

KEY

NOTES

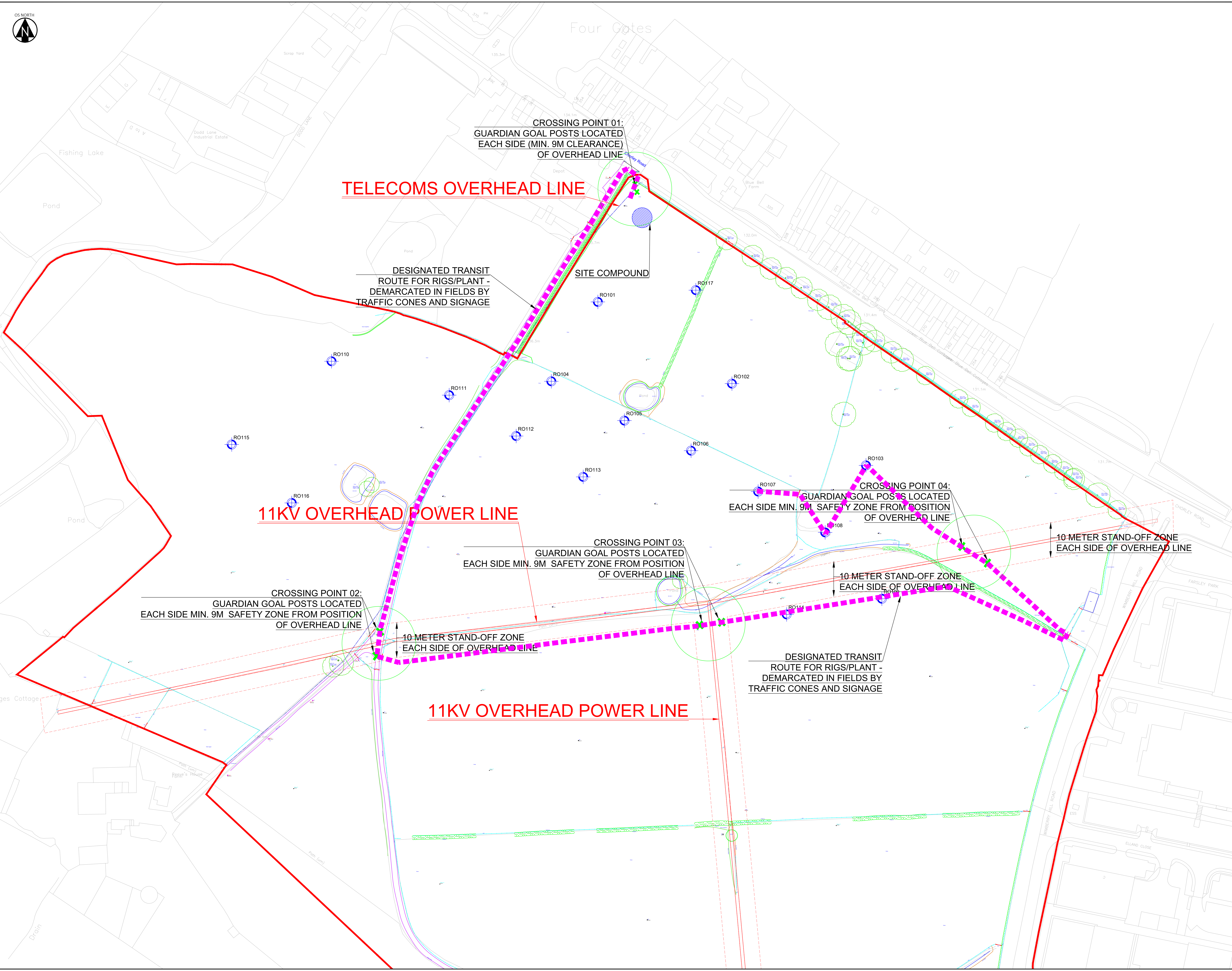
- All dimensions are to be checked on site before the commencement of works. Any discrepancies are to be reported to the Engineer for verification. Figured dimensions only are to be taken from this drawing.
- This drawing is based on the combined results of the RSL and Hydrock ground investigations and should be read in conjunction with those reports.
- Contour plots are indicative and based on interpretation between exploratory hole locations.

REV	NO	DATE	BY	CHKD	DATE

<p>4 Lakeside Festival Way Stoke-on-Trent ST1 5JH t: +44(0)1782 261919 e: info@hydrock.com or visit www.hydrock.com</p>		<p>TITLE GROUND MODEL CONTOURS</p>	
<p>CLIENT HARWORTH ESTATES</p>		<p>HYDROCK PROJECT NO. 15592-GNMA</p> <p>SCALE @ A0 1:2500</p>	
<p>PROJECT WINGATES INDUSTRIAL ESTATE, BOLTON</p>		<p>PURPOSE OF ISSUE SUITABLE FOR INFORMATION</p> <p>DRAWING NO. (PROJECT CODE ORIGINATOR ZONE LEVEL TYPE ROLE NUMBER) 15592-HYD-XX-XX-DR-GE-0007</p>	
<p>STATUS S2</p>		<p>REVISION P1</p>	



NOTES
 1. All dimensions are to be checked on site before the commencement of works. Any discrepancies are to be reported to the Architect & Engineer for verification. Figured dimensions only are to be taken from this drawing.
 2. This drawing is to be read in conjunction with all relevant Engineers' and Service Engineers' drawings and specifications.
 3. This drawing has been based on the following drawings and information: RSK_09/04/18 TOPOGRAPHICAL SURVEY, REF. 193556



CROSSING POINT 01:
 GUARDIAN GOAL POSTS LOCATED
 EACH SIDE (MIN. 9M CLEARANCE)
 OF OVERHEAD LINE

TELECOMS OVERHEAD LINE

DESIGNATED TRANSIT
 ROUTE FOR RIGS/PLANT -
 DEMARCATED IN FIELDS BY
 TRAFFIC CONES AND SIGNAGE

SITE COMPOUND

11KV OVERHEAD POWER LINE

CROSSING POINT 03:
 GUARDIAN GOAL POSTS LOCATED
 EACH SIDE MIN. 9M SAFETY ZONE FROM POSITION
 OF OVERHEAD LINE

CROSSING POINT 04:
 GUARDIAN GOAL POSTS LOCATED
 EACH SIDE MIN. 9M SAFETY ZONE FROM POSITION
 OF OVERHEAD LINE

CROSSING POINT 02:
 GUARDIAN GOAL POSTS LOCATED
 EACH SIDE MIN. 9M SAFETY ZONE FROM POSITION
 OF OVERHEAD LINE

10 METER STAND-OFF ZONE
 EACH SIDE OF OVERHEAD LINE

10 METER STAND-OFF ZONE
 EACH SIDE OF OVERHEAD LINE

10 METER STAND-OFF ZONE
 EACH SIDE OF OVERHEAD LINE

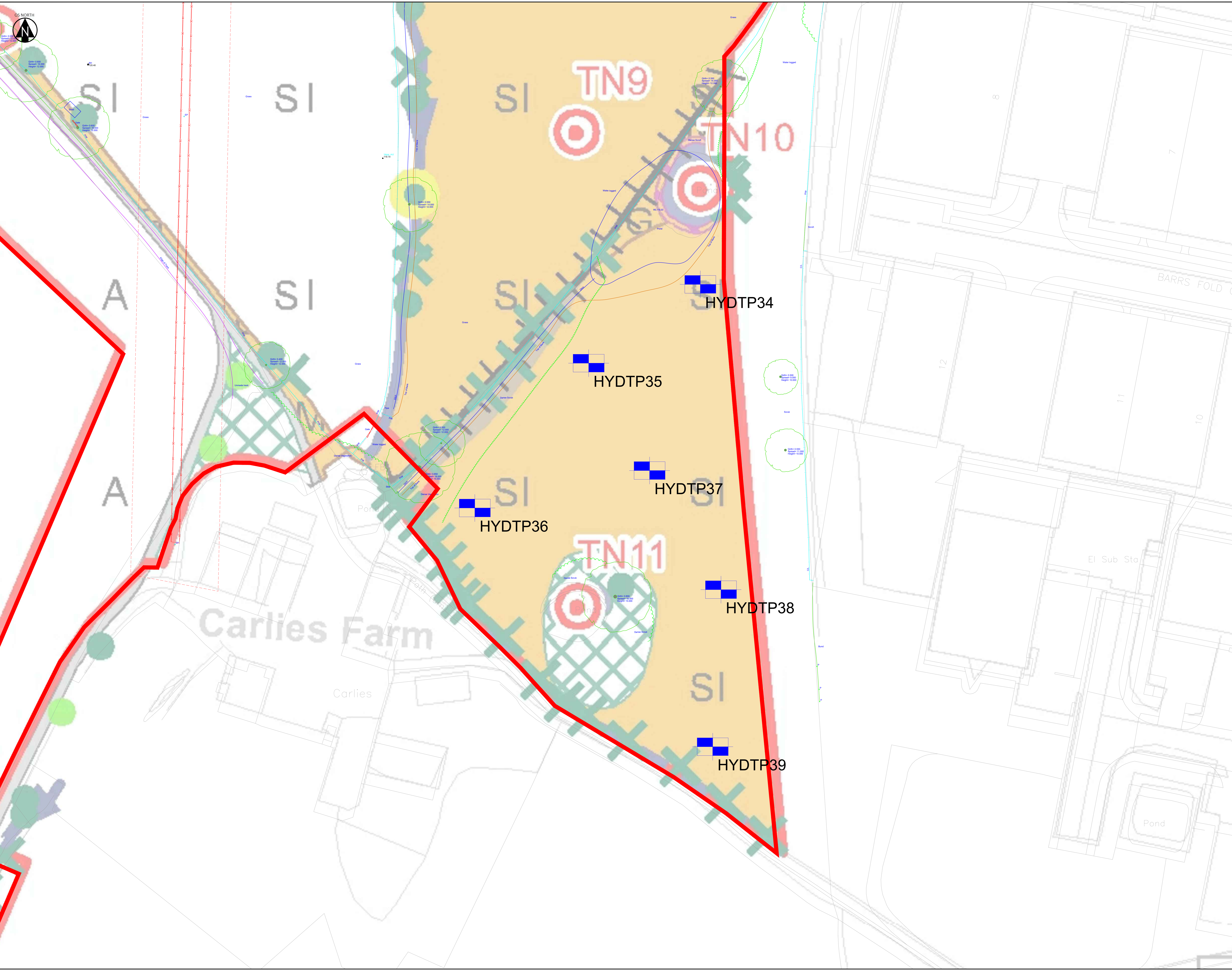
DESIGNATED TRANSIT
 ROUTE FOR RIGS/PLANT -
 DEMARCATED IN FIELDS BY
 TRAFFIC CONES AND SIGNAGE

