

APPENDIX A
General Site Photographs



Photograph 1 Site entrance



Photograph 2 General view from east



Photograph 3 Overhead power lines



Photograph 4 As above



Photograph 5 general view of open fields



Photograph 6 as above



Photographs 7 & 8 General views





Photographs 9 & 10 Footpaths across site





Photographs 11 & 12 Vegetation (Reeds) proving impeded drainage



APPENDIX B

Trial Pit Logs

Trial Pit Log

Project Name: St Peters Close

Client: SG Estates

Date: 04/08/2021

Location:

Contractor: Harvey Plant Hire

Project No. : 2585

Crew Name:

Equipment: JCB 3CX

Location Number
TP01Location Type
TP

Level

Logged By
ESScale
1:25Page Number
Sheet 1 of 1Well
Water
Strikes

Sample and In Situ Testing

Depth (m) Type Results

Depth
(m)Level
(m)

Legend

Stratum Description

Medium dense brown slightly clayey SAND.
(TOPSOIL)Firm brown very sandy gravelly CLAY. Gravel is
subrounded to rounded fine to coarse of sandstone
and coal.
(GLACIAL TILL)Loose brown slightly gravelly SAND. Gravel is
subrounded to subangular fine to coarse of sandstone
and coal.
(FLUVIOGLACIAL DEPOSITS)

End of Borehole at 2.700m

Dimensions

Pit Length
1.80Pit Width
0.60Pit Stability
Pit unstable at base.

Shoring Used

Trench Support and Comment

Remarks

Pumping Data

Date

Rate

Remarks

Remarks

Slow groundwater infiltration at base.



Trial Pit Log

Project Name: St Peters Close

Client: SG Estates

Date: 04/08/2021

Location:

Contractor: Harvey Plant Hire

Project No. : 2585

Crew Name:

Equipment: JCB 3CX

Location Number
TP02Location Type
TP

Level

Logged By
ESScale
1:25Page Number
Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.40			Soft brown very sandy CLAY. (TOPSOIL)	
		1.20		HVP=80.0				Firm to stiff brownish blue very sandy gravelly CLAY. Gravel is subrounded to subangular fine to coarse of sandstone and coal. (GLACIAL TILL)	1
		2.00		HVP=85.0					2
					2.90			End of Borehole at 2.900m	3
									4
									5

Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks
1.90	0.60	Pit Stable					

Remarks

No groundwater encountered.



Trial Pit Log

Project Name: St Peters Close

Client: SG Estates

Date: 04/08/2021

Location:

Contractor: Harvey Plant Hire

Project No. : 2585

Crew Name:

Equipment: JCB 3CX

Location Number

Location Type

Level

Logged By

Scale

Page Number

TP03

TP

ES

1:25

Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.40			Medium dense brown slightly clayey SAND. (TOPSOIL)	
		1.00		HVP=65.0				Firm brown very sandy gravelly CLAY. Gravel is subrounded to subangular fine to coarse of coal and mudstone. (GLACIAL TILL)	1
		1.50		HVP=85.0					
					2.10			Loose brown slightly gravelly SAND. (FLUVIOGLACIAL DEPOSITS)	2
					2.60			End of Borehole at 2.600m	3
									4
									5

Dimensions

Trench Support and Comment

Pumping Data

Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks
1.90	0.60	Pit stable.					

Remarks

No groundwater encountered.



Trial Pit Log

Project Name: St Peters Close

Client: SG Estates

Date: 04/08/2021

Location:

Contractor: Harvey Plant Hire

Project No. : 2585

Crew Name:

Equipment: JCB 3CX

Location Number
TP05Location Type
TP

Level

Logged By
ESScale
1:25Page Number
Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		2.40		HVP=90.0	0.20			Loose to medium dense brown clayey SAND. (TOPSOIL)	1
								Firm brown mottled orange very sandy gravelly CLAY with low cobble content. Gravel is subrounded to subangular fine to coarse of mudstone with occasional coal traces. Cobbles are rounded of mudstone. (GLACIAL TILL)	
					1.60			Loose brown slightly gravelly SAND Gravel is subrounded to subangular fine to coarse of mudstone with occasional coal traces. (FLUVIOGLACIAL DEPOSITS)	2
					2.00			Stiff brown mottled orange gravelly slightly sandy CLAY. Gravel is subrounded to subangular fine to coarse of mudstone with occasional coal. (GLACIAL TILL)	
					2.70		End of Borehole at 2.700m		
					4				
						5			

Dimensions		Trench Support and Comment				Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks		Date	Rate	Remarks
1.90	0.60	Pit stable.						

Remarks

No groundwater encountered.



Trial Pit Log

Project Name: St Peters Close

Client: SG Estates

Date: 04/08/2021

Location:

Contractor: Harvey Plant Hire

Project No. : 2585

Crew Name:

Equipment: JCB 3CX

Location Number
TP04Location Type
TP

Level

Logged By
ESScale
1:25Page Number
Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.20	ES					Loose to medium dense brown slightly clayey SAND. (TOPSOIL)	
					0.45			Firm brown mottled orange very sandy gravelly CLAY. (GLACIAL TILL)	1
		1.20	D						
		1.50		HVP=90.0					
		2.00		HVP=85.0					2
					2.40			Loose brown slightly gravelly SAND. Gravel is subrounded to rounded fine to coarse of sandstone with occasional coal. (FLUVIOGLACIAL DEPOSITS)	
					2.75			End of Borehole at 2.750m	3
									4
									5
Dimensions				Trench Support and Comment				Pumping Data	
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks				Date	Rate
1.80	0.60	Pit stable.							

Remarks

No groundwater encountered.



Trial Pit Log

Project Name: St Peters Close

Client: SG Estates

Date: 04/08/2021

Location:

Contractor: Harvey Plant Hire

Project No. : 2585

Crew Name:

Equipment: JCB 3CX

Location Number
TP06Location Type
TP

Level

Logged By
ESScale
1:25Page Number
Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.20	ES		0.45			Loose dark brown very gravelly SAND. (FLUVIOGLACIAL DEPOSITS)	
		1.00	D					Firm to stiff brown mottled blue sandy gravelly CLAY. (GLACIAL TILL)	1
		2.00		HVP=100.0					2
					2.70			End of Borehole at 2.700m	3
									4
									5

Dimensions

Trench Support and Comment

Pumping Data

Pit Length
2.00Pit Width
0.60Pit Stability
Pit stable.

Shoring Used

Remarks

Date

Rate

Remarks

Remarks

Becoming wet at 2.50m.



Trial Pit Log

Project Name: St Peters Close		Client: SG Estates		Date: 04/08/2021	
Location:		Contractor: Harvey Plant Hire			
Project No. : 2585		Crew Name:		Equipment: JCB 3CX	
Location Number TP07	Location Type TP	Level	Logged By ES	Scale 1:25	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.30			Soft dark brown sandy gravelly CLAY. Gravel is subrounded to subangular fine to coarse of mixed lithologies. (TOPSOIL)	
		1.00	D					Firm to stiff brown mottled blue sandy gravelly CLAY. Gravel is subrounded to rounded fine to coarse of mudstone with occasional coal. (GLACIAL TILL)	1
		2.00		HVP=94.0					2
					2.70			End of Borehole at 2.700m	3
									4
									5

Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks
1.90	0.60	Pit stable.					

Remarks

No groundwater encountered.



Trial Pit Log

Project Name: St Peters Close		Client: SG Estates		Date: 04/08/2021	
Location:		Contractor: Harvey Plant Hire			
Project No. : 2585		Crew Name:		Equipment: JCB 3CX	
Location Number TP08	Location Type TP	Level	Logged By ES	Scale 1:25	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.30			Sift brown sandy gravelly CLAY. Gravel is subrounded to subangular fine to coarse of mixed lithologies. (TOPSOIL)	
								Soft to firm brown mottled grey sandy gravelly CLAY. Gravel is subrounded to rounded fine to coarse of mudstone with occasional coal. (GLACIAL TILL)	1
		2.00		HVP=65.0					2
					2.30				
					2.50			Loose brown gravelly clayey SAND. Gravel is subrounded to rounded fine to coarse of mixed lithologies. (FLUVIOGLACIAL DEPOSITS)	
		2.70		HVP=80.0				Firm to stiff brown mottled grey sandy gravelly CLAY. Gravel is subrounded to rounded fine to coarse of mixed lithologies. (GLACIAL TILL)	
					2.90			End of Borehole at 2.900m	3
									4
									5

Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks
2.00	0.60	Pit stable.					

Remarks

No groundwater encountered.



Trial Pit Log

Project Name: St Peters Close		Client: SG Estates		Date: 04/08/2021	
Location:		Contractor: Harvey Plant Hire			
Project No. : 2585		Crew Name:		Equipment: JCB 3CX	
Location Number TP09	Location Type TP	Level	Logged By ES	Scale 1:25	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.20	ES		0.35			Loose dark brown very gravelly slightly clayey SAND. Gravel is subrounded to rounded fine to coarse of mixed lithologies. (TOPSOIL)	
		1.00	D					Firm to stiff brown mottled blue sandy gravelly CLAY. Gravel is subrounded to rounded fine to coarse of mudstone and occasional coal. (GLACIAL TILL)	1
		1.50		HVP=80.0					2
					2.60			Thin band of sand between 2.30 and 2.40m.	
								End of Borehole at 2.600m	3
									4
									5

Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks
1.80	0.60	Pit stable.					

Remarks

No groundwater encountered.



Trial Pit Log

Project Name: St Peters Close		Client: SG Estates		Date: 04/08/2021	
Location:		Contractor: Harvey Plant Hire			
Project No. : 2585		Crew Name:		Equipment: JCB 3CX	
Location Number TP10	Location Type TP	Level	Logged By ES	Scale 1:25	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		1.00	D		0.35		Loose dark brown very gravelly SAND. Gravel is subangular to angular fine to coarse of mixed lithologies. (TOPSOIL)	1	
							Firm to stiff brown mottled blue very sandy gravelly CLAY. Gravel is subrounded to rounded fine to coarse of mudstone with occasional coal. (GLACIAL TILL)		
					2.70		End of Borehole at 2.750m	3	
								4	
								5	

Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks
2.00	0.60	Pit stable.					

Remarks No groundwater encountered.							
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Trial Pit Log

Project Name: St Peters Close		Client: SG Estates		Date: 04/08/2021	
Location:		Contractor: Harvey Plant Hire			
Project No. : 2585		Crew Name:		Equipment: JCB 3CX	
Location Number TP11	Location Type TP	Level	Logged By ES	Scale 1:25	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.20	ES		0.40			Loose dark brown very gravelly SAND. Gravel is subrounded to rounded fine to coarse of mixed lithologies. (TOPSOIL)	
								Soft to firm brown very sandy gravelly CLAY. Gravel is subrounded to rounded fine to coarse of mixed lithologies. (GLACIAL TILL)	1
		1.00	D						
		1.50			1.70				
		1.80	D					Firm to stiff brown mottled blue sandy gravelly CLAY. Gravel is subrounded to rounded fine to coarse of mudstone with occasional coal. (GLACIAL TILL)	2
		2.50			2.75			End of Borehole at 2.700m	3
									4
									5

Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks
1.90	0.60	Pit stable.					

Remarks

No groundwater encountered.



Trial Pit Log

Project Name: St Peters Close additional SI

Client: SG Estates

Date: 09/09/2021

Location: Rhosrobin

Contractor: Harvey Plant Hire

Project No. : 2609

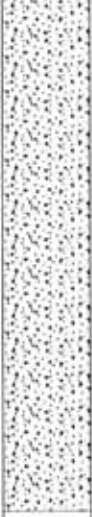
Crew Name:

Equipment: JCB 3CX

Location Number
TP201Location Type
TP

Level

Logged By
ESScale
1:25Page Number
Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.20			Grass over loose brown gravelly SAND. Gravel is subrounded to rounded fine to coarse of mixed lithologies (TOPSOIL)	
								Loose gravelly SAND. (FLUVIOGLACIAL DEPOSITS)	
					2.00			End of Borehole at 2.000m	
									1
									2
									3
									4
									5

Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks
1.40	0.60	Pit Stable					

Remarks

No groundwater encountered. Soakaway test carried out.



Trial Pit Log

Project Name: St Peters Close additional SI		Client: SG Estates		Date: 09/09/2021	
Location: Rhosrobin		Contractor: Harvey Plant Hire			
Project No. : 2609		Crew Name:		Equipment: JCB 3CX	
Location Number TP202	Location Type TP	Level	Logged By ES	Scale 1:25	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.25			Grass over brown gravelly SAND. Gravel is subrounded to rounded fine to coarse of mixed lithologies. (TOPSOIL) Soft brown gravelly sandy CLAY. Gravel is subrounded to rounded fine to coarse of mixed lithologies. (GLACIAL TILL)	
								Sand content increasing with depth from 1.10m.	1
					2.00			End of Borehole at 2.000m	2
									3
									4
									5

Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks
1.40	0.60	Pit Stable					

Remarks

No groundwater encountered.



Trial Pit Log

Project Name: St Peters Close additional SI		Client: SG Estates		Date: 09/09/2021	
Location: Rhosrobin		Contractor: Harvey Plant Hire			
Project No. : 2609		Crew Name:		Equipment: JCB 3CX	
Location Number TP203	Location Type TP	Level	Logged By ES	Scale 1:25	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.20			Grass over very gravelly SAND. Gravel is subangular to subrounded fine to coarse of mixed lithologies. (TOPSOIL)	
					1.30			Loose brown gravelly SAND. Gravel is subrounded to rounded fine to coarse of mixed lithologies. (FLUVIOGLACIAL DEPOSITS)	1
								End of Borehole at 1.300m	2
									3
									4
									5

Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks
1.40	0.60	Pit Stable					

Remarks

No groundwater encountered. Soakaway testing carried out.



Trial Pit Log

Project Name: St Peters Close additional SI			Client: SG Estates			Date: 09/09/2021			
Location: Rhosrobin			Contractor: Harvey Plant Hire						
Project No. : 2609			Crew Name:			Equipment: JCB 3CX			
Location Number TP204		Location Type TP		Level		Logged By ES		Scale 1:25	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.20		 Grass over loose brown very clayey gravelly SAND. Gravel is subangular to angular fine to coarse of mixed lithologies. (TOPSOIL)  Stiff brown mottled blue gravelly slightly gravelly CLAY. Gravel is subrounded to rounded fine to coarse of mixed lithologies. (GLACIAL TILL)		1
					1.80			End of Borehole at 1.800m	2
									3
									4
									5

Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks
1.50	1.80	Pit stable					

Remarks						
No groundwater encountered.						



Trial Pit Log

Project Name: St Peters Close additional SI		Client: SG Estates		Date: 09/09/2021	
Location: Rhosrobin		Contractor: Harvey Plant Hire			
Project No. : 2609		Crew Name:		Equipment: JCB 3CX	
Location Number TP205	Location Type TP	Level	Logged By	Scale 1:25	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.15			Grass over loose brown gravelly SAND. Gravel is subrounded to rounded fine to coarse of mixed lithologies. (TOPSOIL)	
					1.50			Firm brown sandy gravelly CLAY. Gravel is subrounded to rounded fine to coarse of mixed lithologies. (GLACIAL TILL)	1
								End of Borehole at 1.500m	2
									3
									4
									5

Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks
1.50	0.60	Pit Stable					

Remarks

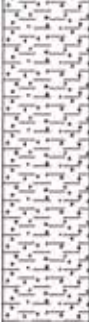
Soakaway carried out. No drop in level recorded over day.



