**4.50E-06**	m/s	Good	Poor	Practically Impervious
			10^{-3} - 10^{-5}	10^{-6} - 10^{-7}	10^{-8} - 10^{-10}

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SOAKWAY TESTING SCHEDULE

PROJECT NO	19-0021
PROJECT NAME	Land off Willen Road, Newport Pagnell
DOC REF	190021-RGL-ZZ-XX-SH-G-500-0001

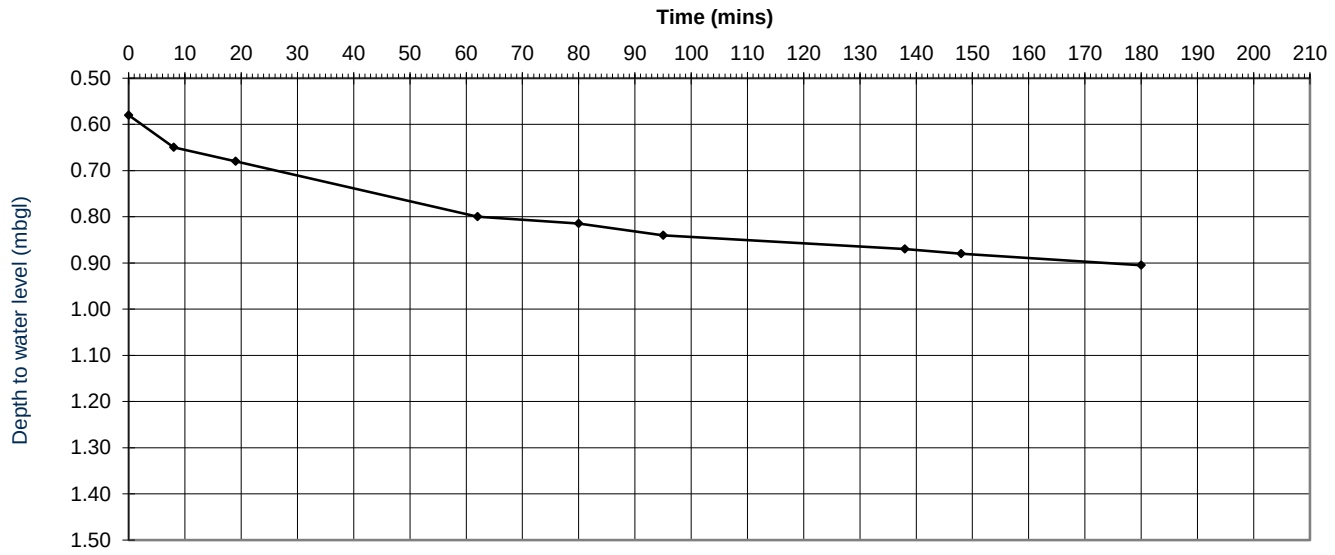
Trial Pit Dimensions (m)	Width	Length	Depth to Base
	0.55	1.85	2.00

Test Date 28/09/2020

Soakaway No. SA13 R2

Calculation of Infiltration Rate in Accordance with BRE Digest 365.

SOAKAWAY TEST RESULTS



From above graph;

0.1625	m	= Depth drop between 75% and 25% of maximum depth to final depth
74	mins	= Time for outflow between 75% and 25% of maximum depth to final depth

Calculation of Soil Infiltration Rate (f):

where

$$f = \frac{VP75\text{-}25}{ap50 \times tp75\text{-}25}$$

using

VP75-25 = Volume outflowing between 75% and 25% of effective depth.
ap50 = Mean surface area through which the outflow occurs.
tp75-25 = Time for the outflow between 75% and 25% of the effective depth.

VP75-25 = 0.1653438 m³
ap50 = 7.0535 m²
tp75-25 = 74.0 mins

General Geological Profile :

0.00-0.33m	TOPSOIL: Brown slightly gravelly very clayey sand. Gravel is medium to coarse subangular to subrounded chalk and flint.
0.33-0.62m	Medium dense brown gravelly SAND with frequent pockets of clay. Gravel is fine to coarse subangular to subrounded flint and quartz.
0.62-1.60m	Firm light brown mottled light grey sandy CLAY with frequent pockets of gravelly sand.
1.60-2.00m	Stiff blue grey fissured CLAY.

Notes :

			Permeability Guideline (m/s)		
Soil Infiltration Rate (f) =	**5.28E-06**	m/s	Good	Poor	Practically Impervious
			10^{-3} - 10^{-5}	10^{-6} - 10^{-7}	10^{-8} - 10^{-10}

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SOAKWAY TESTING SCHEDULE

PROJECT NO	19-0021
PROJECT NAME	Land off Willen Road, Newport Pagnell
DOC REF	190021-RGL-ZZ-XX-SH-G-500-0001

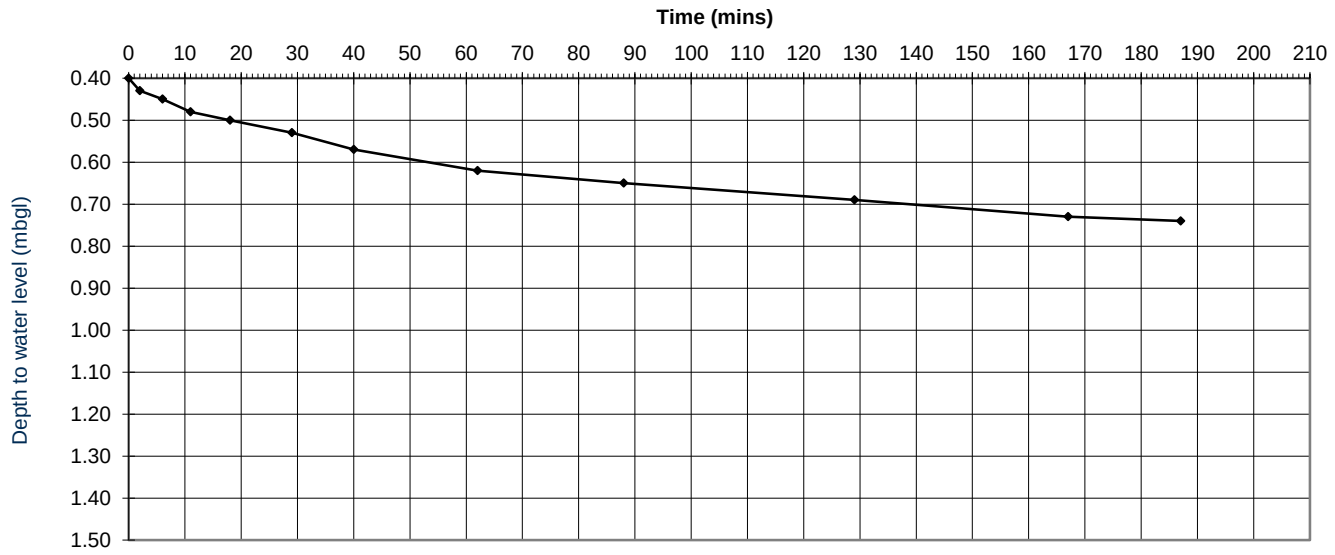
Trial Pit Dimensions (m)	Width	Length	Depth to Base
	0.55	1.45	1.25

Test Date 29/09/2020

Soakaway No. SA14 R1

Calculation of Infiltration Rate in Accordance with BRE Digest 365.

SOAKAWAY TEST RESULTS



From above graph;

0.17	m	= Depth drop between 75% and 25% of maximum depth to final depth
81	mins	= Time for outflow between 75% and 25% of maximum depth to final depth

Calculation of Soil Infiltration Rate (f):

where

$$f = \frac{VP75\text{-}25}{ap50 \times tp75\text{-}25}$$

using

VP75-25 = Volume outflowing between 75% and 25% of effective depth.
ap50 = Mean surface area through which the outflow occurs.
tp75-25 = Time for the outflow between 75% and 25% of the effective depth.

VP75-25 = 0.135575 m³
ap50 = 3.5175 m²
tp75-25 = 81.0 mins

General Geological Profile :

0.00-0.36m	TOPSOIL: Brown slightly gravelly very clayey sand. Gravel is medium to coarse subangular to subrounded chalk and flint.
0.36-1.21m	Medium dense brown clayey gravelly SAND. Gravel is of medium to coarse sub-angular to sub-rounded flint, quartz and sandstone.
1.21-1.25m	Stiff blue grey slightly gravelly sandy CLAY with occasional pockets of sand. Gravel is of medium to coarse subangular to subrounded flint, sandstone and chalk.

Notes :

			Permeability Guideline (m/s)		
Soil Infiltration Rate (f) =	**7.93E-06**	m/s	Good	Poor	Practically Impervious
			10^{-3} - 10^{-5}	10^{-6} - 10^{-7}	10^{-8} - 10^{-10}

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SOAKWAY TESTING SCHEDULE

PROJECT NO	19-0021
PROJECT NAME	Land off Willen Road, Newport Pagnell
DOC REF	190021-RGL-ZZ-XX-SH-G-500-0001

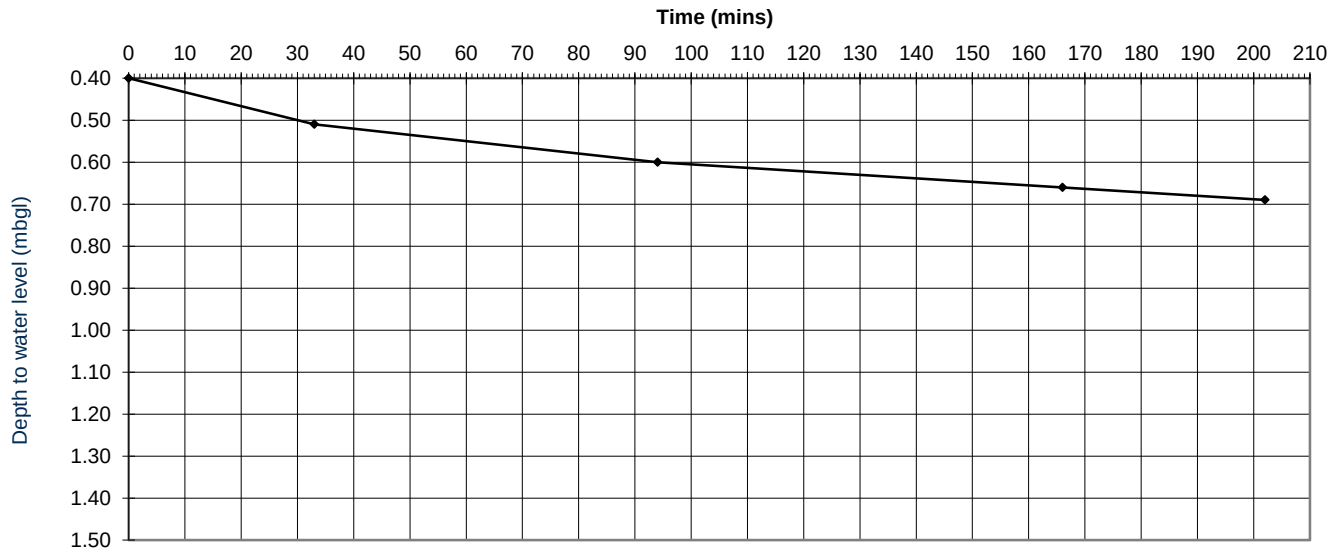
Trial Pit Dimensions (m)	Width	Length	Depth to Base
	0.55	1.45	1.25

Test Date 29/09/2020

Soakaway No. SA14 R2

Calculation of Infiltration Rate in Accordance with BRE Digest 365.

SOAKAWAY TEST RESULTS



From above graph;

0.145	m	= Depth drop between 75% and 25% of maximum depth to final depth
98	mins	= Time for outflow between 75% and 25% of maximum depth to final depth

Calculation of Soil Infiltration Rate (f):

where

$$f = \frac{VP75\text{-}25}{ap50 \times tp75\text{-}25}$$

using

VP75-25 = Volume outflowing between 75% and 25% of effective depth.
ap50 = Mean surface area through which the outflow occurs.
tp75-25 = Time for the outflow between 75% and 25% of the effective depth.

VP75-25 =	0.1156375	m^3
ap50 =	3.6175	m^2
tp75-25 =	98.0	mins

General Geological Profile :

0.00-0.36m	TOPSOIL: Brown slightly gravelly very clayey sand. Gravel is medium to coarse subangular to subrounded chalk and flint.
0.36-1.21m	Medium dense brown clayey gravelly SAND. Gravel is of medium to coarse sub-angular to sub-rounded flint, quartz and sandstone.
1.21-1.25m	Stiff blue grey slightly gravelly sandy CLAY with occasional pockets of sand. Gravel is of medium to coarse subangular to subrounded flint, sandstone and chalk.

Notes :

			Permeability Guideline (m/s)		
Soil Infiltration Rate (f) =	**5.44E-06**	m/s	Good	Poor	Practically Impervious
			10^{-3} - 10^{-5}	10^{-6} - 10^{-7}	10^{-8} - 10^{-10}

APPENDIX E – GAS AND GROUNDWATER MONITORING RESULTS

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GAS AND WATER MONITORING RECORD SHEET (ROUND 01)

PROJECT NO:	19-0021
PROJECT:	Willen Road,Newport pagnell
DATE:	14/05/2021
OPERATIVE:	Chris Carrier
WEATHER CONDITIONS:	Overcast with light drizzle (12°C), Heavy rain in the previous 48hrs
GROUND SURFACE CONDITIONS:	Ground partially saturated with surface water flooding in the southern edge

INSTRUMENT DETAILS:	Gas Data GFM Series (S/N; 10123)					
AMBIENT AIR LEVELS:	CH4	0.00%	CO2	0.00%	o2	20.60%
BAROMETRIC PRESSURE:	14/05/2021: 1011mb					
BAROMETRIC TREND:	Atmospheric pressure remaining constant over the monitoring period. Pressure following a decrease from 1013mb over the previous 24hr					

Monitoring Point			Gas Concentrations								Comments
Ref :	GWL : (m)	Hole base : (m)	Flow : (l/hr)	CH_4			CO_2		O_2		
				LEL : (%)	Peak : (%)	Steady : (%)	Peak : (%)	Steady : (%)	Peak : (%)	Steady : (%)	
CP01	0.59	4.00	0.0	33.0	1.4	0.0	0.0	0.0	19.8	20.1	Borehole monitored for 18 minutes; After 18mins LEL= 0.0%, and Methane = 0.0%
CP02	1.22	4.25	0.0	0.0	0.0	0.0	0.2	0.2	20.0	20.0	
CP03	0.96	3.80	0.0	0.0	0.0	0.0	0.0	0.0	20.2	20.2	
CP04	1.27	4.20	0.0	0.0	0.0	0.0	0.2	0.2	20.0	20.0	
CP05	0.90	4.00	0.0	0.0	0.0	0.0	0.0	0.0	20.1	20.1	
CP06	0.86	4.00	0.0	0.0	0.0	0.0	0.3	0.3	18.1	18.1	
CP07	1.23	4.45	0.0	0.0	0.0	0.0	0.2	0.2	20.1	20.1	
BH09	0.18	3.70	0.0	0.0	0.0	0.0	0.1	0.1	20.3	20.3	
BH10	0.94	3.93	0.0	0.0	0.0	0.0	0.7	0.7	19.7	19.7	
BH11	1.06	3.65	0.0	0.0	0.0	0.0	1.3	1.3	18.9	18.9	
BH12	1.30	3.90	0.0	0.0	0.0	0.0	0.3	0.3	20.0	20.0	
BH13	1.11	3.95	0.0	0.0	0.0	0.0	0.4	0.3	18.1	20.0	
BH14	1.32	3.75	0.0	0.0	0.0	0.0	0.4	0.4	20.0	20.0	
BH15	0.10	4.00	0.0	0.0	0.0	0.0	0.5	0.3	20.0	20.1	
BH16	1.31	3.70	-	-	-	-	-	-	-	-	*Bung was not placed correctly, could not monitor
BH17	1.52	3.75	0.0	0.0	0.0	0.0	1.8	1.8	18.3	18.3	
BH18	1.10	4.50	0.0	0.0	0.0	0.0	0.5	0.5	19.6	19.6	
BH19	1.12	3.75	0.0	0.0	0.0	0.0	0.5	0.5	19.9	19.9	
BH22	0.32	3.60	0.0	0.0	0.0	0.0	0.0	0.0	20.2	20.2	
BH23	0.68	3.95	0.0	0.0	0.0	0.0	0.2	0.2	16.9	16.9	
BH24	2.68	3.95	0.0	0.0	0.0	0.0	2.9	2.9	16.9	16.9	
BH26	1.11	3.60	0.0	0.0	0.0	0.0	1.4	1.4	18.7	18.7	
BH28	+ 0.10	4.00	0.0	0.0	0.0	0.0	0.2	0.1	19.8	19.8	Borehole flooded
BH29	+ 0.10	4.00	0.0	0.0	0.0	0.0	0.3	0.3	19.7	19.7	Borehole flooded
BH30	1.12	2.30	0.0	0.0	0.0	0.0	2.1	2.1	17.8	17.8	
BH31	1.11	14.90	0.0	0.0	0.0	0.0	1.9	1.9	17.9	17.9	

NOTE: (GWL) Depth to groundwater from ground level

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GAS AND WATER MONITORING RECORD SHEET (ROUND 02)

PROJECT NO:	19-0021
PROJECT:	Willen Road,Newport pagnell
DATE:	28/05/2021
OPERATIVE:	Chris Carrier
WEATHER CONDITIONS:	Clear and Sunny (15°C), Moderate rain in the previous 48hrs
GROUND SURFACE CONDITIONS:	Ground partially saturated with surface water flooding in the southern edge

INSTRUMENT DETAILS:	Gas Data GFM Series (S/N; 10123)					
AMBIENT AIR LEVELS:	CH4	0.00%	CO2	0.00%	o2	20.70%
BAROMETRIC PRESSURE:	14/05/2021: 1024mb					

BAROMETRIC TREND:	Atmospheric pressure remaining constant over the monitoring period. Pressure following a increase from 1019mb over the previous 24hr