11KV OVERHEAD POWER LINE

PROPOSED EXPLORATORY HOLE LOCATIONS				
#	LARGE	AC	LARGE	DM
REV	DATE	CHECKED BY	DATE	APPROVED BY
1				

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CLIENT	HARWORTH ESTATES
PROJECT	WINGATES INDUSTRIAL ESTATE, BOLTON
TITLE	EXPLORATORY HOLE PLAN - ADDITIONAL ROTARY BOREHOLES
HYDROCK PROJECT NO.	C-15592
SCALE @ A0	1:750
PURPOSE OF ISSUE	SUITABLE FOR INFORMATION
STATUS	S2
DRAWING NO. - PROJECT CODE ORIGINATOR ZONE LEVEL TYPE ROLE NUMBER	15592-HYD-XX-XX-DR-GE-0006
REVISION	P03



KEY

Hydrock Trial Pit

NOTES

1. All dimensions are to be checked on site before the commencement of works. Any discrepancies are to be reported to the Architect & Engineer for verification. Figured dimensions only are to be taken from this drawing.
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3. This drawing has been based on the following drawings and information: RSK_09/04/18 TOPOGRAPHICAL SURVEY, REF. 193556

PROPOSED EXPLORATORY HOLE LOCATIONS				
#	DATE	AC	DATE	AC

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CLIENT	
HARWORTH ESTATES	
PROJECT	
WINGATES INDUSTRIAL ESTATE, BOLTON	
TITLE	
PROPOSED EXPLORATORY HOLE PLAN - SOUTHERN PARCEL OF LAND	
HYDROCK PROJECT NO.	SCALE @ A0
15592-GNMA	NTS
PURPOSE OF ISSUE	STATUS
SUITABLE FOR INFORMATION	S2
DRAWING NO. / PROJECT CODE / ORIGINATOR / ZONE LEVEL / TYPE / ROLE / NUMBER	REVISION
15592-HYD-XX-XX-DR-GE-0009	PO1



NOTES

- All dimensions are to be checked on site before the commencement of works. Any discrepancies are to be reported to the Architect & Engineer for verification. Figured dimensions only are to be taken from this drawing.
- This drawing is to be read in conjunction with all relevant Engineers' and Service Engineers' drawings and specifications.
- This drawing has been based on the following drawings and information:
RSK_09/04/18 TOPOGRAPHICAL SURVEY, REF. 193556

- HYDROCK 2022**
- Hand Dug Trial Pit
- HYDROCK 2021**
- Rotary Borehole
 - Trial Pit
 - CBR Testing
 - Borehole
 - Window Sample
 - Trial Trench
 - Cable Percussive Borehole
 - Dynamic Cone Penetrometer Testing
 - Stand-off Zone from Overhead Cables
- RSK 2017 & 2018**
- Trial Pit
 - Cable Percussive Borehole
 - Window Sample
 - Rotary Borehole
 - Mine Shaft - Proven at 364180.57, 407565.04
 - EA - Historical Landfill Boundaries
 - RSK Landfill Boundaries



FIRST ISSUE		DATE		DATE		DATE	
PI	06/05/22	AC	06/05/22	AC	06/05/22	AC	06/05/22
REVISION NOTES/COMMENTS							
REV	DRAWN BY	DATE	CHECKED BY	DATE	APPROVED BY	DATE	
<p>4 Lakeside Festival Way Soleton-Tarrant SP1 5BY t: +44(0) 1782 261019 e: stoke@hydrock.com or visit www.hydrock.com</p>							
CLIENT							
HARWORTH ESTATES							
PROJECT							
WINGATES INDUSTRIAL ESTATE, BOLTON							
TITLE							
EXPLORATORY HOLE PLAN - ECOLOGICAL MITIGATION AREA							
HYDROCK PROJECT NO. 15592-GNMA						SCALE @ A0 NTS	
PURPOSE OF ISSUE SUITABLE FOR INFORMATION							STATUS S2
DRAWING NO. (PROJECT CODE-ORIGINATOR-ZONE LEVEL-TYPE-ROLE NUMBER) 15592-HYD-XX-XX-DR-GE-0011							REVISION P1

Appendix B Exploratory Hole Logs and Photographs

Exploratory Hole Logs



Project: Wingates Industrial Estate,
Bolton

Borehole No
HYDCP01

Page No. 1 of 1

Method: Cable Percussion	Date(s): 25/05/2021	Logged By: NC	Drilled By: VC Drilling
Client: Harworth Estate Property Group Ltd.	Co-ords: 364346.59, 407721.00	Checked By: JB/MC	Flush:
Hydrock Project No: 15592-GNMA	Ground Level: 132.83m OD		Scale: 1:50

Samples / Tests			Water-Strikes	Stratum Description	Depth m bgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill	
Depth (m)	Type	Results								
0.00 - 0.40	B			Dark brown slightly sandy slightly gravelly SILT with many fine rootlets. Gravel is angular to subangular, medium of coal. (TOPSOIL)	0.40	(0.40)	132.43			
0.20	D									
0.40 - 1.00	D			Firm orangish brown mottled yellow and grey slightly sandy slightly gravelly CLAY. Gravel is subangular to subrounded, fine to coarse of sandstone, coal and silt. (GLACIAL TILL)						
0.40 - 1.00	D									
1.20	SPT	N=8 (1,2,2,2,2,2)								
1.20 - 1.65	D					(2.60)				
2.00 - 2.45	U	(21,100%)								
2.50	D									
3.00	SPT	N=16 (1,2,3,4,5,4)		Firm becoming stiff greyish brown slightly sandy gravelly CLAY. Gravel is angular to subrounded, fine to coarse of silt, sandstone and coal. (GLACIAL TILL)	3.00		129.83			
3.00 - 3.45	B									
3.00 - 3.45	D									
4.00 - 4.45	U									
4.00 - 4.45	U	(35,100%)								
4.50	D									
5.00	SPT	N=18 (2,3,4,4,5,5)								
5.00 - 5.45	D					(4.50)				
6.00 - 6.45	U	(42,100%)								
6.50	D									
7.50	SPT	50/94mm (11,9,38,12)		Extremely weak dark grey MUDSTONE, recovered as clayey gravel. (PENNINE LOWER COAL MEASURES)	7.50		125.33			
7.50 - 7.95	B						(0.50)			
7.50 - 7.95	D									
8.00	SPT	30/25mm (25,25,30)								
8.00	C						124.83			
				End of Borehole at 8.00m						

Progress and Observations									Chiselling			General Remarks: 1) Location cleared for services 2) hand dug inspection pit to 1.2m bgl 3) on completion monitoring standpipe installed to 7.5m bgl.
Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)	From (m)	To (m)	Duration (HH:MM)	
												Groundwater: None Encountered



Project: Wingates Industrial Estate,
Bolton

Borehole No
HYDCP02

Page No. 1 of 1

Method: Cable Percussion	Date(s): 25/05/2021	Logged By: NC	Drilled By: VC Drilling
Client: Harworth Estate Property Group Ltd.	Co-ords: 364414.06, 407643.61	Checked By: JB/MC	Flush:
Hydrock Project No: 15592-GNMA	Ground Level: 133.02m OD		Scale: 1:50

Samples / Tests			Water-Strikes	Stratum Description	Depth m bgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill	
Depth (m)	Type	Results								
0.10 - 0.60	B			Dark brown SILT with many fine rootlets. (TOPSOIL)	0.60	(0.60)	132.42			
0.10 - 0.60 0.20	B D									
0.60	D			Soft becoming firm orangish brown mottled yellow and grey slightly sandy slightly gravelly CLAY. Gravel is subangular to subrounded, fine to medium of sandstone and coal. (GLACIAL TILL)	1	(2.10)	130.32			
0.60	D									
0.60	ES									
0.60 - 1.20	B									
1.20	SPT	N=8 (1,2,2,2,2,2)								
2.00 - 2.45	U			Firm becoming stiff grey and brown slightly sandy gravelly CLAY with a low cobble content. Gravel is tabular to subrounded, fine to coarse of sandstone, silt and coal. (GLACIAL TILL)	2	(3.90)	126.42			
2.00 - 2.45	U	(16,80%)								
2.50	D									
2.70	D									
3.00	SPT	N=16 (2,3,4,3,4,5)								
4.00 - 4.45	U	(38,90%)								
4.50	D									
5.00	SPT	N=18 (3,3,3,5,4,6)								
6.50 - 6.95	U			Extremely weak dark grey MUDSTONE, recovered as clayey gravel. (PENNINE LOWER COAL MEASURES)	7	(0.75)	125.67			
6.50 - 6.95	U	(100,5%)								
6.90	SPT	50/20mm (25,50)								
				End of Borehole at 7.35m						

Progress and Observations									Chiselling			General Remarks: 1) Location cleared for services 2) hand dug inspection pit to 1.2m bgl 3) on completion borehole backfilled with arisings.
Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)	From (m)	To (m)	Duration (HH:MM)	
									6.60	6.90	01:00	

Groundwater: None Encountered



Project: Wingates Industrial Estate,
Bolton

Borehole No
HYDCP03
Page No. 1 of 1

Method: Cable Percussion	Date(s): 10/06/2021	Logged By: NC	Drilled By: VC Drilling
Client: Harworth Estate Property Group Ltd.	Co-ords: 364145.14, 407621.59	Checked By: JB/MC	Flush:
Hydrock Project No: 15592-GNMA	Ground Level: 135.32m OD		Scale: 1:50