<u>GroundSolve Ltd</u>		Trial Pit Log												
Project Name: St Peters Close additional SI					Client: SG Estates					Date: 09/09/2021				
Location: Rhosrobin					Contractor: Harvey Plant Hire									
Project No. : 2609					Crew Name:					Equipment: JCB 3CX				
Location Number TP206			Location Type TP		Level		Logged By ES		Scale 1:25		Page Number Sheet 1 of 1			
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description						
		Depth (m)	Type	Results										
					0.25			Grass over loose brown very gravelly SAND. Gravel is subrounded to rounded fine to coarse of mixed lithologies. (TOPSOIL)	1					
					1.50			Soft to firm very sandy gravelly CLAY. Gravel is subrounded to rounded fine to coarse of mixed lithologies. (GLACIAL TILL)						
								End of Borehole at 1.500m	2					
									3					
									4					
									5					
Dimensions				Trench Support and Comment				Pumping Data						
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks				Date	Rate	Remarks				
1.40	0.60	Pit stable.												
Remarks														
No groundwater encountered.														

Trial Pit Log

Project Name: St Peters Close additional SI			Client: SG Estates			Date: 09/09/2021			
Location: Rhosrobin			Contractor: Harvey Plant Hire						
Project No. : 2609			Crew Name:			Equipment: JCB 3CX			
Location Number TP208		Location Type TP		Level		Logged By ES		Scale 1:25	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.25		 Grass over loose brown slightly gravelly SAND Gravel is subrounded to rounded fine to coarse of mixed lithologies. (TOPSOIL)	1	
							 Stiff brown gravelly CLAY. Gravel is subrounded to rounded fine to coarse of mixed lithologies. (GLACIAL TILL)		
					1.40		End of Borehole at 1.400m	2	
								3	
								4	
								5	

Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks
1.50	0.60	Pit Stable					

Remarks No groundwater encountered.							

APPENDIX C

Borehole Logs

Percussion Drilling Log

Project Name: St Peters Close additional SI		Client: SG Estates		Date: 14/09/2021	
Location: Rhosrobin		Contractor: Harvey Plant Hire			
Project No. : 2609		Crew Name: Cheshire Drilling		Drilling Equipment: Dando 2000	
Borehole Number BH01	Hole Type CP	Level	Logged By ES	Scale 1:50	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.40			Grass over brown gravelly SAND. Gravel is subrounded to rounded fine to coarse of mixed lithologies. (TOPSOIL)	
								Loose gravelly SAND. Gravel is subrounded to rounded fine to coarse of mixed lithologies. (FLUVIOGLACIAL DEPOSITS)	1
		2.50 - 3.50	B						2
					3.50			Medium dense brown clayey gravelly SAND. Gravel is subrounded to rounded fine to coarse of mixed lithologies. (FLUVIOGLACIAL DEPOSITS)	4
		4.50 - 5.50	B		4.50			Medium dense sandy subrounded to subangular fine to coarse GRAVEL of mixed lithologies with high cobble content. Cobbles are rounded of sandstone and limestone. (FLUVIOGLACIAL DEPOSITS)	5
		5.50 - 6.50	B						6
		7.00 - 8.00	B						7
									8
		9.00 - 10.00	B						9
					10.00			End of Borehole at 10.000m	10

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation
10.00	200	10.00	200								

Remarks No groundwater encountered. Falling head depths carried out at various depths.										
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Percussion Drilling Log

Project Name: St Peters Close additional SI		Client: SG Estates		Date: 15/09/2021	
Location: Rhosrobin		Contractor: Harvey Plant Hire			
Project No. : 2609		Crew Name: Cheshire Drilling		Drilling Equipment: Dando 2000	
Borehole Number BH02	Hole Type CP	Level	Logged By ES	Scale 1:50	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.40			Grass over brown gravelly SAND. Gravel is subrounded to rounded fine to coarse of mixed lithologies.	
								(TOPSOIL) Loose to medium dense clayey gravelly SAND. Gravel is subrounded to rounded fine to coarse of mixed lithologies. (FLUVIOGLACIAL DEPOSITS)	1
		2.30	B		2.30			Firm brown very sandy gravelly CLAY. Gravel is subrounded to rounded fine to coarse of mixed lithologies. (GLACIAL TILL)	2
									3
									4
					5.00			Cobbles or angular limestone recorded @ 4.85m. End of Borehole at 5,000m	5
									6
									7
									8
									9
									10

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation
				4.85		01.00					

Remarks No groundwater encountered.	
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Percussion Drilling Log

Project Name: St Peters Close additional SI		Client: SG Estates		Date: 14/09/2021	
Location: Rhosrobin		Contractor: Harvey Plant Hire			
Project No. : 2609		Crew Name: Cheshire Drilling		Drilling Equipment: Dando 2000	
Borehole Number BH2A	Hole Type CP	Level	Logged By ES	Scale 1:50	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.50			Grass over brown gravelly SAND. Gravel is subrounded to rounded fine to coarse of mixed lithologies. (TOPSOIL) Soft to firm brown mottled blue sandy gravelly CLAY. Gravel is subrounded to rounded fine to coarse of mixed lithologies. (GLACIAL TILL)	1
									2
									3
									4
		5.00	B		4.80			Medium dense brown very gravelly SAND. Gravel is subrounded to rounded fine to coarse of mixed lithologies. (FLUVIOGLACIAL DEPOSITS)	5
									6
		6.00	B						7
									8
		7.00	B						9
					7.50			End of Borehole at 7.500m	10

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation
7.50	200	7.50	200								

Remarks

No groundwater encountered. Falling head tests carried out at various depths.

Percussion Drilling Log

Project Name: St Peters Close additional SI		Client: SG Estates		Date: 15/09/2021	
Location: Rhosrobin		Contractor: Harvey Plant Hire			
Project No. : 2609		Crew Name: Cheshire Drilling		Drilling Equipment: Dando 2000	
Borehole Number BH03	Hole Type CP	Level	Logged By ES	Scale 1:50	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.60			Grass over brown gravelly SAND. Gravel is subrounded to rounded fine to coarse of mixed lithologies. (TOPSOIL)	
								Firm brown very gravelly sandy CLAY. Gravel is subrounded to rounded fine to coarse of mixed lithologies. (GLACIAL TILL)	1
									2
									3
									4
		5.00	B		4.40			Medium dense brown very gravelly slightly clayey SAND with medium cobble content. Gravel is subrounded to rounded fine to coarse of mixed lithologies. Cobbles are rounded of sandstone and limestone. (FLUVIOGLACIAL DEPOSITS)	5
									6
									7
								Cobble content increasing with depth from 7.0m.	8
									9
					10.00			End of Borehole at 10.000m	10

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation
0.00	200	0.00	200								

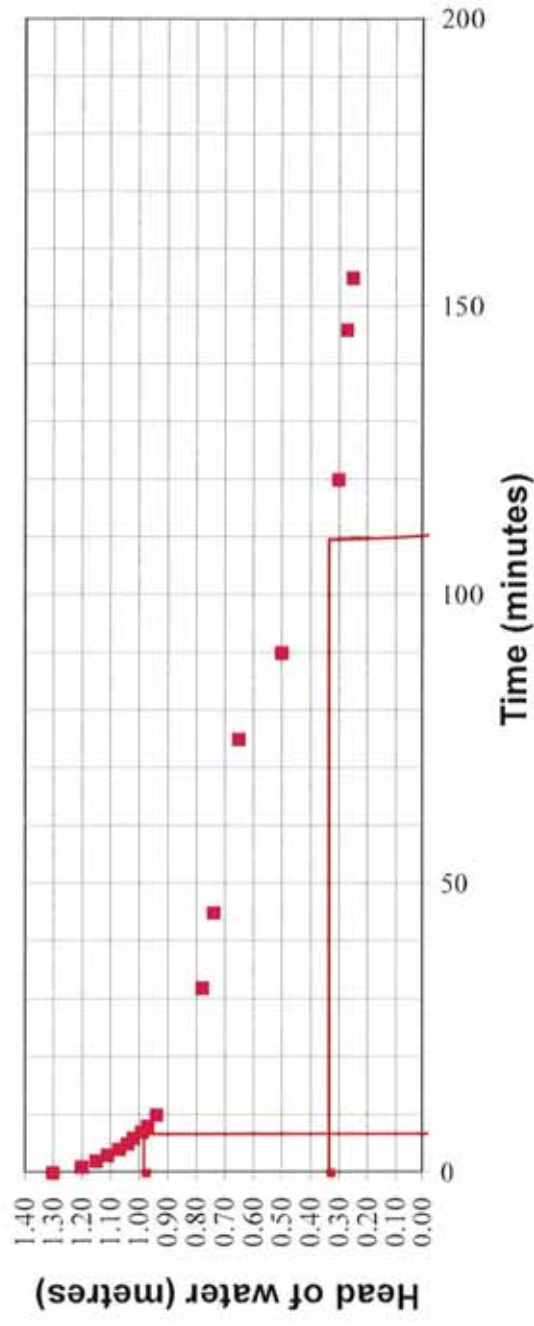
Remarks

No groundwater encountered. Falling head tests carried out at various depths.

APPENDIX D

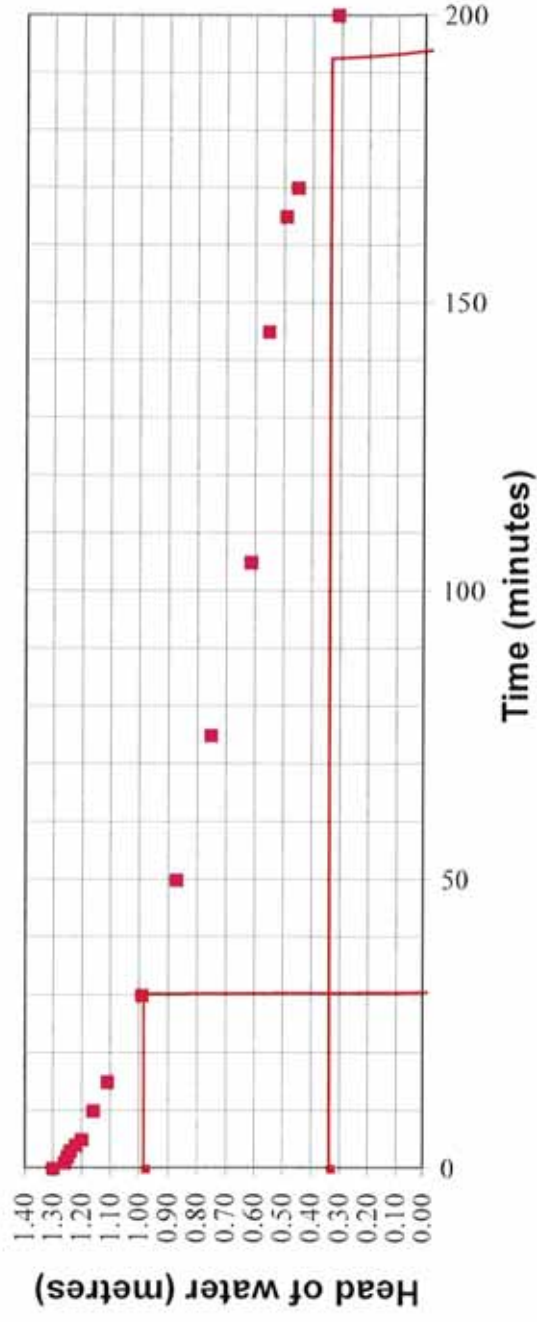
Soakaway Test Results

2609. St Peters Close Additional Works
TP1 - Test 1
 09/09/2021

[illegible]

Depth (m)	Length (m)	Width (m)	Head at 75% Vol (m)	Head at 25% Vol (m)	Water depth(t=0) (m)	Effective Area Ap50 m2	Vp75-Vp25 Volume of water m3	Adjustment Factor *	t75 (mins)	t25 (mins)	Infiltration rate m/s
2.00	1.40	0.60	0.975	0.33	1.30	3.440	0.546	1.00	9	110	2.619E-05

* with gravel filter adjustment factor = 0.30, with no filter = 1.0

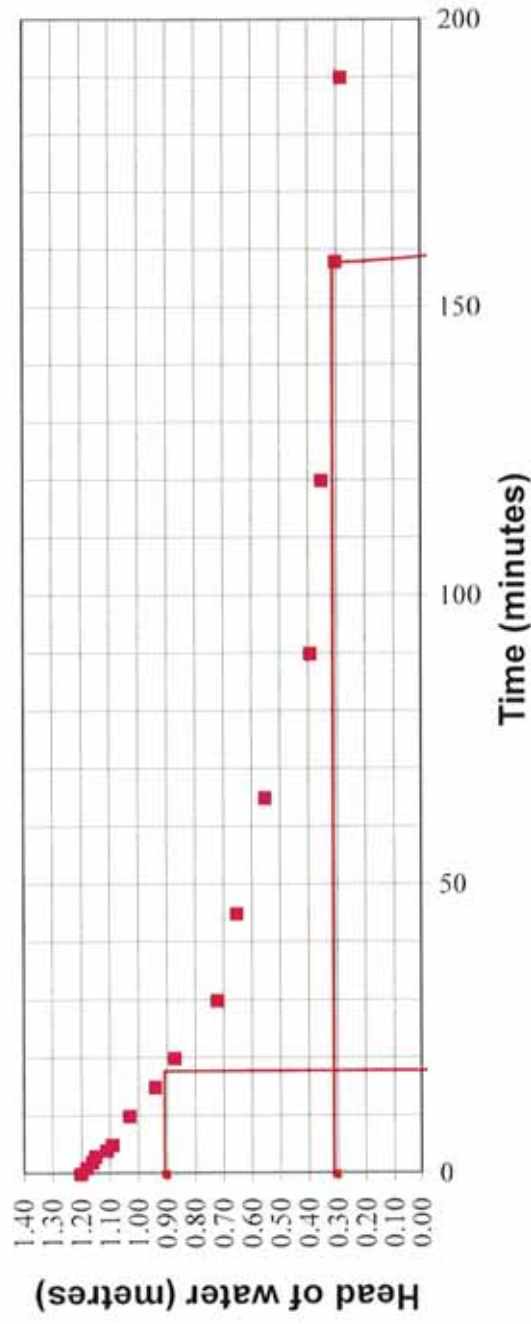
[illegible]

Depth (m)	Length (m)	Width (m)	Head at 75% Vol (m)	Head at 25% Vol (m)	Water depth(t=0) (m)	Effective Area Ap50 m2	Vp75-Vp25 Volume of water m3	Adjustment Factor *	t75 (mins)	t25 (mins)	Infiltration rate m/s
2.00	1.40	0.60	0.975	0.33	1.30	3.440	0.546	1.00	30	192	1.633E-05