Monitoring Point			Gas Concentrations								Comments
				CH_4			CO_2		O_2		
Ref :	GWL : (m)	Hole base : (m)	Flow : (l/hr)	LEL : (%)	Peak : (%)	Steady : (%)	Peak : (%)	Steady : (%)	Peak : (%)	Steady : (%)	
CP01	0.65	4.00	0.0	4.0	0.2	0.0	0.0	0.0	20.4	20.4	Borehole monitored for 3 minutes; After 3mins LEL= 0.0%, and Methane = 0.0%
CP02	1.20	4.25	0.0	0.0	0.0	0.0	0.2	0.2	20.4	20.4	
CP03	0.93	3.80	0.0	0.0	0.0	0.0	0.0	0.0	20.7	20.7	
CP04	1.22	4.20	0.0	0.0	0.0	0.0	0.3	0.3	20.4	20.4	
CP05	0.88	4.00	0.0	0.0	0.0	0.0	0.2	0.2	20.5	20.5	
CP06	0.75	4.00	0.0	0.0	0.0	0.0	0.2	0.2	19.9	19.9	
CP07	1.12	4.45	0.0	0.0	0.0	0.0	0.3	0.3	20.2	20.2	
BH09	0.60	3.70	0.0	0.0	0.0	0.0	0.1	0.1	20.5	20.5	
BH10	1.03	3.93	0.0	0.0	0.0	0.0	0.3	0.3	20.3	20.3	
BH11	1.16	3.65	0.0	0.0	0.0	0.0	3.6	3.6	15.6	15.6	
BH12	1.47	3.90	0.0	0.0	0.0	0.0	2.4	2.4	17.2	17.2	
BH13	1.13	3.95	0.0	0.0	0.0	0.0	0.3	0.3	19.9	19.9	
BH14	1.46	3.75	0.0	0.0	0.0	0.0	1.8	1.8	18.1	18.1	
BH15	0.27	4.00	0.0	0.0	0.0	0.0	0.5	0.5	20.5	20.5	
BH16	1.34	3.70	0.0	0.0	0.0	0.0	4.4	4.4	12.5	12.5	
BH17	1.48	3.75	0.0	0.0	0.0	0.0	0.9	0.9	19.4	19.4	
BH18	0.56	4.50	0.0	0.0	0.0	0.0	0.4	0.2	20.4	20.4	
BH19	1.08	3.75	1.5	0.0	0.0	0.0	0.5	0.5	20.0	20.0	* Initial positive flow stabilised to 0.0l/hr after 4 seconds
BH22	0.45	3.60	0.0	0.0	0.0	0.0	0.1	0.1	20.4	20.4	
BH23	0.73	3.95	0.0	0.0	0.0	0.0	0.4	0.4	20.1	20.1	
BH24	1.42	3.95	0.0	0.0	0.0	0.0	6.5	6.5	7.5	7.5	
BH26	1.04	3.60	0.0	0.0	0.0	0.0	0.9	0.9	19.3	19.3	
BH28	+ 0.20	4.00	-	-	-	-	-	-	-	-	Borehole flooded, unable to undertake monitoring
BH29	+ 0.20	4.00	-	-	-	-	-	-	-	-	Borehole flooded, unable to undertake monitoring
BH30	0.98	2.30	0.0	0.0	0.0	0.0	0.7	0.7	19.9	19.9	
BH31	1.03	3.85	0.0	0.0	0.0	0.0	0.7	0.7	19.7	19.7	

NOTE: (GWL) Depth to groundwater from ground level

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GAS AND WATER MONITORING RECORD SHEET (ROUND 03)

PROJECT NO:	19-0021
PROJECT:	Willen Road,Newport pagnell
DATE:	06/07/2021
OPERATIVE:	Chris Carrier
WEATHER CONDITIONS:	Cloudy with sun (18°C). Heavy rain in the previous 48hrs
GROUND SURFACE CONDITIONS:	Ground surface damp but still firm

INSTRUMENT DETAILS:	Gas Data GFM Series (S/N; 10123)					
AMBIENT AIR LEVELS:	CH4	0.00%	CO2	0.00%	O2	20.70%
BAROMETRIC PRESSURE:	06/07/2021: 996mb					
BAROMETRIC TREND:	Atmospheric pressure remaining constant over the monitoring period. Pressure following a decrease from 998mb over the previous 24hr					

Monitoring Point			Gas Concentrations							Comments
				CH_4			CO_2		O_2	
Ref :	GWL : (m)	Hole base : (m)	Flow : (l/hr)	LEL : (%)	Peak : (%)	Steady : (%)	Peak : (%)	Steady : (%)	Peak : (%)	Steady : (%)	
CP01	GL	4.00	0.0	0.0	0.0	0.0	0.0	0.0	20.4	20.4	
CP02	1.28	4.25	0.0	0.0	0.0	0.0	0.0	0.0	20.7	20.7	
CP03	0.88	3.80	0.0	0.0	0.0	0.0	0.0	0.0	20.6	20.6	
CP04	1.29	4.20	0.0	0.0	0.0	0.0	1.1	1.1	19.4	19.4	
CP05	0.95	4.00	0.0	0.0	0.0	0.0	0.0	0.0	20.6	20.6	
CP06	0.78	4.00	0.0	0.0	0.0	0.0	0.1	0.1	20.3	20.3	
CP07	0.63	4.45	0.0	*11	0.4	0.4	1.7	1.7	11.1	11.1	*Borehole monitored for 15 minutes. * Re-run monitoring for 5 minutes after and shows no detectable methane
BH09	0.64	3.70	0.0	0.0	0.0	0.0	0.3	0.3	20.2	20.2	
BH10	1.06	3.93	0.0	0.0	0.0	0.0	0.9	0.9	19.5	19.5	
BH11	-	-	-	-	-	-	-	-	-	-	Unable to monitor: borehole buried in dense nettle growth - could not see or reach installation.
BH12	1.54	3.90	0.0	0.0	0.0	0.0	4.1	4.1	17.9	17.9	
BH13	1.20	3.95	0.0	0.0	0.0	0.0	4.6	4.6	15.0	15.0	
BH14	1.43	3.75	0.0	0.0	0.0	0.0	0.5	0.5	19.8	19.8	
BH15	0.28	4.00	0.0	0.0	0.0	0.0	3.4	3.4	17.1	17.1	
BH16	1.43	3.70	0.0	0.0	0.0	0.0	4.6	4.6	17.0	17.0	
BH17	1.48	3.75	0.0	0.0	0.0	0.0	2.3	2.3	19.7	19.7	
BH18	0.90	4.50	0.0	0.0	0.0	0.0	0.8	0.8	19.5	19.5	
BH19	1.01	3.75	0.0	0.0	0.0	0.0	1.4	1.4	19.2	19.2	
BH22	0.27	3.60	0.0	0.0	0.0	0.0	0.4	0.4	20.3	20.3	
BH23	0.33	3.95	0.0	0.0	0.0	0.0	0.3	0.3	20.3	20.3	
BH24	0.75	3.95	0.0	3.4	0.2	0.2	13.6	13.6	7.1	7.1	*Borehole monitored for 15 minutes. * Re-run monitoring for 5 minutes after and shows no detectable methane
BH26	1.40	3.60	0.0	0.0	0.0	0.0	2.7	2.7	18.6	18.6	
BH28	+ 0.20	4.00	-	-	-	-	-	-	-	-	Borehole flooded, unable to undertake monitoring
BH29	+ 0.20	4.00	-	-	-	-	-	-	-	-	Borehole flooded, unable to undertake monitoring
BH30	1.03	2.30	0.0	0.0	0.0	0.0	1.4	1.4	19.7	19.7	
BH31	1.06	3.85	0.0	0.0	0.0	0.0	0.8	0.8	20.0	20.0	

NOTE: (GWL) Depth to groundwater from ground level

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GAS AND WATER MONITORING RECORD SHEET (ROUND 04) SHEET 1 OF 2

PROJECT NO:	19-0021
PROJECT:	Willen Road,Newport pagnell
DATE:	11/08/2021
OPERATIVE:	Chris Carrier
WEATHER CONDITIONS:	Cloudy with sun (17°C). Light rain in the previous 48hrs
GROUND SURFACE CONDITIONS:	Ground surface damp but still firm

INSTRUMENT DETAILS:	Gas Data GFM Series (S/N; 10123)					
AMBIENT AIR LEVELS:	CH4	0.00%	CO2	0.00%	O2	20.70%
BAROMETRIC PRESSURE:	18/08/2021: 1020mb					
BAROMETRIC TREND:	Atmospheric pressure remaining constant over the monitoring period. Pressure following a decrease from 1022mb over the previous 24hr					

Monitoring Point			Gas Concentrations							Comments
				CH_4			CO_2		O_2	
Ref :	GWL : (m)	Hole base : (m)	Flow : (l/hr)	LEL : (%)	Peak : (%)	Steady : (%)	Peak : (%)	Steady : (%)	Peak : (%)	Steady : (%)	
CP01	0.10	4.00	0.0	0.0	0.0	0.0	0.0	0.0	20.8	20.8	
CP02	1.41	4.25	0.0	0.0	0.0	0.0	1.3	1.1	19.4	19.4	
CP03	0.90	3.80	0.0	0.0	0.0	0.0	0.0	0.0	20.7	20.7	
CP04	1.46	4.20	0.0	0.0	0.0	0.0	1.8	1.8	19.1	19.1	
CP05	1.07	4.00	0.0	0.0	0.0	0.0	0.2	0.2	20.5	20.5	
CP06	0.32	4.00	0.0	0.0	0.0	0.0	0.3	0.3	20.6	20.6	
CP07	1.33	4.45	0.0	*11.8	0.5	0.0	0.6	0.2	18.5	20.0	*Borehole monitored for 5 minutes. After 4 minutes no detectable methane.
BH09	0.73	3.70	0.0	0.0	0.0	0.0	0.0	0.0	20.8	20.8	
BH10	1.16	3.93	0.0	0.0	0.0	0.0	0.3	0.3	20.8	20.8	
BH11	1.20	3.65	0.0	0.0	0.0	0.0	7.6	7.6	13.5	13.5	
BH12	1.50	3.90	0.0	0.0	0.0	0.0	7.2	2.2	19.3	19.3	
BH13	1.37	3.95	0.0	0.0	0.0	0.0	2.9	2.9	18.5	18.5	
BH14	1.46	3.75	0.0	0.0	0.0	0.0	1.1	1.1	20.1	20.1	
BH15	1.03	4.00	0.0	0.0	0.0	0.0	2.4	2.4	19.1	19.1	
BH16	1.58	3.70	0.0	0.0	0.0	0.0	3.4	3.4	18.7	18.7	
BH17	1.50	3.75	0.0	0.0	0.0	0.0	1.0	1.0	19.8	19.8	
BH18	1.60	4.50	0.0	0.0	0.0	0.0	0.5	0.5	20.5	20.5	
BH19	1.30	3.75	0.0	0.0	0.0	0.0	3.1	3.1	18.6	18.6	
BH22	0.44	3.60	0.0	0.0	0.0	0.0	0.4	0.4	20.6	20.6	
BH23	0.37	3.95	0.0	0.0	0.0	0.0	0.3	0.3	20.7	20.7	
BH24	0.78	3.95	0.0	0.0	0.0	0.0	2.2	2.2	19.7	19.7	
BH26	1.36	3.60	0.0	0.0	0.0	0.0	1.4	1.4	20.0	20.0	
BH28	+ 0.20	4.00	-	-	-	-	-	-	-	-	Borehole flooded, unable to undertake monitoring
BH29	0.73	4.00	0.0	0.0	0.0	0.0	0.0	0.0	20.7	20.7	
BH30	1.38	2.30	0.0	0.0	0.0	0.0	2.4	2.4	19.3	19.3	
BH31	1.30	3.85	0.0	0.0	0.0	0.0	2.0	2.0	19.4	19.4	

NOTE: (GWL) Depth to groundwater from ground level

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GAS AND WATER MONITORING RECORD SHEET (ROUND 04) SHEET 2 OF 2

PROJECT NO:	19-0021
PROJECT:	Willen Road,Newport pagnell
DATE:	18/08/2021
OPERATIVE:	Chris Carrier
WEATHER CONDITIONS:	Clear sunny skies (16°C). Dry in the previous 48hrs
GROUND SURFACE CONDITIONS:	Ground surface dry

INSTRUMENT DETAILS:	Gas Data GFM Series (S/N; 10123)						
AMBIENT AIR LEVELS:	CH4	0.00%	CO2	0.00%	O2	20.70%	
BAROMETRIC PRESSURE:	18/08/2021: 1016mb						

BAROMETRIC TREND:	Atmospheric pressure remaining constant over the monitoring period. Pressure following a decrease from 1020mb over the previous 24hr

Monitoring Point			Gas Concentrations							Comments
				CH_4			CO_2		O_2	
Ref :	GWL : (m)	Hole base : (m)	Flow : (l/hr)	LEL : (%)	Peak : (%)	Steady : (%)	Peak : (%)	Steady : (%)	Peak : (%)	Steady : (%)	
BH21	1.20	4.00	0.0	0.0	0.0	0.0	1.5	1.5	19.6	19.6	
BH25	0.20	4.00	-	-	-	-	-	-	-	-	Borehole flooded, unable to undertake monitoring.
BH27	3.23	5.00	0.0	*>100	4.5	4.5	1.0	1.0	0.4	0.4	*Borehole monitored for 5 minutes. No change in gas readings.
BH35	1.20	4.00	0.0	0.0	0.0	0.0	0.4	0.4	20.6	20.6	
BH38	1.30	2.64	0.0	0.0	0.0	0.0	1.6	1.5	20.4	20.1	
BH39	0.17	4.00	-	-	-	-	-	-	-	-	Borehole flooded, unable to undertake monitoring.
BH40	0.20	5.00	0.0	*18.8	0.7	0.7	0.0	0.0	13.5	13.5	*Borehole monitored for 5 minutes. No change in gas readings.

NOTE: (GWL) Depth to groundwater from ground level

APPENDIX F – LABORATORY TEST RESULTS

- Chemical Test Results
- Geotechnical Test Results

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	21-13717-1
Initial Date of Issue:	11-May-2021
Client	Rolton Group
Client Address:	The Charles Parker Building Higham Ferrers Rushden Northamptonshire NN10 8DN
Contact(s):	Eloise Slade
Project	19-0021 Willen Road, Newport Pagnell

Quotation No.:		**Date Received:**	27-Apr-2021
Order No.:	29651 / 19-0021	**Date Instructed:**	27-Apr-2021
No. of Samples:	10		
Turnaround (Wkdays):	9	**Results Due:**	10-May-2021
Date Approved:	11-May-2021		

Approved By:

[redacted]

Details: Glynn Harvey, Technical Manager

Results - Soil

Project: 19-0021 Willen Road, Newport Pagnell

Client: Rolton Group			**Chemtest Job No.:**		21-13717	21-13717	21-13717	21-13717	21-13717	21-13717	21-13717	21-13717	21-13717
Quotation No.:			**Chemtest Sample ID.:**		1188110	1188111	1188112	1188113	1188114	1188119	1188120	1188123	1188124
			Client Sample ID.:		TP23	TP01	TP21	TP08	TP04	TP16	TP22	TP33	TP34
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
			Date Sampled:		19-Apr-2021	19-Apr-2021	19-Apr-2021	19-Apr-2021	19-Apr-2021	19-Apr-2021	19-Apr-2021	19-Apr-2021	19-Apr-2021
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
Moisture	N	2030	%	0.020	18	15	23	17	9.1	11	11	10	15
Stones and Removed Materials	N	2030	%	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020		< 0.020	< 0.020
pH	U	2010		4.0	7.1	7.1	7.9	7.5	6.9	7.1		7.3	7.3
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	0.55	0.79	1.7	0.70		1.1		< 0.40	0.73
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	< 0.010	< 0.010	0.036	< 0.010		0.12		< 0.010	< 0.010
Cyanide (Total)	U	2300	mg/kg	0.50	0.70	0.50	< 0.50	< 0.50		< 0.50		< 0.50	< 0.50
Arsenic	U	2450	mg/kg	1.0	14	15	20	19		12		14	15
Cadmium	U	2450	mg/kg	0.10	0.22	0.17	0.36	0.34		0.17		0.16	0.18
Chromium	U	2450	mg/kg	1.0	33	30	28	34		17		23	23
Copper	U	2450	mg/kg	0.50	14	14	23	18		12		11	13
Mercury	U	2450	mg/kg	0.10	0.10	0.11	0.13	0.10		< 0.10		< 0.10	< 0.10
Nickel	U	2450	mg/kg	0.50	19	19	27	24		14		16	19
Lead	U	2450	mg/kg	0.50	26	35	57	31		19		22	26
Selenium	U	2450	mg/kg	0.20	0.38	0.48	0.43	0.41		0.21		0.22	0.30
Zinc	U	2450	mg/kg	0.50	56	52	96	69		43		42	51
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50		< 0.50		< 0.50	< 0.50
Organic Matter	U	2625	%	0.40	3.3	3.1	4.0	2.9		3.8		2.6	2.4
Total TPH >C6-C40	U	2670	mg/kg	10	61	< 10	110	< 10		< 10		< 10	< 10
Naphthalene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10		< 0.10		< 0.10	< 0.10
Acenaphthylene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10		< 0.10		< 0.10	< 0.10
Acenaphthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10		< 0.10		< 0.10	< 0.10
Fluorene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10		< 0.10		< 0.10	< 0.10
Phenanthrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10		< 0.10		< 0.10	< 0.10
Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10		< 0.10		< 0.10	< 0.10
Fluoranthene	U	2700	mg/kg	0.10	0.48	< 0.10	0.74	< 0.10		< 0.10		< 0.10	< 0.10
Pyrene	U	2700	mg/kg	0.10	0.49	< 0.10	0.72	< 0.10		< 0.10		< 0.10	< 0.10
Benzo[a]anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10		< 0.10		< 0.10	< 0.10
Chrysene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10		< 0.10		< 0.10	< 0.10
Benzo[b]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10		< 0.10		< 0.10	< 0.10
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10		< 0.10		< 0.10	< 0.10
Benzo[a]pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10		< 0.10		< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10		< 0.10		< 0.10	< 0.10
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10		< 0.10		< 0.10	< 0.10
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10		< 0.10		< 0.10	< 0.10
Total Of 16 PAH's	U	2700	mg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0		< 2.0		< 2.0	< 2.0
Total Phenols	U	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10		< 0.10		< 0.10	< 0.10

Results - Soil

Project: 19-0021 Willen Road, Newport Pagnell

Client: Rolton Group		**Chemtest Job No.:**			21-13717
Quotation No.:		**Chemtest Sample ID.:**			1188126
		Client Sample ID.:			TP68
		Sample Type:			SOIL
		Top Depth (m):			0.1
		Date Sampled:			19-Apr-2021
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Moisture	N	2030	%	0.020	12
Stones and Removed Materials	N	2030	%	0.020	< 0.020
pH	U	2010		4.0	7.3
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	< 0.40
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	< 0.010
Cyanide (Total)	U	2300	mg/kg	0.50	< 0.50
Arsenic	U	2450	mg/kg	1.0	21
Cadmium	U	2450	mg/kg	0.10	0.23
Chromium	U	2450	mg/kg	1.0	29
Copper	U	2450	mg/kg	0.50	15
Mercury	U	2450	mg/kg	0.10	< 0.10
Nickel	U	2450	mg/kg	0.50	25
Lead	U	2450	mg/kg	0.50	24
Selenium	U	2450	mg/kg	0.20	0.35
Zinc	U	2450	mg/kg	0.50	69
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50
Organic Matter	U	2625	%	0.40	2.9
Total TPH >C6-C40	U	2670	mg/kg	10	< 10
Naphthalene	U	2700	mg/kg	0.10	< 0.10
Acenaphthylene	U	2700	mg/kg	0.10	< 0.10
Acenaphthene	U	2700	mg/kg	0.10	< 0.10
Fluorene	U	2700	mg/kg	0.10	< 0.10
Phenanthrene	U	2700	mg/kg	0.10	< 0.10
Anthracene	U	2700	mg/kg	0.10	< 0.10
Fluoranthene	U	2700	mg/kg	0.10	< 0.10
Pyrene	U	2700	mg/kg	0.10	< 0.10
Benzo[a]anthracene	U	2700	mg/kg	0.10	< 0.10
Chrysene	U	2700	mg/kg	0.10	< 0.10
Benzo[b]fluoranthene	U	2700	mg/kg	0.10	< 0.10
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	< 0.10
Benzo[a]pyrene	U	2700	mg/kg	0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	< 0.10
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10	< 0.10
Total Of 16 PAH's	U	2700	mg/kg	2.0	< 2.0
Total Phenols	U	2920	mg/kg	0.10	< 0.10