Samples / Tests			Water-Strikes	Stratum Description	Depth m bgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
Depth (m)	Type	Results							
0.00 - 0.90	B			Dark brown slightly sandy slightly gravelly SILT with some fine rootlets. Gravel is angular medium to coarse of siltstone and ceramic fragments. (TOPSOIL)		(0.90)			
0.90 - 1.20	B			Soft orangish brown mottled grey sandy slightly gravelly CLAY. Gravel is angular to subrounded fine to coarse of mudstone, siltstone, and coal. (GLACIAL TILL)	0.90		134.42		
1.20	SPT	N=5 (1,1,1,2,1,1)			1				
1.20 - 1.65	D			Firm becoming stiff to very stiff greyish brown slightly sandy gravelly CLAY. Gravel is angular to rounded fine to coarse of mudstone, siltstone, sandstone, and coal. (GLACIAL TILL)					
1.20 - 1.65	D								
2.00 - 2.45	U	(10,70%)			2		(2.10)		
2.00 - 2.45	U			... Below 9.0m bgl: Very stiff					
2.50	D								
3.00	SPT	N=9 (2,2,1,2,3,3)			3			132.32	
3.00 - 3.45	D								
4.00 - 4.45	U	(14,70%)		Very weak dark grey carbonaceous MUDSTONE. Recovered as gravel. (PENNINE LOWER COAL MEASURES)					
4.50	D								
5.00	SPT	N=18 (3,3,4,3,5,6)			5				
5.00 - 5.45	D								
6.00 - 6.45	U	(18,100%)			6		(6.50)		
6.00 - 6.45	U			End of Borehole at 9.95m					
6.50	D								
7.00	SPT	N=14 (3,3,3,4,3,4)			7				
7.00 - 7.45	D								
8.00 - 8.45	U	(25,100%)			8				
8.50	D								
9.00	SPT	50/200mm (3,3,5,20,25)		9					
9.00 - 9.45	D								
9.50	D				9.50		125.82		
9.60	SPT	50/115mm (14,11,26,24)							
9.60 - 9.95	D								
					9.95		125.37		

Progress and Observations									Chiselling			General Remarks: 1) Location cleared for services 2) hand dug inspection pit to 1.2m bgl 3) on completion borehole backfilled with arisings.
Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)	From (m)	To (m)	Duration (HH:MM)	
									9.50	9.60	01:00	Groundwater: None Encountered



Project: Wingates Industrial Estate,
Bolton

Borehole No
HYDCP04

Page No. 1 of 1

Method: Cable Percussion	Date(s): 10/06/2021	Logged By: NC	Drilled By: VC Drilling
Client: Harworth Estate Property Group Ltd.	Co-ords: 364045.11, 407634.29	Checked By: JB/MC	Flush:
Hydrock Project No: 15592-GNMA	Ground Level: 133.48m OD		Scale: 1:50

Samples / Tests			Water-Strikes	Stratum Description	Depth m bgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
Depth (m)	Type	Results							
0.20	D			Dark brown slightly sandy slightly gravelly SILT with some fine rootlets. Gravel is angular medium to coarse of siltstone and ceramic fragments. (TOPSOIL)	0.40	(0.40)	133.08		
0.40	D				Soft orangish brown mottled grey sandy slightly gravelly CLAY. Gravel is angular to subrounded fine to coarse of mudstone, siltstone, sandstone, and coal. (GLACIAL TILL)	1.00			
0.50	ES								
0.50 - 1.00	B								
0.50 - 1.00	B								
1.20 - 1.65	U				1.65	(1.60)			
1.20 - 1.65	U	(14,100%)							
1.70	D				2.00		131.48		
2.00	SPT	N=7 (1,1,1,2,2,2)							
2.00 - 2.45	D			Firm becoming stiff greyish brown slightly sandy gravelly CLAY. Gravel is angular to subrounded fine to coarse of mudstone, siltstone, and coal. (GLACIAL TILL)	3.00				
3.00 - 3.45	U								
3.00 - 3.45	U	(25,100%)							
3.50	D								
4.00	SPT	N=14 (2,2,3,3,4,4)		... At 5.50m bgl: Becoming stiff.	4.00				
4.00 - 4.45	D								
5.00	SPT	N=14 (2,2,3,3,4,4)							
5.00 - 5.45	U	(30,100%)							
5.50	D				6.00	(7.60)			
6.00	SPT	N=18 (2,2,3,4,5,6)							
6.00 - 6.45	D								
7.50 - 7.95	U	(35,100%)							
8.00	D				8.00				
8.10	D								
9.00	SPT	50/175mm (12,15,17,20,13)							
9.00 - 9.45	C								
9.00 - 9.45	D				9.60		123.88		
				End of Borehole at 9.60m					

Progress and Observations									Chiselling			General Remarks: 1) Location cleared for services 2) hand dug inspection pit to 1.2m bgl 3) on completion monitoring standpipe installed to 9.6m bgl.
Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)	From (m)	To (m)	Duration (HH:MM)	
									8.50	9.00	01:20	Groundwater: None Encountered



Project: Wingates Industrial Estate,
Bolton

Borehole No
HYDCP05

Page No. 1 of 1

Method: Cable Percussion	Date(s): 08/06/2021	Logged By: NC	Drilled By: VC Drilling
Client: Harworth Estate Property Group Ltd.	Co-ords: 364501.19, 407623.11	Checked By: JB/MC	Flush:
Hydrock Project No: 15592-GNMA	Ground Level: 133.27m OD		Scale: 1:50

Samples / Tests			Water-Strikes	Stratum Description	Depth m bgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
Depth (m)	Type	Results							
0.00 - 0.40	B			Dark brown slightly sandy SILT with some fine rootlets. (TOPSOIL)	0.40	(0.40)	132.87		
0.40 - 1.20	B			Firm orangish brown slightly sandy slightly gravelly CLAY. Gravel is angular to subangular fine to coarse of siltstone, sandstone, and coal. (GLACIAL TILL)					
1.20	SPT	N=17 (2,2,3,4,5,5)		... Below 1.2m bgl: Firm		(1.60)			
1.20 - 1.65	D								
2.00 - 2.45	U	(26,90%)		Firm to stiff greyish brown slightly sandy gravelly cobbly CLAY. Gravel and cobbles are angular to sub rounded fine to coarse of mudstone, siltstone, and sandstone. (GLACIAL TILL)	2.00		131.27		
2.50	D								
3.00	SPT	N=22 (3,3,4,6,6,6)							
3.00 - 3.45	D					(3.00)			
3.00 - 3.45	D								
4.00	SPT	N=20 (3,4,3,5,6,6)							
4.00 - 4.45	D								
5.00 - 5.45	U	(21,0%)		No recovery due to sandstone cobble. (GLACIAL TILL)	5.00		128.27		
5.50	D								
6.00	SPT	N=20 (3,3,4,4,6,6)							
6.00 - 6.45	D								
7.00 - 7.45	U								
7.00 - 7.45	U	(21,100%)							
7.50	D								
7.90	D				7.90		125.37		
8.00	SPT	50/95mm (12,13,36,14)		Weak dark grey carbonaceous MUDSTONE. Recovered as gravel. (PENNINE LOWER COAL MEASURES)	8.00	(0.10)	125.27		
8.00 - 8.45	D			End of Borehole at 8.00m					

Progress and Observations									Chiselling			General Remarks: 1) Location cleared for services 2) hand dug inspection pit to 1.2m bgl 3) on completion monitoring standpipe installed to 7.9m bgl.
Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)	From (m)	To (m)	Duration (HH:MM)	
									7.90	8.00	01:00	

Groundwater: None Encountered



Method: Cable Percussion	Date(s): 04/06/2021	Logged By: NC	Drilled By: VC Drilling
Client: Harworth Estate Property Group Ltd.	Co-ords: 364208.13, 407618.53	Checked By: JB/MC	Flush:
Hydrock Project No: 15592-GNMA	Ground Level: 136.52m OD		Scale: 1:50

Samples / Tests			Water-Strikes	Stratum Description	Depth m bgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
Depth (m)	Type	Results							
0.00 - 0.50	B			Dark brown sandy gravelly CLAY. Gravel is subangular to rounded, fine to coarse of siltstone and sandstone. (TOPSOIL)		(0.80)	135.72		
0.50	ES					0.80			
0.50 - 1.20	B								
1.20	SPT	N=10 (1,1,2,2,3,3)		Soft to firm brown mottled grey slightly sandy slightly gravelly CLAY. Gravel is subangular to subrounded, fine to coarse of sandstone. (GLACIAL TILL) ... Below 1.2m bgl: Firm	1	(1.20)			
2.00 - 2.45	U	(10,60%)				2		134.52	
2.00 - 2.45	U								
2.50	D			Firm brown sandy gravelly CLAY. Gravel is subangular to rounded fine to coarse of siltstone, sandstone and occasionally very sandy. (GLACIAL TILL)					
2.80	D								
2.80	ES								
3.00	SPT	N=15 (1,2,3,4,4,4)			3				
4.00 - 4.45	U	(16,80%)							
4.50	D					(5.00)			
5.00	SPT	N=12 (1,2,2,3,3,4)			5				
6.00 - 6.45	U	(18,60%)							
6.50	D								
6.50	ES								
7.00	SPT	N=25 (4,4,6,5,6,8)		Very weak dark grey very carbonaceous MUDSTONE, recovered as gravelly clay (PENNINE LOWER COAL MEASURES)	7		129.52		
8.00 - 8.45	U	(40,100%)							
8.50	D								
9.00	SPT	N=29 (4,6,6,7,7,9)			9	(3.60)			

Progress and Observations									Chiselling			General Remarks: 1) Location cleared for services 2) hand dug inspection pit to 1.2m bgl 3) on completion monitoring standpipe installed to 10.0m bgl.
Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)	From (m)	To (m)	Duration (HH:MM)	
												Groundwater: None Encountered



Project: Wingates Industrial Estate,
Bolton

Borehole No
HYDCP06

Page No. 2 of 2

Method: Cable Percussion	Date(s): 04/06/2021	Logged By: NC	Drilled By: VC Drilling
Client: Harworth Estate Property Group Ltd.	Co-ords: 364208.13, 407618.53	Checked By: JB/MC	Flush:
Hydrock Project No: 15592-GNMA	Ground Level: 136.52m OD		Scale: 1:50

Samples / Tests			Water-Strikes	Stratum Description	Depth m bgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
Depth (m)	Type	Results							
10.00	SPT	N=32 (4,4,6,8,9,9)		Very weak dark grey very carbonaceous MUDSTONE, recovered as gravelly clay (PENNINE LOWER COAL MEASURES) ... Below 10.00m bgl: Stiff					
10.60	D			Weak black shiny COAL, recovered as gravel. (PENNINE LOWER COAL MEASURES)	10.60	(0.40)	125.92		
11.00	SPT	50/30mm (15,10,50)			11.00		125.52		
11.00 - 11.45	D			End of Borehole at 11.00m					
					12				
					13				
					14				
					15				
					16				
					17				
					18				
					19				
					20				