* with gravel filter adjustment factor = 0.30, with no filter = 1.0

TP1- Test 3

10/09/2021



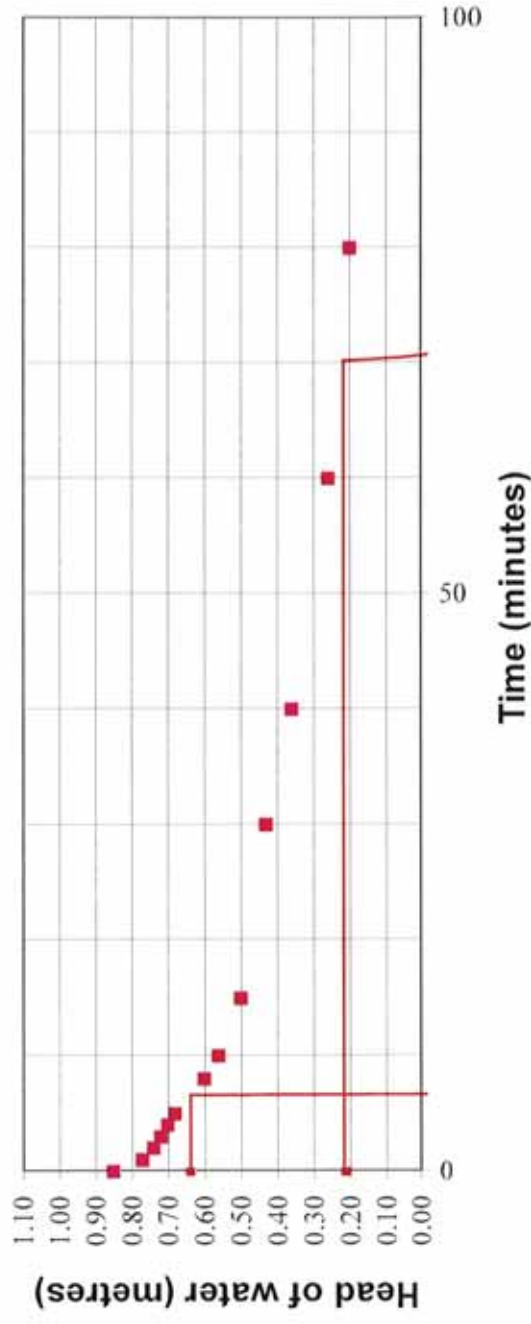
Depth (m)	Length (m)	Width (m)	Head at 75% Vol (m)	Head at 25% Vol (m)	Water depth(t=0) (m)	Effective Area Ap50 m2	Vp75-Vp25 Volume of water m3	Adjustment Factor *	t75 (mins)	t25 (mins)	Infiltration rate m/s
1.80	1.40	0.60	0.900	0.30	1.20	3.240	0.504	1.00	30	159	2.010E-05

* with gravel filter adjustment factor = 0.30, with no filter = 1.0

2609. St Peters Close Additional Works

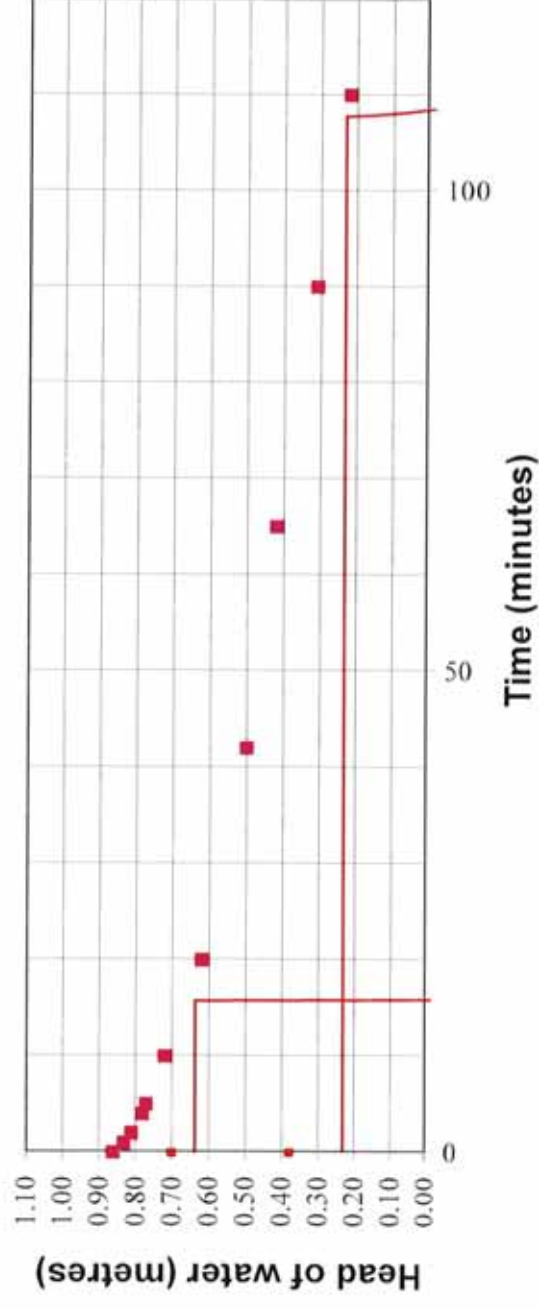
TP3- Test 1

09/09/2021

[illegible]

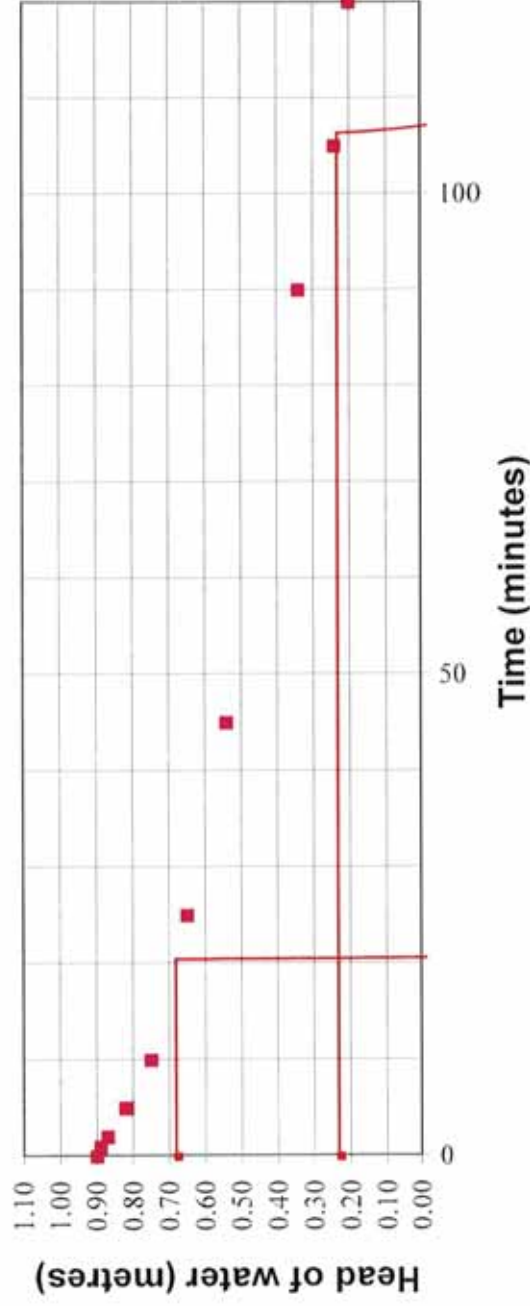
Depth (m)	Length (m)	Width (m)	Head at 75% Vol (m)	Head at 25% Vol (m)	Water depth(t=0) (m)	Effective Area Ap50 m2	Vp75-Vp25 Volume of water m3	Adjustment Factor *	t75 (mins)	t25 (mins)	Infiltration rate m/s
1.30	1.30	0.60	0.638	0.21	0.85	2.395	0.332	1.00	8	70	3.721E-05

* with gravel filter adjustment factor = 0.30, with no filter = 1.0

[illegible]

Depth (m)	Length (m)	Width (m)	Head at 75% Vol (m)	Head at 25% Vol (m)	Water depth(t=0) (m)	Effective Area Ap50 m ²	Vp75-Vp25 Volume of water m ³	Adjustment Factor *	t75 (mins)	t25 (mins)	Infiltration rate m/s
1.30	1.30	0.60	0.645	0.22	0.66	2.414	0.335	1.00	15	108	2.490E-05

* with gravel filter adjustment factor = 0.30, with no filter = 1.0

[illegible]

Depth	Length	Width	Head at 75% Vol	Head at 25% Vol	Water depth(t=0)	Effective Area	Vp75-Vp25	Adjustment Factor *	t75	t25	Infiltration
(m)	(m)	(m)	(m)	(m)	(m)	Ap50 m2	Volume of water m3		(mins)	(mins)	rate m/s
1.30	1.30	0.60	0.675	0.23	0.90	2.490	0.351	1.00	20	108	2.670E-05

* with gravel filter adjustment factor = 0.30, with no filter = 1.0

APPENDIX E

Falling Head Permeability Test Results

GroundSolve Ltd

Unit 1 Well House Barns
Chester Road
Bretton
Flintshire CH4 0DH

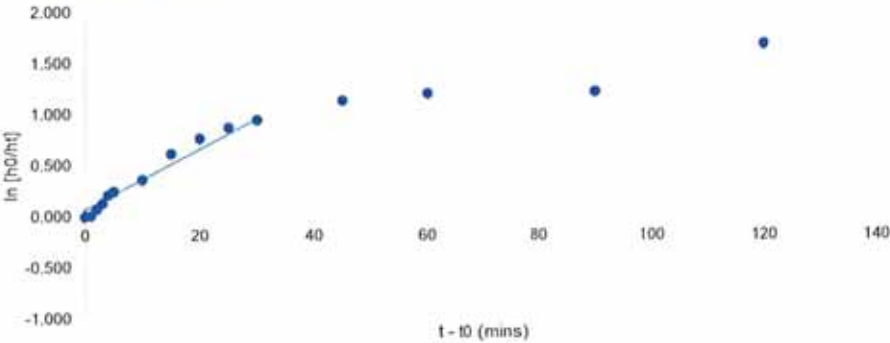
FALLING HEAD TEST PERMEABILITY CALCULATION
Variable Head Test Method, BS EN ISO 22282-2:2012

Project No.	2609
Project Name	St Peters Close
Borehole	BH1
Date	

BH Depth (m)	4.00
Casing Depth (m)	3.00
Casing Dia (m)	0.15
Casing Height (m)	0.00

L/D Ratio	3.85
Shape Factor	2.4205

Time (mins)	Depth to Water	ln (h0/ht)
0	1.63	0.000
1	1.65	0.008
2	1.80	0.074
3	1.92	0.131
4	2.08	0.211
5	2.15	0.248
10	2.35	0.362
15	2.72	0.616
20	2.90	0.768
25	3.01	0.873
30	3.08	0.946
45	3.24	1.137
60	3.29	1.205
90	3.30	1.220
120	3.56	1.684
		-0.523
		-0.523
		-0.523
		-0.523
		-0.523



α (gradient)	0.03399
Area of BH (m ²)	0.05552

Infiltration Rate, k	7.796E-04 m/s
----------------------	---------------

Notes	Test carried out between 3&4m, within slightly clayey sand and gravels.
-------	---

GroundSolve Ltd
Unit 1 Well House Barns
Chester Road
Bretton
Flintshire CH4 0DH

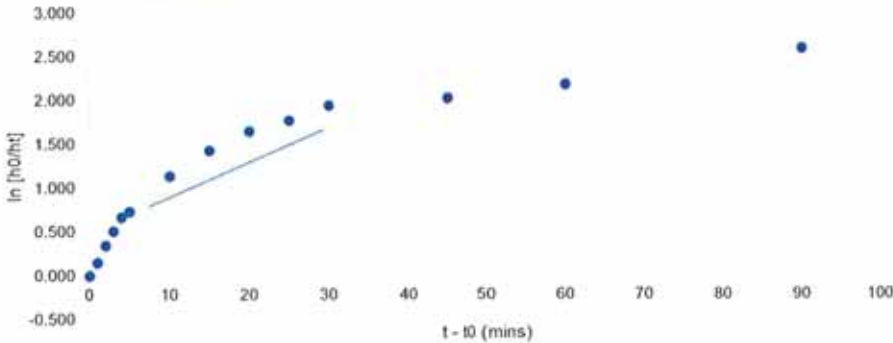
FALLING HEAD TEST PERMEABILITY CALCULATION
Variable Head Test Method, BS EN ISO 22282-2:2012

Project No.	2609
Project Name	St Peters Close
Borehole	BH1
Date	

Time (mins)	Depth to Water	ln (h0/ht)
0	0.20	0.000
1	0.94	0.150
2	1.75	0.346
3	2.32	0.511
4	2.79	0.671
5	2.95	0.732
10	3.80	1.137
15	4.23	1.429
20	4.48	1.648
25	4.60	1.773
30	4.74	1.942
45	4.80	2.024
60	4.90	2.179
90	5.10	2.584
		-0.037
		-0.037
		-0.037
		-0.037
		-0.037
		-0.037

BH Depth (m)	5.50
Casing Depth (m)	4.50
Casing Dia (m)	0.15
Casing Height (m)	0.00

L/D Ratio	3.85
Shape Factor	2.4205



α (gradient)	0.05784
Area of BH (m ²)	0.05552

Infiltration Rate, k	1.37E10-4 m/s
----------------------	---------------

Notes	Test carried out between 4.5+5.5m, within sand and gravels.
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GroundSolve Ltd
Unit 1 Well House Barns
Chester Road
Bretton
Flintshire CH4 0DH

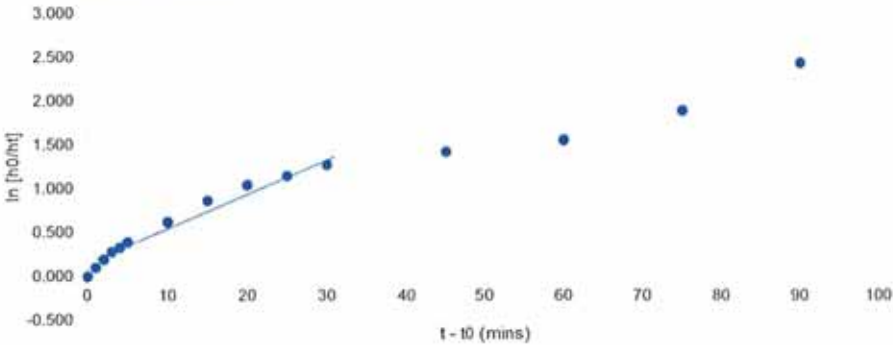
FALLING HEAD TEST PERMEABILITY CALCULATION
Variable Head Test Method, BS EN ISO 22282-2:2012

Project No.	2609
Project Name	St Peters Close
Borehole	8H1
Date	

BH Depth (m)	6.50
Casing Depth (m)	5.50
Casing Dia (m)	0.15
Casing Height (m)	0.00