Results - Topsoil Report

BS3882:2015

Chemtest Job No.: 21-13717
Chemtest Sample ID.: 1188114
Client Sample Ref.:
Sample Location:
Client Sample ID.: TP04
Top Depth (m): 0.2
Bottom Depth (m):
Date Sampled: 19-Apr-2021
Time Sampled:

Parameter	Units	Multipurpose Range			Result	Compliant with Multipurpose Range? (Y/N)	Compliant with Specific Purpose Range? (Y/N)		
Texture							**Acid**	**Low F**	**Calc.**
Clay content	%				0.000				
Silt content	%				9.7				
Sand content	%				90				
Soil texture class		See Attached Chart			Sand	NO			
Mass Loss on Ignition									
Clay 5-20%		3.0-20			4.3	NO	NO	YES	NO
Clay 20-35%		5.0-20							
Stone Content	**% m/m**								
>2mm		0-30			26	YES			
>20mm		0-10			4.4	YES			
>50mm		0			< 0.020	YES			
Soil pH value		5.5-8.5			6.9	YES	NO	YES	NO
Carbonate (Calcareous only)	%				< 0.10				NO
Electrical Conductivity	µS/cm	If >3300 do ESP			2000	YES			
Available Nutrient Content									
Nitrogen %		>0.15			0.17	YES	YES		YES
Extractable phosphorus	mg/l	16-140			14	NO	NO	YES	NO
Extractable potassium	mg/l	121-1500			65	NO	NO		NO
Extractable magnesium	mg/l	51-600			70	YES	YES		YES
Carbon : Nitrogen Ratio		<20:1			15.0/1	YES	YES	YES	YES
Exchangeable sodium	**%**	<15			2.6				
Available Calcium	mg/l				140				
Available Sodium	mg/l				26				
Phytotoxic Contaminants (by soil pH)		**< 6.0**	**6.0-7.0**	**> 7.0**					
Zinc (Nitric Acid extract)	mg/kg	<200	<200	<300	41	YES			
Copper (Nitric Acid extract)	mg/kg	<100	<135	<200	16	YES			
Nickel (Nitric Acid extract)	mg/kg	<60	<75	<110	16	YES			
Visible Contaminants	**% mm**								
>2mm		<0.5			0.000	YES			
….. of which plastics		<0.25			0.000	YES			
….. man-made sharps		zero in 1kg			0.000	YES			

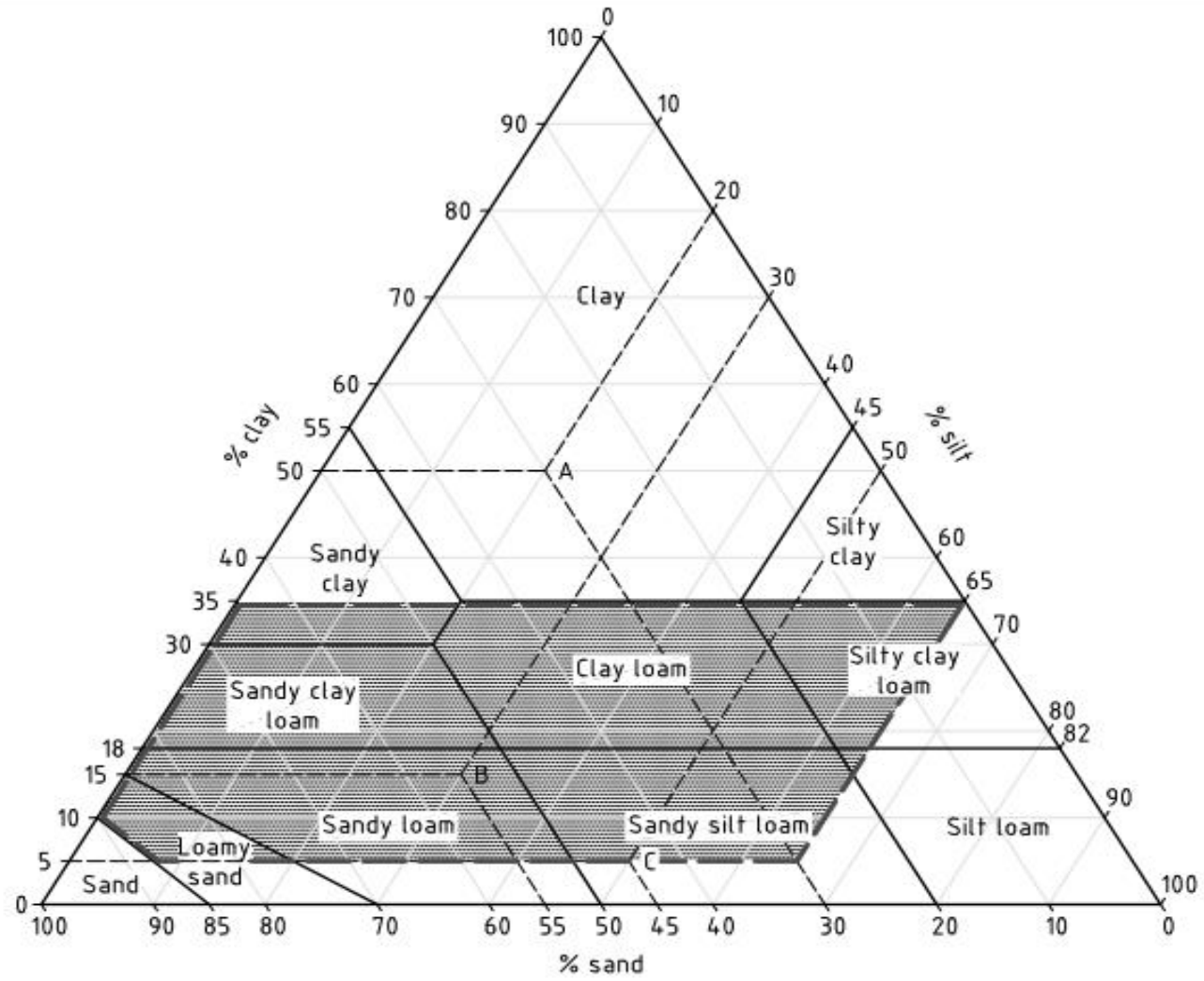
Results - Topsoil Report

BS3882:2015

Chemtest Job No.: 21-13717
Chemtest Sample ID.: 1188120
Client Sample Ref.:
Sample Location:
Client Sample ID.: TP22
Top Depth (m): 0.2
Bottom Depth (m):
Date Sampled: 19-Apr-2021
Time Sampled:

Parameter	Units	Multipurpose Range			Result	Compliant with Multipurpose Range? (Y/N)	Compliant with Specific Purpose Range? (Y/N)		
Texture							**Acid**	**Low F**	**Calc.**
Clay content	%				1.6				
Silt content	%				26				
Sand content	%				73				
Soil texture class		See Attached Chart			Loamy Sand	NO			
Mass Loss on Ignition									
Clay 5-20%		3.0-20			3.4	NO	NO	YES	NO
Clay 20-35%		5.0-20							
Stone Content	**% m/m**								
>2mm		0-30			38	NO			
>20mm		0-10			5.1	YES			
>50mm		0			< 0.020	YES			
Soil pH value		5.5-8.5			7.5	YES	NO	YES	YES
Carbonate (Calcareous only)	%				1.1				YES
Electrical Conductivity	µS/cm	If >3300 do ESP			2200	YES			
Available Nutrient Content									
Nitrogen %		>0.15			0.25	YES	YES		YES
Extractable phosphorus	mg/l	16-140			14	NO	NO	YES	NO
Extractable potassium	mg/l	121-1500			160	YES	YES		YES
Extractable magnesium	mg/l	51-600			120	YES	YES		YES
Carbon : Nitrogen Ratio		<20:1			8.1/1	YES	YES	YES	YES
Exchangeable sodium	**%**	<15			2.4				
Available Calcium	mg/l				330				
Available Sodium	mg/l				55				
Phytotoxic Contaminants (by soil pH)		**< 6.0**	**6.0-7.0**	**> 7.0**					
Zinc (Nitric Acid extract)	mg/kg	<200	<200	<300	39	YES			
Copper (Nitric Acid extract)	mg/kg	<100	<135	<200	8.1	YES			
Nickel (Nitric Acid extract)	mg/kg	<60	<75	<110	14	YES			
Visible Contaminants	**% mm**								
>2mm		<0.5			0.000	YES			
….. of which plastics		<0.25			0.000	YES			
….. man-made sharps		zero in 1kg			0.000	YES			

Topsoil:
Texture Classification Chart



Key

Area within which the texture of topsoil is required to fall

NOTE Examples of textural classification are as follows.

- *Soil A with 30% sand, 20% silt and 50% clay is in the "clay" textural class.*
- *Soil B with 55% sand, 30% silt and 15% clay is in the "sandy loam" textural class.*
- *Soil C with 45% sand, 50% silt and 5% clay is in the "sandy silt loam" textural class.*

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2020	Electrical Conductivity	Electrical conductivity (EC) of aqueous extract or calcium sulphate solution for topsoil	Measurement of the electrical resistance of a 2:1 water/soil extract.
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2115	Total Nitrogen in Soils	Nitrogen	Determination by elemental analyser
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2260	Carbonate	Carbonate	Titration
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2400	Cations	Cations	ICP-MS
2420	Phosphate	Phosphate	Spectrophotometry - Discrete analyser
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2620	LOI 440	LOI 440 Trommel Fines	Determination of the proportion by mass that is lost from a soil by ignition at 440°C.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID (GC-FID detection is non-selective and can be subject to interference from co-eluting compounds)
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	21-13853-1		
Initial Date of Issue:	11-May-2021		
Client	Rolton Group		
Client Address:	The Charles Parker Building Higham Ferrers Rushden Northamptonshire NN10 8DN		
Contact(s):	Eloise Slade		
Project	19-0021 Willen Rd		
Quotation No.:		**Date Received:**	27-Apr-2021
Order No.:	29651 / 19-0021	**Date Instructed:**	28-Apr-2021
No. of Samples:	29		
Turnaround (Wkdays):	8	**Results Due:**	10-May-2021
Date Approved:	10-May-2021		
Approved By:	[redacted]		
Details:	Glynn Harvey, Technical Manager		

Results - Soil

Project: 19-0021 Willen Rd

Client: Rolton Group			**Chemtest Job No.:**		21-13853	21-13853	21-13853	21-13853	21-13853	21-13853	21-13853	21-13853	21-13853
Quotation No.:			**Chemtest Sample ID.:**		1188730	1188732	1188734	1188735	1188736	1188737	1188738	1188742	1188743
			Client Sample ID.:		ES1	ES1	ES2	ES1	ES1	ES1	ES1	ES2	ES1
			Sample Location:		LOC.2	TP16	TP17	TP18	TP15	TP19	TP20	TP28	TP69
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		0.2	0.2	1	0.2	0.2	0.2	0.2	0.4	0.2
			Date Sampled:		23-Apr-2021	23-Apr-2021	23-Apr-2021	23-Apr-2021	19-Apr-2021	19-Apr-2021	19-Apr-2021	19-Apr-2021	19-Apr-2021
			Asbestos Lab:				NEW-ASB					NEW-ASB	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
ACM Type	U	2192		N/A			-					-	
Asbestos Identification	U	2192		N/A			No Asbestos Detected					No Asbestos Detected	
ACM Detection Stage	U	2192		N/A			-					-	
Moisture	N	2030	%	0.020	13	7.6	1.6	8.8	14	9.3	11	11	14
Stones and Removed Materials	N	2030	%	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
pH	U	2010		4.0	8.0	7.8	7.8	6.9	7.1	6.9	7.2	8.0	7.2
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	< 0.40	< 0.40	< 0.40	< 0.40	0.82	< 0.40	< 0.40	< 0.40	< 0.40
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Cyanide (Total)	U	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50		< 0.50	< 0.50	< 0.50
Arsenic	U	2450	mg/kg	1.0	20	17	43	29	30	17	13	26	14
Cadmium	U	2450	mg/kg	0.10	0.45	0.27	0.25	0.30	0.51	0.15	0.11	0.21	0.18
Chromium	U	2450	mg/kg	1.0	39	25	36	30	38	29	24	27	24
Copper	U	2450	mg/kg	0.50	34	15	19	19	21	11	11	15	15
Mercury	U	2450	mg/kg	0.10	0.19	< 0.10	< 0.10	< 0.10	0.15	< 0.10	< 0.10	< 0.10	< 0.10
Nickel	U	2450	mg/kg	0.50	26	17	43	29	35	22	20	26	23
Lead	U	2450	mg/kg	0.50	57	25	18	33	37	23	13	19	20
Selenium	U	2450	mg/kg	0.20	0.49	0.34	0.38	0.41	0.60	0.35	0.29	0.20	0.31
Zinc	U	2450	mg/kg	0.50	86	57	83	94	370	53	43	54	52
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Organic Matter	U	2625	%	0.40	3.3	4.1	1.6	2.4	5.2		1.2	2.6	0.72
Total TPH >C6-C40	U	2670	mg/kg	10	< 10	[C] < 10	< 10	< 10	< 10	< 10	< 10	< 10	[C] 100
Naphthalene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10		< 0.10	< 0.10	< 0.10
Acenaphthylene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10		< 0.10	< 0.10	< 0.10
Acenaphthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10		< 0.10	< 0.10	< 0.10
Fluorene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10		< 0.10	< 0.10	< 0.10
Phenanthrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10		< 0.10	< 0.10	< 0.10
Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10		< 0.10	< 0.10	< 0.10
Fluoranthene	U	2700	mg/kg	0.10	0.24	< 0.10	< 0.10	< 0.10	< 0.10		< 0.10	< 0.10	< 0.10
Pyrene	U	2700	mg/kg	0.10	0.29	< 0.10	< 0.10	< 0.10	< 0.10		< 0.10	< 0.10	< 0.10
Benzo[a]anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10		< 0.10	< 0.10	< 0.10
Chrysene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10		< 0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10		< 0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10		< 0.10	< 0.10	< 0.10
Benzo[a]pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10		< 0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10		< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10		< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10		< 0.10	< 0.10	< 0.10

Results - Soil

Project: 19-0021 Willen Rd

Client: Rolton Group			**Chemtest Job No.:**		21-13853	21-13853	21-13853	21-13853	21-13853	21-13853	21-13853	21-13853	21-13853
Quotation No.:			**Chemtest Sample ID.:**		1188730	1188732	1188734	1188735	1188736	1188737	1188738	1188742	1188743
			Client Sample ID.:		ES1	ES1	ES2	ES1	ES1	ES1	ES1	ES2	ES1
			Sample Location:		LOC.2	TP16	TP17	TP18	TP15	TP19	TP20	TP28	TP69
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		0.2	0.2	1	0.2	0.2	0.2	0.2	0.4	0.2
			Date Sampled:		23-Apr-2021	23-Apr-2021	23-Apr-2021	23-Apr-2021	19-Apr-2021	19-Apr-2021	19-Apr-2021	19-Apr-2021	19-Apr-2021
			Asbestos Lab:				NEW-ASB					NEW-ASB	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
Total Of 16 PAH's	U	2700	mg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0		< 2.0	< 2.0	< 2.0
Total Phenols	U	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

Results - Soil

Project: 19-0021 Willen Rd

Client: Rolton Group			**Chemtest Job No.:**		21-13853	21-13853	21-13853	21-13853	21-13853	21-13853	21-13853	21-13853	21-13853
Quotation No.:			**Chemtest Sample ID.:**		1188744	1188745	1188746	1188747	1188748	1188749	1188751	1188753	1188755
			Client Sample ID.:		ES1	ES1	ES1	ES2	ES3	ES1	ES1	ES2	ES1
			Sample Location:		TP24	TP25	TPBH11A	TPBH11A	TPBH11A	TPBH11B	TPE/TP66	TP37	TP38
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		0.2	0.2	0.6	1.5	1.9	1	0.2	0.8	0.2
			Date Sampled:		24-Apr-2021	24-Apr-2021	24-Apr-2021	24-Apr-2021	24-Apr-2021	24-Apr-2021	15-Apr-2021	22-Apr-2021	22-Apr-2021
			Asbestos Lab:				NEW-ASB		NEW-ASB	NEW-ASB			
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
ACM Type	U	2192		N/A			-		-	-			
Asbestos Identification	U	2192		N/A			No Asbestos Detected		No Asbestos Detected	No Asbestos Detected			
ACM Detection Stage	U	2192		N/A			-		-	-			
Moisture	N	2030	%	0.020	10	12	27	12	12	7.8	9.5	8.9	11
Stones and Removed Materials	N	2030	%	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
pH	U	2010		4.0	6.7	6.7	7.4	7.5	7.8	7.5	7.5	7.3	6.9
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	< 0.40	< 0.40	< 0.40	0.82	< 0.40	0.45	< 0.40	< 0.40	< 0.40
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	< 0.010	< 0.010	0.22	< 0.010	0.063	0.17	< 0.010	< 0.010	< 0.010
Cyanide (Total)	U	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Arsenic	U	2450	mg/kg	1.0	17	16	17	11	20	8.4	12	22	14
Cadmium	U	2450	mg/kg	0.10	0.17	0.15	0.46	0.24	0.19	0.13	0.18	0.14	0.19
Chromium	U	2450	mg/kg	1.0	26	24	19	14	26	15	21	32	29
Copper	U	2450	mg/kg	0.50	15	14	32	15	12	9.3	12	11	14
Mercury	U	2450	mg/kg	0.10	< 0.10	< 0.10	0.12	0.13	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Nickel	U	2450	mg/kg	0.50	21	25	19	15	25	13	18	30	20
Lead	U	2450	mg/kg	0.50	20	20	770	41	23	94	130	20	30
Selenium	U	2450	mg/kg	0.20	0.34	0.30	0.62	0.34	0.47	0.22	0.21	0.37	0.28
Zinc	U	2450	mg/kg	0.50	71	58	260	110	67	38	52	46	56
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Organic Matter	U	2625	%	0.40	2.2	3.3	2.8	0.62	0.57	12	1.5	0.69	2.1
Total TPH >C6-C40	U	2670	mg/kg	10	< 10	< 10	[C] 370	< 10	< 10	110	[C] < 10	< 10	< 10
Naphthalene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	0.71	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	0.15	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	0.47	0.79	< 0.10	0.47	< 0.10	< 0.10	< 0.10
Pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	0.60	0.81	< 0.10	0.48	< 0.10	< 0.10	< 0.10
Benzo[a]anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	0.89	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Chrysene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	0.90	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	1.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	0.42	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	0.46	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	0.43	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	0.11	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	0.64	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

Results - Soil

Project: 19-0021 Willen Rd

Client: Rolton Group			**Chemtest Job No.:**		21-13853	21-13853	21-13853	21-13853	21-13853	21-13853	21-13853	21-13853	21-13853
Quotation No.:			**Chemtest Sample ID.:**		1188744	1188745	1188746	1188747	1188748	1188749	1188751	1188753	1188755
			Client Sample ID.:		ES1	ES1	ES1	ES2	ES3	ES1	ES1	ES2	ES1
			Sample Location:		TP24	TP25	TPBH11A	TPBH11A	TPBH11A	TPBH11B	TPE/TP66	TP37	TP38
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		0.2	0.2	0.6	1.5	1.9	1	0.2	0.8	0.2
			Date Sampled:		24-Apr-2021	24-Apr-2021	24-Apr-2021	24-Apr-2021	24-Apr-2021	24-Apr-2021	15-Apr-2021	22-Apr-2021	22-Apr-2021
			Asbestos Lab:				NEW-ASB		NEW-ASB	NEW-ASB			
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
Total Of 16 PAH's	U	2700	mg/kg	2.0	< 2.0	< 2.0	< 2.0	7.4	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Total Phenols	U	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