Progress and Observations									Chiselling			General Remarks: 1) Location cleared for services 2) hand dug inspection pit to 1.2m bgl 3) on completion monitoring standpipe installed to 10.0m bgl.
Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)	From (m)	To (m)	Duration (HH:MM)	
												Groundwater: None Encountered



Project: Wingates Industrial Estate,
Bolton

Borehole No
HYDCP07

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Method: Cable Percussion	Date(s): 08/06/2021	Logged By: NC	Drilled By: VC Drilling
Client: Harworth Estate Property Group Ltd.	Co-ords: 364336.48, 407594.60	Checked By: JB/MC	Flush:
Hydrock Project No: 15592-GNMA	Ground Level: 136.61m OD		Scale: 1:50

Samples / Tests			Water-Strikes	Stratum Description	Depth m bgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
Depth (m)	Type	Results							
0.10 - 1.20	B			Dark brown slightly sandy SILT with many fine rootlets. (TOPSOIL)	0.40	(0.40)	136.21		
1.20	SPT	N=20 (2,4,6,4,4,6)		Firm to stiff becoming stiff brown slightly sandy gravelly CLAY. Gravel is angular to subrounded fine to coarse of mudstone, siltstone, sandstone, and coal. (GLACIAL TILL)	1				
2.00 - 2.65	U	(20,100%)			2				
3.00	SPT	N=21 (4,4,4,7,6,4)			3				
4.00 - 4.65	U	(32,100%)			4	(6.60)			
5.00	SPT	N=19 (1,1,4,4,5,6)			5				
6.00 - 6.65	U	(48,100%)			6				
7.00	SPT	N=50 (6,6,10,10,14,16)		Weak dark grey MUDSTONE. Recovered as gravel. (PENNINE LOWER COAL MEASURES)	7	7.00	129.61		
8.00	SPT	50/150mm (11,12,23,27)		End of Borehole at 8.00m	8	8.00	128.61		
					9				
					10				

Progress and Observations									Chiselling			General Remarks: 1) Location cleared for services 2) hand dug inspection pit to 1.2m bgl 3) on completion monitoring standpipe installed to 7.0m bgl.
Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)	From (m)	To (m)	Duration (HH:MM)	
									7.00	8.00	01:00	
Groundwater: None Encountered												



Project: Wingates Industrial Estate,
Bolton

Borehole No
HYDCP08
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Method: Cable Percussion	Date(s): 07/06/2021	Logged By: NC	Drilled By: VC Drilling
Client: Harworth Estate Property Group Ltd.	Co-ords: 364230.22, 407588.96	Checked By: JB/MC	Flush:
Hydrock Project No: 15592-GNMA	Ground Level: 136.69m OD		Scale: 1:50

Samples / Tests			Water-Strikes	Stratum Description	Depth m bgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
Depth (m)	Type	Results							
0.00 - 0.60	B			Dark brown slightly sandy SILT with many fine rootlets. (TOPSOIL)		(0.60)	136.09		
0.60 - 1.20 0.60 - 1.20	B B				Soft orangish brown mottled grey slightly sandy slightly gravelly CLAY. Gravel is angular to subrounded, fine to coarse of sandstone and coal fragments. (GLACIAL TILL)	0.60			
1.20	SPT	N=6 (1,1,1,2,2,1)				(2.00)			
2.00 - 2.45	U	(11,70%)							
2.50	D				2.60		134.09		
3.00 3.00 - 3.45	SPT D	N=12 (2,2,2,3,3,4)		Firm greyish brown slightly sandy gravelly CLAY. Gravel is angular to rounded, fine to coarse of mudstone, siltstone, sandstone and coal fragments. (GLACIAL TILL)					
4.00 - 4.45	U	(16,80%)							
4.50	D								
5.00	SPT	N=15 (2,2,3,3,4,5)				(4.30)			
6.00 - 6.45	U	(14,80%)							
6.50	D								
7.00	SPT	50/80mm (10,15,38,12)		Weak grey SILTSTONE, recovered as gravel. (PENNINE LOWER COAL MEASURES) End of Borehole at 7.05m	6.90		129.79		
						7.05	(0.15)	129.64	XXXXXX

Progress and Observations									Chiselling			General Remarks: 1) Location cleared for services 2) hand dug inspection pit to 1.2m bgl 3) on completion borehole backfilled with arisings.
Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)	From (m)	To (m)	Duration (HH:MM)	
												Groundwater: None Encountered



Project: Wingates Industrial Estate,
Bolton

Borehole No
HYDCP09

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Method: Cable Percussion	Date(s): 08/06/2021	Logged By: NC	Drilled By: VC Drilling
Client: Harworth Estate Property Group Ltd.	Co-ords: 364576.83, 407567.34	Checked By: JB/MC	Flush:
Hydrock Project No: 15592-GNMA	Ground Level: 132.46m OD		Scale: 1:50

Samples / Tests			Water-Strikes	Stratum Description	Depth m bgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
Depth (m)	Type	Results							
0.40 - 1.20	B			Dark brown slightly sandy SILT with some fine rootlets. (TOPSOIL)	0.40	(0.40)	132.06		
1.20	SPT	N=25 (5,6,5,6,7,7)		Medium dense clayey cobbly SAND AND GRAVEL. Gravel and cobbles are sub angular to sub rounded of sandstone and mudstone. (GLACIAL TILL)	1				
1.20 - 1.65	D				2				
2.00	SPT	N=24 (4,6,6,5,6,7)			2	(3.50)			
2.00 - 2.45	D				3				
2.00 - 2.45	D				3				
3.00	SPT	N=22 (4,4,5,6,5,6)			3				
3.00 - 3.45	D				4				
3.90	D			Soft to firm brown sandy cobbly CLAY. Cobbles are sub angular to sub rounded of sandstone and mudstone. (GLACIAL TILL)	3.90		128.56		
4.00	SPT	N=8 (1,2,2,2,2,2)			4				
4.00 - 4.45	D				5	(1.90)			
5.00 - 5.45	U				5				
5.00 - 5.45	U	(10,100%)			5				
5.50	D				5.80		126.66		
5.90	D			Weak dark grey carbonaceous MUDSTONE. Recovered as gravel. (PENNINE LOWER COAL MEASURES) <small>End of Borehole at 6.00m</small>	6.00	(0.20)	126.46		
6.00	SPT	50/190mm (10,13,15,15,20)			6				
6.00 - 6.45	D				7				
					8				
					9				
					10				

Progress and Observations									Chiselling			General Remarks: 1) Location cleared for services 2) hand dug inspection pit to 1.2m bgl 3) on completion borehole backfilled with arisings.
Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)	From (m)	To (m)	Duration (HH:MM)	
												Groundwater: None Encountered



Project: Wingates Industrial Estate,
Bolton

Borehole No
HYDCP10

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Method: Cable Percussion	Date(s): 07/06/2021	Logged By: NC	Drilled By: VC Drilling
Client: Harworth Estate Property Group Ltd.	Co-ords: 364326.14, 407566.90	Checked By: JB/MC	Flush:
Hydrock Project No: 15592-GNMA	Ground Level: 136.90m OD		Scale: 1:50

Samples / Tests			Water-Strikes	Stratum Description	Depth m bgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
Depth (m)	Type	Results							
0.00 - 0.50	B			Dark brown slightly sandy SILT with many fine rootlets. (TOPSOIL)		(0.50)	136.40		
0.50 - 1.20	B			Soft becoming soft brown sandy CLAY. (GLACIAL TILL)	0.50				
1.20	SPT	N=5 (1,1,1,2,1,1)		... Below 1.2m bgl: Soft	1	(1.50)			
2.00 - 2.45	U	(11,90%)		Firm brown sandy cobbly CLAY. (GLACIAL TILL)	2		134.90		
3.00	SPT	N=13 (4,3,2,3,4,4)			3				
4.00 - 4.45	U	(12,70%)			4	(4.40)			
4.50	D				4.50				
5.00	SPT	N=13 (4,4,4,3,3,3)			5				
6.00 - 6.45	D	(30,80%)			6				
6.50	D			Weak dark grey carbonaceous MUDSTONE. Recovered as gravel. (PENNINE LOWER COAL MEASURES)	6.40	(0.60)	130.50		
7.00	SPT	50/240mm (11,14,11,10,21,8)		End of Borehole at 7.00m	7		129.90		
					8				
					9				
					10				

Progress and Observations									Chiselling			General Remarks: 1) Location cleared for services 2) hand dug inspection pit to 1.2m bgl 3) on completion borehole backfilled with arisings.
Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)	From (m)	To (m)	Duration (HH:MM)	
												Groundwater: None Encountered



Project: Wingates Industrial Estate,
Bolton

Borehole No
HYDCP11

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Method: Cable Percussion	Date(s): 08/06/2021	Logged By: NC	Drilled By: VC Drilling
Client: Harworth Estate Property Group Ltd.	Co-ords: 364450.95, 407550.54	Checked By: JB/MC	Flush:
Hydrock Project No: 15592-GNMA	Ground Level: 134.45m OD		Scale: 1:50

Samples / Tests			Water-Strikes	Stratum Description	Depth m bgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
Depth (m)	Type	Results							
0.10 - 1.20	B			Dark brown slightly sandy SILT with many fine rootlets. (TOPSOIL)	0.50	(0.50)	133.95		
1.20	SPT	N=9 (2,1,2,2,3,2)		Soft to firm brown mottled grey slightly sandy slightly gravelly CLAY. Gravel is angular to subangular fine to coarse of siltstone and sandstone. (Driller noted possible made ground). (GLACIAL TILL)	1	(2.20)	131.75		
1.20 - 1.65	D								
2.00 - 2.65	U	(34,100%)		Firm becoming stiff greyish brown slightly sandy gravelly CLAY. Gravel is angular to rounded fine to coarse of mudstone, siltstone, sandstone, and coal. (GLACIAL TILL)	2	(4.10)	127.65		
3.00	SPT	N=11 (4,3,3,2,3,3)							
3.00 - 3.45	D								
3.00 - 3.45	D								
4.00 - 4.65	D			... Below 4.50m bgl: stiff	4				
4.00 - 4.65	U	(44,100%)							
5.00	SPT	N=29 (4,6,7,7,6,9)		Weak dark grey MUDSTONE. Recovered as gravel. (PENNINE LOWER COAL MEASURES)	5	(1.20)	126.45		
6.00 - 6.65	U	(47,100%)							
7.00	SPT	N=47 (7,10,11,12,10,14)		End of Borehole at 8.00m	6				
8.00	SPT	N=50 (9,12,14,10,14,12)							