L/D Ratio	3.85
Shape Factor	2.4205

Time (mins)	Depth to Water	ln (h0/ht)
0	0.80	0.000
1	1.35	0.101
2	1.80	0.193
3	2.20	0.282
4	2.40	0.329
5	2.65	0.392
10	3.44	0.622
15	4.10	0.865
20	4.50	1.047
25	4.70	1.153
30	4.91	1.277
45	5.13	1.426
60	5.30	1.558
75	5.64	1.891
90	6.00	2.434
		-0.131
		-0.131
		-0.131
		-0.131
		-0.131



α (gradient)	0.04127
Area of BH (m ²)	0.05552

Infiltration Rate, k	9.466E-04 m/s
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Notes	Test carried out between 5.5+6.5m, within sand and gravels.
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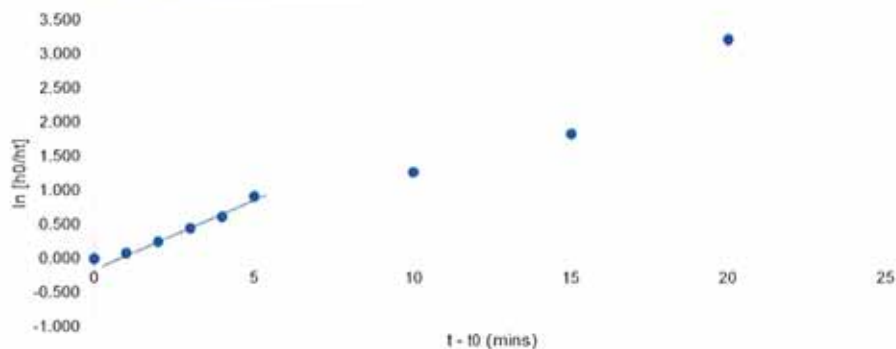
Variable Head Test Method, BS EN ISO 22282-2:2012

Project No.	2609
Project Name	St Peters Close
Borehole	BH1
Date	

BH Depth (m)	8.00
Casing Depth (m)	7.00
Casing Dia (m)	0.15
Casing Height (m)	0.00

L/D Ratio	3.85
Shape Factor	2.4205

Time (mins)	Depth to Water	In (h0/ht)
0	3.00	0.000
1	3.40	0.083
2	4.10	0.248
3	4.80	0.446
4	5.30	0.616
5	6.00	0.916
10	6.60	1.273
15	7.20	1.833
20	7.80	3.219
		-0.470
		-0.470
		-0.470
		-0.470
		-0.470



α (gradient)	0.14604
Area of BH (m^2)	0.05552

Infiltration Rate, k	3.350E-03 m/s
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Notes	Test carried out between 7+8m, slightly sand and gravels.
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GroundSolve Ltd
Unit 1 Well House Barns
Chester Road
Bretton
Flintshire CH4 0DH

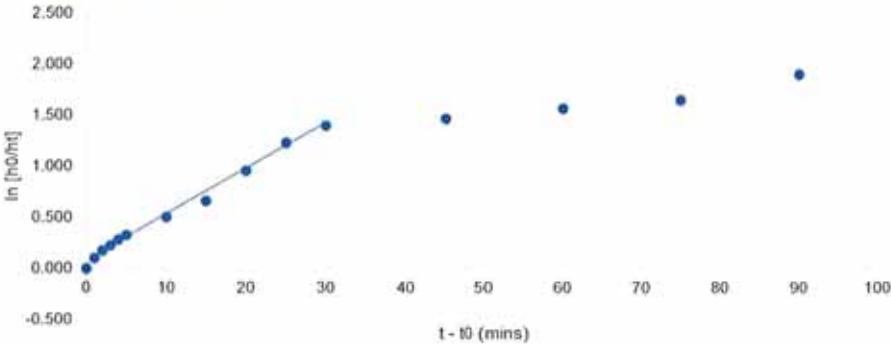
FALLING HEAD TEST PERMEABILITY CALCULATION
Variable Head Test Method, BS EN ISO 22282-2:2012

Project No.	2609
Project Name	St Peters Close
Borehole	BH2a
Date	

BH Depth (m)	6.00
Casing Depth (m)	5.00
Casing Dia (m)	0.15
Casing Height (m)	0.00

L/D Ratio	3.85
Shape Factor	2.4205

Time (mins)	Depth to Water	ln (h0/ht)
0	1.78	0.000
1	2.20	0.105
2	2.46	0.176
3	2.63	0.225
4	2.82	0.283
5	2.96	0.328
10	3.45	0.504
15	3.83	0.665
20	4.38	0.957
25	4.77	1.233
30	4.96	1.401
45	5.03	1.470
60	5.12	1.568
75	5.19	1.651
90	5.37	1.902
		-0.352
		-0.352
		-0.352
		-0.352
		-0.352



α (gradient)	0.04389
Area of BH (m ²)	0.05552

Infiltration Rate, k	1.007E-03 m/s
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Notes	Test carried out between 5+6m, within sand and gravels.
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GroundSolve Ltd

Unit 1 Well House Barns
Chester Road
Bretton
Flintshire CH4 0DH

FALLING HEAD TEST PERMEABILITY CALCULATION

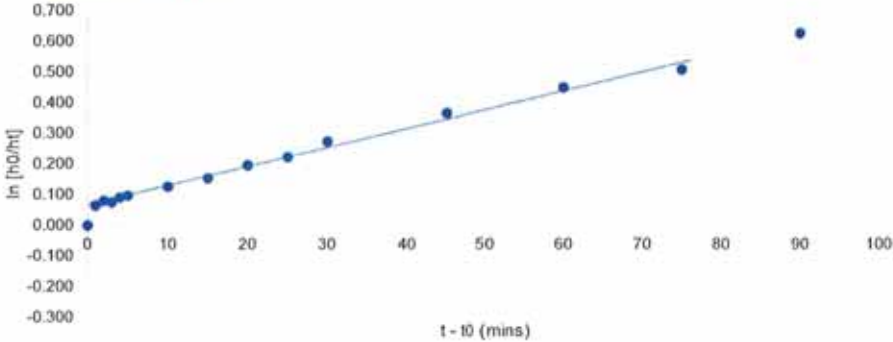
Variable Head Test Method, BS EN ISO 22282-2:2012

Project No.	2609
Project Name	St Peters Close
Borehole	BH3
Date	

BH Depth (m)	6.00
Casing Depth (m)	5.00
Casing Dia (m)	0.15
Casing Height (m)	0.00

L/D Ratio	3.85
Shape Factor	2.4205

Time (mins)	Depth to Water	ln (h0/ht)
0	0.95	0.000
1	1.27	0.065
2	1.34	0.080
3	1.32	0.076
4	1.39	0.091
5	1.42	0.098
10	1.55	0.126
15	1.67	0.154
20	1.85	0.196
25	1.96	0.223
30	2.16	0.274
45	2.50	0.367
60	2.78	0.450
75	2.96	0.508
90	3.30	0.626
		-0.172
		-0.172
		-0.172
		-0.172
		-0.172



α (gradient)	0.00650
Area of BH (m ²)	0.05552

Infiltration Rate, k	1.491E-04 m/s
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Notes	Test carried out between 5+6m, within sand and gravels.
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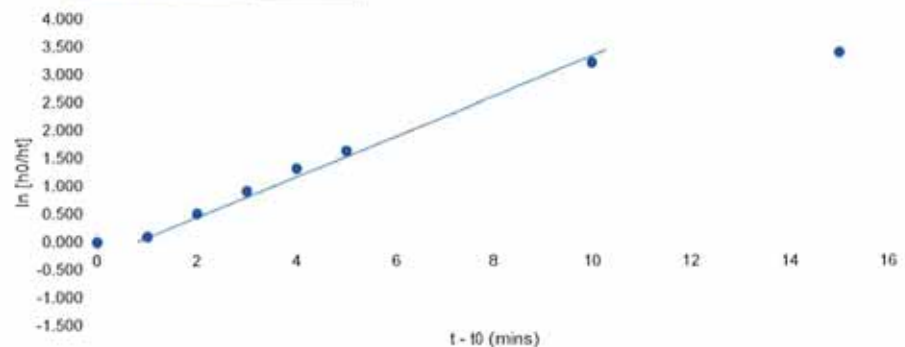
Variable Head Test Method, BS EN ISO 22282-2:2012

Project No.	2609
Project Name	St Peters Close
Borehole	BH3
Date	

BH Depth (m)	7.00
Casing Depth (m)	6.00
Casing Dia (m)	0.15
Casing Height (m)	0.00

L/D Ratio	3.85
Shape Factor	2.4205

Time (mins)	Depth to Water	ln (h0/ht)
0	4.00	0.000
1	4.29	0.102
2	5.20	0.511
3	5.80	0.916
4	6.20	1.322
5	6.42	1.643
10	6.88	3.219
15	6.90	3.401
		-0.847
		-0.847
		-0.847
		-0.847
		-0.847



α (gradient)	0.21491
Area of BH (m^2)	0.05552

Infiltration Rate, k	4.929E-03 m/s
------------------------	---------------

Notes	Test carried out between 6+7m, within sand and gravels.
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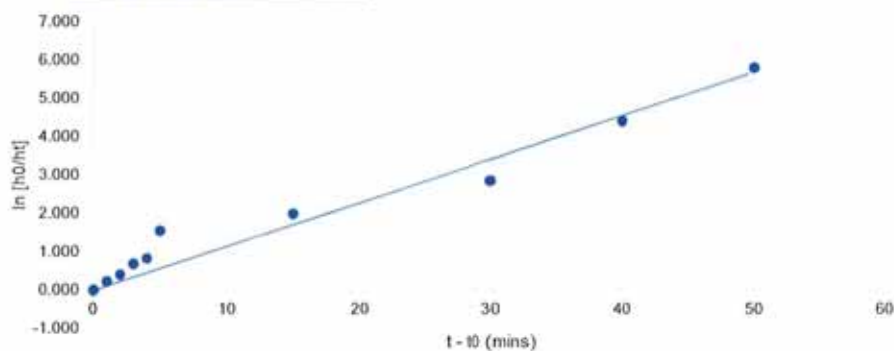
Variable Head Test Method, BS EN ISO 22282-2:2012

Project No.	2609
Project Name	St Peters Close
Borehole	BH3
Date	

BH Depth (m)	9.00
Casing Depth (m)	8.00
Casing Dia (m)	0.15
Casing Height (m)	0.00

L/D Ratio	3.85
Shape Factor	2.4205

Time (mins)	Depth to Water	ln (h ₀ /ht)
0	2.40	0.000
1	3.72	0.223
2	4.60	0.405
3	5.68	0.687
4	6.10	0.822
5	7.60	1.551
15	8.10	1.992
30	8.62	2.855
40	8.92	4.413
50	8.98	5.799
		-0.310
		-0.310
		-0.310
		-0.310
		-0.310



α (gradient)	0.09808
Area of BH (m^2)	0.05552

Infiltration Rate, k	2.250E-03 m/s
------------------------	---------------

Notes	Test carried out between 8+9m, within sand and gravels.
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APPENDIX F
CBR Test Results

DYNAMIC CONE PENETROMETER TEST REPORT

Project: 2585

Project name: St Peters Close

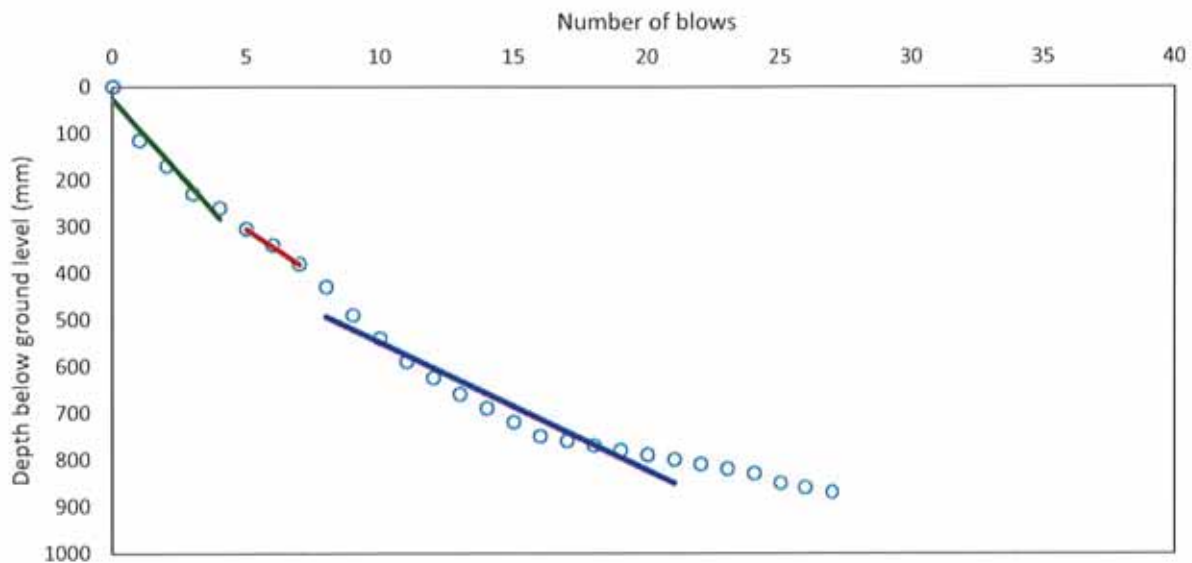
Report date: 05/08/2021

Operator: CK

Notes:

Test date: 05/08/2021

Test location: DCP1



Layer 0-280mm bgl

50th Percentile penetration rate

32 mm/blow

Estimated CBR

7.7 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

65.2 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

101.9 kPa

[PCA - Design of Concrete Pavement. 1955]

Layer 280-400mm bgl

50th Percentile penetration rate

19 mm/blow

Estimated CBR

13.4 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

92.7 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

146.8 kPa

[PCA - Design of Concrete Pavement. 1955]

Layer 400-800mm bgl

50th Percentile penetration rate

14 mm/blow

Estimated CBR

18.6 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

114.0 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

181.9 kPa

[PCA - Design of Concrete Pavement. 1955]