Results - Soil

Project: 19-0021 Willen Rd

Client: Rolton Group			**Chemtest Job No.:**		21-13853	21-13853	21-13853	21-13853	21-13853	21-13853	21-13853	21-13853	21-13853
Quotation No.:			**Chemtest Sample ID.:**		1188757	1188758	1188759	1188761	1188763	1188764	1188765	1188766	1188768
			Client Sample ID.:		ES3	ES4	ES1	ES3	ES2	ES3	ES1	ES2	ES1
			Sample Location:		TP38	TP38	TP39	TP39	TP45	TP45	TP46	TP46	TP49
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		1.2	2.6	0.2	1.2	2	2.4	0.2	1.4	0.2
			Date Sampled:		22-Apr-2021	22-Apr-2021	22-Apr-2021	22-Apr-2021	22-Apr-2021	22-Apr-2021	22-Apr-2021	22-Apr-2021	22-Apr-2021
			Asbestos Lab:		DURHAM				DURHAM			DURHAM	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
ACM Type	U	2192		N/A	-				-			-	
Asbestos Identification	U	2192		N/A	No Asbestos Detected				No Asbestos Detected			No Asbestos Detected	
ACM Detection Stage	U	2192		N/A	-				-			-	
Moisture	N	2030	%	0.020	16	12	2.2	13	15	16	18	15	13
Stones and Removed Materials	N	2030	%	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
pH	U	2010		4.0	7.9	8.2	7.1	8.6	8.3	8.2	7.7	8.0	7.6
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	0.40	0.47	< 0.40	0.66	< 0.40	< 0.40	< 0.40	< 0.40	0.48
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	0.29	0.28	< 0.010	0.21	0.16	0.30	< 0.010	0.17	< 0.010
Cyanide (Total)	U	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Arsenic	U	2450	mg/kg	1.0	21	26	11	28	20	26	14	21	20
Cadmium	U	2450	mg/kg	0.10	0.16	0.17	0.18	0.28	0.16	0.25	0.17	0.33	0.25
Chromium	U	2450	mg/kg	1.0	30	38	21	31	31	37	21	37	36
Copper	U	2450	mg/kg	0.50	16	15	14	23	20	26	12	20	18
Mercury	U	2450	mg/kg	0.10	< 0.10	< 0.10	0.14	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.10
Nickel	U	2450	mg/kg	0.50	30	27	17	47	34	30	20	35	26
Lead	U	2450	mg/kg	0.50	17	21	23	31	17	69	20	23	34
Selenium	U	2450	mg/kg	0.20	< 0.20	0.29	0.25	< 0.20	< 0.20	0.21	0.24	0.22	0.31
Zinc	U	2450	mg/kg	0.50	57	56	49	80	58	84	51	74	65
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Organic Matter	U	2625	%	0.40	1.2	2.2	3.1	1.5	0.64	0.97	3.6	1.7	2.8
Total TPH >C6-C40	U	2670	mg/kg	10	61	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Naphthalene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	U	2700	mg/kg	0.10	< 0.10	0.79	< 0.10	0.73	< 0.10	0.43	< 0.10	< 0.10	< 0.10
Pyrene	U	2700	mg/kg	0.10	< 0.10	0.85	< 0.10	0.73	< 0.10	0.50	< 0.10	< 0.10	< 0.10
Benzo[a]anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Chrysene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

Results - Soil

Project: 19-0021 Willen Rd

Client: Rolton Group			**Chemtest Job No.:**		21-13853	21-13853	21-13853	21-13853	21-13853	21-13853	21-13853	21-13853	21-13853
Quotation No.:			**Chemtest Sample ID.:**		1188757	1188758	1188759	1188761	1188763	1188764	1188765	1188766	1188768
			Client Sample ID.:		ES3	ES4	ES1	ES3	ES2	ES3	ES1	ES2	ES1
			Sample Location:		TP38	TP38	TP39	TP39	TP45	TP45	TP46	TP46	TP49
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		1.2	2.6	0.2	1.2	2	2.4	0.2	1.4	0.2
			Date Sampled:		22-Apr-2021	22-Apr-2021	22-Apr-2021	22-Apr-2021	22-Apr-2021	22-Apr-2021	22-Apr-2021	22-Apr-2021	22-Apr-2021
			Asbestos Lab:		DURHAM				DURHAM			DURHAM	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
Total Of 16 PAH's	U	2700	mg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Total Phenols	U	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

Results - Soil

Project: 19-0021 Willen Rd

Client: Rolton Group		**Chemtest Job No.:**			21-13853	21-13853
Quotation No.:		**Chemtest Sample ID.:**			1188771	1188772
		Client Sample ID.:			ES1	ES2
		Sample Location:			TP51	TP51
		Sample Type:			SOIL	SOIL
		Top Depth (m):			0.2	1.3
		Date Sampled:			22-Apr-2021	22-Apr-2021
		Asbestos Lab:				DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
ACM Type	U	2192		N/A		-
Asbestos Identification	U	2192		N/A		No Asbestos Detected
ACM Detection Stage	U	2192		N/A		-
Moisture	N	2030	%	0.020	10	18
Stones and Removed Materials	N	2030	%	0.020	< 0.020	< 0.020
pH	U	2010		4.0	8.0	7.8
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	< 0.40	0.66
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	< 0.010	0.19
Cyanide (Total)	U	2300	mg/kg	0.50	< 0.50	< 0.50
Arsenic	U	2450	mg/kg	1.0	20	22
Cadmium	U	2450	mg/kg	0.10	0.15	0.16
Chromium	U	2450	mg/kg	1.0	26	40
Copper	U	2450	mg/kg	0.50	13	24
Mercury	U	2450	mg/kg	0.10	< 0.10	< 0.10
Nickel	U	2450	mg/kg	0.50	24	32
Lead	U	2450	mg/kg	0.50	17	27
Selenium	U	2450	mg/kg	0.20	0.36	< 0.20
Zinc	U	2450	mg/kg	0.50	49	68
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50
Organic Matter	U	2625	%	0.40	1.1	1.3
Total TPH >C6-C40	U	2670	mg/kg	10	< 10	< 10
Naphthalene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Acenaphthylene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Acenaphthene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Fluorene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Phenanthrene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Fluoranthene	U	2700	mg/kg	0.10	< 0.10	0.36
Pyrene	U	2700	mg/kg	0.10	< 0.10	0.44
Benzo[a]anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Chrysene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Benzo[a]pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10	< 0.10	< 0.10

Results - Soil

Project: 19-0021 Willen Rd

Client: Rolton Group			**Chemtest Job No.:**		21-13853	21-13853
Quotation No.:			**Chemtest Sample ID.:**		1188771	1188772
			Client Sample ID.:		ES1	ES2
			Sample Location:		TP51	TP51
			Sample Type:		SOIL	SOIL
			Top Depth (m):		0.2	1.3
			Date Sampled:		22-Apr-2021	22-Apr-2021
			Asbestos Lab:			DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
Total Of 16 PAH's	U	2700	mg/kg	2.0	< 2.0	< 2.0
Total Phenols	U	2920	mg/kg	0.10	< 0.10	< 0.10

Results - Topsoil Report

BS3882:2015

Chemtest Job No.: 21-13853
Chemtest Sample ID.: 1188732
Client Sample Ref.:
Sample Location: TP16
Client Sample ID.: ES1
Top Depth (m): 0.2
Bottom Depth (m):
Date Sampled: 23-Apr-2021
Time Sampled:

Parameter	Units	Multipurpose Range			Result	Compliant with Multipurpose Range? (Y/N)	Compliant with Specific Purpose Range? (Y/N)		
Texture							**Acid**	**Low F**	**Calc.**
Clay content	%				0.000				
Silt content	%				13				
Sand content	%				90				
Soil texture class		See Attached Chart			Sand	NO			
Mass Loss on Ignition									
Clay 5-20%		3.0-20			5.6	NO	NO	YES	NO
Clay 20-35%		5.0-20							
Stone Content	**% m/m**								
>2mm		0-30			23	YES			
>20mm		0-10			< 0.020	YES			
>50mm		0			< 0.020	YES			
Soil pH value		5.5-8.5			7.8	YES	NO	YES	YES
Carbonate (Calcareous only)	%				1.2				YES
Electrical Conductivity	µS/cm	If >3300 do ESP			2200	YES			
Available Nutrient Content									
Nitrogen %		>0.15			0.33	YES	YES		YES
Extractable phosphorus	mg/l	16-140			0.98	NO	NO	YES	NO
Extractable potassium	mg/l	121-1500			410	YES	YES		YES
Extractable magnesium	mg/l	51-600			450	YES	YES		YES
Carbon : Nitrogen Ratio		<20:1			10.0/1	YES	YES	YES	YES
Exchangeable sodium	**%**	<15			8.9				
Available Calcium	mg/l				240				
Available Sodium	mg/l				240				
Phytotoxic Contaminants (by soil pH)		**< 6.0**	**6.0-7.0**	**> 7.0**					
Zinc (Nitric Acid extract)	mg/kg	<200	<200	<300	85	YES			
Copper (Nitric Acid extract)	mg/kg	<100	<135	<200	22	YES			
Nickel (Nitric Acid extract)	mg/kg	<60	<75	<110	160	NO			
Visible Contaminants	**% mm**								
>2mm		<0.5			0.000	YES			
….. of which plastics		<0.25			0.000	YES			
….. man-made sharps		zero in 1kg			0.000	YES			

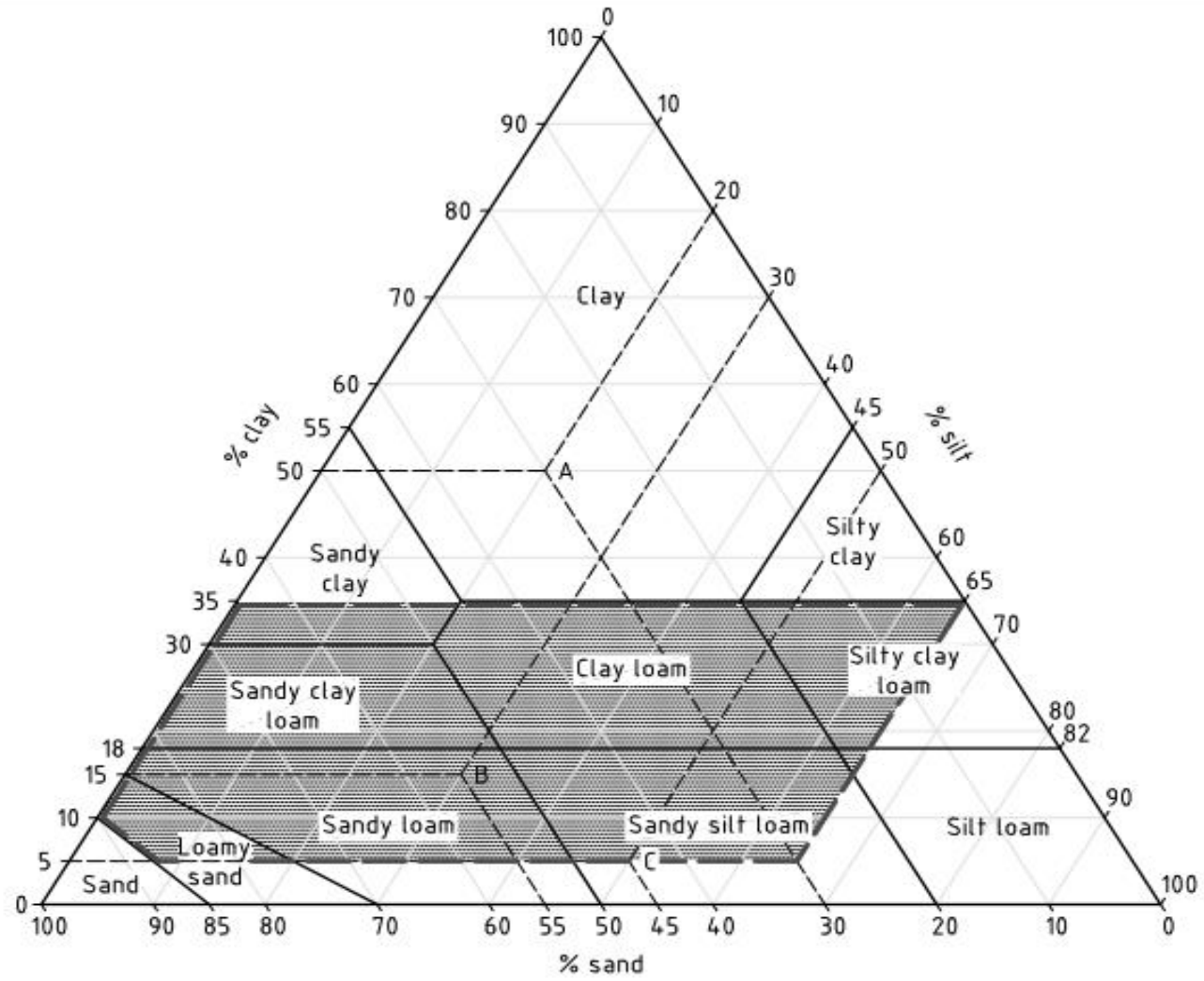
Results - Topsoil Report

BS3882:2015

Chemtest Job No.: 21-13853
Chemtest Sample ID.: 1188759
Client Sample Ref.:
Sample Location: TP39
Client Sample ID.: ES1
Top Depth (m): 0.2
Bottom Depth (m):
Date Sampled: 22-Apr-2021
Time Sampled:

Parameter	Units	Multipurpose Range			Result	Compliant with Multipurpose Range? (Y/N)	Compliant with Specific Purpose Range? (Y/N)		
Texture							**Acid**	**Low F**	**Calc.**
Clay content	%				6.5				
Silt content	%				19				
Sand content	%				74				
Soil texture class		See Attached Chart			Sandy Loam	YES			
Mass Loss on Ignition									
Clay 5-20%		3.0-20			4.5	YES	YES	YES	YES
Clay 20-35%		5.0-20							
Stone Content	**% m/m**								
>2mm		0-30			30	YES			
>20mm		0-10			9.0	YES			
>50mm		0			< 0.020	YES			
Soil pH value		5.5-8.5			7.1	YES	NO	YES	NO
Carbonate (Calcareous only)	%				1.8				YES
Electrical Conductivity	µS/cm	If >3300 do ESP			2000	YES			
Available Nutrient Content									
Nitrogen %		>0.15			0.23	YES	YES		YES
Extractable phosphorus	mg/l	16-140			1.3	NO	NO	YES	NO
Extractable potassium	mg/l	121-1500			40	NO	NO		NO
Extractable magnesium	mg/l	51-600			56	YES	YES		YES
Carbon : Nitrogen Ratio		<20:1			11.5/1	YES	YES	YES	YES
Exchangeable sodium	**%**	<15			7.2				
Available Calcium	mg/l				190				
Available Sodium	mg/l				94				
Phytotoxic Contaminants (by soil pH)		**< 6.0**	**6.0-7.0**	**> 7.0**					
Zinc (Nitric Acid extract)	mg/kg	<200	<200	<300	95	YES			
Copper (Nitric Acid extract)	mg/kg	<100	<135	<200	17	YES			
Nickel (Nitric Acid extract)	mg/kg	<60	<75	<110	180	NO			
Visible Contaminants	**% mm**								
>2mm		<0.5			0.000	YES			
….. of which plastics		<0.25			0.000	YES			
….. man-made sharps		zero in 1kg			0.000	YES			

Topsoil:
Texture Classification Chart



Key

Area within which the texture of topsoil is required to fall

NOTE Examples of textural classification are as follows.

- *Soil A with 30% sand, 20% silt and 50% clay is in the "clay" textural class.*
- *Soil B with 55% sand, 30% silt and 15% clay is in the "sandy loam" textural class.*
- *Soil C with 45% sand, 50% silt and 5% clay is in the "sandy silt loam" textural class.*

Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request.The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample:	Sample Ref:	Sample ID:	Sample Location:	Sampled Date:	Deviation Code(s):	Containers Received:
1188732		ES1	TP16	23-Apr-2021	C	Plastic Bag
1188743		ES1	TP69	19-Apr-2021	C	Plastic Tub 500g
1188746		ES1	TPBH11A	24-Apr-2021	C	Plastic Tub 1000g
1188746		ES1	TPBH11A	24-Apr-2021	C	Plastic Tub 500g
1188751		ES1	TPE/TP66	15-Apr-2021	C	Plastic Bag

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2020	Electrical Conductivity	Electrical conductivity (EC) of aqueous extract or calcium sulphate solution for topsoil	Measurement of the electrical resistance of a 2:1 water/soil extract.
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2115	Total Nitrogen in Soils	Nitrogen	Determination by elemental analyser
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2260	Carbonate	Carbonate	Titration
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2400	Cations	Cations	ICP-MS
2420	Phosphate	Phosphate	Spectrophotometry - Discrete analyser
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2620	LOI 440	LOI 440 Trommel Fines	Determination of the proportion by mass that is lost from a soil by ignition at 440°C.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID (GC-FID detection is non-selective and can be subject to interference from co-eluting compounds)
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Certificate of Analysis

Certificate Number	21-08855	*Issued:*	06-May-21

Client Geotechnics LTD
203 Torrington Avenue
Tile Hill
Coventry
CV4 9AP

Our Reference	21-08855
Client Reference	PC218147
Order No	AUTH-OC29384
Contract Title	Newport Pagnell
Description	3 Soil samples.
Date Received	28-Apr-21
Date Started	28-Apr-21
Date Completed	06-May-21
Test Procedures	Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By [redacted]

Adam Fenwick
Contracts Manager

UKAS TESTING
2139

Summary of Chemical Analysis

Soil Samples

Our Ref 21-08855
Client Ref PC218147
Contract Title Newport Pagnell

			Lab No	1838806	1838807	1838808
			.Sample ID	BH24	BH24	BH24
			Depth	1.00	1.80	2.80
			Other ID			
			Sample Type	ES	ES	ES
			Sampling Date	n/s	n/s	n/s
			Sampling Time	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**			
Metals						
Arsenic	DETSC 2301#	0.2	mg/kg	15	13	12
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	0.7	1.2	1.5
Cadmium	DETSC 2301#	0.1	mg/kg	0.2	0.2	< 0.1
Chromium	DETSC 2301#	0.15	mg/kg	24	21	30
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	16	22	28
Lead	DETSC 2301#	0.3	mg/kg	27	14	14
Mercury	DETSC 2325#	0.05	mg/kg	0.06	< 0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	19	20	31
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Zinc	DETSC 2301#	1	mg/kg	57	61	57
Inorganics						
pH	DETSC 2008#		pH	7.0	8.0	7.8
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.3	< 0.1	< 0.1
Organic matter	DETSC 2002#	0.1	%	3.3	1.5	1.3
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	40	1000	790
Petroleum Hydrocarbons						
EPH (C10-C40)	DETSC 3311#	10	mg/kg	< 10	< 10	< 10
PAHs						
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	< 0.10	< 0.10
Phenols						
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3

Key: * -not accredited. # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Summary of Asbestos Analysis

Soil Samples

Our Ref 21-08855
Client Ref PC218147
Contract Title Newport Pagnell

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1838807	BH24 1.80	SOIL	NAD	none	Emma Stacey
1838808	BH24 2.80	SOIL	NAD	none	Emma Stacey

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * - not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 21-08855
Client Ref PC218147
Contract Newport Pagnell