Progress and Observations									Chiselling			General Remarks: 1) Location cleared for services 2) hand dug inspection pit to 1.2m bgl 3) on completion monitoring standpipe installed to 6.8m bgl.
Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)	From (m)	To (m)	Duration (HH:MM)	
									6.80	8.00	01:00	Groundwater: None Encountered



Project: Wingates Industrial Estate, Bolton

Borehole No
HYDCP12

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Method: Cable Percussion	Date(s): 07/06/2021	Logged By: NC	Drilled By: VC Drilling
Client: Harworth Estate Property Group Ltd.	Co-ords: 364278.89, 407549.82	Checked By: JB/MC	Flush:
Hydrock Project No: 15592-GNMA	Ground Level: 137.49m OD		Scale: 1:50

Samples / Tests			Water-Strikes	Stratum Description	Depth m bgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill	
Depth (m)	Type	Results								
0.00 - 0.50	B			Dark brown slightly sandy SILT with many fine rootlets. (TOPSOIL)		(0.50)	136.99			
0.50 - 1.20	B			Soft orange brown mottled yellow and grey slightly sandy slightly gravelly CLAY. Gravel is angular to subrounded, fine to coarse of sandstone and coal fragments. (GLACIAL TILL)		(2.10)	134.89			
0.50 - 1.20	B									
1.20	SPT	N=6 (1,1,1,2,2,1)								
2.00 - 2.45	U	(10,70%)								
2.50	D			Firm greyish brown gravelly CLAY. Gravel is angular to subrounded, fine to coarse of mudstone, siltstone, sandstone and coal fragments. (GLACIAL TILL)		(4.00)	130.89			
2.60	D									
2.60	D									
3.00 - 3.45	U	(13,90%)								
3.50	D									
3.50	ES									
4.00	SPT	N=15 (2,2,3,3,4,5)								
5.00 - 5.45	U									
5.00 - 5.45	U	(25,100%)								
5.50	D									
6.00	SPT	N=13 (2,3,2,3,4,4)								
6.60	D									
6.60	D			Weak dark grey carbonaceous MUDSTONE. Recovered as gravel. (PENNINE LOWER COAL MEASURES)		(0.40)	130.49			
6.60	ES									
7.00	SPT	50/15mm (25,50)								
				End of Borehole at 7.00m						

Progress and Observations									Chiselling			General Remarks: 1) Location cleared for services 2) hand dug inspection pit to 1.2m bgl 3) on completion monitoring standpipe installed to 6.6m bgl.
Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)	From (m)	To (m)	Duration (HH:MM)	
												Groundwater: None Encountered



Project: Wingates Industrial Estate,
Bolton

Borehole No
HYDCP13

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Method: Cable Percussion	Date(s): 03/06/2021	Logged By: NC	Drilled By: VC Drilling
Client: Harworth Estate Property Group Ltd.	Co-ords: 364499.39, 407514.19	Checked By: JB/MC	Flush:
Hydrock Project No: 15592-GNMA	Ground Level: 132.74m OD		Scale: 1:50

Samples / Tests			Water-Strikes	Stratum Description	Depth m bgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
Depth (m)	Type	Results							
0.20	D			Dark brown slightly gravelly SILT with some fine rootlets. Gravel is angular to subangular, fine to medium of mudstone and sandstone. (TOPSOIL)	0.40	(0.40)	132.34		
0.40	D				Soft to firm light brown mottled orange and grey slightly sandy slightly gravelly CLAY. Gravel is angular to subangular, fine to medium of sandstone and coal fragments. (GLACIAL TILL)	1.20			
0.50 - 1.00	B			Firm becoming stiff greyish brown slightly sandy gravelly CLAY. Gravel is angular to subrounded, fine to coarse of mudstone, siltstone, sandstone and coal fragments. (GLACIAL TILL)		1.20 - 1.65	(2.10)		
0.50 - 1.00	B				... At 4.50m bgl: Stiff.	2.00 - 2.45			
1.20	SPT	N=11 (1,2,2,3,3,3)		Very weak to weak dark grey MUDSTONE. Recovered as gravel. (PENNINE LOWER COAL MEASURES)		2.50		130.24	
1.20 - 1.65	D				End of Borehole at 8.00m	3.00 - 3.45			
2.00 - 2.45	U	(16,100%)				3.00			
2.50	D					3.00 - 3.45			
3.00	SPT	N=16 (2,2,3,4,4,5)				4.00			
3.00 - 3.45	D					4.00 - 4.45	(3.80)		
4.00	ES					4.00 - 4.45			
4.00 - 4.45	U	(69,100%)				4.50			
4.50	D					5.00			
5.00	SPT	N=19 (5,8,4,4,5,6)				5.00 - 5.45			
5.00 - 5.45	D					6.00 - 6.45			
6.00 - 6.45	U	(48,100%)				6.30		126.44	
6.50	D					6.50			
7.00	SPT	50/200mm (12,15,16,19,15)				7.00 - 7.45	(1.70)		
7.00 - 7.45	C					7.00 - 7.45			
7.00 - 7.45	D					8.00		124.74	
8.00	SPT	50/125mm (19,22,27,23)				8.00 - 8.45			
8.00 - 8.45	C					8.00 - 8.45			
8.00 - 8.45	D								

Progress and Observations									Chiselling			General Remarks: 1) Location cleared for services 2) hand dug inspection pit to 1.2m bgl 3) on completion monitoring standpipe installed to 8.0m bgl.
Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)	From (m)	To (m)	Duration (HH:MM)	
									6.50	8.00	01:00	
Groundwater: None Encountered												



Project: Wingates Industrial Estate,
Bolton

Borehole No
HYDCP14

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Method: Cable Percussion	Date(s): 10/06/2021	Logged By: NC	Drilled By: VC Drilling
Client: Harworth Estate Property Group Ltd.	Co-ords: 364031.87, 407523.13	Checked By: JB/MC	Flush:
Hydrock Project No: 15592-GNMA	Ground Level: 130.65m OD		Scale: 1:50

Samples / Tests			Water-Strikes	Stratum Description	Depth m bgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
Depth (m)	Type	Results							
0.00 - 1.00	B			Dark brown slightly sandy slightly gravelly SILT with some fine rootlets. Gravel is angular to subangular fine to coarse of siltstone, and rare ceramic fragments. (TOPSOIL)		(1.00)			
1.00 - 1.20	B			Soft orangish brown mottled grey sandy slightly gravelly CLAY. Gravel is angular to subangular fine to medium of siltstone and coal. (GLACIAL TILL)	1.00		129.65		
1.20	SPT	N=7 (1,1,2,2,1,2)							
1.20 - 1.65	D					(1.60)			
1.20 - 1.65	D								
2.00 - 2.45	U	(10,0%)			2				
2.50	D			Firm greyish brown slightly sandy gravelly CLAY. Gravel is angular to subrounded fine to coarse of mudstone, siltstone, and coal. (GLACIAL TILL)	2.60		128.05		
2.60	ES								
3.00	SPT	N=13 (2,1,2,3,3,5)			3				
3.00 - 3.45	D					(2.40)			
4.00 - 4.45	U	(14,80%)			4				
4.50	D								
5.00	SPT	50/275mm (6,11,11,9,15,15)		Very weak shiny black COAL. Recovered as gravel. (PENNINE LOWER COAL MEASURES)	5.00		125.65		
5.00 - 5.45	D				5.30	(0.30)	125.35		
5.30	SPT	50/115mm (5,6,14,36)		End of Borehole at 5.30m					
5.30 - 5.75	D								

Progress and Observations									Chiselling			General Remarks: 1) Location cleared for services 2) hand dug inspection pit to 1.2m bgl 3) on completion borehole backfilled with arisings.
Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)	From (m)	To (m)	Duration (HH:MM)	
									5.00	5.30	01:00	

Groundwater: None Encountered



Project: Wingates Industrial Estate,
Bolton

Borehole No
HYDCP15

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Method: Cable Percussion	Date(s): 04/06/2021	Logged By: NC	Drilled By: VC Drilling
Client: Harworth Estate Property Group Ltd.	Co-ords: 364156.99, 407507.93	Checked By: JB/MC	Flush:
Hydrock Project No: 15592-GNMA	Ground Level: 133.70m OD		Scale: 1:50

Samples / Tests			Water-Strikes	Stratum Description	Depth m bgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
Depth (m)	Type	Results							
0.20	D			Dark brown slightly sandy SILT with some fine rootlets. (TOPSOIL)		(0.50)	133.20		
0.50 - 1.00	D B B			Soft orange brown mottled grey slightly sandy slightly gravelly CLAY. Gravel is angular to subrounded fine to medium of siltstone and coal fragments. (GLACIAL TILL)	0.50				
1.20 - 1.45	U	(14,100%)			1	(1.20)			
1.70	D			Firm greyish brown slightly sandy gravelly CLAY. Gravel is angular to rounded, fine to coarse of mudstone, sandstone and rare coal fragments. (GLACIAL TILL)	1.70		132.00		
2.00	SPT	N=9 (1,2,2,2,3,2)			2				
2.00 - 2.45	D								
2.80	D					(2.10)			
3.00 - 3.45	U	(20,100%)			3				
3.50	D								
4.00	SPT	50/160mm (10,13,17,27,6)		Very weak dark grey very carbonaceous MUDSTONE, recovered as slightly clayey gravel. (PENNINE LOWER COAL MEASURES)	3.80		129.90		
4.00 - 4.45	D				4	(1.20)			
5.00	SPT	50/100mm (25,25,20,30)			5		128.70		
5.00 - 5.45	C			End of Borehole at 5.00m					
5.00 - 5.45	D								
					6				
					7				
					8				
					9				
					10				

Progress and Observations									Chiselling			General Remarks: 1) Location cleared for services 2) hand dug inspection pit to 1.2m bgl 3) on completion monitoring standpipe installed to 3.5m bgl.
Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)	From (m)	To (m)	Duration (HH:MM)	
									4.00	5.00	01:00	
Groundwater: None Encountered												



Project: Wingates Industrial Estate,
Bolton

Borehole No
HYDCP16

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Method: Cable Percussion	Date(s): 07/06/2021	Logged By: NC	Drilled By: VC Drilling
Client: Harworth Estate Property Group Ltd.	Co-ords: 364183.49, 407502.30	Checked By: JB/MC	Flush:
Hydrock Project No: 15592-GNMA	Ground Level: 134.95m OD		Scale: 1:50