Produced by	Dated	Checked by	Dated
TG	05/08/21		

DYNAMIC CONE PENETROMETER TEST REPORT

GroundSolve Ltd

Well House Barns • Bretton • CH4 0DH

Project: 2585

Project name: St Peters Close

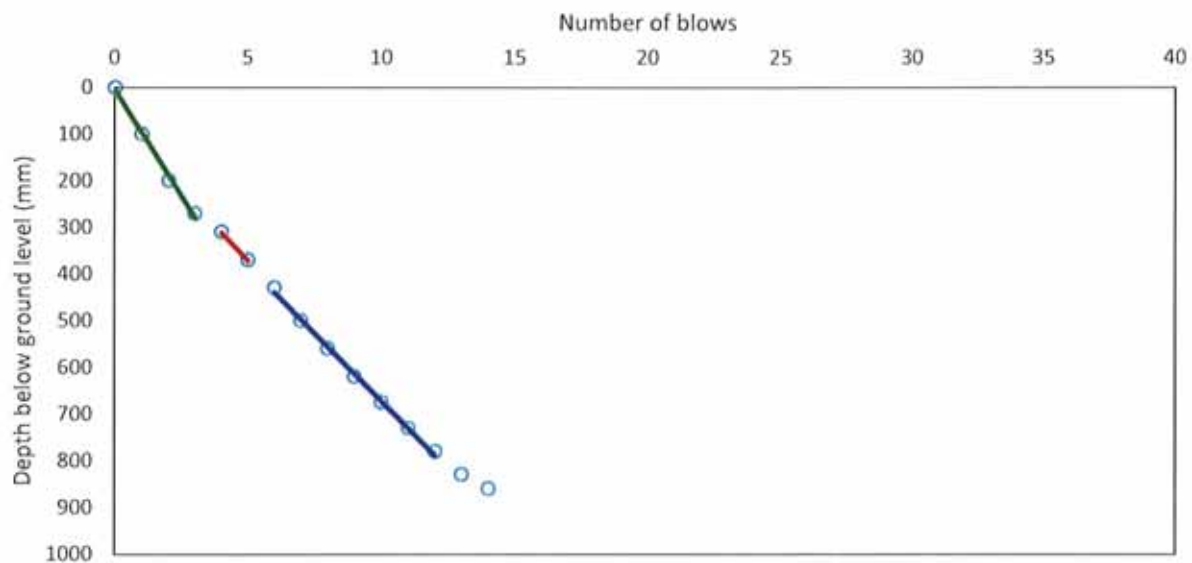
Report date: 05/08/2021

Operator: CK

Notes:

Test date: 05/08/2021

Test location: DCP2



Layer 0-280mm bgl

50th Percentile penetration rate

46 mm/blow

Estimated CBR

5.3 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

51.0 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

79.0 kPa

[PCA - Design of Concrete Pavement. 1955]

Layer 280-400mm bgl

50th Percentile penetration rate

30 mm/blow

Estimated CBR

8.3 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

68.1 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

106.6 kPa

[PCA - Design of Concrete Pavement. 1955]

Layer 400-800mm bgl

50th Percentile penetration rate

30 mm/blow

Estimated CBR

8.3 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

68.1 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

106.6 kPa

[PCA - Design of Concrete Pavement. 1955]

Produced by	Dated	Checked by	Dated
TG	05/08/21		

DYNAMIC CONE PENETROMETER TEST REPORT

Project: 2585

Project name: St Peters Close

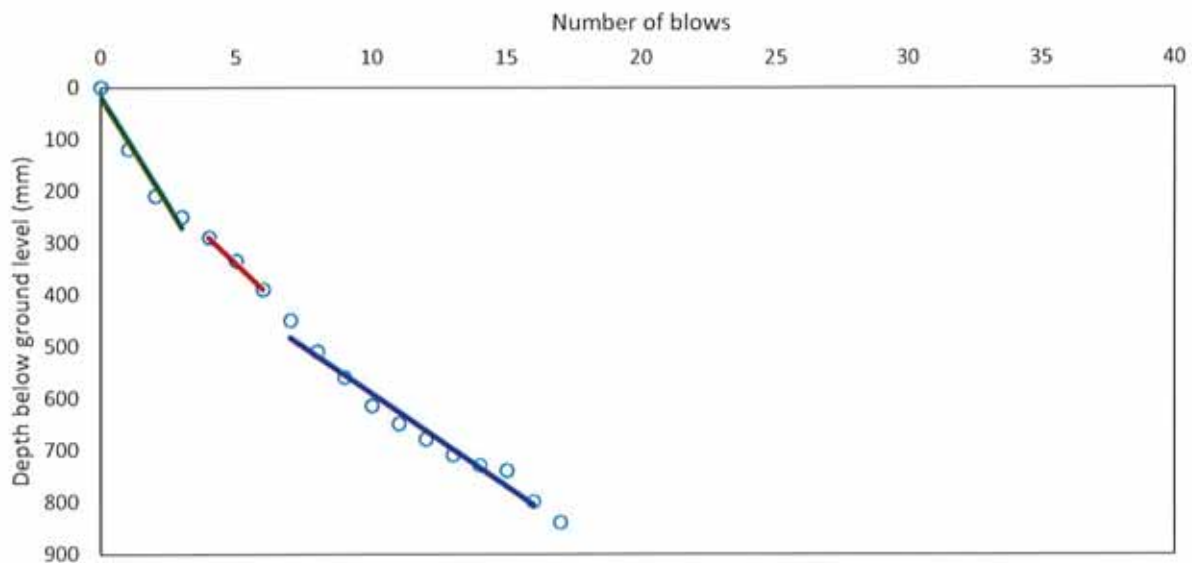
Report date: 05/08/2021

Operator: CK

Notes:

Test date: 05/08/2021

Test location: DCP3

**Layer 0-280mm bgl**

50th Percentile penetration rate

42 mm/blow

Estimated CBR

5.8 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

54.2 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

84.2 kPa

[PCA - Design of Concrete Pavement. 1955]

Layer 280-400mm bgl

50th Percentile penetration rate

25 mm/blow

Estimated CBR

10.1 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

77.0 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

121.1 kPa

[PCA - Design of Concrete Pavement. 1955]

Layer 400-800mm bgl

50th Percentile penetration rate

18 mm/blow

Estimated CBR

14.2 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

96.2 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

152.5 kPa

[PCA - Design of Concrete Pavement. 1955]

Produced by	Dated	Checked by	Dated
TG	05/08/21		

DYNAMIC CONE PENETROMETER TEST REPORT

Project: 2585

Project name: St Peters Close

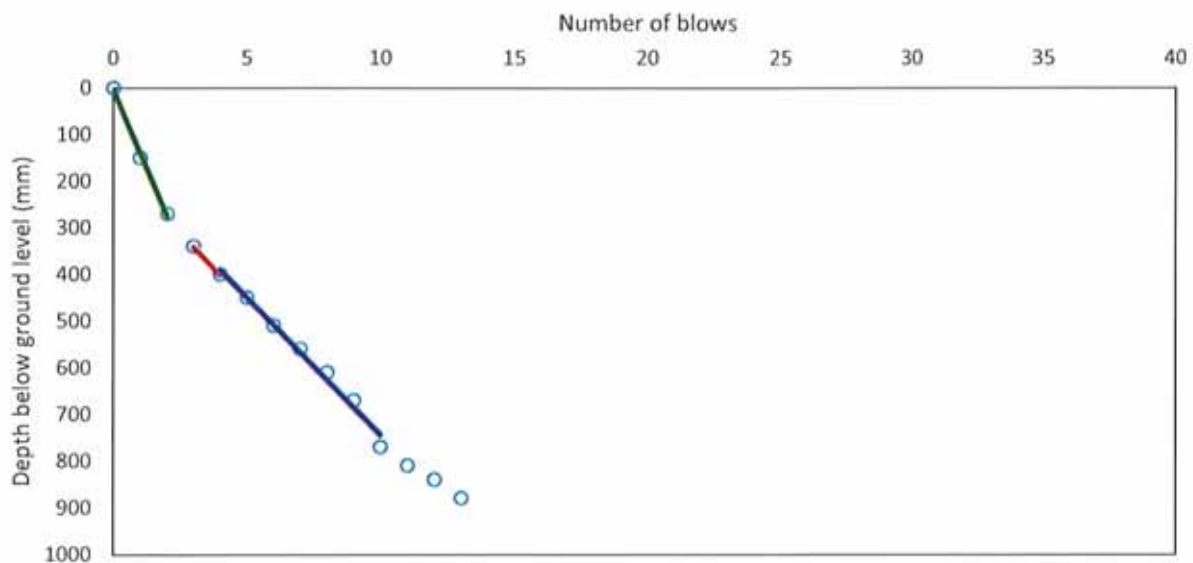
Report date: 05/08/2021

Operator: CK

Notes:

Test date: 05/08/2021

Test location: DCP4

**Layer 0-280mm bgl**

50th Percentile penetration rate

68 mm/blow

Estimated CBR

3.5 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

39.1 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

60.0 kPa

[PCA - Design of Concrete Pavement, 1955]

Layer 280-400mm bgl

50th Percentile penetration rate

30 mm/blow

Estimated CBR

8.3 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

68.1 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

106.6 kPa

[PCA - Design of Concrete Pavement, 1955]

Layer 400-800mm bgl

50th Percentile penetration rate

30 mm/blow

Estimated CBR

8.3 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

68.1 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

106.6 kPa

[PCA - Design of Concrete Pavement, 1955]

Produced by	Dated	Checked by	Dated
TG	05/08/21		

DYNAMIC CONE PENETROMETER TEST REPORT

Project: 2585

Project name: St Peters Close

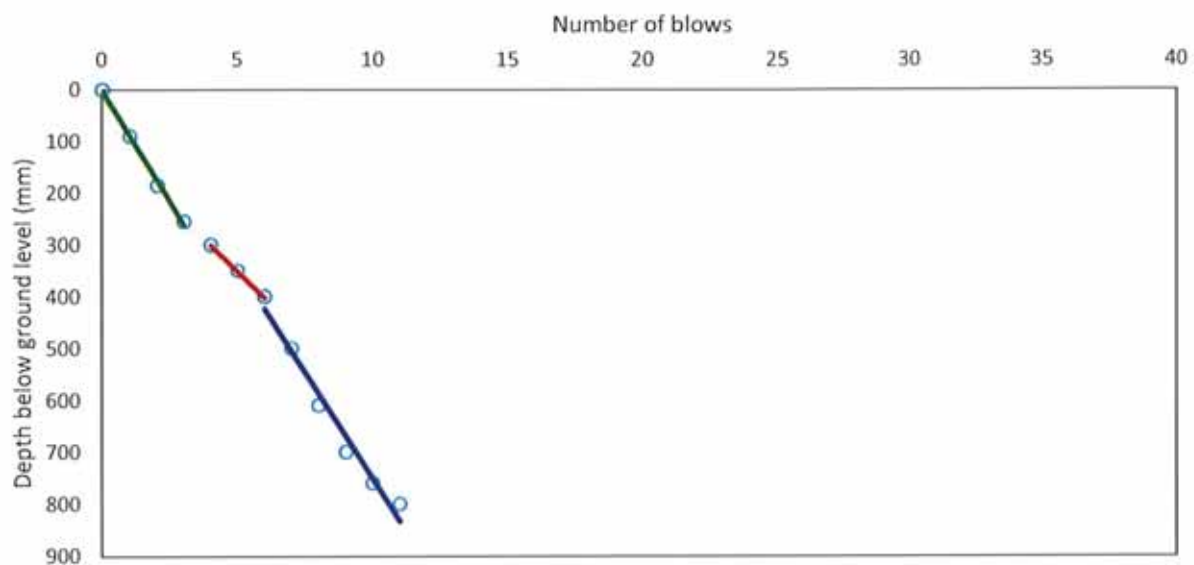
Report date: 05/08/2021

Operator: CK

Notes:

Test date: 05/08/2021

Test location: DCP5

**Layer 0-280mm bgl**

50th Percentile penetration rate

43 mm/blow

Estimated CBR

5.7 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

53.4 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

82.8 kPa

[PCA - Design of Concrete Pavement. 1955]

Layer 280-400mm bgl

50th Percentile penetration rate

25 mm/blow

Estimated CBR

10.1 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

77.0 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

121.1 kPa

[PCA - Design of Concrete Pavement. 1955]

Layer 400-800mm bgl

50th Percentile penetration rate

41 mm/blow

Estimated CBR

6.0 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

55.1 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

85.6 kPa

[PCA - Design of Concrete Pavement. 1955]

Produced by	Dated	Checked by	Dated
TG	05/08/21		

DYNAMIC CONE PENETROMETER TEST REPORT

Project: 2585

Project name: St Peters Close

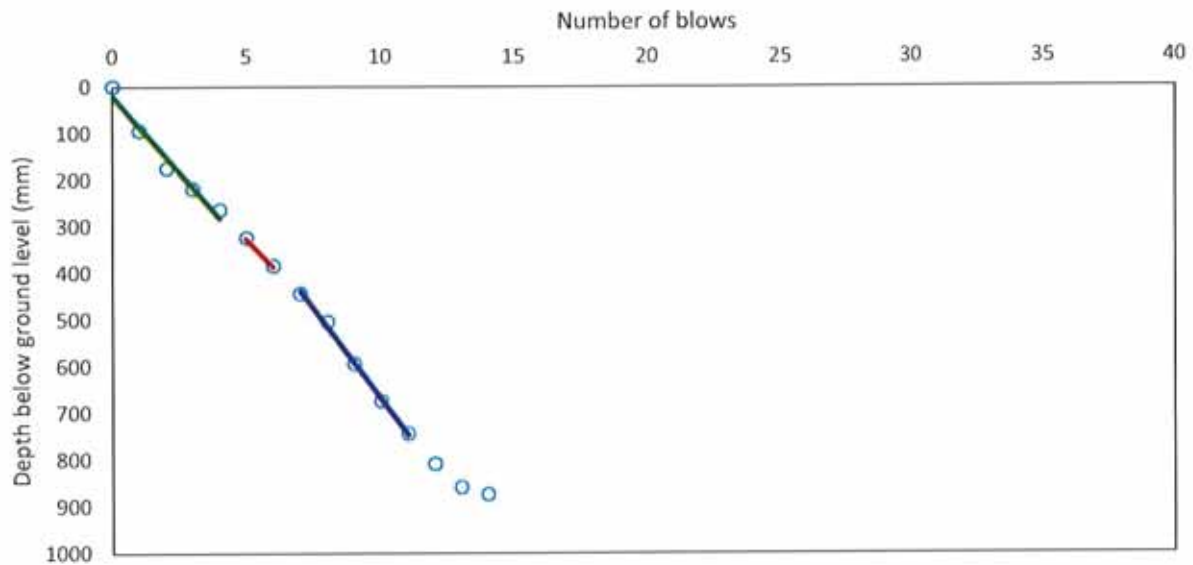
Report date: 05/08/2021

Operator: CK

Notes:

Test date: 05/08/2021

Test location: DCP6



Layer 0-280mm bgl

50th Percentile penetration rate

33 mm/blow

Estimated CBR

7.5 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

63.8 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

99.7 kPa

[PCA - Design of Concrete Pavement. 1955]

Layer 280-400mm bgl

50th Percentile penetration rate

30 mm/blow

Estimated CBR

8.3 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

68.1 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

106.6 kPa

[PCA - Design of Concrete Pavement. 1955]

Layer 400-800mm bgl

50th Percentile penetration rate

39 mm/blow

Estimated CBR

6.3 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

57.0 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

88.6 kPa

[PCA - Design of Concrete Pavement. 1955]