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1838806	BH24 1.00 SOIL		GJ 250ml x2, PT 1L	Sample date not supplied, Anions 2:1 (30 days), Boron (365 days), Chromium, Hexavalent (365 days), Mercury (28 days), ICP WS Boron (182 days), Metals ICP (182 days), Metals ICP Prep (182 days), Kone Cr6 (30 days), Naphthalene (14 days), Organic Matter (Manual) (28 days), PAH MS (14 days), pH + Conductivity (7 days), Cyanide/Mono pHoh (14 days), EPH/TPH (14 days)	
1838807	BH24 1.80 SOIL		GJ 250ml x2, PT 1L	Sample date not supplied, Anions 2:1 (30 days), Boron (365 days), Chromium, Hexavalent (365 days), Mercury (28 days), ICP WS Boron (182 days), Metals ICP (182 days), Metals ICP Prep (182 days), Kone Cr6 (30 days), Naphthalene (14 days), Organic Matter (Manual) (28 days), PAH MS (14 days), pH + Conductivity (7 days), Cyanide/Mono pHoh (14 days), EPH/TPH (14 days)	
1838808	BH24 2.80 SOIL		GJ 250ml x2, PT 1L	Sample date not supplied, Anions 2:1 (30 days), Boron (365 days), Chromium, Hexavalent (365 days), Mercury (28 days), ICP WS Boron (182 days), Metals ICP (182 days), Metals ICP Prep (182 days), Kone Cr6 (30 days), Naphthalene (14 days), Organic Matter (Manual) (28 days), PAH MS (14 days), pH + Conductivity (7 days), Cyanide/Mono pHoh (14 days), EPH/TPH (14 days)	

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

End of Report

Certificate of Analysis

Certificate Number	21-08733	*Issued:*	29-Apr-21

Client Geotechnics LTD
203 Torrington Avenue
Tile Hill
Coventry
CV4 9AP

Our Reference	21-08733
Client Reference	PC218147
Order No	AUTH-OC29338
Contract Title	Newport Pagnell
Description	6 Soil samples.
Date Received	23-Apr-21
Date Started	27-Apr-21
Date Completed	29-Apr-21
Test Procedures	Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By [redacted]

Adam Fenwick
Contracts Manager

UKAS TESTING
2139

Summary of Chemical Analysis

Soil Samples

Our Ref 21-08733
Client Ref PC218147
Contract Title Newport Pagnell

			Lab No	1838061	1838062	1838063	1838064	1838065	1838066
			.Sample ID	BH02	BH03	BH05	BH07	BH08	BH16
			Depth	0.15	0.15	0.15	0.15	0.15	0.15
			Other ID						
			Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Sampling Date	12/04/2021	12/04/2021	13/04/2021	13/04/2021	13/04/2021	13/04/2021
			Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**						
Metals									
Arsenic	DETSC 2301#	0.2	mg/kg	16	23	18	20	22	21
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	1.0	0.5	0.7	2.0	0.7	2.7
Cadmium	DETSC 2301#	0.1	mg/kg	0.4	0.3	0.3	0.8	3.3	0.4
Chromium	DETSC 2301#	0.15	mg/kg	25	27	22	42	28	24
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	22	17	18	25	24	20
Lead	DETSC 2301#	0.3	mg/kg	28	21	37	33	33	30
Mercury	DETSC 2325#	0.05	mg/kg	0.07	0.05	0.06	0.09	0.10	0.08
Nickel	DETSC 2301#	1	mg/kg	21	24	22	33	27	24
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Zinc	DETSC 2301#	1	mg/kg	54	59	67	85	82	81
Inorganics									
pH	DETSC 2008#		pH	6.0	5.7	7.0	6.1	6.6	6.1
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1	0.2	0.2	0.2	0.2	0.2
Organic matter	DETSC 2002#	0.1	%	3.4	2.0	3.3	3.7	4.5	3.3
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	17	10	< 10	12	12	< 10
Petroleum Hydrocarbons									
EPH (C10-C40)	DETSC 3311#	10	mg/kg	< 10	< 10	< 10	< 10	< 10	27
PAHs									
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.04	< 0.03	< 0.03	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.12	< 0.03	0.03	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.12	< 0.03	0.03	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.05	< 0.03	< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	0.06	< 0.03	< 0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.06	< 0.03	< 0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.04	< 0.03	< 0.03	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	< 0.10	0.48	< 0.10	< 0.10	< 0.10
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	0.4	< 0.3	< 0.3

Key: * -not accredited. # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Information in Support of the Analytical Results

Our Ref 21-08733
Client Ref PC218147
Contract Newport Pagnell

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1838061	BH02 0.15 SOIL	12/04/21	GJ 250ml x2, PT 1L	pH + Conductivity (7 days)	
1838062	BH03 0.15 SOIL	12/04/21	GJ 250ml x2, PT 1L	pH + Conductivity (7 days)	
1838063	BH05 0.15 SOIL	13/04/21	GJ 250ml x2, PT 1L	pH + Conductivity (7 days)	
1838064	BH07 0.15 SOIL	13/04/21	GJ 250ml x2, PT 1L	pH + Conductivity (7 days)	
1838065	BH08 0.15 SOIL	13/04/21	GJ 250ml x2, PT 1L	pH + Conductivity (7 days)	
1838066	BH16 0.15 SOIL	13/04/21	GJ 250ml x2, PT 1L	pH + Conductivity (7 days)	

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

End of Report

Chris Carrier
Rolton Group Ltd
The Charles Parker Building
Midland Road
Higham Ferrers
NN10 8DN

e: Chris.Carrier@rolton.com

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS
[redacted]

Analytical Report Number : 21-93093

Replaces Analytical Report Number: 21-93093, issue no. 1
Additional analysis undertaken.

Project / Site name:	Willen Road	**Samples received on:**	06/08/2021
Your job number:	19-0021	**Samples instructed on/ Analysis started on:**	16/08/2021
Your order number:	29843 - 19-0021	**Analysis completed by:**	10/09/2021
Report Issue Number:	2	**Report issued on:**	10/09/2021
Samples Analysed:	10 soil samples		

Signed: [redacted]

Karolina Marek
PL Head of Reporting Team
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 21-93093
Project / Site name: Willen Road
Your Order No: 29843 - 19-0021

Lab Sample Number				1973448	1973449	1973450	1973451	1973452
Sample Reference				Bund Loc. 1	Bund Loc. 2	Bund Loc. 4	Bund Loc. 6	Bund Loc. 7
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	1.40	None Supplied
Date Sampled				Deviating	Deviating	Deviating	Deviating	Deviating
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	7.5	5.9	6.6	11	7.0
Total mass of sample received	kg	0.001	NONE	1.2	1.2	1.2	1.2	1.2
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	Chrysotile	-	-
Asbestos in Soil	Type	N/A	ISO 17025	-	-	Detected	-	-
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	< 0.001	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	< 0.001	-	-
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	6.8	6.7	7.1	7.6	7.7
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Water Soluble Sulphate as SO4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	20	24	47	71	54
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.010	0.012	0.023	0.035	0.027
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	10.0	12.1	23.3	35.3	26.9
Organic Matter (automated)	%	0.1	MCERTS	2.5	4.1	2.3	0.8	0.6
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80

Analytical Report Number: 21-93093
Project / Site name: Willen Road
Your Order No: 29843 - 19-0021

Lab Sample Number				1973448	1973449	1973450	1973451	1973452
Sample Reference				Bund Loc. 1	Bund Loc. 2	Bund Loc. 4	Bund Loc. 6	Bund Loc. 7
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	1.40	None Supplied
Date Sampled				Deviating	Deviating	Deviating	Deviating	Deviating
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	13	15	19	16	17
Boron (water soluble)	mg/kg	0.2	MCERTS	0.5	0.6	0.3	< 0.2	0.3
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	2.4	< 1.2	< 1.2	< 1.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	27	31	27	25	27
Copper (aqua regia extractable)	mg/kg	1	MCERTS	12	13	19	9.7	8.8
Lead (aqua regia extractable)	mg/kg	1	MCERTS	28	38	28	14	12
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	18	22	22	24	27
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	56	71	100	52	52
Petroleum Hydrocarbons								
TPH C10 - C40	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 21-93093
Project / Site name: Willen Road
Your Order No: 29843 - 19-0021

Lab Sample Number				1973453	1973454	1973455	1973456	1973457
Sample Reference				Bund Loc. 8	TP40	TP40	TP41	TP60
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	0.30	1.50	0.50	3.00
Date Sampled				Deviating	Deviating	Deviating	Deviating	Deviating
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	9.8	8.3	14	18	10
Total mass of sample received	kg	0.001	NONE	1.3	1.2	1.0	1.2	1.4
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	-	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	-	-
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	8.0	8.1	8.3	9.5	8.4
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Water Soluble Sulphate as SO4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	250	2500	1400	3400	1200
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.13	1.2	0.70	1.7	0.61
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	126	1250	699	1700	605
Organic Matter (automated)	%	0.1	MCERTS	0.3	3.6	2.1	2.5	1.6
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	0.48	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	1.7	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	1.3	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	12	1.3	0.53	0.87
Anthracene	mg/kg	0.05	MCERTS	< 0.05	3.6	0.37	< 0.05	0.27
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	25	1.9	1.3	2.0
Pyrene	mg/kg	0.05	MCERTS	< 0.05	24	1.8	1.3	1.9
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	13	0.68	0.71	1.0
Chrysene	mg/kg	0.05	MCERTS	< 0.05	8.2	0.56	0.58	0.80
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	13	0.63	0.87	0.95
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	7.4	0.22	0.46	0.57
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	14	0.59	0.86	0.96
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	6.8	0.29	0.45	0.47
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	1.7	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	7.6	0.31	0.55	0.54
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	139	8.63	7.63	10.4

Analytical Report Number: 21-93093
Project / Site name: Willen Road
Your Order No: 29843 - 19-0021

Lab Sample Number				1973453	1973454	1973455	1973456	1973457
Sample Reference				Bund Loc. 8	TP40	TP40	TP41	TP60
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	0.30	1.50	0.50	3.00
Date Sampled				Deviating	Deviating	Deviating	Deviating	Deviating
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	16	16	20	15	19
Boron (water soluble)	mg/kg	0.2	MCERTS	< 0.2	1.1	2.2	2.3	0.5
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	1.2	< 0.2
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	24	23	32	35	29
Copper (aqua regia extractable)	mg/kg	1	MCERTS	9.0	36	24	48	18
Lead (aqua regia extractable)	mg/kg	1	MCERTS	12	67	87	34	24
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	24	18	29	23	23
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	51	120	95	150	81
Petroleum Hydrocarbons								
TPH C10 - C40	mg/kg	10	MCERTS	< 10	840	< 10	680	< 10

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 21-93093
Project / Site name: Willen Road
Your Order No:

Certificate of Analysis - Asbestos Quantification

Methods:

Qualitative Analysis

The samples were analysed qualitatively for asbestos by polarising light and dispersion staining as described by the Health and Safety Executive in HSG 248.

Quantitative Analysis

The analysis was carried out using our documented in-house method A006-PL based on HSE Contract Research Report No: 83/1996: Development and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies et al, 1996) and HSG 248. Our method includes initial examination of the entire representative sample, then fractionation and detailed analysis of each fraction, with quantification by hand picking and weighing.

The limit of detection (reporting limit) of this method is 0.001 %.

The method has been validated using samples of at least 100 g, results for samples smaller than this should be interpreted with caution.

Both Qualitative and Quantitative Analyses are UKAS accredited.

Sample Number	Sample ID	Sample Depth (m)	Sample Weight (g)	Asbestos Containing Material Types Detected (ACM)	PLM Results	Asbestos by hand picking/weighing (%)	Total % Asbestos in Sample
1973450	Bund Loc. 4		139	Loose Fibres	**Chrysotile**	< 0.001	**< 0.001**

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

Analytical Report Number : 21-93093
Project / Site name: Willen Road

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
1973448	Bund Loc. 1	None Supplied	None Supplied	Brown loam and sand with gravel and vegetation.
1973449	Bund Loc. 2	None Supplied	None Supplied	Brown loam and sand with gravel and vegetation.
1973450	Bund Loc. 4	None Supplied	None Supplied	Brown loam and sand with gravel and vegetation.
1973451	Bund Loc. 6	None Supplied	1.4	Brown clay and loam with gravel.
1973452	Bund Loc. 7	None Supplied	None Supplied	Brown clay and loam with gravel and vegetation.
1973453	Bund Loc. 8	None Supplied	0.5	Brown clay and sand with gravel.
1973454	TP40	None Supplied	0.3	Brown loam and sand with gravel and brick.
1973455	TP40	None Supplied	1.5	Brown clay and loam with gravel.
1973456	TP41	None Supplied	0.5	Brown clay and loam with gravel and brick.
1973457	TP60	None Supplied	3	Brown clay and loam with gravel.

Analytical Report Number : 21-93093
Project / Site name: Willen Road

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
Hexavalent chromium in soil (Lower Level)	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
TPH Banding in Soil by FID	Determination of hexane extractable hydrocarbons in soil by GC-FID.	In-house method, TPH with carbon banding and silica gel split/cleanup.	L076-PL	W	MCERTS
Asbestos Quantification - Gravimetric	Asbestos quantification by gravimetric method - in house method based on references.	HSE Report No: 83/1996, HSG 248, HSG 264 & SCA Blue Book (draft).	A006-PL	D	ISO 17025
Organic matter (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L009-PL	D	MCERTS
Sulphate, water soluble, in soil	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Analytical Report Number : 21-93093
Project / Site name: Willen Road

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Sample Deviation Report

Analytical Report Number : 21-93093
Project / Site name: Willen Road

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
Bund Loc. 1	None Supplied	S	1973448	a	None Supplied	None Supplied	None Supplied
Bund Loc. 2	None Supplied	S	1973449	a	None Supplied	None Supplied	None Supplied
Bund Loc. 4	None Supplied	S	1973450	a	None Supplied	None Supplied	None Supplied
Bund Loc. 6	None Supplied	S	1973451	a	None Supplied	None Supplied	None Supplied
Bund Loc. 7	None Supplied	S	1973452	a	None Supplied	None Supplied	None Supplied
Bund Loc. 8	None Supplied	S	1973453	a	None Supplied	None Supplied	None Supplied
TP40	None Supplied	S	1973454	a	None Supplied	None Supplied	None Supplied
TP40	None Supplied	S	1973455	a	None Supplied	None Supplied	None Supplied
TP41	None Supplied	S	1973456	a	None Supplied	None Supplied	None Supplied
TP60	None Supplied	S	1973457	a	None Supplied	None Supplied	None Supplied

Key: **a** - No sampling date **b** - Incorrect container
c - Holding time **d** - Headspace **e** - Temperature

Chris Carrier
Rolton Group Ltd
The Charles Parker Building
Midland Road
Higham Ferrers
NN10 8DN

e: Chris.Carrier@rolton.com

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

Analytical Report Number : 21-97342

Project / Site name:	Willen Road	**Samples received on:**	06/09/2021
Your job number:	19-0021	**Samples instructed on/ Analysis started on:**	06/09/2021
Your order number:	29878 - 19-0021	**Analysis completed by:**	14/09/2021
Report Issue Number:	1	**Report issued on:**	14/09/2021
Samples Analysed:	3 soil samples		

Signed: [redacted]

Karolina Marek
PL Head of Reporting Team
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 21-97342
Project / Site name: Willen Road
Your Order No: 29878 - 19-0021

Lab Sample Number				1999107	1999108	1999109
Sample Reference				Bund Loc. 1	Bund Loc. 2	Bund Loc. 3
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied
Date Sampled				Deviating	Deviating	Deviating
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**			
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number : 21-97342
Project / Site name: Willen Road

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Sample Deviation Report

Analytical Report Number : 21-97342
Project / Site name: Willen Road

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
Bund Loc. 1	None Supplied	S	1999107	a	None Supplied	None Supplied	None Supplied
Bund Loc. 2	None Supplied	S	1999108	a	None Supplied	None Supplied	None Supplied
Bund Loc. 3	None Supplied	S	1999109	a	None Supplied	None Supplied	None Supplied

Key: **a** - No sampling date **b** - Incorrect container
c - Holding time **d** - Headspace **e** - Temperature

Certificate of Analysis

Certificate Number 21-11193 *Issued:* 02-Jun-21

Client Geotechnics LTD
203 Torrington Avenue
Tile Hill
Coventry
CV4 9AP

Our Reference 21-11193

Client Reference PC218147

Order No AUTH-OC29712

Contract Title Newport Pagnell

Description 35 Soil samples.

Date Received 27-May-21

Date Started 27-May-21

Date Completed 02-Jun-21

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By [redacted]

Adam Fenwick
Contracts Manager

UKAS TESTING
2139

Summary of Chemical Analysis
Soil Samples

Our Ref 21-11193
Client Ref PC218147
Contract Title Newport Pagnell

			Lab No	1853440	1853441	1853442	1853443	1853444	1853445	1853446	1853447	1853448	1853449	1853450
			.Sample ID	CP01	CP01	CP01	CP01	CP02	CP02	CP02	CP03	CP03	CP03	CP04
			Depth	1.30-1.75	4.50-5.00	9.00-9.50	11.50-12.10	5.00-5.50	9.00-9.10	14.00-14.50	3.50-4.00	6.50-7.00	8.40-9.00	1.30-1.80
			Other ID											
			Sample Type	D	D	D	D	D	D	D	D	D	D	D
			Sampling Date	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s
			Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**											
Inorganics														
pH	DETSC 2008#		pH	7.9	7.5	7.7	7.7	7.5	7.5	7.6	7.6	8.1	7.8	7.8
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	410	350	310	440	1300	1600	1700	1100	670	850	71

Key: # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Summary of Chemical Analysis
Soil Samples

Our Ref 21-11193
Client Ref PC218147
Contract Title Newport Pagnell

			Lab No	1853451	1853452	1853453	1853454	1853455	1853456	1853457	1853458	1853459	1853460	1853461
			.Sample ID	CP04	CP04	CP05	CP05	CP05	CP06	CP06	CP06	CP07	CP07	CP07
			Depth	4.00-4.50	7.50-8.00	2.50-3.00	7.00-7.50	13.00-13.50	4.30-4.80	8.40-8.90	11.50-12.00	6.10-6.60	9.00-9.50	11.40-11.90
			Other ID											
			Sample Type	D	D	D	D	D	D	D	D	D	D	D
			Sampling Date	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s
			Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**											
Inorganics														
pH	DETSC 2008#		pH	7.7	8.3	8.0	7.8	8.8	7.8	7.9	7.5	7.4	7.9	8.0
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	660	650	170	600	230	150	220	630	780	200	640

Key: # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Summary of Chemical Analysis
Soil Samples

Our Ref 21-11193
Client Ref PC218147
Contract Title Newport Pagnell

			Lab No	1853462	1853463	1853464	1853465	1853466	1853467	1853468	1853469	1853470	1853471	1853472
			.Sample ID	BH01	BH01	BH02	BH02	BH04	BH04	BH05	BH07	BH07	BH16	BH16
			Depth	1.20-1.80	2.00-3.00	1.20-2.00	2.00-3.00	1.20-2.00	3.00-4.00	1.20-2.00	1.20-1.80	2.00-3.00	1.20-2.00	3.00-4.00
			Other ID											
			Sample Type	D	D	D	D	D	D	D	D	D	D	D
			Sampling Date	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s
			Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**											
Inorganics														
pH	DETSC 2008#		pH	8.3	7.5	8.1	7.7	8.4	7.8	7.5	8.0	7.5	8.7	7.5
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	23	570	20	460	14	190	65	250	680	14	520