Samples / Tests			Water-Strikes	Stratum Description	Depth m bgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
Depth (m)	Type	Results							
0.10	D			Dark brown sandy SILT with some fine rootlets. (TOPSOIL)	0.20	(0.20)	134.75		
0.20	D			Soft mottled grey and orange slightly sandy slightly gravelly CLAY with some decayed rootlets. Gravel is subangular to subrounded, fine to medium of siltstone, sandstone and quartzite. (GLACIAL TILL)	1	(1.50)	133.25		
0.50 - 1.00	B								
1.20 - 1.65	U	(16,100%)							
1.70	D			Firm becoming stiff brown mottled orange slightly sandy gravelly CLAY. Gravel is angular to rounded, fine to coarse of mudstone, siltstone and coal fragments. (GLACIAL TILL)	2		129.95		
2.00	SPT	N=11 (2,2,3,2,3,3)							
2.00 - 2.45	D								
2.00 - 2.45	D								
3.00 - 3.45	U	(27,100%)							
3.50	D			... Below 3.50m bgl: Greyish brown.					
4.00	SPT	N=21 (2,3,4,5,6,6)		... Below 3.90m bgl: becoming stiff					
4.00 - 4.45	D								
5.00	SPT	50/156mm (12,17,21,26,3)		Weak dark grey carbonaceous iron stained MUDSTONE. Recovered as gravel. (PENNINE LOWER COAL MEASURES)	5	(1.00)	128.95		
5.00	ES								
5.00 - 5.45	C								
5.00 - 5.45	D								
6.00	SPT	50/135mm (15,24,28,22)		End of Borehole at 6.00m	6.00				
6.00 - 6.45	C								
6.00 - 6.45	D								

Progress and Observations									Chiselling			General Remarks: 1) Location cleared for services 2) hand dug inspection pit to 1.2m bgl 3) on completion borehole backfilled with arisings.
Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)	From (m)	To (m)	Duration (HH:MM)	
									5.00	6.00	01:00	

Groundwater: None Encountered



Project: Wingates Industrial Estate,
Bolton

Borehole No
HYDCP17

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Method: Cable Percussion	Date(s): 07/06/2021	Logged By: NC	Drilled By: VC Drilling
Client: Harworth Estate Property Group Ltd.	Co-ords: 364242.87, 407500.17	Checked By: JB/MC	Flush:
Hydrock Project No: 15592-GNMA	Ground Level: 136.16m OD		Scale: 1:50

Samples / Tests			Water-Strikes	Stratum Description	Depth m bgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
Depth (m)	Type	Results							
0.20	D			Dark brown slightly sandy SILT with many fine rootlets. (TOPSOIL)	0.30	(0.30)	135.86		
0.30	D			Soft to firm orange brown mottled grey sandy slightly gravelly CLAY with some decayed rootlets. Gravel is subangular to subrounded, fine to coarse of siltstone, quartzite and coal fragments. (GLACIAL TILL)					
0.50 - 1.00	B								
1.20	SPT	N=8 (1,2,2,2,2,2)							
1.20 - 1.65	D					(2.20)			
2.00 - 2.45	U	(18,100%)							
2.50	D			Firm becoming stiff brown slightly sandy gravelly CLAY. Gravel is angular to subrounded, fine to coarse of mudstone, siltstone, sandstone and rare coal fragments. (GLACIAL TILL)	2.50		133.66		
2.50	D								
3.00	SPT	N=14 (2,2,3,3,4,4)							
3.00 - 3.45	D								
4.00 - 4.45	U	(62,100%)							
4.50	D			... Below 4.50m bgl: stiff					
5.00	SPT	N=21 (2,3,4,5,6,6)							
5.00 - 5.45	D								
6.00	SPT	50/165mm (10,16,20,24,6)		Weak dark grey very carbonaceous MUDSTONE. Recovered as gravel. (PENNINE LOWER COAL MEASURES)	6.00		130.16		
6.00 - 6.45	C								
6.00 - 6.45	D								
6.00 - 6.45	D								
7.00	SPT	50/50mm (20,25,50)							
7.00 - 7.45	C								
7.00 - 7.45	D								
				End of Borehole at 7.00m	7.00		129.16		

Progress and Observations									Chiselling			General Remarks: 1) Location cleared for services 2) hand dug inspection pit to 1.2m bgl 3) on completion monitoring standpipe installed to 5.5m bgl.
Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)	From (m)	To (m)	Duration (HH:MM)	
									6.00	7.00	01:00	

Groundwater: None Encountered



Project: Wingates Industrial Estate,
Bolton

Borehole No
HYDCP18

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Method: Cable Percussion	Date(s): 09/06/2021	Logged By: NC	Drilled By: VC Drilling
Client: Harworth Estate Property Group Ltd.	Co-ords: 364576.73, 407489.29	Checked By: JB/MC	Flush:
Hydrock Project No: 15592-GNMA	Ground Level: 131.64m OD		Scale: 1:50

Samples / Tests			Water-Strikes	Stratum Description	Depth m bgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
Depth (m)	Type	Results							
0.10 - 1.20	B			Dark brown slightly silty gravelly fine to coarse sand. Gravel is angular fine to coarse of concrete, tarmac, brick fragments, and ceramic fragments. (MADE GROUND) Tarmac brick concrete fill (Drillers description). (MADE GROUND)	0.20	(0.20)	131.44		
1.20	SPT	N=21 (2,4,6,6,4,5)				(1.60)			
1.80	D				1.80		129.84		
1.80	D			Soft to firm becoming stiff brown slightly sandy gravelly CLAY. Gravel is angular to subrounded fine to coarse of mudstone, siltstone, and sandstone. (GLACIAL TILL)					
2.00 - 2.65	U	(28,100%)							
3.00	SPT	N=8 (1,2,1,2,2,3)							
4.00 - 4.65	U			... Below 4.50m bgl: stiff					
4.00 - 4.65	U	(38,100%)							
5.00	SPT	N=23 (4,5,7,6,5,5)		... Below 5.0m bgl: Firm					
6.00 - 6.65	D								
6.00 - 6.65	U	(56,100%)							
7.00	SPT	N=50 (9,10,12,11,14,13)		Weak dark grey MUDSTONE. Recovered as gravel. (PENNINE LOWER COAL MEASURES)			125.14		
				----- End of Borehole at 7.00m	7.00		124.64		

Progress and Observations									Chiselling			General Remarks: 1) Location cleared for services 2) hand dug inspection pit to 1.2m bgl 3) on completion monitoring standpipe installed to 6.5m bgl.
Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)	From (m)	To (m)	Duration (HH:MM)	
									6.70	7.00	00:40	Groundwater: None Encountered



Project: Wingates Industrial Estate,
Bolton

Borehole No
HYDCP19

Page No. 1 of 1

Method: Cable Percussion	Date(s): 02/06/2021	Logged By: NC	Drilled By: VC Drilling
Client: Harworth Estate Property Group Ltd.	Co-ords: 364367.92, 407481.51	Checked By: JB/MC	Flush:
Hydrock Project No: 15592-GNMA	Ground Level: 134.47m OD		Scale: 1:50

Samples / Tests			Water-Strikes	Stratum Description	Depth m bgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
Depth (m)	Type	Results							
0.20	D			Dark brown slightly sandy SILT with some fine rootlets. (TOPSOIL)	0.40	(0.40)	134.07		
0.40	D			Soft to firm light brown mottled orange and grey slightly sandy slightly gravelly CLAY. Gravel is subangular to subrounded, fine to coarse of sandstone and coal fragments. (GLACIAL TILL)	1	(1.30)			
0.50	B								
0.50 - 1.00	B								
1.20 - 1.65	U	(20,100%)							
1.70	D			Firm becoming stiff brown slightly sandy gravelly CLAY. Gravel is angular to subrounded, fine to coarse of mudstone, siltstone, sandstone and coal fragments. (GLACIAL TILL)	2		132.77		
1.70	ES								
2.00	SPT	N=10 (1,2,2,2,3,3)							
2.00 - 2.45	D								
3.00 - 3.45	U	(30,100%)							
3.50	D								
4.00	SPT	N=17 (2,3,3,4,5,5)		... Below 4.00m bgl: Greyish brown.					
4.00 - 4.45	D								
5.00 - 5.45	U	(69,100%)							
5.50	D								
6.00	SPT	N=21 (4,3,3,5,6,7)							
6.00 - 6.45	D								
7.00	SPT	50/220mm (10,12,14,17,19)		Weak dark grey carbonaceous MUDSTONE. Recovered as gravel. (PENNINE LOWER COAL MEASURES)	7		127.47		
7.00 - 7.45	C								
7.00 - 7.45	D								
7.00 - 7.45	D								
8.00	SPT	50/60mm (22,20,50)		End of Borehole at 8.00m	8		126.47		
8.00 - 8.45	C								
8.00 - 8.45	D								

Progress and Observations									Chiselling			General Remarks: 1) Location cleared for services 2) hand dug inspection pit to 1.2m bgl 3) on completion monitoring standpipe installed to 7.0m bgl.
Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)	From (m)	To (m)	Duration (HH:MM)	
									7.00	8.00	01:00	

Groundwater: None Encountered



Method: Cable Percussion	Date(s): 09/06/2021	Logged By: NC	Drilled By: VC Drilling
Client: Harworth Estate Property Group Ltd.	Co-ords: 364064.83, 407475.01	Checked By: JB/MC	Flush:
Hydrock Project No: 15592-GNMA	Ground Level: 129.28m OD		Scale: 1:50

Samples / Tests			Water-Strikes	Stratum Description	Depth m bgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill	
Depth (m)	Type	Results								
0.00 - 1.00	B			Dark brown slightly sandy SILT with many fine rootlets. (TOPSOIL)		(1.00)	128.28			
1.00 - 1.20 1.00 - 1.20 1.20	B B SPT	N=9 (2,2,2,2,3,2)		Soft to firm orangish brown mottled grey slightly sandy slightly gravelly CLAY. Gravel is angular to subangular fine to coarse of sandstone and coal. (GLACIAL TILL)		(1.50)	126.78			
1.20 - 1.65	D									
2.00 - 2.45 2.00 - 2.45	U U	(16,90%)								
2.50	D			Yellowish brown clayey subangular to subrounded COBBLES of sandstone. (GLACIAL TILL)		(0.50)	126.28			
3.00 3.00 - 3.45	SPT D	N=13 (3,4,2,3,4,4)		Firm greyish brown slightly sandy gravelly CLAY. Gravel is angular to rounded fine to coarse of mudstone, siltstone, and sandstone. (GLACIAL TILL)		(1.80)				
4.00 - 4.45	U	(26,100%)								
4.50	D									
4.80	D									
5.00 5.00 - 5.45	SPT D	50/125mm (1,16,21,29)		Weak black shiny COAL, recovered as gravel. (PENNINE LOWER COAL MEASURES)		(0.80)	124.48			
5.60 5.60 - 6.05	SPT D	50/15mm (10,15,50)		Weak dark grey carbonaceous MUDSTONE. Recovered as gravel. (PENNINE LOWER COAL MEASURES) ... At 5.60m bgl: Light grey mottled yellow mudstone.		(0.45)	123.68			
				End of Borehole at 6.05m						