Produced by	Dated	Checked by	Dated
TG	05/08/21		

DYNAMIC CONE PENETROMETER TEST REPORT

GroundSolve Ltd

Well House Barns • Bretton • CH4 0DH

Project: 2585

Project name: St Peters Close

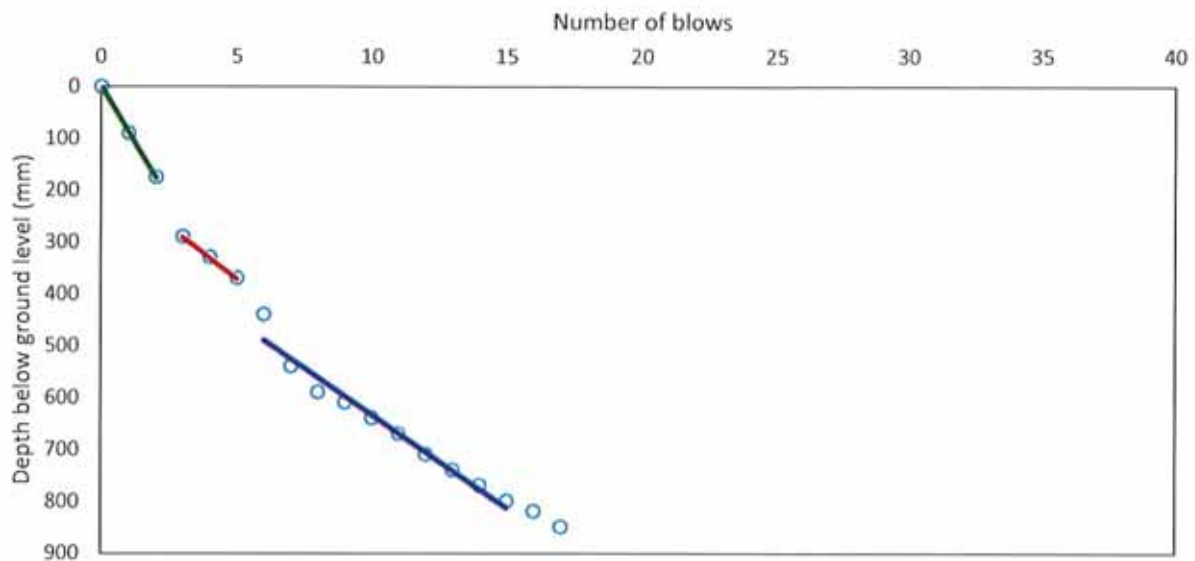
Report date: 05/08/2021

Operator: CK

Notes:

Test date: 05/08/2021

Test location: DCP7



Layer 0-280mm bgl

50th Percentile penetration rate

44 mm/blow

Estimated CBR

5.5 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

52.5 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

81.5 kPa

[PCA - Design of Concrete Pavement. 1955]

Layer 280-400mm bgl

50th Percentile penetration rate

20 mm/blow

Estimated CBR

12.7 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

89.6 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

141.7 kPa

[PCA - Design of Concrete Pavement. 1955]

Layer 400-800mm bgl

50th Percentile penetration rate

18 mm/blow

Estimated CBR

14.2 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

96.2 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

152.5 kPa

[PCA - Design of Concrete Pavement. 1955]

Produced by	Dated	Checked by	Dated
TG	05/08/21		

DYNAMIC CONE PENETROMETER TEST REPORT

Project: 2585

Project name: St Peters Close

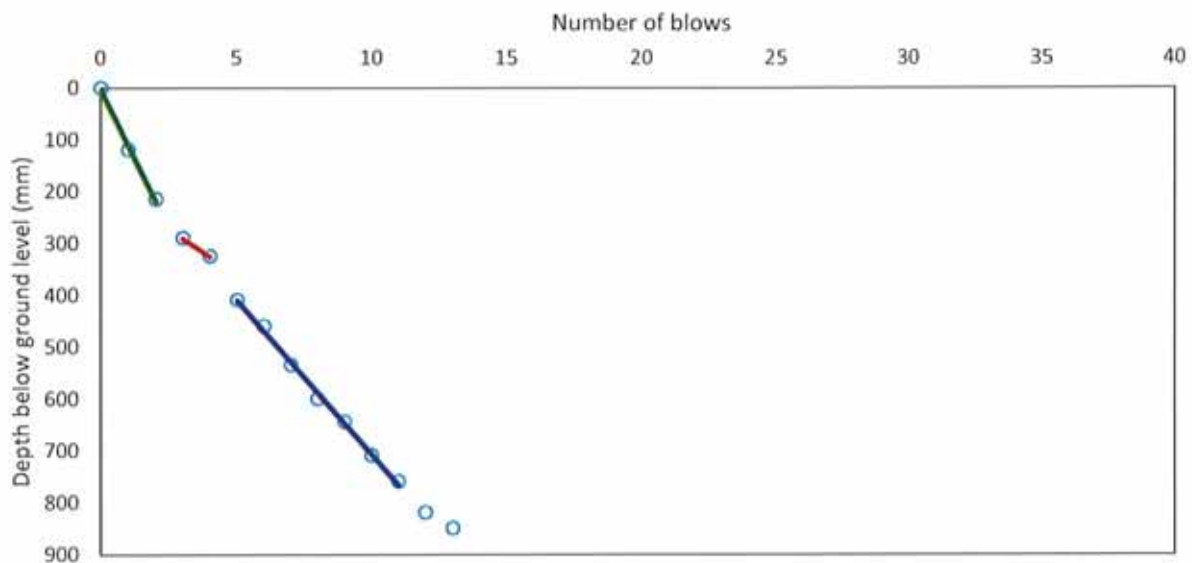
Report date: 05/08/2021

Operator: CK

Notes:

Test date: 05/08/2021

Test location: DCP8



Layer 0-280mm bgl

50th Percentile penetration rate

54 mm/blow

Estimated CBR

4.5 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

45.7 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

70.5 kPa

[PCA - Design of Concrete Pavement. 1955]

Layer 280-400mm bgl

50th Percentile penetration rate

18 mm/blow

Estimated CBR

14.2 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

96.2 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

152.5 kPa

[PCA - Design of Concrete Pavement. 1955]

Layer 400-800mm bgl

50th Percentile penetration rate

30 mm/blow

Estimated CBR

8.3 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

68.1 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

106.6 kPa

[PCA - Design of Concrete Pavement. 1955]

Produced by	Dated	Checked by	Dated
TG	05/08/21		

DYNAMIC CONE PENETROMETER TEST REPORT

Project: 2585

Project name: St Peters Close

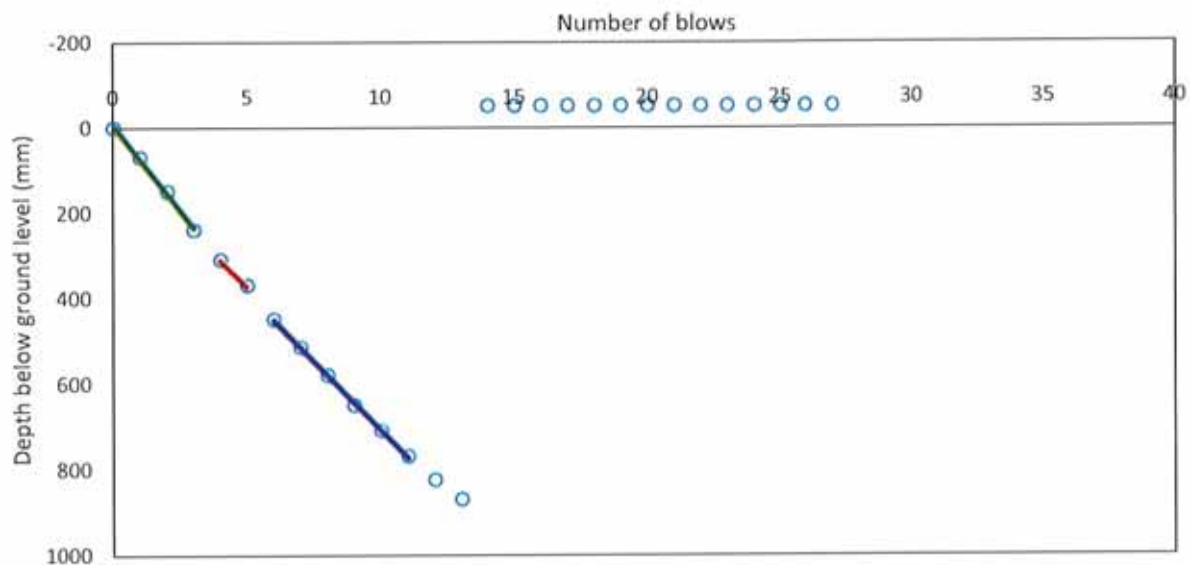
Report date: 05/08/2021

Operator: CK

Notes:

Test date: 05/08/2021

Test location: DCP9



Layer 0-280mm bgl

50th Percentile penetration rate

40 mm/blow

Estimated CBR

6.1 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

56.0 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

87.1 kPa

[PCA - Design of Concrete Pavement, 1955]

Layer 280-400mm bgl

50th Percentile penetration rate

30 mm/blow

Estimated CBR

8.3 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

68.1 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

106.6 kPa

[PCA - Design of Concrete Pavement, 1955]

Layer 400-800mm bgl

50th Percentile penetration rate

33 mm/blow

Estimated CBR

7.5 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

63.8 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

99.7 kPa

[PCA - Design of Concrete Pavement, 1955]

Produced by	Dated	Checked by	Dated
TG	05/08/21		

DYNAMIC CONE PENETROMETER TEST REPORT

Project: 2585

Project name: St Peters Close

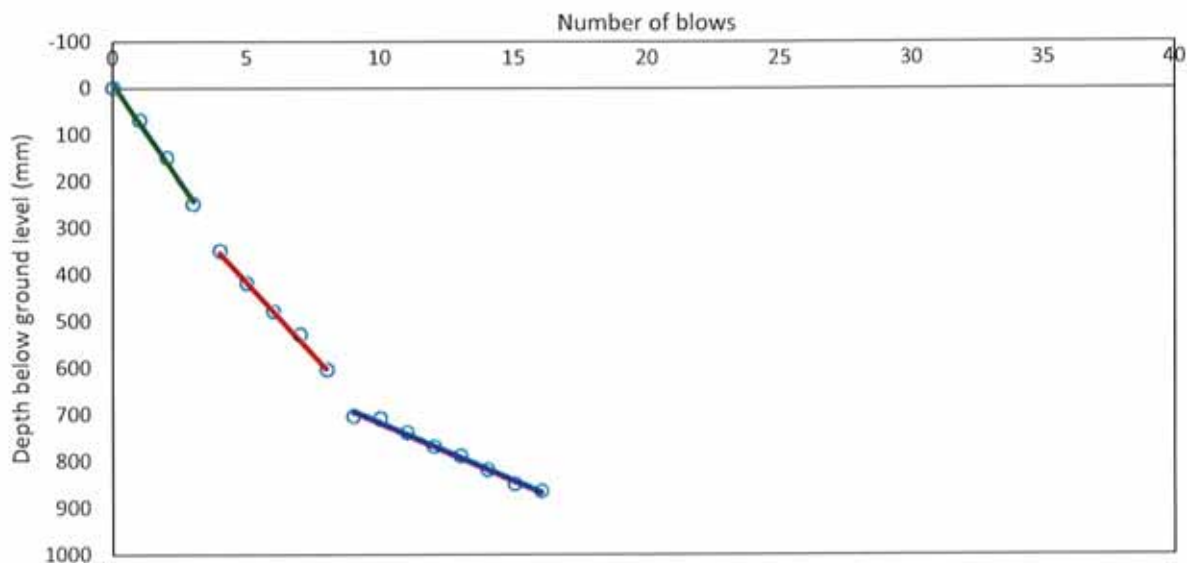
Report date: 05/08/2021

Operator: CK

Notes:

Test date: 05/08/2021

Test location: DCP10



Layer 0-280mm bgl

50th Percentile penetration rate

42 mm/blow

Estimated CBR

5.8 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

54.2 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

84.2 kPa

[PCA - Design of Concrete Pavement. 1955]

Layer 350-700mm bgl

50th Percentile penetration rate

31 mm/blow

Estimated CBR

8.0 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

66.6 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

104.1 kPa

[PCA - Design of Concrete Pavement. 1955]

Layer 700-900mm bgl

50th Percentile penetration rate

13 mm/blow

Estimated CBR

20.1 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

119.9 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

191.7 kPa

[PCA - Design of Concrete Pavement. 1955]

Produced by	Dated	Checked by	Dated
TG	05/08/21		

DYNAMIC CONE PENETROMETER TEST REPORT

Well House Barns • Bretton • CH4 0DH

Project: 2585

Project name: St Peters Close

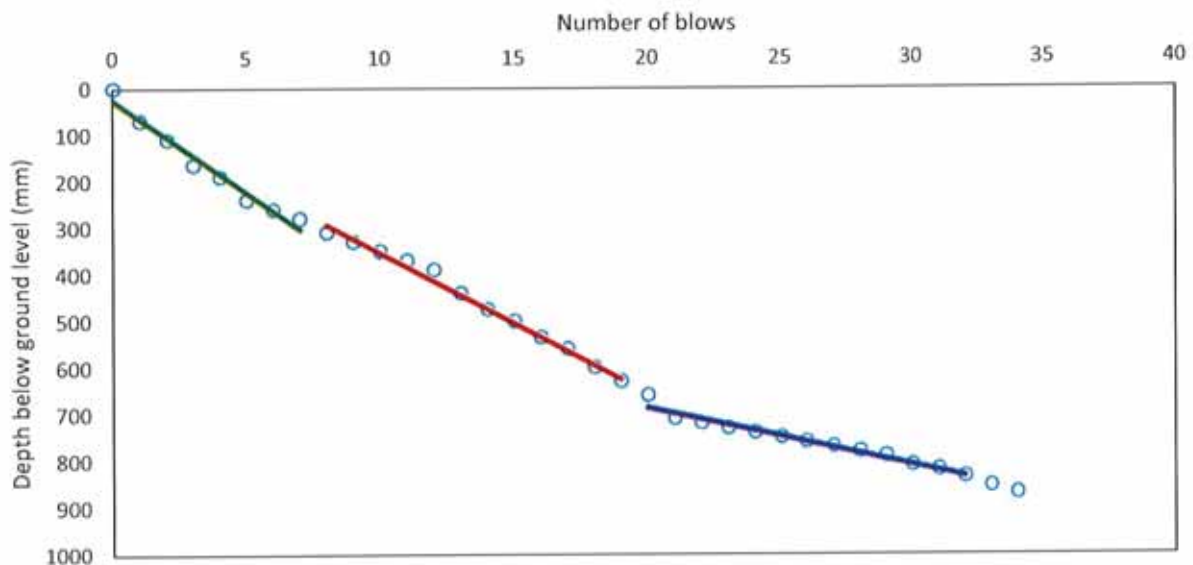
Report date: 05/08/2021

Operator: CK

Notes:

Test date: 05/08/2021

Test location: DCP11



Layer 0-300mm bgl

50th Percentile penetration rate

20 mm/blow

Estimated CBR

12.7 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

89.6 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

141.7 kPa

[PCA - Design of Concrete Pavement. 1955]

Layer 300-650mm bgl

50th Percentile penetration rate

16 mm/blow

Estimated CBR

16.1 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

104.1 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

165.7 kPa

[PCA - Design of Concrete Pavement. 1955]

Layer 650-850mm bgl

50th Percentile penetration rate

7 mm/blow

Estimated CBR

38.6 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

182.2 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

296.0 kPa

[PCA - Design of Concrete Pavement. 1955]

