

**APPENDIX G**  
**BOREHOLE LOGS AND BOREHOLE LOCATION PLAN**



Technical advisers on environmental issues

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# BOREHOLE LOG

Project <b>Earls Barton Quarry</b>		Client <b>Breedon Southern Limited</b>		Date Completed <b>25/10/2019</b>
Project No. <b>BRE/EA/CJC/2989/01</b>		Ground Level (mAOD)	Co-ordinates ( ) <b>E 483 559. N 262 573.</b>	Borehole No. <b>1</b>
Contractor <b>Hughes Exploration &amp; Environmental Ltd.</b>		Location <b>Earls Barton, Northamptonshire</b>		Sheet <b>1 of 1</b>

Scale	SAMPLES & TESTS			STRATA				Water	Instrument/ Backfill
	Depth	Type No	Test Result	Reduced Level	Depth (Thickness)	DESCRIPTION	Legend		
1					0.20	Light orangish brown sandy CLAY with frequent rootlets. [TOPSOIL]			
					(0.80)	Light orangish brown sandy CLAY.			
2					1.00	Brownish orange sandy slightly gravelly CLAY. Gravel is fine to medium angular to sub-angular flint.			
					(0.50)				
3					1.50	Soft orangish brown very sandy CLAY. Sand is coarse.			
					(1.90)				
4					3.40	Firm orange brown silty CLAY. 3.50 Becoming dark grey in colour.			
					(0.40)				
5					3.80	Dark grey slightly gravelly CLAY. Gravel is fine sub-angular to angular flint.			
					(0.60)				
5					4.40	Dark grey very sandy gravelly CLAY. Gravel is sub-angular to angular flint and sandstone.			
					(0.30)				
5					4.70	Dark grey sandy very gravelly CLAY.			
					(0.30)				
5					5.00	Soft grey slightly sandy CLAY. [WHITBY MUDSTONE FORMATION]			
					(0.50)				
					5.50	END OF BOREHOLE			

GROUNDWATER							REMARKS / INSTALLATIONS	DRILLING	
Date	Depth of hole	Depth of casing	Depth to water	Depth struck	Depth after 20 mins	Depth sealed	Drilling from ground level to 5.50m depth using rotary auger method.	Plant: RC40	
25/10/19				4.4				Crew: M. Hughes R.Saunders	
								Type and Diameter	Depth m
								Continuous Flight Auger 150mm	4.00
							LOGGED BY	R.White	



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Project Earls Barton Quarry		Client Breedon Southern Limited		Date Completed 25/10/2019
Project No. BRE/EA/CJC/2989/01		Ground Level (mAOD)	Co-ordinates () E 483 600. N 262 559.	
Contractor Hughes Exploration & Environmental Ltd.		Location Earls Barton, Northamptonshire		Sheet 1 of 1

Scale	SAMPLES & TESTS			STRATA				Water	Instrument/ Backfill
	Depth	Type No	Test Result	Reduced Level	Depth (Thickness)	DESCRIPTION	Legend		
1             2             3             4             5	3.00-3.80	B		0.15	0.15	Dark brown slightly sandy CLAY with frequent rootlets. [TOPSOIL]			
				(2.85)	1.50 - 3.00 Clay orangish brown and very sandy.				
				3.00	3.00	Orangish brown silty very gravelly SAND. Gravel is fine to medium sub-angular flint.			
				(0.80)	3.40 - 3.80 Becoming less gravelly.				
				3.80	3.80	Orangish brown SILT.			
				(0.70)	4.50	Grey clayey SILT.			
				(0.50)	5.00	END OF BOREHOLE			

GROUNDWATER							REMARKS / INSTALLATIONS	DRILLING		
Date	Depth of hole	Depth of casing	Depth to water	Depth struck	Depth after 20 mins	Depth sealed	Drilling from ground level to 5.0m depth using rotary auger method.	Plant: RC40		
25/10/19				3.8				Crew: M. Hughes R.Saunders		
								Type and Diameter	Depth m	
							LOGGED BY	R.White	Continuous Flight Auger 150mm	5.00