Progress and Observations									Chiselling			General Remarks: 1) Location cleared for services 2) hand dug inspection pit to 1.2m bgl 3) on completion monitoring standpipe installed to 5.6m bgl.
Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)	From (m)	To (m)	Duration (HH:MM)	
									4.80 5.00	5.00 5.60	01:00 02:30	Groundwater: None Encountered



Project: Wingates Industrial Estate,
Bolton

Borehole No
HYDCP21

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Method: Cable Percussion	Date(s): 01/06/2021	Logged By: NC	Drilled By: VC Drilling
Client: Harworth Estate Property Group Ltd.	Co-ords: 364280.88, 407440.36	Checked By: JB/MC	Flush:
Hydrock Project No: 15592-GNMA	Ground Level: 132.68m OD		Scale: 1:50

Samples / Tests			Water-Strikes	Stratum Description	Depth m bgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
Depth (m)	Type	Results							
0.20	D			Dark brown slightly sandy slightly gravelly SILT with some fine rootlets. Gravel is subangular, fine to medium of siltstone.	0.40	(0.40)	132.28		
0.40	D			(TOPSOIL)					
0.50 - 1.00	B		▼	Firm orangish brown mottled grey slightly sandy slightly gravelly CLAY. Gravel is angular to subrounded, fine to coarse of mudstone, siltstone and coal fragments. (GLACIAL TILL)					
1.20 - 1.65	U	(15,100%)	▼		1	(1.60)			
1.70	D			... Below 1.70m bgl: brown mottled orange and brown.					
2.00	SPT	N=13 (2,2,3,3,3,4)			2		130.68		
2.00 - 2.45	D			Firm becoming stiff brown slightly sandy slightly gravelly CLAY. Gravel is angular to subrounded, fine to coarse of mudstone and sandstone. (GLACIAL TILL)					
3.00 - 3.45	U	(23,100%)			3				
4.00	SPT	N=20 (3,3,4,5,5,6)			4	(3.50)			
4.00 - 4.45	D								
5.00 - 5.45	U	(55,100%)		... Below 5.0m bgl: Stiff	5				
5.50	D				5.50		127.18		
5.50	D			Weak dark grey carbonaceous iron stained MUDSTONE. Recorded as gravel. (PENNINE LOWER COAL MEASURES)					
6.00	SPT	50/228mm (12,15,15,16,18,1)			6	(1.50)			
6.00 - 6.45	D								
7.00	SPT	50/165mm (10,15,17,25,8)			7		125.68		
7.00 - 7.45	C			End of Borehole at 7.00m					
7.00 - 7.45	D								
					8				
					9				
					10				

Progress and Observations									Chiselling			General Remarks: 1) Location cleared for services 2) hand dug inspection pit to 1.2m bgl 3) on completion borehole backfilled with arisings.
Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)	From (m)	To (m)	Duration (HH:MM)	
									5.60	7.00	01:00	
Groundwater: Water ingress at 1.50m												



Project: Wingates Industrial Estate,
Bolton

Borehole No
HYDCP22

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Method: Cable Percussion	Date(s): 04/06/2021	Logged By: NC	Drilled By: VC Drilling
Client: Harworth Estate Property Group Ltd.	Co-ords: 364448.54, 407430.82	Checked By: JB/MC	Flush:
Hydrock Project No: 15592-GNMA	Ground Level: 129.90m OD		Scale: 1:50

Samples / Tests			Water-Strikes	Stratum Description	Depth m bgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
Depth (m)	Type	Results							
0.00 - 1.00	B			Dark brown slightly sandy SILT with many fine rootlets. (TOPSOIL)		(1.00)	128.90		
1.00 - 1.20	B			Soft to firm brown sandy slightly gravelly CLAY with the occasional grading to clayey sand. Gravel is subangular, fine to medium of sandstone. (GLACIAL TILL)	1.00	(0.50)	128.40		
1.20	SPT	N=11 (1,2,2,3,3,3)			1.50				
2.00	ES			Loose brown clayey fine to coarse SAND. (GLACIAL TILL)	2.00	(1.50)			
2.00 - 2.45	U				2.50				
2.50	D			Firm greyish brown slightly sandy gravelly CLAY. Gravel is angular to subrounded, fine to coarse of siltstone, sandstone and rare coal fragments. (GLACIAL TILL)	3.00		126.90		
3.00	SPT	N=12 (1,2,3,3,4)			3.00				
3.00 - 3.45	D				4.00				
4.00 - 4.45	U	(18,80%)			4.50				
4.50	D				5.00				
5.00	SPT	N=13 (2,2,3,3,3,4)			6.00		(4.40)		
6.00 - 6.45	U	(20,70%)			6.50				
6.50	D				7.00				
7.00	SPT	N=16 (3,3,3,4,4,5)		Extremely weak grey MUDSTONE, recovered as gravelly clay. (PENNINE LOWER COAL MEASURES)	7.00		122.50		
7.00 - 7.45	D				7.40				
8.00	SPT	50/20mm (25,50)		End of Borehole at 8.00m	8.00		121.90		
8.00 - 8.45	D				9.00				
					10.00				

Progress and Observations									Chiselling			General Remarks: 1) Location cleared for services 2) hand dug inspection pit to 1.2m bgl 3) on completion monitoring standpipe installed to 7.0m bgl.
Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)	From (m)	To (m)	Duration (HH:MM)	
												Groundwater: None Encountered



Project: Wingates Industrial Estate,
Bolton

Borehole No
HYDCP23
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Method: Cable Percussion Date(s): 01/06/2021 Logged By: NC Drilled By: VC Drilling
 Client: Harworth Estate Property Group Ltd. Co-ords: 364349.09, 407408.80 Checked By: JB/MC Flush:
 Hydrock Project No: 15592-GNMA Ground Level: 130.69m OD Scale: 1:50

Samples / Tests			Water-Strikes	Stratum Description	Depth m bgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
Depth (m)	Type	Results							
0.20	D			Dark brown slightly sandy slightly gravelly SILT with may fine rootlets. Gravel is subangular, fine of sandstone.	0.40	(0.40)	130.29		
0.40	D			(TOPSOIL)					
0.50 - 1.00	B			Firm orangish brown mottled grey slightly sandy slightly gravelly CLAY. Gravel is subangular to rounded, fine to coarse of siltstone, sandstone and coal fragments.					
0.50 - 1.00	B			(GLACIAL TILL)					
1.20	SPT	N=13 (2,2,3,3,4,3)				(1.60)			
1.20 - 1.65	D								
2.00	SPT	N=10 (2,2,2,3,2,3)		Firm becoming stiff brown sandy gravelly CLAY with a low cobble content. Gravel is subangular to rounded, fine to coarse of mudstone and siltstone.	2.00		128.69		
2.00 - 2.45	C			(GLACIAL TILL)					
2.00 - 2.45	D								
3.00 - 3.45	U								
3.00 - 3.45	U	(17,100%)							
3.50	D								
4.00	SPT	N=14 (1,2,2,3,4,5)		... Below 4.00m bgl: greyish brown slightly sandy and gravel includes sandstone and coal fragments.					
4.00 - 4.45	D								
5.00 - 5.45	U			... Below 5.50m bgl: becoming stiff		(5.50)			
6.00	SPT	N=19 (2,3,4,4,5,6)							
6.00 - 6.45	D								
7.00	SPT	50/145mm (14,19,24,26)							
7.50 - 7.95	C			Weak medium strong dark grey carbonaceous MUDSTONE, recovered as gravel.	7.50		123.19		
7.50 - 7.95	D			(PENNINE LOWER COAL MEASURES)					
8.50	SPT	50/45mm (25,25,50)							
8.50 - 8.95	C								
8.50 - 8.95	D								
					8.95		121.74		
					End of Borehole at 8.95m				

Progress and Observations									Chiselling			General Remarks: 1) Location cleared for services 2) hand dug inspection pit to 1.2m bgl 3) on completion borehole backfilled with arisings.
Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)	From (m)	To (m)	Duration (HH:MM)	
									7.50	8.50	01:00	
Groundwater: Water ingress at 7.50m												



Project: Wingates Industrial Estate,
Bolton

Borehole No
HYDCP24

Page No. 1 of 1

Method: Cable Percussion	Date(s): 02/06/2021	Logged By: NC	Drilled By: VC Drilling
Client: Harworth Estate Property Group Ltd.	Co-ords: 364555.45, 407385.80	Checked By: JB/MC	Flush:
Hydrock Project No: 15592-GNMA	Ground Level: 126.22m OD		Scale: 1:50

Samples / Tests			Water-Strikes	Stratum Description	Depth m bgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
Depth (m)	Type	Results							
0.00 - 0.60	B			Dark brown slightly sandy SILT with many fine rootlets. (TOPSOIL)		(0.60)			
0.20	D					0.60	125.62		
0.60	D				Soft dark brown mottled grey slightly sandy slightly gravelly CLAY. Gravel is subangular, fine to medium of sandstone. (GLACIAL TILL)				
0.60	D					1			
0.60 - 1.20	B								
1.20	SPT	N=6 (1,1,1,1,2,2)							
1.20 - 1.65	D								
1.20 - 1.65	D						(1.90)		
2.00	ES								
2.00 - 2.45	U	(18,90%)				2			
2.50	D								
2.50	D				Firm to stiff greyish brown slightly sandy slightly gravelly CLAY. Gravel is anuglar to subrounded, fine to coarse of mudstone, siltstone, sandstone and rare coal fragments. (GLACIAL TILL)	2.50	123.72		
3.00	SPT	N=18 (2,3,4,4,5,5)							
3.00 - 3.45	D					3			
4.00 - 4.45	U	(39,100%)							
4.50	D								
5.00	SPT	N=23 (4,4,6,5,6,6)							
5.00 - 5.45	D								
7.00 - 7.45	U								
7.60	D				7.60	118.62			
8.00	SPT	50/100mm (12,13,20,30)		Very dense grey gravelly subrounded to rounded COBBLES and BOULDERS of MUDSTONE. (PENNINE LOWER COAL MEASURES)	8.00	(0.40)	118.22		
8.00 - 8.45	B			End of Borehole at 8.00m					