Key: # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Summary of Chemical Analysis
Soil Samples

Our Ref 21-11193
Client Ref PC218147
Contract Title Newport Pagnell

			Lab No	1853473	1853474
			.Sample ID	BH22	BH28
			Depth	1.20-2.00	3.00-4.00
			Other ID		
			Sample Type	D	D
			Sampling Date	n/s	n/s
			Sampling Time	n/s	n/s
Test	**Method**	**LOD**	**Units**		
Inorganics					
pH	DETSC 2008#		pH	7.7	7.9
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	240	470

Key: # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Information in Support of the Analytical Results

Our Ref 21-11193
Client Ref PC218147
Contract Newport Pagnell

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1853440	CP01 1.30-1.75 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), pH + Conductivity (7 days)	
1853441	CP01 4.50-5.00 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), pH + Conductivity (7 days)	
1853442	CP01 9.00-9.50 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), pH + Conductivity (7 days)	
1853443	CP01 11.50-12.10 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), pH + Conductivity (7 days)	
1853444	CP02 5.00-5.50 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), pH + Conductivity (7 days)	
1853445	CP02 9.00-9.10 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), pH + Conductivity (7 days)	
1853446	CP02 14.00-14.50 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), pH + Conductivity (7 days)	
1853447	CP03 3.50-4.00 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), pH + Conductivity (7 days)	
1853448	CP03 6.50-7.00 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), pH + Conductivity (7 days)	
1853449	CP03 8.40-9.00 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), pH + Conductivity (7 days)	
1853450	CP04 1.30-1.80 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), pH + Conductivity (7 days)	
1853451	CP04 4.00-4.50 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), pH + Conductivity (7 days)	
1853452	CP04 7.50-8.00 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), pH + Conductivity (7 days)	
1853453	CP05 2.50-3.00 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), pH + Conductivity (7 days)	
1853454	CP05 7.00-7.50 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), pH + Conductivity (7 days)	
1853455	CP05 13.00-13.50 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), pH + Conductivity (7 days)	
1853456	CP06 4.30-4.80 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), pH + Conductivity (7 days)	
1853457	CP06 8.40-8.90 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), pH + Conductivity (7 days)	
1853458	CP06 11.50-12.00 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), pH + Conductivity (7 days)	
1853459	CP07 6.10-6.60 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), pH + Conductivity (7 days)	
1853460	CP07 9.00-9.50 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), pH + Conductivity (7 days)	
1853461	CP07 11.40-11.90 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), pH + Conductivity (7 days)	
1853462	BH01 1.20-1.80 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), pH + Conductivity (7 days)	
1853463	BH01 2.00-3.00 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), pH + Conductivity (7 days)	
1853464	BH02 1.20-2.00 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), pH + Conductivity (7 days)	

Information in Support of the Analytical Results

Our Ref 21-11193
Client Ref PC218147
Contract Newport Pagnell

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1853465	BH02 2.00-3.00 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), pH + Conductivity (7 days)	
1853466	BH04 1.20-2.00 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), pH + Conductivity (7 days)	
1853467	BH04 3.00-4.00 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), pH + Conductivity (7 days)	
1853468	BH05 1.20-2.00 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), pH + Conductivity (7 days)	
1853469	BH07 1.20-1.80 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), pH + Conductivity (7 days)	
1853470	BH07 2.00-3.00 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), pH + Conductivity (7 days)	
1853471	BH16 1.20-2.00 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), pH + Conductivity (7 days)	
1853472	BH16 3.00-4.00 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), pH + Conductivity (7 days)	
1853473	BH22 1.20-2.00 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), pH + Conductivity (7 days)	
1853474	BH28 3.00-4.00 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), pH + Conductivity (7 days)	

Key: P-Plastic T-Tub

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Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

End of Report

Certificate of Analysis

Certificate Number 21-11856 *Issued:* 10-Jun-21

Client Geotechnics LTD
203 Torrington Avenue
Tile Hill
Coventry
CV4 9AP

Our Reference 21-11856

Client Reference PC218167

Order No AUTH-OC29748

Contract Title Newport Pagnel Trial Pitting

Description 18 Soil samples.

Date Received 04-Jun-21

Date Started 04-Jun-21

Date Completed 10-Jun-21

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By [redacted]

Adam Fenwick
Contracts Manager

UKAS TESTING
2139

Summary of Chemical Analysis
Soil Samples

Our Ref 21-11856
Client Ref PC218167
Contract Title Newport Pagnel Trial Pitting

			Lab No	1858111	1858112	1858113	1858114	1858115	1858116	1858117	1858118	1858119	1858120	1858121
			.Sample ID	TP16	TP19	TP19	TP20	TP20	TP24	TP24	TP25	TP30	TP30	TP32
			Depth	0.90	1.50	2.70	1.00	2.80	1.40	2.90	1.50	0.80	2.60	1.10
			Other ID											
			Sample Type	B	B	B	B	B	B	B	B	B	B	B
			Sampling Date	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s
			Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**											
Inorganics														
pH	DETSC 2008#		pH	6.9	7.8	7.1	8.0	7.4	7.7	7.3	7.7	7.4	7.4	7.9
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	22	26	1000	16	410	24	500	11	37	420	16

Key: # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Summary of Chemical Analysis
Soil Samples

Our Ref 21-11856
Client Ref PC218167
Contract Title Newport Pagnel Trial Pitting

			Lab No	1858122	1858123	1858124	1858125	1858126	1858127	1858128
			.Sample ID	TP32	TP34	TP35	TP35	TP49	TP69	TP69
			Depth	2.80	2.50	1.00	3.00	1.60	1.00	2.65
			Other ID							
			Sample Type	B	B	B	B	B	B	B
			Sampling Date	n/s	n/s	n/s	n/s	n/s	n/s	n/s
			Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**							
Inorganics										
pH	DETSC 2008#		pH	7.9	7.5	8.0	7.5	7.4	7.9	7.7
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	58	420	900	440	32	51	190

Key: # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Information in Support of the Analytical Results

Our Ref 21-11856
Client Ref PC218167
Contract Newport Pagnel Trial Pitting

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1858111	TP16 0.90 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), pH + Conductivity (7 days)	
1858112	TP19 1.50 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), pH + Conductivity (7 days)	
1858113	TP19 2.70 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), pH + Conductivity (7 days)	
1858114	TP20 1.00 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), pH + Conductivity (7 days)	
1858115	TP20 2.80 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), pH + Conductivity (7 days)	
1858116	TP24 1.40 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), pH + Conductivity (7 days)	
1858117	TP24 2.90 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), pH + Conductivity (7 days)	
1858118	TP25 1.50 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), pH + Conductivity (7 days)	
1858119	TP30 0.80 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), pH + Conductivity (7 days)	
1858120	TP30 2.60 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), pH + Conductivity (7 days)	
1858121	TP32 1.10 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), pH + Conductivity (7 days)	
1858122	TP32 2.80 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), pH + Conductivity (7 days)	
1858123	TP34 2.50 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), pH + Conductivity (7 days)	
1858124	TP35 1.00 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), pH + Conductivity (7 days)	
1858125	TP35 3.00 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), pH + Conductivity (7 days)	
1858126	TP49 1.60 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), pH + Conductivity (7 days)	
1858127	TP69 1.00 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), pH + Conductivity (7 days)	
1858128	TP69 2.65 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), pH + Conductivity (7 days)	

Key: P-Plastic T-Tub

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Information in Support of the Analytical Results

Our Ref 21-11856
Client Ref PC218167
Contract Newport Pagnel Trial Pitting

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.
Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.
The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-
Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

End of Report

LABORATORY RESULTS - Atterberg Limit

Project NEWPORT PAGNELL **Project No:** PC218147

Sample					Results								
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	Test Type	Point Data: Cone Pene.	Point Data: Water % (Factor)	Symbol	þ %	>425 sieve µm	w_L %	w_p %
BH01	2.00-3.00 (2.00)	B	C60629	Grey sandy silty CLAY.*	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CH	37	8%	60	23
BH02	1.20-2.00 (1.20)	B	C60633	Brown sandy slightly gravelly CLAY.*	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CL	12	27%	29	17
BH02	2.00-3.00 (2.00)	B	C60632	Dark brown CLAY with pockets of sand.*	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CH	30	11%	52	22
BH04	3.00-4.00 (3.00)	B	C60645	Brown sandy CLAY.*	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CI	30	3%	50	20
BH05	1.20-2.00 (1.20)	B	C60670	Brown gravelly CLAY.*	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CH	41	25%	62	21
BH05	3.00-4.00 (3.00)	B	C60671	Dark grey silty CLAY.*	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CI	28	0%	48	20
BH06	0.80 (0.80)	B	C60902	Dark brown slightly clayey very gravelly SAND.*	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve					62%	29	NP
BH06	2.00-3.00 (2.00)	B	C60675	Dark brown sandy CLAY.*	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CH	36	7%	57	21
BH07	2.00-3.00 (2.00)	B	C60677	Grey mottled brown sandy CLAY.*	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CH	43	2%	64	21
BH16	1.20-2.00 (1.20)	B	C60690	Brown very gravelly sandy CLAY.* Test Remark: 1-point cone	Fall Cone 1pt with increasing water content, cone type: 80g/30, washed over 425um sieve	19.7 19.9	42.01 41.75 (1.094)	CI	29	82%	46	17
BH22	1.20-2.00 (1.20)	B	C60784	Light brown sandy gravelly CLAY.*	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CH	35	23%	53	18

Remarks AGS

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LABORATORY RESULTS - Atterberg Limit

Project NEWPORT PAGNELL **Project No:** PC218147

Sample					Results								
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	Test Type	Point Data: Cone Pene.	Point Data: Water % (Factor)	Symbol	Ip %	>425 sieve µm	w_L %	w_p %
BH22	3.00-4.00 (3.00)	B	C60783	Light brown mottled grey sandy CLAY with gravel.*	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CI	27	9%	45	18
BH28	3.00-4.00 (3.00)	B	C60867	Brown mottled grey slightly gravelly CLAY.*	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CI	29	23%	48	19
CP01	0.80-1.20 (0.80)	B	C61061	Brown gravelly CLAY.*	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CI	27	32%	46	19
CP01	9.00-9.50 (9.00)	B	C61057	Brown silty CLAY.*	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CI	22	1%	40	18
CP02	14.00-14.50 (14.00)	B	C61079	Bluish grey very silty CLAY.*	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CV	38	1%	72	34
CP03	6.50-7.00 (6.50)	B	C60699	Grey very silty CLAY.*	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CH	42	0%	69	27
CP05	13.00-13.50 (13.00)	B	C61161	Bluish grey very silty CLAY.*	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			MV	45	1%	82	37
CP06	8.40-8.90 (8.40)	B	C61182	Brown CLAY.*	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CI	31	0%	49	18
CP07	11.40-11.90 (11.40)	B	C61068	Grey CLAY.*	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CH	41	2%	68	27

Remarks AGS

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LABORATORY RESULTS - Classification and Strength

Project NEWPORT PAGNELL **Project No:** PC218147

Sample					Classification					Strength					
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	Symbol	I_p (>425) %	w_L %	w_p %	w (p_d) %	Test	γ_b (γ_d) Mg/m^3	σ_3 kN/m^2	$\sigma_1-\sigma_3$ kN/m^2	c_u kN/m^2	c_{Avg} kN/m^2
BH01	1.20-1.80 (1.20)	B	C60627	Brow gravelly SAND.*					10.6						
BH01	2.00-3.00 (2.00)	B	C60629	Grey sandy silty CLAY.*	CH	37 (8%)	60	23	25.0						
BH02	1.20-2.00 (1.20)	B	C60633	Brown sandy slightly gravelly CLAY.*	CL	12 (27%)	29	17	19.4						
BH02	2.00-3.00 (2.00)	B	C60632	Dark brown CLAY with pockets of sand.*	CH	30 (11%)	52	22	25.3						
BH04	1.20-2.00 (1.20)	B	C60646	Brown GRAVEL and SAND.*					10.5						
BH04	3.00-4.00 (3.00)	B	C60645	Brown sandy CLAY.*	CI	30 (3%)	50	20	25.0						
BH05	1.20-2.00 (1.20)	B	C60670	Brown gravelly CLAY.*	CH	41 (25%)	62	21	18.4						
BH05	3.00-4.00 (3.00)	B	C60671	Dark grey silty CLAY.*	CI	28 (0%)	48	20	20.3						
BH06	0.80 (0.80)	B	C60902	Dark brown slightly clayey very gravelly SAND.*		(62%)	29	NP	11.6						
BH06	2.00-3.00 (2.00)	B	C60675	Dark brown sandy CLAY.*	CH	36 (7%)	57	21	29.5						
BH07	1.20-1.80 (1.20)	B	C60679	Brown gravelly SAND.*					12.7						
BH07	2.00-3.00 (2.00)	B	C60677	Grey mottled brown sandy CLAY.*	CH	43 (2%)	64	21	29.1						
BH16	1.20-2.00 (1.20)	B	C60690	Brown very gravelly sandy CLAY.* (See Test Remarks Sheet for further information)	CI	29 (82%)	46	17	12.6						
BH22	1.20-2.00 (1.20)	B	C60784	Light brown sandy gravelly CLAY.*	CH	35 (23%)	53	18	27.4						
BH22	3.00-4.00 (3.00)	B	C60783	Light brown mottled grey sandy CLAY with gravel.*	CI	27 (9%)	45	18	32.3						

Remarks NST - Not suitable for Test
For Standards followed see Laboratory Test Certficate
w% - ^ = Rock water content test; x = Aggregate moisture content test
QUT Water Contents: <Failure Zone>, [After test]

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LABORATORY RESULTS - Classification and Strength

Project NEWPORT PAGNELL **Project No:** PC218147

Sample					Classification					Strength					
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	Symbol	I_p (>425) %	w_L %	w_p %	w (p_d) %	Test	γ_b (γ_d) Mg/m^3	σ_3 kN/m^2	$\sigma_1-\sigma_3$ kN/m^2	c_u kN/m^2	c_{Avg} kN/m^2
BH28	3.00-4.00 (3.00)	B	C60867	Brown mottled grey slightly gravelly CLAY.*	CI	29 (23%)	48	19	26.4						
CP01	0.80-1.20 (0.80)	B	C61061	Brown gravelly CLAY.*	CI	27 (32%)	46	19	18.7						
CP01	9.00-9.50 (9.00)	B	C61057	Brown silty CLAY.*	CI	22 (1%)	40	18	21.9						
CP02	14.00-14.50 (14.00)	B	C61079	Bluish grey very silty CLAY.*	CV	38 (1%)	72	34	37.3						
CP03	6.50-7.00 (6.50)	B	C60699	Grey very silty CLAY.*	CH	42 (0%)	69	27	27.2						
CP04	1.30-1.80 (1.30)	B	C60754	Brown GRAVEL.*					5.8						
CP05	13.00-13.50 (13.00)	B	C61161	Bluish grey very silty CLAY.*	MV	45 (1%)	82	37	35.9						
CP06	8.40-8.90 (8.40)	B	C61182	Brown CLAY.*	CI	31 (0%)	49	18	20.7						
CP07	11.40-11.90 (11.40)	B	C61068	Grey CLAY.*	CH	41 (2%)	68	27	27.1						

Remarks AGS

NST - Not suitable for Test
For Standards followed see Laboratory Test Certficate
w% - ^ = Rock water content test; x = Aggregate moisture content test
QUT Water Contents: <Failure Zone>, [After test]

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LABORATORY RESULTS - Test Remarks

Project NEWPORT PAGNELL **Project No:** PC218147

Sample				Laboratory Remark
Hole	Depth (Specimen Depth) m	Type	Sample Ref	
BH16	1.20-2.00 (1.20-2.00)	B	C60690	Atterberg Limit Test - 1-point cone

Remarks

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LABORATORY RESULTS - *Atterberg Limit*

Project NEWPORT PAGNEL TRIAL PITTING **Project No:** PC218167

Sample					Results								
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	Test Type	Point Data		Symbol	Ip %	>425 sieve µm	w_L %	w_p %
						Cone Pene.	Water % (Factor)					
TP15	1.40 (1.40)	B	C60943	Brown mottled grey gravelly CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CL	18	24%	33	15
TP20	1.00 (1.00)	B	C60954	Brown silty sandy CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CL	14	82%	28	14
TP24	1.40 (1.40)	B	C61021	Brown mottled grey CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CH	30	1%	51	21
TP24	2.90 (2.90)	B	C61020	Grey CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CI	28	7%	49	21
TP25	1.50 (1.50)	B	C61022	SAND and GRAVEL. (See Test Remarks Sheet for further information) Test Remark: Sample is granular in nature so unsuitable for testing.	Not suitable for Test							
TP27	1.50 (1.50)	B	C60967	Brown sandy gravelly CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CL	19	85%	34	15
TP27	3.20 (3.20)	B	C60966	Grey silty CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CH	37	1%	68	31
TP32	1.10 (1.10)	B	C60976	Grey silty CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CI	27	3%	44	17
TP32	2.80 (2.80)	B	C60978	Brown mottled grey gravelly silty CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CH	32	1%	52	20
TP34	2.50 (2.50)	B	C60982	Grey silty CLAY with gravel and sand.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CH	32	0%	51	19
TP38	1.20 (1.20)	B	C61034	Brown mottled grey slightly gravelly CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CH	34	1%	57	23

Remarks

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LABORATORY RESULTS - *Atterberg Limit*

Project NEWPORT PAGNEL TRIAL PITTING **Project No:** PC218167

Sample					Results								
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	Test Type	Point Data		Symbol	ρ %	>425 sieve µm	w_L %	w_p %
						Cone Pene.	Water % (Factor)					
TP38	3.10 (3.10)	B	C61032	Grey very silty CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CI	32	0%	50	18
TP46	1.00 (1.00)	B	C61042	Brown mottled blue gravelly clay.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CH	34	21%	57	23
TP51	2.80 (2.80)	B	C61054	Brown mottled grey slightly sandy slightly gravelly CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CH	30	3%	51	21
TP69	1.00 (1.00)	B	C60993	Grey mottled brown CLAY with occasional gravel.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CI	32	0%	50	18
TP69	2.65 (2.65)	B	C60994	Brown CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CH	36	1%	56	20
TP66	1.40 (1.40)	B	C61010	Light brown mottled grey calcareous SILT with limestone.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CL	11	6%	23	12
TP66	2.40 (2.40)	B	C61011	Light brown mottled grey very sandy gravelly CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CL	14	27%	26	12

Remarks

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LABORATORY RESULTS - *Classification and Strength*