Produced by	Dated	Checked by	Dated
TG	05/08/21		

DYNAMIC CONE PENETROMETER TEST REPORT

GroundSolve Ltd

Well House Barns • Bretton • CH4 0DH

Project: 2585

Project name: St Peters Close

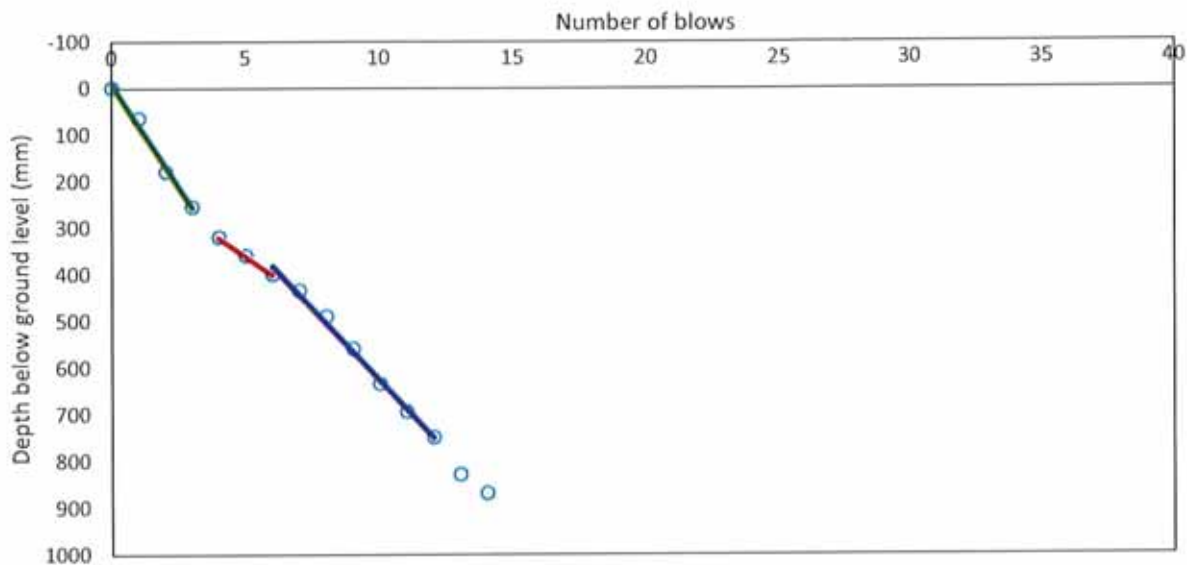
Report date: 05/08/2021

Operator: CK

Notes:

Test date: 05/08/2021

Test location: DCP12



Layer 0-280mm bgl

50th Percentile penetration rate

44 mm/blow

Estimated CBR

5.5 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

52.5 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

81.5 kPa

[PCA - Design of Concrete Pavement. 1955]

Layer 280-400mm bgl

50th Percentile penetration rate

20 mm/blow

Estimated CBR

12.7 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

89.6 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

141.7 kPa

[PCA - Design of Concrete Pavement. 1955]

Layer 400-800mm bgl

50th Percentile penetration rate

31 mm/blow

Estimated CBR

8.0 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

66.6 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

104.1 kPa

[PCA - Design of Concrete Pavement. 1955]

Produced by	Dated	Checked by	Dated
TG	05/08/21		

DYNAMIC CONE PENETROMETER TEST REPORT

Project: 2585

Project name: St Peters Close

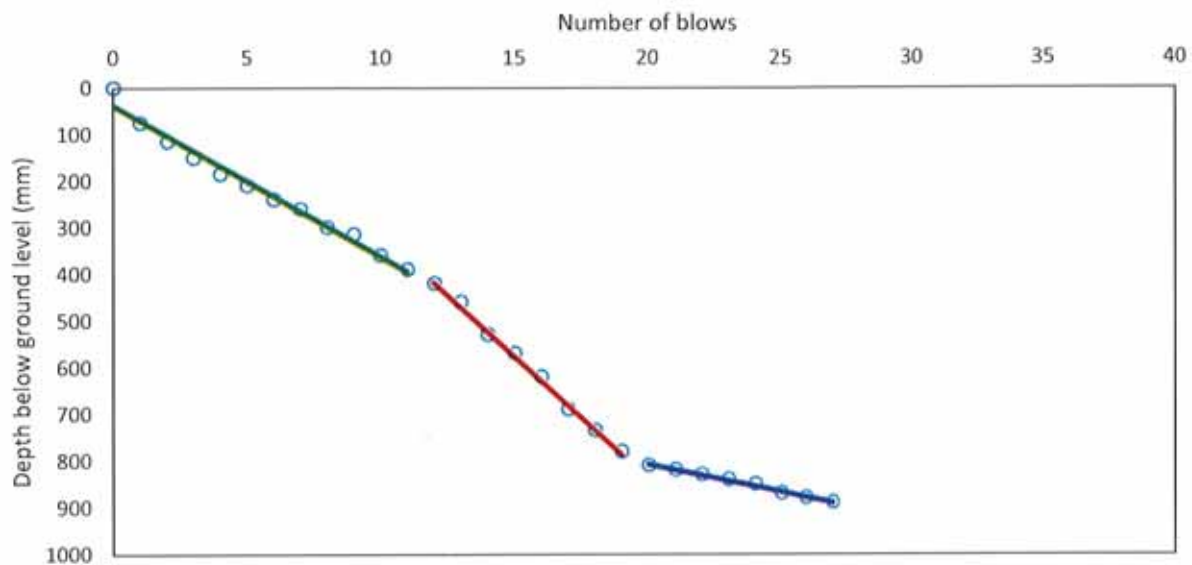
Report date: 05/08/2021

Operator: CK

Notes:

Test date: 05/08/2021

Test location: DCP13



Layer 0-400mm bgl

50th Percentile penetration rate

17 mm/blow

Estimated CBR

15.1 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

100.0 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

158.8 kPa

[PCA - Design of Concrete Pavement. 1955]

Layer 400-800mm bgl

50th Percentile penetration rate

27 mm/blow

Estimated CBR

9.3 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

73.1 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

114.8 kPa

[PCA - Design of Concrete Pavement. 1955]

Layer 800-900mm bgl

50th Percentile penetration rate

6 mm/blow

Estimated CBR

45.4 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

202.2 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

329.8 kPa

[PCA - Design of Concrete Pavement. 1955]

Produced by	Dated	Checked by	Dated
TG	05/08/21		

DYNAMIC CONE PENETROMETER TEST REPORT

Project: 2585

Project name: St Peters Close

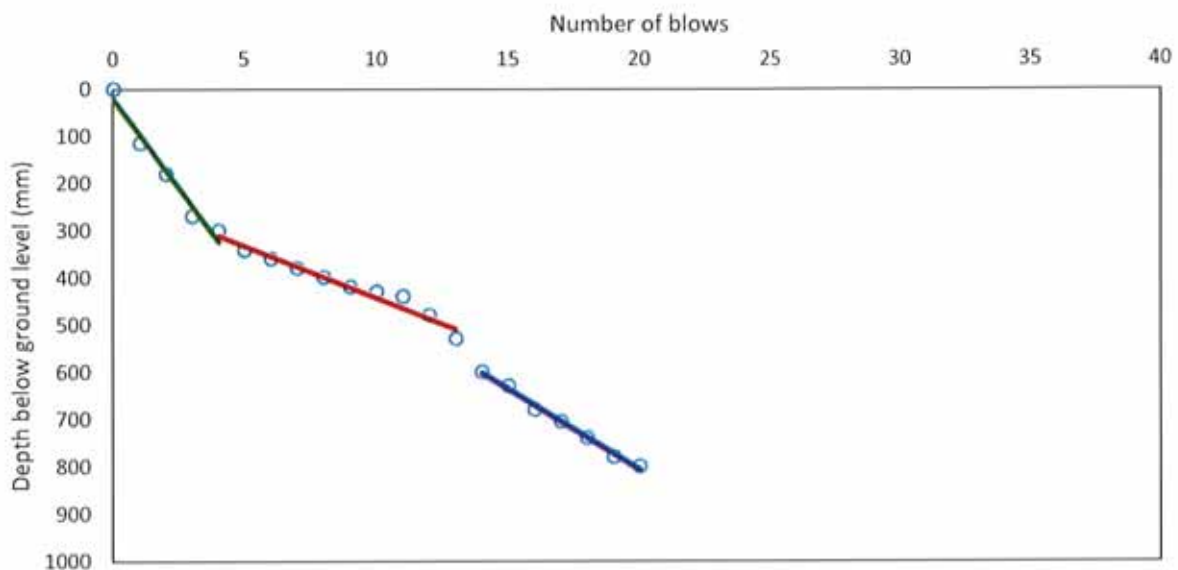
Report date: 05/08/2021

Operator: CK

Notes:

Test date: 05/08/2021

Test location: DCP14

**Layer 0-300mm bgl**

50th Percentile penetration rate

38 mm/blow

Estimated CBR

6.5 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

58.0 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

90.3 kPa

[PCA - Design of Concrete Pavement, 1955]

Layer 300-550mm bgl

50th Percentile penetration rate

11 mm/blow

Estimated CBR

23.9 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

134.2 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

215.5 kPa

[PCA - Design of Concrete Pavement, 1955]

Layer 550-800mm bgl

50th Percentile penetration rate

18 mm/blow

Estimated CBR

14.2 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

96.2 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

152.5 kPa

[PCA - Design of Concrete Pavement, 1955]

Produced by	Dated	Checked by	Dated
TG	05/08/21		

DYNAMIC CONE PENETROMETER TEST REPORT

Project: 2585

Project name: St Peters Close

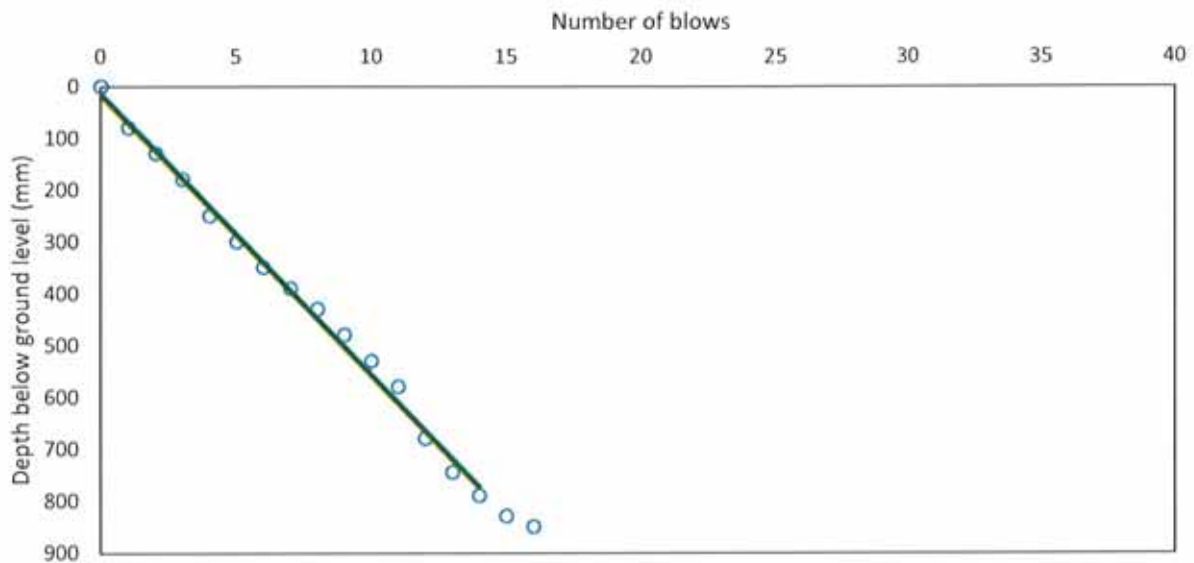
Report date: 05/08/2021

Operator: CK

Notes:

Test date: 05/08/2021

Test location: DCP15



Layer 0-800mm bgl

50th Percentile penetration rate

28 mm/blow

Estimated CBR

8.9 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

71.3 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

111.9 kPa

[PCA - Design of Concrete Pavement, 1955]

Produced by	Dated	Checked by	Dated
TG	05/08/21		

DYNAMIC CONE PENETROMETER TEST REPORT

GroundSolve Ltd

Well House Barns • Bretton • CH4 0DH

Project: 2585

Project name: St Peters Close

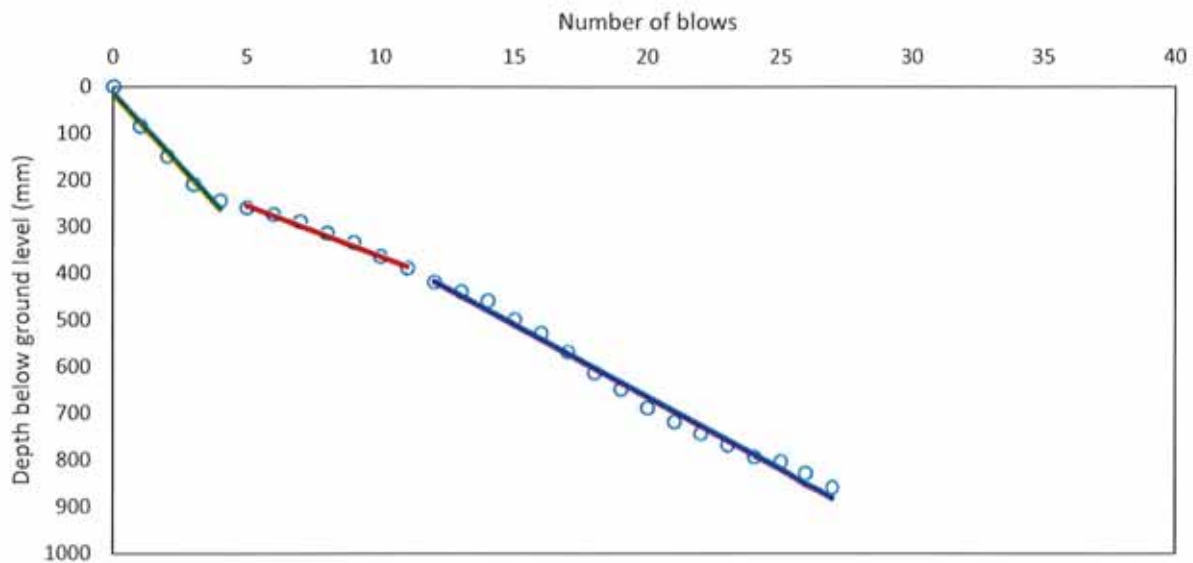
Report date: 05/08/2021

Operator: CK

Notes:

Test date: 05/08/2021

Test location: DCP16



Layer 0-250mm bgl

50th Percentile penetration rate	31 mm/blow	
Estimated CBR	8.0 %	[IAN 73/06 Rev1 (2009) - Clause 893]
Subgrade surface modulus	66.6 MPa	[TRRL LR 1132 - Appendix C Equation C1]
Estimated bearing capacity	104.1 kPa	[PCA - Design of Concrete Pavement, 1955]

Layer 250-400mm bgl

50th Percentile penetration rate	11 mm/blow	
Estimated CBR	23.9 %	[IAN 73/06 Rev1 (2009) - Clause 893]
Subgrade surface modulus	134.2 MPa	[TRRL LR 1132 - Appendix C Equation C1]
Estimated bearing capacity	215.5 kPa	[PCA - Design of Concrete Pavement, 1955]

Layer 400-900mm bgl

50th Percentile penetration rate	16 mm/blow	
Estimated CBR	16.1 %	[IAN 73/06 Rev1 (2009) - Clause 893]
Subgrade surface modulus	104.1 MPa	[TRRL LR 1132 - Appendix C Equation C1]
Estimated bearing capacity	165.7 kPa	[PCA - Design of Concrete Pavement, 1955]

Produced by	Dated	Checked by	Dated
TG	05/08/21		

APPENDIX G
Physical Test Results



LABORATORY REPORT



4043

Contract Number: PSL21/6865

Report Date: 02 September 2021
Client's Reference:
Client Name: Dets
Park Rd Industrial Estate
South Consett
Co Durham
DH8 5PY

For the attention of: Adam Fenwick

Contract Title: 21-17044

Date Received: 25/8/2021
Date Commenced: 25/8/2021
Date Completed: 2/9/2021

Notes: Opinions and Interpretations are outside the UKAS Accreditation

A copy of the Laboratory Schedule of accredited tests as issued by UKAS is attached to this report. 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 other than in full, without the prior written approval of the laboratory.