Progress and Observations									Chiselling			General Remarks: 1) Location cleared for services 2) hand dug inspection pit to 1.2m bgl 3) on completion borehole backfilled with arisings.
Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)	From (m)	To (m)	Duration (HH:MM)	
									7.60	7.70	01:30	

Groundwater: None Encountered



Project: Wingates Industrial Estate,
Bolton

Borehole No
HYDCP25

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Method: Cable Percussion	Date(s): 28/05/2021	Logged By: NC	Drilled By: VC Drilling
Client: Harworth Estate Property Group Ltd.	Co-ords: 364264.78, 407366.75	Checked By: JB/MC	Flush:
Hydrock Project No: 15592-GNMA	Ground Level: 127.13m OD		Scale: 1:50

Samples / Tests			Water-Strikes	Stratum Description	Depth m bgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
Depth (m)	Type	Results							
0.20	D			Dark brown slightly sandy slightly gravelly SILT with many fine rootlets. Gravel is subangular to subrounded, fine to coarse of siltstone. (TOPSOIL)	0.40	(0.40)	126.73		
0.40	D			Very soft light yellowish brown mottled orange sandy slightly gravelly CLAY. Gravel is subangular to subrounded, fine of sandstone. (GLACIAL TILL)	1	(1.30)			
0.50 - 1.00	B								
1.20 - 1.65	U			Very soft becoming firm to stiff brown slightly sandy gravelly CLAY with a low cobble content. Gravel is subangular to rounded, fine to coarse of siltstone, sandstone and coal fragments. (GLACIAL TILL)	1.70		125.43		
1.20 - 1.65	U	(18,100%)							
1.70	D				2				
2.00	SPT	N=2 (0,1,0,1,0,1)							
2.00 - 2.45	D				3				
3.00 - 3.45	U	(30,100%)							
3.50	D			... Below 3.50m bgl: becoming firm to stiff	4				
3.50	D								
4.00	SPT	N=16 (1,2,3,4,4,5)			5				
4.00 - 4.45	D								
5.00 - 5.45	U	(36,100%)			6				
6.00	SPT	N=21 (3,4,4,5,6,6)							
6.00 - 6.45	D				7		120.13		
7.00	D								
7.50	SPT	50/150mm (12,22,31,19)		Extremely weak dark grey MUDSTONE, recovered as clayey gravel. (PENNINE LOWER COAL MEASURES)	8				
7.50 - 7.95	C								
7.50 - 7.95	D				8.50		118.63		
8.50	SPT	50/60mm (22,25,50)							
8.50 - 8.95	C			End of Borehole at 8.50m	9				
8.50 - 8.95	D								
					10				

Progress and Observations									Chiselling			General Remarks: 1) Location cleared for services 2) hand dug inspection pit to 1.2m bgl 3) on completion monitoring standpipe installed to 8.5m bgl.
Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)	From (m)	To (m)	Duration (HH:MM)	
									7.50	8.50	01:00	

Groundwater: Water ingress at 7.00m



Method: Cable Percussion	Date(s): 02/06/2021	Logged By: NC	Drilled By: VC Drilling
Client: Harworth Estate Property Group Ltd.	Co-ords: 364527.64, 407357.27	Checked By: JB/MC	Flush:
Hydrock Project No: 15592-GNMA	Ground Level: 124.73m OD		Scale: 1:50

Samples / Tests			Water-Strikes	Stratum Description	Depth m bgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill	
Depth (m)	Type	Results								
0.10 - 0.50	B			Dark brown slightly sandy slightly gravelly SILT with some fine rootlets. Gravel is angular, medium of ceramic fragments. (TOPSOIL)		(0.50)				
0.20	D					0.50	124.23			
0.50	B			Soft orangish brown mottled grey slightly sandy slightly gravelly CLAY. Gravel is subangular to subrounded, fine to coarse of sandstone. (GLACIAL TILL)						
1.20	SPT	N=7 (1,1,1,2,2,2)				1				
1.20 - 1.65	D					(1.90)				
2.00 - 2.45	U	(16,100%)			2					
2.40	D			Firm becoming stiff greyish brown sandy gravelly CLAY. Gravel is subangular to subrounded, fine to coarse of mudstone, siltstone and sandstone. (GLACIAL TILL)	2.40		122.33			
2.50	D									
3.00	SPT	N=16 (2,2,3,4,4,5)			3					
3.00 - 3.45	D									
4.00 - 4.45	U	(33,100%)			4					
4.50	D									
5.00	SPT	N=22 (3,4,5,5,5,7)			5					
5.00 - 5.45	D					(5.40)				
6.00	D				6					
6.50 - 6.95	U	(41,100%)								
7.00	D				7					
7.70	D									
8.00	SPT	50/10mm (25,50)		Very weak to weak dark grey carbonaceous MUDSTONE. Recorded as gravel. (PENNINE LOWER COAL MEASURES)	7.80		116.93			
8.00 - 8.45	C					8	(0.65)			
8.00 - 8.45	D									
				End of Borehole at 8.45m						
					9					
					10					

Progress and Observations									Chiselling			General Remarks: 1) Location cleared for services 2) hand dug inspection pit to 1.2m bgl 3) on completion monitoring standpipe installed to 5.0m bgl.
Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)	From (m)	To (m)	Duration (HH:MM)	
												Groundwater: None Encountered

Method: Cable Percussion	Date(s): 01/06/2021	Logged By: NC	Drilled By: VC Drilling
Client: Harworth Estate Property Group Ltd.	Co-ords: 364421.81, 407322.08	Checked By: JB/MC	Flush:
Hydrock Project No: 15592-GNMA	Ground Level: 125.10m OD		Scale: 1:50

Samples / Tests			Water-Strikes	Stratum Description	Depth m bgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
Depth (m)	Type	Results							
0.10 - 0.40	B			Dark brown slightly sandy slightly gravelly SILT with many fine rootlets. Gravel is subangular, fine to medium of sandstone. (TOPSOIL)	0.40	(0.40)	124.70		
0.20	D								
0.40	D			Soft yellowish brown mottled orange and grey slightly sandy slightly gravelly CLAY. Gravel is subrounded, medium to coarse of siltstone. (GLACIAL TILL)	1	(1.30)			
0.40 - 1.20	B								
1.20 - 1.65	U				1.70		123.40		
1.20 - 1.65	U	(13,100%)							
1.70	D			Firm to stiff greyish brown slightly sandy gravelly CLAY. Gravel is subangular to rounded, fine to coarse of siltstone, sandstone and coal fragments. (GLACIAL TILL)	2				
2.00	SPT	N=17 (2,3,4,4,4,5)							
2.00 - 2.45	D				3				
2.20 - 2.65	D								
3.00 - 3.45	U	(29,100%)			4				
3.50	D								
4.00	SPT	N=21 (2,3,4,4,5,8)			5				
4.00 - 4.45	D								
5.00 - 5.45	U	(33,90%)			6				
5.50	D								
6.00	D			... At 6.00m bgl: slightly gravelly.	7				
6.50	SPT	N=23 (3,4,5,5,6,7)							
6.50 - 6.95	D				7.60		117.50		
7.60	D								
8.00	SPT	50/30mm (25,50)		Extremely weak dark grey MUDSTONE, recovered as clayey gravel. (PENNINE LOWER COAL MEASURES)	8				
8.00	ES								
8.00 - 8.45	C			... At 8.00m bgl: weak carbonaceous mudstone, recorded as gravel.	8.45		116.65		
8.00 - 8.45	D								
				End of Borehole at 8.45m					

Progress and Observations									Chiselling			General Remarks: 1) Location cleared for services 2) hand dug inspection pit to 1.2m bgl 3) on completion monitoring standpipe installed to 5.0m bgl.
Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)	From (m)	To (m)	Duration (HH:MM)	
									7.70	8.00	01:00	Groundwater: None Encountered



Method: Cable Percussion	Date(s): 28/05/2021	Logged By: NC	Drilled By: VC Drilling
Client: Harworth Estate Property Group Ltd.	Co-ords: 364357.25, 407296.16	Checked By: JB/MC	Flush:
Hydrock Project No: 15592-GNMA	Ground Level: 122.91m OD		Scale: 1:50

Samples / Tests			Water-Strikes	Stratum Description	Depth m bgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill	
Depth (m)	Type	Results								
0.20	D			Dark brown slightly sandy SILT with many fine rootlets. (TOPSOIL)		(0.50)				
0.50 - 1.20	D B B			Firm orangish brown mottled yellow and grey sandy slightly gravelly CLAY. Gravel is subangular, fine to medium of sandstone and coal fragments. (GLACIAL TILL)	0.50		122.41			
1.20	SPT	N=12 (2,2,3,3,3,3)								
1.20 - 1.65	D				1	(1.10)				
1.20 - 1.65	D									
1.60	D			Firm becoming stiff greyish brown slightly sandy gravelly CLAY. Gravel is subangular to rounded, fine to coarse of mudstone, siltstone, sandstone and coal fragments. (GLACIAL TILL)	1.60		121.31			
2.00 - 2.45	U				2					
2.00 - 2.45	U									
2.50	D									
3.00	SPT	N=22 (3,4,4,5,6,7)			3					
3.00 - 3.45	D									
4.00	U	(34,100%)			4					
4.50	D									
5.00	SPT	N=26 (2,4,8,5,7,6)			5					
5.00 - 5.45	D									
6.00	D				6					
6.50 - 6.95	U	(39,100%)								
7.00	D				7					
7.20	D									
7.50	SPT	50/20mm (25,50)		Extremely weak dark grey MUDSTONE, recovered as clayey gravel. (PENNINE LOWER COAL MEASURES) ... At 7.50m bgl: weak slightly clayey gravel.	7.20		115.71			
7.50 - 7.95	C									
7.50 - 7.95	D				7.95		114.96			
				End of Borehole at 7.95m						

Progress and Observations									Chiselling			General Remarks: 1) Location cleared for services 2) hand dug inspection pit to 1.2m bgl 3) on completion borehole backfilled with arisings.
Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)	From (m)	To (m)	Duration (HH:MM)	
									7.30	7.50	01:00	Groundwater: None Encountered