Project NEWPORT PAGNEL TRIAL PITTING **Project No:** PC218167

Sample					Classification					Strength					
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	Symbol	I_p (>425) %	w_L %	w_p %	w (p_d) %	Test	γ_b (γ_d) Mg/m^3	σ_3 kN/m^2	$\sigma_1 - \sigma_3$ kN/m^2	c_u kN/m^2	c_{Avg} kN/m^2
TP15	1.40 (1.40)	B	C60943	Brown mottled grey gravelly CLAY.	CL	18 (24%)	33	15	16.1						
TP20	1.00 (1.00)	B	C60954	Brown silty sandy CLAY.	CL	14 (82%)	28	14	17.2						
TP24	1.40 (1.40)	B	C61021	Brown mottled grey CLAY.	CH	30 (1%)	51	21	21.9						
TP24	2.90 (2.90)	B	C61020	Grey CLAY.	CI	28 (7%)	49	21	22.3						
TP25	1.50 (1.50)	B	C61022	SAND and GRAVEL. (See Test Remarks Sheet for further information)		NST (0%)			11.9						
TP27	1.50 (1.50)	B	C60967	Brown sandy gravelly CLAY.	CL	19 (85%)	34	15	9.6						
TP27	3.20 (3.20)	B	C60966	Grey silty CLAY.	CH	37 (1%)	68	31	29.5						
TP32	1.10 (1.10)	B	C60976	Grey silty CLAY.	CI	27 (3%)	44	17	18.3						
TP32	2.80 (2.80)	B	C60978	Brown mottled grey gravelly silty CLAY.	CH	32 (1%)	52	20	23.5						
TP34	2.50 (2.50)	B	C60982	Grey silty CLAY with gravel and sand.	CH	32 (0%)	51	19	23.4						
TP38	1.20 (1.20)	B	C61034	Brown mottled grey slightly gravelly CLAY.	CH	34 (1%)	57	23	28.0						
TP38	3.10 (3.10)	B	C61032	Grey very silty CLAY.	CI	32 (0%)	50	18	23.3						
TP46	1.00 (1.00)	B	C61042	Brown mottled blue gravelly clay.	CH	34 (21%)	57	23	20.0						
TP51	2.80 (2.80)	B	C61054	Brown mottled grey slightly sandy slightly gravelly CLAY.	CH	30 (3%)	51	21	25.2						
TP69	1.00 (1.00)	B	C60993	Grey mottled brown CLAY with occasional gravel.	CI	32 (0%)	50	18	20.9						
TP69	2.65 (2.65)	B	C60994	Brown CLAY.	CH	36 (1%)	56	20	23.0						
TPE	1.40 (1.40)	B	C61010	Light brown mottled grey calcareous SILT with limestone.	CL	11 (6%)	23	12	12.7						
TPE	2.40 (2.40)	B	C61011	Light brown mottled grey very sandy gravelly CLAY.	CL	14 (27%)	26	12	14.1						

Remarks AGS

NST - Not suitable for Test
For Standards followed see Laboratory Test Certficate
w% - ^ = Rock water content test; x = Aggregate moisture content test
QUT Water Contents: <Failure Zone>, [After test]

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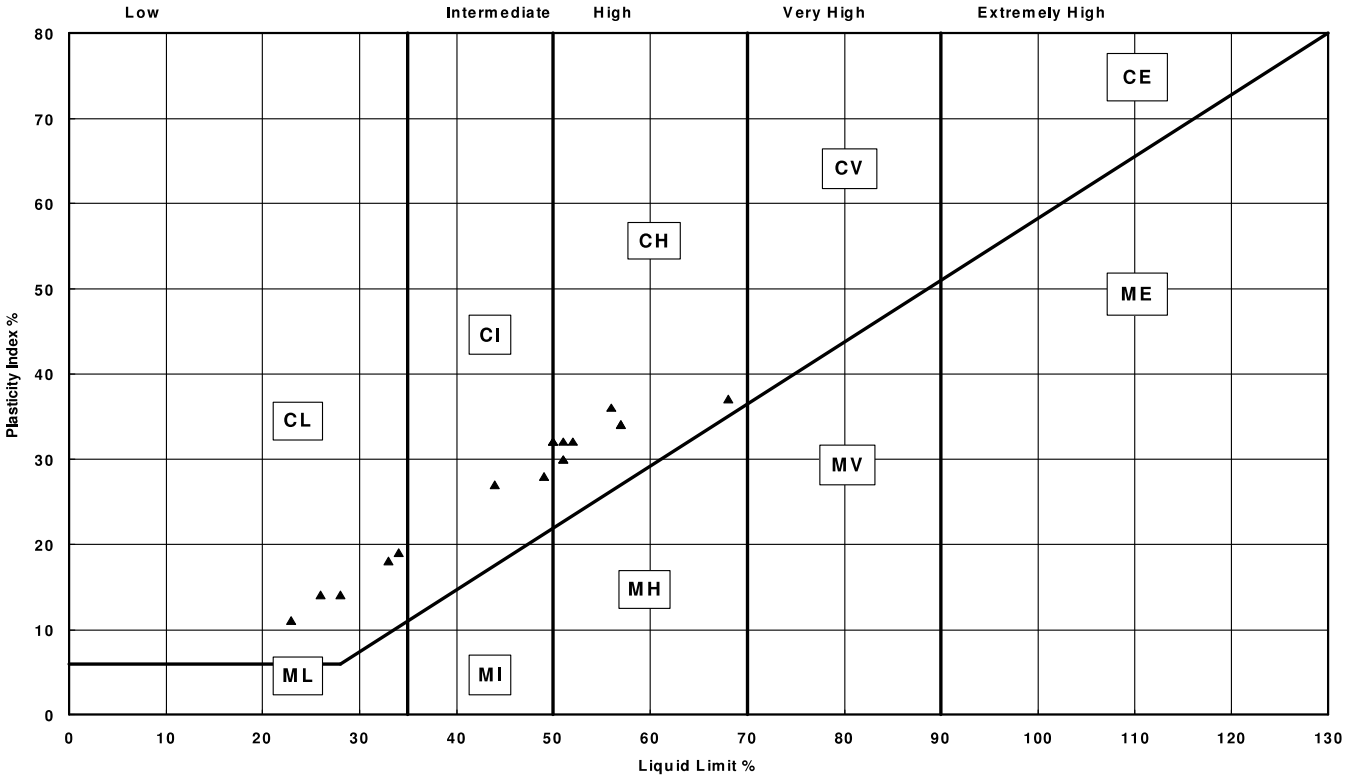
LABORATORY RESULTS - *Classification Chart*

Project: NEWPORT PAGNEL TRIAL PITTING

Project No: PC218167

PLOT OF PLASTICITY INDEX AGAINST LIQUID LIMIT
for all items tested



Soil Type	Plasticity Characterisics
C Clay	L Low
	I Intermediate
M Silt	H High
	V Very High
	E Extremely High

Table of Soil Types and Plasticity Characteristics from BS 5930 : 1999

Remarks

22/06/2021

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LABORATORY RESULTS - Test Remarks

Project NEWPORT PAGNEL TRIAL PITTING **Project No:** PC218167

Sample				Laboratory Remark
Hole	Depth (Specimen Depth) m	Type	Sample Ref	
TP25	1.50 (1.50)	B	C61022	Atterberg Limit Test - Sample is granular in nature so unsuitable for testing.

Remarks

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Certificate of Analysis

Certificate Number	21-17873	*Issued:*	01-Sep-21

Client Geotechnics LTD
203 Torrington Avenue
Tile Hill
Coventry
CV4 9AP

Our Reference	21-17873
Client Reference	PC218282
Order No	AUTH-OL30644
Contract Title	Willen Road, Newport Pagnell
Description	10 Soil samples.
Date Received	24-Aug-21
Date Started	24-Aug-21
Date Completed	01-Sep-21
Test Procedures	Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By [redacted]

Adam Fenwick
Contracts Manager

UKAS TESTING
2139

Summary of Chemical Analysis
Soil Samples

Our Ref 21-17873
Client Ref PC218282
Contract Title Willen Road, Newport Pagnell

			Lab No	1894472	1894473	1894474	1894475	1894476	1894477
			.Sample ID	TP40	TP41	TP52	TP52	TP52	TP53
			Depth	2.70	1.50	1.20	2.00	2.80	1.20
			Other ID						
			Sample Type	B	B	B	B	B	B
			Sampling Date	20/08/2021	20/08/2021	20/08/2021	20/08/2021	20/08/2021	20/08/2021
			Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**						
Metals									
Arsenic	DETSC 2301#	0.2	mg/kg			19			
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg			0.7			
Cadmium	DETSC 2301#	0.1	mg/kg			0.3			
Chromium	DETSC 2301#	0.15	mg/kg			22			
Chromium, Hexavalent	DETSC 2204*	1	mg/kg			< 1.0			
Copper	DETSC 2301#	0.2	mg/kg			19			
Lead	DETSC 2301#	0.3	mg/kg			15			
Mercury	DETSC 2325#	0.05	mg/kg			< 0.05			
Nickel	DETSC 2301#	1	mg/kg			26			
Selenium	DETSC 2301#	0.5	mg/kg			< 0.5			
Zinc	DETSC 2301#	1	mg/kg			72			
Inorganics									
pH	DETSC 2008#		pH	7.7	7.8	8.5	8.2	7.7	7.9
Cyanide, Total	DETSC 2130#	0.1	mg/kg			0.1			
Organic matter	DETSC 2002#	0.1	%			1.1			
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	540	380	220	33	390	550
Petroleum Hydrocarbons									
EPH (C10-C40)	DETSC 3311#	10	mg/kg			< 10			
PAHs									
Naphthalene	DETSC 3303#	0.03	mg/kg			< 0.03			
Acenaphthylene	DETSC 3303#	0.03	mg/kg			< 0.03			
Acenaphthene	DETSC 3303#	0.03	mg/kg			< 0.03			
Fluorene	DETSC 3303	0.03	mg/kg			< 0.03			
Phenanthrene	DETSC 3303#	0.03	mg/kg			0.25			
Anthracene	DETSC 3303	0.03	mg/kg			0.07			
Fluoranthene	DETSC 3303#	0.03	mg/kg			0.29			
Pyrene	DETSC 3303#	0.03	mg/kg			0.27			
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg			0.08			
Chrysene	DETSC 3303	0.03	mg/kg			0.11			
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg			0.09			
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg			0.04			
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg			0.19			
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg			0.04			
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg			< 0.03			
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg			< 0.03			
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg			1.4			
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg			< 0.3			

Key: * -not accredited. # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Summary of Chemical Analysis
Soil Samples

Our Ref 21-17873
Client Ref PC218282
Contract Title Willen Road, Newport Pagnell

	Lab No	1894478	1894479	1894480	1894481
	.Sample ID	TP53	TP55	TP59	TP59
	Depth	2.80	1.50	0.80	2.50
	Other ID				
	Sample Type	B	B	B	B
	Sampling Date	20/08/2021	20/08/2021	20/08/2021	20/08/2021
	Sampling Time	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**		
Metals					
Arsenic	DETSC 2301#	0.2	mg/kg		16	22	
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg		0.8	0.7	
Cadmium	DETSC 2301#	0.1	mg/kg		0.3	0.2	
Chromium	DETSC 2301#	0.15	mg/kg		22	33	
Chromium, Hexavalent	DETSC 2204*	1	mg/kg		< 1.0	< 1.0	
Copper	DETSC 2301#	0.2	mg/kg		17	16	
Lead	DETSC 2301#	0.3	mg/kg		12	18	
Mercury	DETSC 2325#	0.05	mg/kg		< 0.05	< 0.05	
Nickel	DETSC 2301#	1	mg/kg		24	27	
Selenium	DETSC 2301#	0.5	mg/kg		0.6	< 0.5	
Zinc	DETSC 2301#	1	mg/kg		61	56	
Inorganics							
pH	DETSC 2008#		pH	8.2	8.0	7.7	7.8
Cyanide, Total	DETSC 2130#	0.1	mg/kg		< 0.1	0.1	
Organic matter	DETSC 2002#	0.1	%		1.0	1.8	
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	150	95	81	490
Petroleum Hydrocarbons							
EPH (C10-C40)	DETSC 3311#	10	mg/kg		< 10	< 10	
PAHs							
Naphthalene	DETSC 3303#	0.03	mg/kg		< 0.03	< 0.03	
Acenaphthylene	DETSC 3303#	0.03	mg/kg		< 0.03	< 0.03	
Acenaphthene	DETSC 3303#	0.03	mg/kg		< 0.03	< 0.03	
Fluorene	DETSC 3303	0.03	mg/kg		< 0.03	< 0.03	
Phenanthrene	DETSC 3303#	0.03	mg/kg		< 0.03	0.04	
Anthracene	DETSC 3303	0.03	mg/kg		< 0.03	< 0.03	
Fluoranthene	DETSC 3303#	0.03	mg/kg		0.05	0.11	
Pyrene	DETSC 3303#	0.03	mg/kg		0.05	0.12	
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg		< 0.03	0.04	
Chrysene	DETSC 3303	0.03	mg/kg		< 0.03	0.07	
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg		0.05	0.07	
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg		< 0.03	0.03	
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg		0.15	0.16	
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg		< 0.03	< 0.03	
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg		< 0.03	< 0.03	
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg		< 0.03	< 0.03	
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg		0.29	0.61	
Phenols							
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg		< 0.3	< 0.3	

Key: * -not accredited. # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Summary of Asbestos Analysis
Soil Samples

Our Ref 21-17873
Client Ref PC218282
Contract Title Willen Road, Newport Pagnell

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1894474	TP52 1.20	SOIL	NAD	none	Lee Kerridge
1894479	TP55 1.50	SOIL	NAD	none	Lee Kerridge
1894480	TP59 0.80	SOIL	NAD	none	Lee Kerridge

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * - not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 21-17873
Client Ref PC218282
Contract Willen Road, Newport Pagnell

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1894472	TP40 2.70 SOIL	20/08/21	PT 1L		
1894473	TP41 1.50 SOIL	20/08/21	PT 1L		
1894474	TP52 1.20 SOIL	20/08/21	PT 1L		Naphthalene, PAH MS, EPH/TPH
1894475	TP52 2.00 SOIL	20/08/21	PT 1L		
1894476	TP52 2.80 SOIL	20/08/21	PT 1L		
1894477	TP53 1.20 SOIL	20/08/21	PT 1L		
1894478	TP53 2.80 SOIL	20/08/21	PT 1L		
1894479	TP55 1.50 SOIL	20/08/21	PT 1L		Naphthalene, PAH MS, EPH/TPH
1894480	TP59 0.80 SOIL	20/08/21	PT 1L		Naphthalene, PAH MS, EPH/TPH
1894481	TP59 2.50 SOIL	20/08/21	PT 1L		

Key: P-Plastic T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

End of Report

LABORATORY RESULTS - Atterberg Limit

Project WILLEN ROAD, NEWPORT PAGNELL **Project No:** PC218282

Sample					Results								
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	Test Type	Point Data		Symbol	þ %	>425 sieve µm	w_L %	w_p %
						Cone Pene.	Water % (Factor)					
TP40	1.00 (1.00)	B	C67232	Brown gravelly CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CH	34	19%	55	21
TP40	2.70 (2.70)	B	C67233	Brownish grey CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CI	30	3%	49	19
TP52	1.20 (1.20)	B	C67216	Brown sandy gravelly CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CI	25	2%	43	18
TP52	2.80 (2.80)	B	C67218	Brown slightly gravelly slightly silty CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CI	31	1%	50	19
TP55	1.50 (1.50)	B	C67221	Brown gravelly CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CI	29	18%	49	20
TP55	2.70 (2.70)	B	C67222	Brown gravelly CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CH	35	29%	61	26
TP60	1.00 (1.00)	B	C67226	Brown gravelly CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CI	25	46%	43	18
TP60	3.70 (3.70)	B	C67228	Brownish grey slightly gravelly CLAY.	Fall Cone 4pt with increasing water content, cone type: 80g/30, washed over 425um sieve			CI	30	1%	50	20

Remarks AGS

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LABORATORY RESULTS - Classification and Strength

Project WILLEN ROAD, NEWPORT PAGNELL **Project No:** PC218282

Sample					Classification					Strength					
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	Symbol	I_p (>425) %	w_L %	w_p %	w (p_d) %	Test	γ_b (γ_d) Mg/m^3	σ_3 kN/m^2	$\sigma_1 - \sigma_3$ kN/m^2	c_u kN/m^2	c_{Avg} kN/m^2
TP40	1.00 (1.00)	B	C67232	Brown gravelly CLAY.	CH	34 (19%)	55	21	18.7						
TP40	2.70 (2.70)	B	C67233	Brownish grey CLAY.	CI	30 (3%)	49	19	21.4						
TP52	1.20 (1.20)	B	C67216	Brown sandy gravelly CLAY.	CI	25 (2%)	43	18	18.0						
TP52	2.80 (2.80)	B	C67218	Brown slightly gravelly slightly silty CLAY.	CI	31 (1%)	50	19	20.6						
TP55	1.50 (1.50)	B	C67221	Brown gravelly CLAY.	CI	29 (18%)	49	20	20.0						
TP55	2.70 (2.70)	B	C67222	Brown gravelly CLAY.	CH	35 (29%)	61	26	28.2						
TP60	1.00 (1.00)	B	C67226	Brown gravelly CLAY.	CI	25 (46%)	43	18	16.5						
TP60	3.70 (3.70)	B	C67228	Brownish grey slightly gravelly CLAY.	CI	30 (1%)	50	20	22.5						

Remarks NST - Not suitable for Test
For Standards followed see Laboratory Test Certficate
w% - ^ = Rock water content test; x = Aggregate moisture content test
QUT Water Contents: <Failure Zone>, [After test]

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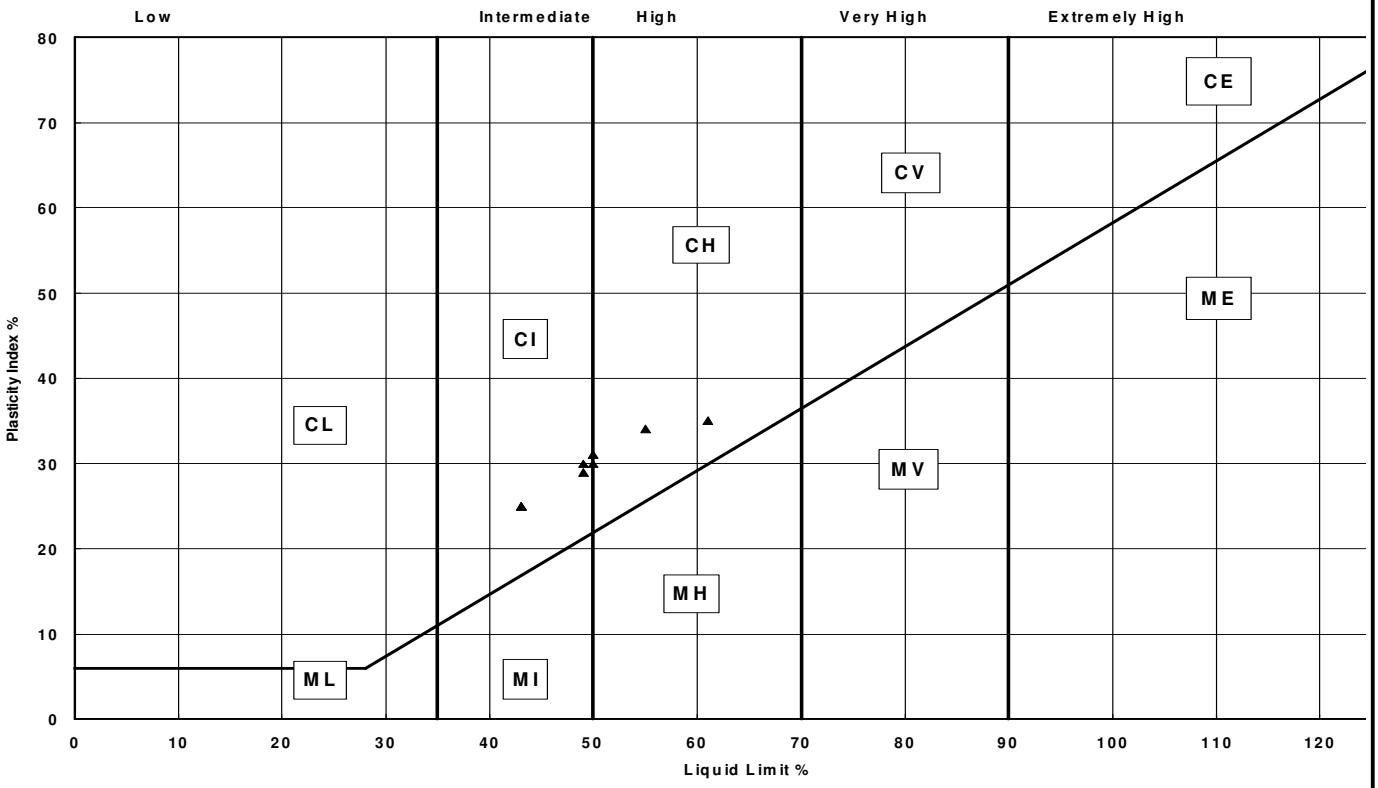
LABORATORY RESULTS - *Classification Chart*