Checked and Approved Signatories:

A Watkins
(Director)

R Berriman
(Quality Manager)

S Royle
(Laboratory Manager)

L Knight
(Assistant Laboratory Manager)

S Eyre
(Senior Technician)

T Watkins
(Senior Technician)

5 – 7 Hexthorpe Road, Hexthorpe,
Doncaster DN4 0AR
tel: +44 (0)844 815 6641
fax: +44 (0)844 815 6642
e-mail: rberriman@prosoils.co.uk
awatkins@prosoils.co.uk

Page 1 of

SUMMARY OF LABORATORY SOIL DESCRIPTIONS

[illegible]

4043

PSL

Professional Soils Laboratory

21-17044

Contract No:

PSI.21/6865

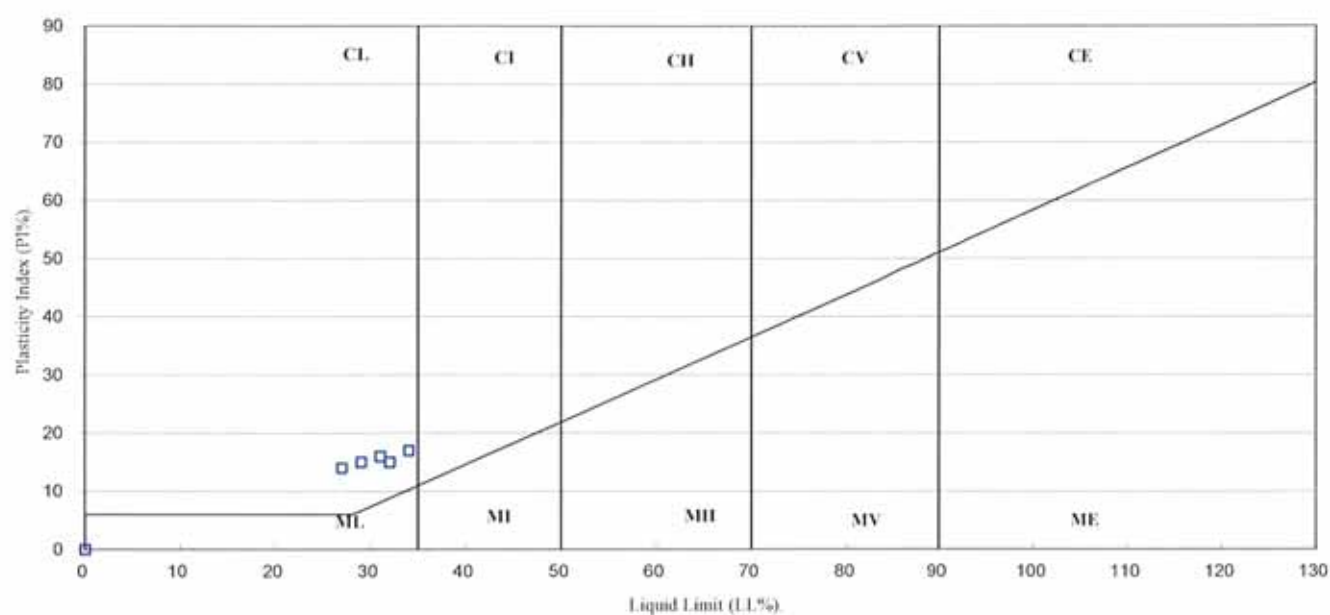
Client Ref:

(BS1377 : PART 2 : 1990)

SYMBOLS : NP : Non Plastic * : Liquid Limit and Plastic Limit Wet Sieved.

Client Ref:

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.



 4043	 Professional Soils Laboratory	21-17044	Contract No:
			PSL21/6865
			Client Ref:

APPENDIX H
Chemical Test Results



Certificate of Analysis

Certificate Number 21-17044

Issued: 02-Sep-21

Client GroundSolve Limited
Unit 1
Well House Barns
Bretton
Flintshire
FAO Adam Fenwick
CH4 0DH

Our Reference 21-17044

Client Reference 2585

Order No (not supplied)

Contract Title St Peters Close

Description 10 Soil samples.

Date Received 13-Aug-21

Date Started 13-Aug-21

Date Completed 02-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

Adam Fenwick
Contracts Manager



Summary of Chemical Analysis

Soil Samples

Our Ref 21-17044
Client Ref 2585
Contract Title St Peters Close

Lab No	1889374	1889375	1889376	1889377	1889378	1889379
Sample ID	TP01	TP01	TP04	TP04	TP06	TP07
Depth	0.20	1.00	1.00	0.20	0.20	1.00
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	04/08/2021	04/08/2021	04/08/2021	04/08/2021	04/08/2021	04/08/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Preparation								
Moisture Content	DETSC 1004	0.1	%		11	12		11
Metals								
Arsenic	DETSC 2301#	0.2	mg/kg	13			8.1	9.2
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	0.2			0.3	0.5
Cadmium	DETSC 2301#	0.1	mg/kg	0.2			0.3	0.4
Chromium	DETSC 2301#	0.15	mg/kg	16			15	21
Chromium III	DETSC 2301*	0.15	mg/kg	16			15	21
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0			< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	26			17	29
Lead	DETSC 2301#	0.3	mg/kg	81			53	87
Mercury	DETSC 2325#	0.05	mg/kg	0.09			0.06	0.11
Nickel	DETSC 2301#	1	mg/kg	14			12	13
Selenium	DETSC 2301#	0.5	mg/kg	2.4			1.9	1.6
Zinc	DETSC 2301#	1	mg/kg	220			170	66
Inorganics								
pH	DETSC 2008#		pH	6.5	7.2	7.7		5.7
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.5			0.5	0.7
Organic matter	DETSC 2002#	0.1	%	4.0			4.2	4.6
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	95	62	33	16	19
Sulphide	DETSC 2024*	10	mg/kg	24			< 10	20
Sulphur (free)	DETSC 3049#	0.75	mg/kg	1.3			< 0.75	2.1
Petroleum Hydrocarbons								
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01			< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01			< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01			< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5			< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2			< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5			< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4			< 3.4	< 3.4
Aliphatic C35-C40	DETSC 3072*	3.4	mg/kg	< 3.4			< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10			< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01			< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01			< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01			< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9			< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5			< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6			< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4			< 1.4	< 1.4
Aromatic C35-C40	DETSC 3072*	1.4	mg/kg	< 1.4			< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10			< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10			< 10	< 10
PAHs								

Summary of Chemical Analysis

Soil Samples

Our Ref 21-17044
 Client Ref 2585
 Contract Title St Peters Close

Lab No	1889374	1889375	1889376	1889377	1889378	1889379
Sample ID	TP01	TP01	TP04	TP04	TP06	TP07
Depth	0.20	1.00	1.00	0.20	0.20	1.00
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	04/08/2021	04/08/2021	04/08/2021	04/08/2021	04/08/2021	04/08/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Naphthalene	DETS 3303#	0.03	mg/kg	< 0.03			< 0.03	< 0.03	
Acenaphthylene	DETS 3303#	0.03	mg/kg	< 0.03			< 0.03	< 0.03	
Acenaphthene	DETS 3303#	0.03	mg/kg	< 0.03			< 0.03	< 0.03	
Fluorene	DETS 3303	0.03	mg/kg	< 0.03			< 0.03	< 0.03	
Phenanthrene	DETS 3303#	0.03	mg/kg	0.05			< 0.03	< 0.03	
Anthracene	DETS 3303	0.03	mg/kg	< 0.03			< 0.03	< 0.03	
Fluoranthene	DETS 3303#	0.03	mg/kg	0.21			0.05	0.07	
Pyrene	DETS 3303#	0.03	mg/kg	0.19			0.04	0.06	
Benzo(a)anthracene	DETS 3303#	0.03	mg/kg	0.10			0.03	< 0.03	
Chrysene	DETS 3303	0.03	mg/kg	0.10			< 0.03	< 0.03	
Benzo(b)fluoranthene	DETS 3303#	0.03	mg/kg	0.19			0.10	0.10	
Benzo(k)fluoranthene	DETS 3303#	0.03	mg/kg	0.04			< 0.03	< 0.03	
Benzo(a)pyrene	DETS 3303#	0.03	mg/kg	0.08			< 0.03	< 0.03	
Indeno(1,2,3-c,d)pyrene	DETS 3303#	0.03	mg/kg	0.03			< 0.03	< 0.03	
Dibenzo(a,h)anthracene	DETS 3303#	0.03	mg/kg	< 0.03			< 0.03	< 0.03	
Benzo(g,h,i)perylene	DETS 3303#	0.03	mg/kg	0.03			< 0.03	< 0.03	
PAH - USEPA 16, Total	DETS 3303	0.1	mg/kg	0.97			0.19	0.23	
Phenols									
Phenol - Monohydric	DETS 2130#	0.3	mg/kg	0.3			< 0.3	0.5	

Summary of Chemical Analysis

Soil Samples

Our Ref 21-17044
Client Ref 2585
Contract Title St Peters Close

Lab No	1889380	1889381	1889382	1889383
Sample ID	TP09	TP09	TP11	TP11
Depth	0.20	1.00	0.20	1.00
Other ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sampling Date	04/08/2021	04/08/2021	04/08/2021	04/08/2021
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
Preparation							
Moisture Content	DETSC 1004	0.1	%		12		14
Metals							
Arsenic	DETSC 2301#	0.2	mg/kg	10		11	
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	0.4		0.4	
Cadmium	DETSC 2301#	0.1	mg/kg	0.4		0.2	
Chromium	DETSC 2301#	0.15	mg/kg	18		19	
Chromium III	DETSC 2301*	0.15	mg/kg	18		19	
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0		< 1.0	
Copper	DETSC 2301#	0.2	mg/kg	25		25	
Lead	DETSC 2301#	0.3	mg/kg	54		56	
Mercury	DETSC 2325#	0.05	mg/kg	0.07		0.07	
Nickel	DETSC 2301#	1	mg/kg	17		18	
Selenium	DETSC 2301#	0.5	mg/kg	1.9		1.1	
Zinc	DETSC 2301#	1	mg/kg	72		57	
Inorganics							
pH	DETSC 2008#		pH	8.6	6.7	5.7	7.6
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.6		0.6	
Organic matter	DETSC 2002#	0.1	%	4.4		4.3	
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	12	< 10	15	< 10
Sulphide	DETSC 2024*	10	mg/kg	< 10		< 10	
Sulphur (free)	DETSC 3049#	0.75	mg/kg	1.2		< 0.75	
Petroleum Hydrocarbons							
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01	
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01	
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01	
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5		< 1.5	
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2		< 1.2	
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5		< 1.5	
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4		< 3.4	
Aliphatic C35-C40	DETSC 3072*	3.4	mg/kg	< 3.4		< 3.4	
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10		< 10	
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01	
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01	
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01	
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9		< 0.9	
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5		< 0.5	
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6		< 0.6	
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4		< 1.4	
Aromatic C35-C40	DETSC 3072*	1.4	mg/kg	< 1.4		< 1.4	
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10		< 10	
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10		< 10	
PAHs							

Summary of Chemical Analysis

Soil Samples

Our Ref 21-17044
 Client Ref 2585
 Contract Title St Peters Close

Lab No	1889380	1889381	1889382	1889383
Sample ID	TP09	TP09	TP11	TP11
Depth	0.20	1.00	0.20	1.00
Other ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sampling Date	04/08/2021	04/08/2021	04/08/2021	04/08/2021
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units			
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	0.07		< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03		< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.21		0.06
Pyrene	DETSC 3303#	0.03	mg/kg	0.18		0.05
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.11		0.03
Chrysene	DETSC 3303	0.03	mg/kg	0.12		0.04
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.22		0.11
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.05		< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.10		< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.05		< 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	0.05		< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	1.2		0.25
Phenols						
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	0.4		0.4

Summary of Asbestos Analysis

Soil Samples

Our Ref 21-17044

Client Ref 2585

Contract Title St Peters Close

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1889374	TP01 0.20	SOIL	NAD	none	Colin Patrick
1889377	TP04 0.20	SOIL	NAD	none	Colin Patrick
1889378	TP06 0.20	SOIL	NAD	none	Colin Patrick
1889380	TP09 0.20	SOIL	NAD	none	Colin Patrick
1889382	TP11 0.20	SOIL	NAD	none	Colin Patrick

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 21-17044
 Client Ref 2585
 Contract St Peters Close

Containers Received & Deviating Samples

Lab No	Sample ID	Date		Containers Received	Holding time exceeded for tests	inappropriate container for tests
		Sampled				
1889374	TP01 0.20 SOIL	04/08/21		GJ 250ml, GJ 60ml x2	Sulphur (free) (7 days), pH + Conductivity (7 days)	
1889375	TP01 1.00 SOIL	04/08/21		PT 1L	pH + Conductivity (7 days)	
1889376	TP04 1.00 SOIL	04/08/21		PT 1L	pH + Conductivity (7 days)	
1889377	TP04 0.20 SOIL	04/08/21		GJ 250ml, GJ 60ml x2	Sulphur (free) (7 days), pH + Conductivity (7 days)	
1889378	TP06 0.20 SOIL	04/08/21		GJ 250ml, GJ 60ml x2	Sulphur (free) (7 days), pH + Conductivity (7 days)	
1889379	TP07 1.00 SOIL	04/08/21		PT 1L		
1889380	TP09 0.20 SOIL	04/08/21		GJ 250ml, GJ 60ml x2	Sulphur (free) (7 days), pH + Conductivity (7 days)	
1889381	TP09 1.00 SOIL	04/08/21		PT 1L	pH + Conductivity (7 days)	
1889382	TP11 0.20 SOIL	04/08/21		GJ 250ml, GJ 60ml	Sulphur (free) (7 days), pH + Conductivity (7 days)	
1889383	TP11 1.00 SOIL	04/08/21		PT 1L	pH + Conductivity (7 days)	

Key: G-Glass J-Jar 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