Project: WILLEN ROAD, NEWPORT PAGNELL

Project No: PC218282

PLOT OF PLASTICITY INDEX AGAINST LIQUID LIMIT
for all items tested



Soil Type	Plasticity Characterisics
C Clay	L Low
	I Intermediate
M Silt	H High
	V Very High
	E Extremely High

Table of Soil Types and Plasticity Characteristics from BS 5930 : 1999

Remarks

08/09/2021

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LABORATORY RESULTS - *MCV, Compaction, CBR*

Project WILLEN ROAD, NEWPORT PAGNELL, STOCKPILE/BUND **Project No:** PC218284

Sample					MCV		Compaction					CBR				
Hole	Depth (Specimen Depth) m	Type	Sample Ref	Description	MCV	w %	Type	w (Opt) %	ρ_d Mg/m^3	γ_b Mg/m^3	γ_d (Max) Mg/m^3	Type	Top CBR %	Top w %	Bottom CBR %	Bottom w %
LOC 7	0.00 (0.00)	B	C67386	Brown sandy gravelly CLAY.			2.5kg	(9.0)	2.70a		(2.04)					
								13.3*		*2.23	*1.97					
								15.6		2.15	1.86					
								4.8		1.97	1.88					
								6.9		2.14	2.00					
								9.1		2.20	2.02					
LOC 8	0.50 (0.50)	B	C67387	Brown sandy gravelly CLAY.			2.5kg	(12.5)	2.65a		(1.94)					
								17.2*		*2.13	*1.82					
								19.7		2.09	1.74					
								9.2		2.01	1.84					
								12.2		2.15	1.92					
								14.8		2.14	1.86					

Remarks AGS

Particle Density - a=assumed, m=measured
w% - * = at natural moisture content; x = aggregate moisture content
# = stabilised, see relevant test plot for details
NST = Not suitable for Test
For Standards followed see Laboratory Test Certficate

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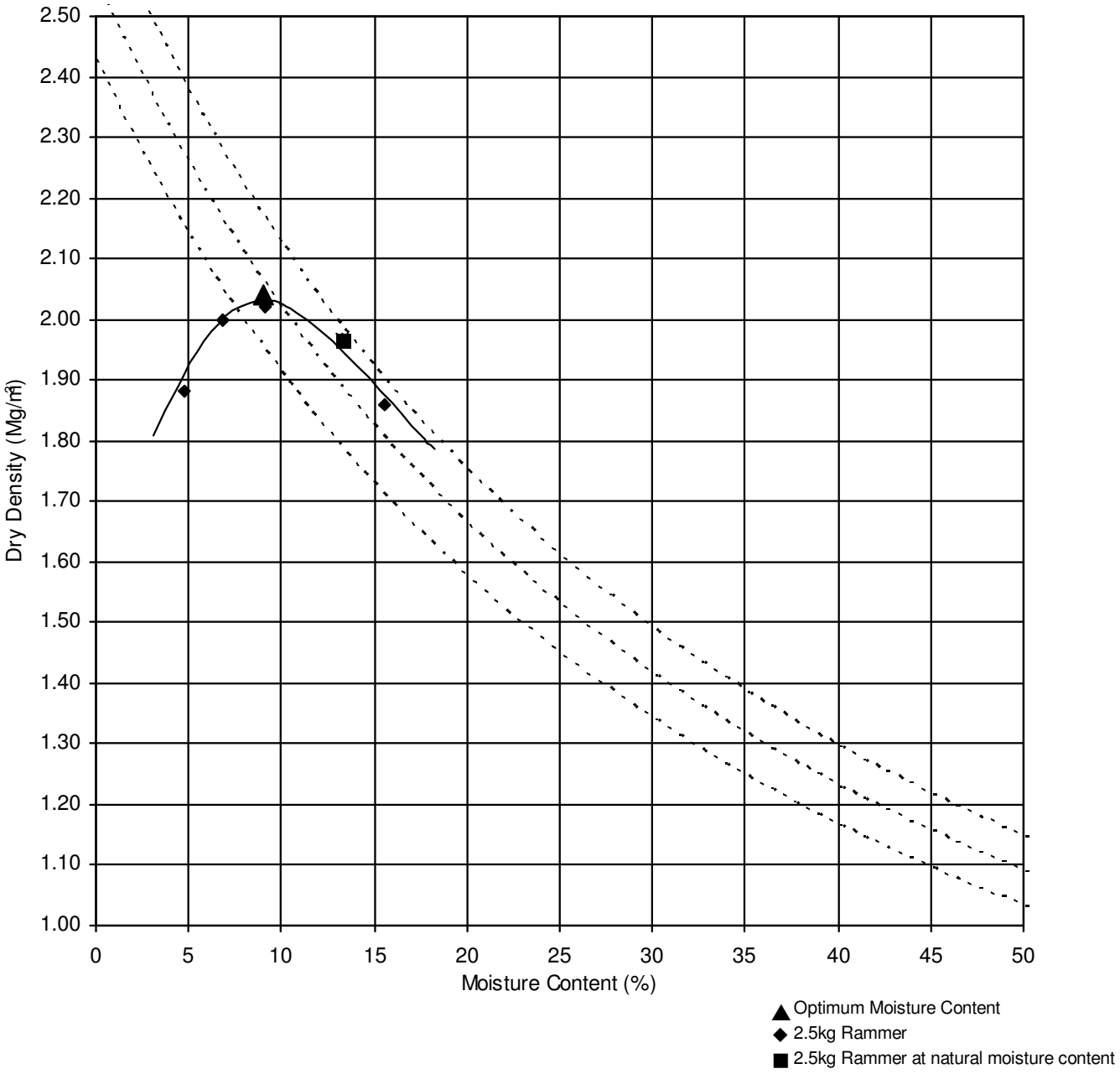
LABORATORY RESULTS - *Compaction*

Project: WILLEN ROAD, NEWPORT PAGNELL, STOCKPILE/BUND

Project No: PC218284

Hole	LOC 7
Sample Depth	0.00m
Sample Type	B
Sample Ref	C67386



Optimum Moisture Content	9.0	
Maximum Dry Density	2.04	Mg/m^3
Particle Density	2.70 (Ass'm)	Mg/m^3
Preparation	Single Sample 2.5kg Rammer	

Particles retained on	37.5mm sieve	0 %
	20mm sieve	2 %
Description	Brown sandy gravelly CLAY.	

Remarks BS1377 Part 4 1990 : Clause 3.3 and 3.4

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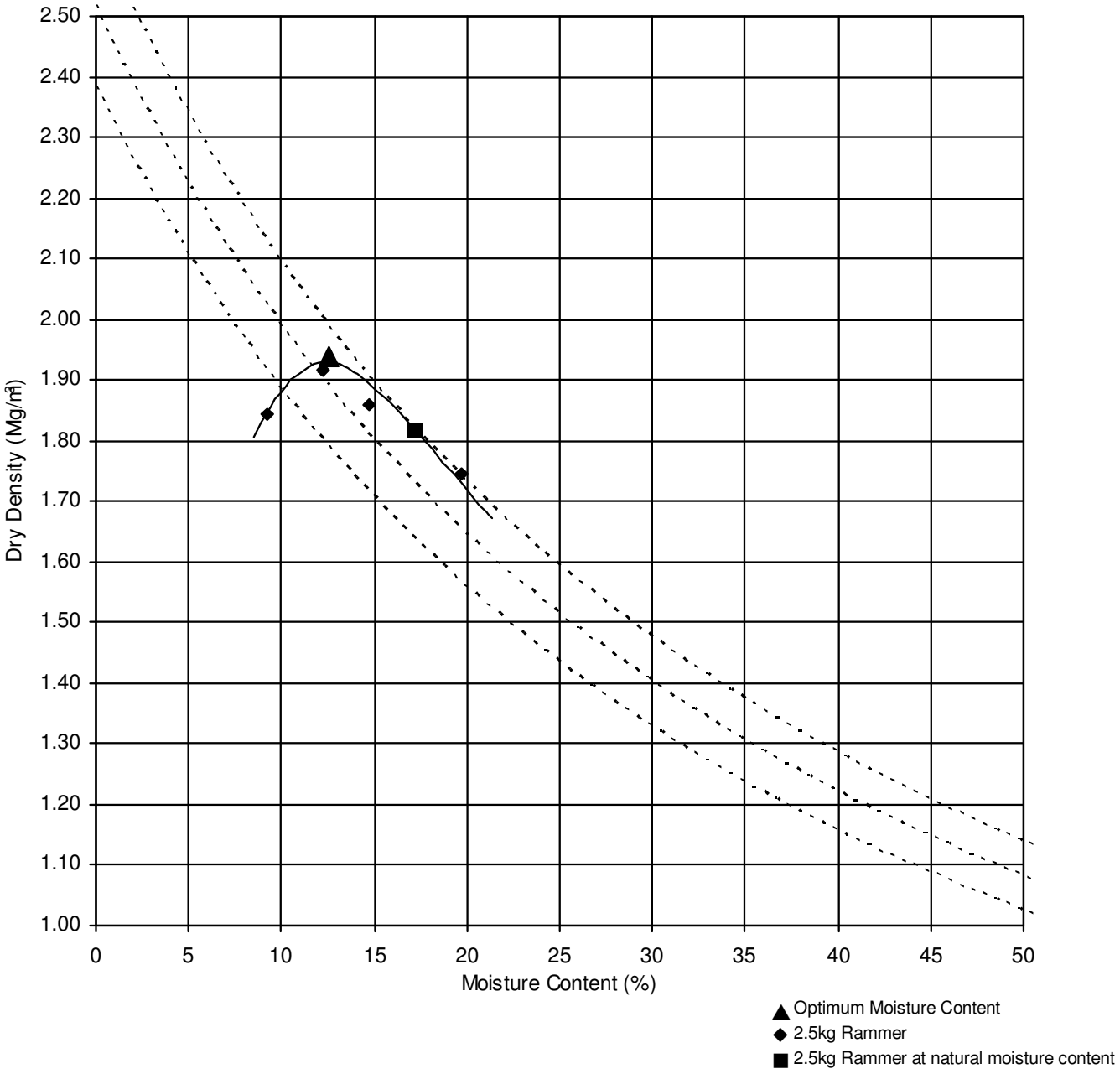
01/09/2021

LABORATORY RESULTS - *Compaction*

Project: WILLEN ROAD, NEWPORT PAGNELL, STOCKPILE/BUND

Project No: PC218284

Hole	LOC 8
Sample Depth	0.50m
Sample Type	B
Sample Ref	C67387



Optimum Moisture Content	12.5	
Maximum Dry Density	1.94	Mg/m^3
Particle Density	2.65 (Assumed)	Mg/m^3
Preparation	Single Sample 2.5kg Rammer	

Particles retained on	37.5mm sieve	0 %
	20mm sieve	1 %
Description	Brown sandy gravelly CLAY.	

Remarks BS1377 Part 4 1990 : Clause 3.3 and 3.4

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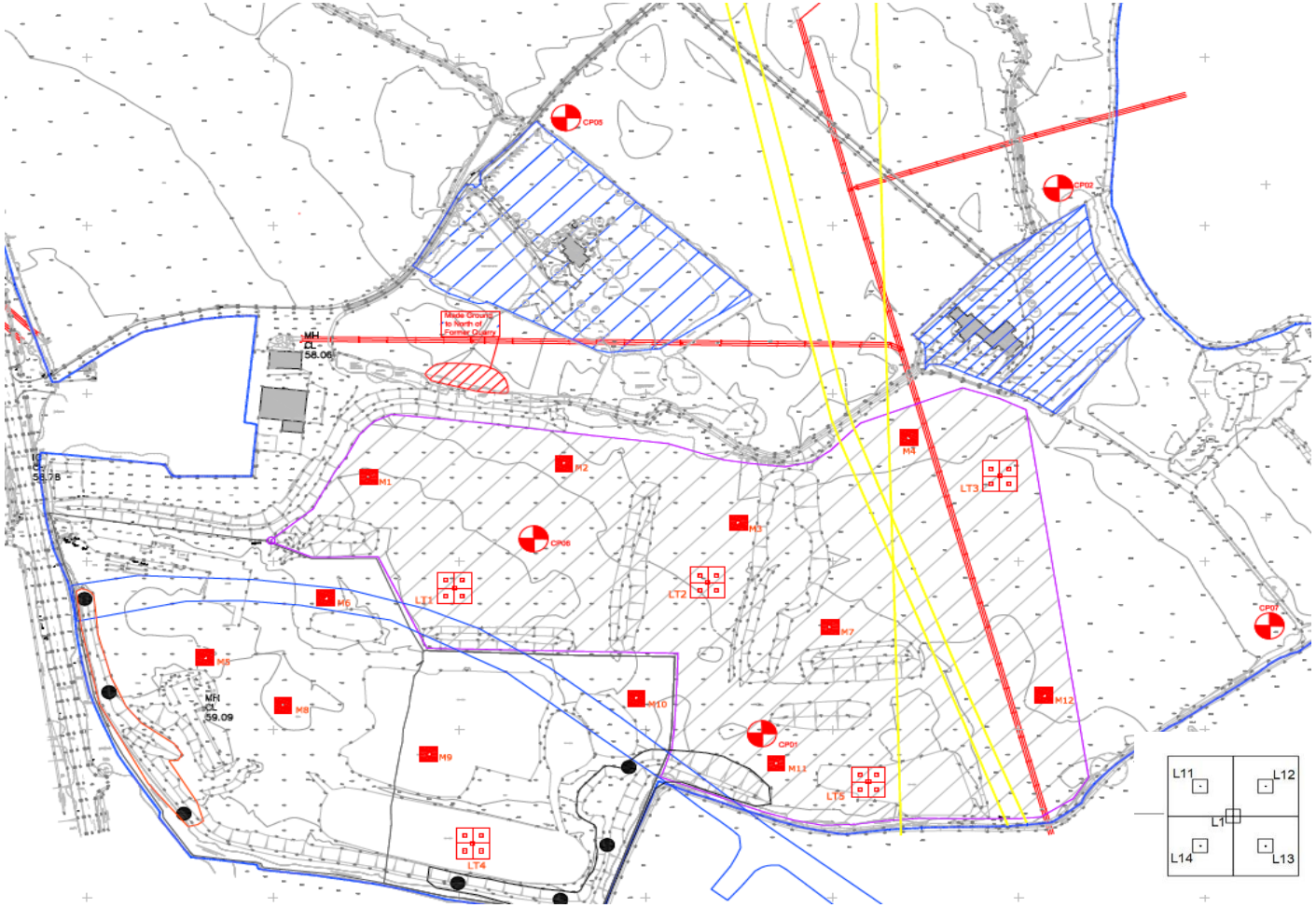
01/09/2021

APPENDIX G – QUARRY BACKFILL LEVEL MONITORING

Location Plan

ROLTON GROUP
ENGINEERING THE FUTURE™

Job No.: **30396**
Job Description: **Land off Willen Road, Newport Pagnell**



mksurveys

ROLTON GROUP
ENGINEERING THE FUTURE™

Job No.: 30396
Job Description: Land off Willen Road, Newport Pagnell
Surveyor: MM
Date: 23.09.2021 (Visit 5)

	Level Value 24.08.21	Level Value 27.08.21	Level Value 02.09.21	Level Value 09.09.21	Level Value 23.09.21	Variance between 24.08.21 & 23.09.21	Variance between 09.09.21 & 23.09.21
Name	-Ht/Z-	-Ht/Z-	-Ht/Z-	-Ht/Z-	-Ht/Z-	-Ht/Z-	-Ht/Z-
LT1	51.146	51.145	51.144	51.143	51.142	-0.004	-0.001
LT11	51.155	51.154	51.153	51.152	51.152	-0.003	0.000
LT12	51.154	51.153	51.152	51.152	51.151	-0.002	0.000
LT13	51.120	51.119	51.119	51.118	51.118	-0.002	0.000
LT14	51.151	51.150	51.149	51.148	51.148	-0.003	-0.001
LT2	50.366	50.365	50.365	50.365	50.366	-0.001	0.000
LT21	50.370	50.370	50.369	50.369	50.368	-0.002	-0.001
LT22	50.374	50.372	50.372	50.372	50.371	-0.002	0.000
LT23	50.377	50.376	50.375	50.375	50.374	-0.002	-0.001
LT24	50.361	50.360	50.359	50.359	50.358	-0.002	-0.001
LT3	50.097	50.095	50.094	50.093	50.093	-0.005	0.000
LT31	50.047	50.045	50.044	50.044	50.044	-0.003	0.000
LT32	50.080	50.078	50.077	50.076	50.077	-0.003	0.000
LT33	50.079	50.076	50.075	50.075	50.075	-0.004	0.000
LT34	50.094	50.092	50.091	50.090	50.090	-0.004	0.000
LT4	51.787	51.784	51.778	51.773	51.764	-0.023	-0.009
LT41	51.814	51.811	51.806	51.801	51.792	-0.022	-0.009
LT42	51.792	51.790	51.784	51.778	51.770	-0.023	-0.009
LT43	51.788	51.786	51.781	51.776	51.769	-0.020	-0.007
LT44	51.776	51.774	51.769	51.765	51.758	-0.018	-0.007
LT5	50.602	50.600	50.599	50.598	50.597	-0.005	-0.002
LT51	50.575	50.573	50.572	50.571	50.570	-0.005	-0.002
LT52	50.589	50.588	50.587	50.587	50.586	-0.004	-0.001
LT53	50.546	50.543	50.542	50.542	50.540	-0.005	-0.001
LT54	50.601	50.600	50.599	50.599	50.598	-0.003	-0.001
M1	Not Installed	-	-	-	-	-	-
M2	Not Installed	-	-	-	-	-	-
M3	49.124	49.123	49.123	49.123	49.122	-0.002	-0.001
M4	48.779	48.777	48.777	48.777	48.777	-0.002	0.000
M5	50.263	50.264	50.262	50.262	50.263	0.000	0.001
M6	Not Installed	-	-	-	-	-	-
M7	49.365	49.364	49.364	49.364	49.364	-0.001	0.000
M8	50.430	50.430	50.430	50.430	50.430	0.000	0.001
M9	49.939	49.938	49.938	49.937	49.937	-0.002	-0.001
M10	49.768	49.767	49.767	49.767	49.767	-0.001	0.000
M11	49.751	49.749	49.749	49.749	49.748	-0.003	-0.001
M12	49.479	49.478	49.478	49.478	49.478	-0.001	0.000

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The Development: Land off Willen Road,
Newport Pagnell, Buckinghamshire

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