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Project Earls Barton Quarry		Client Breedon Southern Limited		Date Completed 25/10/2019
Project No. BRE/EA/CJC/2989/01		Ground Level (mAOD)	Co-ordinates () E 483 687. N 262 568.	Borehole No. 3
Contractor Hughes Exploration & Environmental Ltd.		Location Earls Barton, Northamptonshire		Sheet 1 of 1

Scale	SAMPLES & TESTS			STRATA				Water	Instrument/ Backfill
	Depth	Type No	Test Result	Reduced Level	Depth (Thickness)	DESCRIPTION	Legend		
1 2 3 4 5 6	1.80-4.80	B			0.15	Dark brown slightly sandy CLAY with frequent rootlets . [TOPSOIL]		▽	
					(0.35) 0.50	Dark brown slightly sandy CLAY.			
					(1.20)	Firm yellow silty CLAY.			
					1.70				
					1.80	Yellowish brown slightly sandy gravelly CLAY. Gravel is fine to medium sub-angular flint.			
						Orangish brown silty slightly gravelly to very gravelly SAND. Gravel is fine to medium sub-angular flint.			
						2.60 - 3.00 Becoming very gravelly.			
					4.80				
			(0.70)	5.10 - 5.50 Becoming dark bluish grey.					
			5.50						
					END OF BOREHOLE				

GROUNDWATER							REMARKS / INSTALLATIONS		DRILLING	
Date	Depth of hole	Depth of casing	Depth to water	Depth struck	Depth after 20 mins	Depth sealed			Type and Diameter	Depth m
25/10/19				3.0			Drilling from ground level to 5.50m depth using rotary auger method.		Plant: RC40 Crew: M. Hughes R.Saunders	
							LOGGED BY R.White		Continuous Flight Auger 150mm	5.50



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Project No. <b>BRE/EA/CJC/2989/01</b>		Ground Level (mAOD)	Co-ordinates () <b>E 483 752. N 262 569.</b>	Borehole No. <b>4</b>
Contractor <b>Hughes Exploration &amp; Environmental Ltd.</b>		Location <b>Earls Barton, Northamptonshire</b>		Sheet <b>1 of 1</b>

Scale	SAMPLES & TESTS			STRATA				Water	Instrument/ Backfill
	Depth	Type No	Test Result	Reduced Level	Depth (Thickness)	DESCRIPTION	Legend		
1	1.75-3.50	B			0.15	Dark brown slightly sandy CLAY with frequent rootlets. [TOPSOIL]			
					(0.85)	Orangish brown slightly silty CLAY.			
				1.00	Brown slightly gravelly SILT. Gravel is fine to medium angular flint.				
				(0.75)					
2					1.75	Orangish brown very silty gravelly to very gravelly SAND. Gravel is fine to medium angular flint. Sand is coarse. 1.80 Becoming very gravelly.			
					(1.75)				
3					3.50	Soft grey CLAY. [WHITBY MUDSTONE FORMATION]			
					(0.50)				
4		4.00	END OF BOREHOLE						
5									

GROUNDWATER							REMARKS / INSTALLATIONS	DRILLING		
Date	Depth of hole	Depth of casing	Depth to water	Depth struck	Depth after 20 mins	Depth sealed	Drilling from ground level to 4.0m depth using rotary auger method.	Plant: RC40		
								Crew: M. Hughes R.Saunders		
								Type and Diameter	Depth m	
							LOGGED BY	R.White	Continuous Flight Auger 150mm	4.00



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# BOREHOLE LOG

Project <b>Earls Barton Quarry</b>		Client <b>Breedon Southern Limited</b>		Date Completed <b>30/10/2019</b>
Project No. <b>BRE/EA/CJC/2989/01</b>		Ground Level (mAOD)	Co-ordinates () <b>E 483 242. N 262 563.</b>	Borehole No. <b>5</b>
Contractor <b>Hughes Exploration &amp; Environmental Ltd.</b>		Location <b>Earls Barton, Northamptonshire</b>		Sheet <b>1 of 1</b>

Scale	SAMPLES & TESTS			STRATA				Water	Instrument/ Backfill
	Depth	Type No	Test Result	Reduced Level	Depth (Thickness)	DESCRIPTION	Legend		
0 1 2 3 4 5 6	3.50-5.50	B			0.15	Dark brown slightly sandy CLAY with frequent rootlets. [TOPSOIL]		▽	
					(0.35) 0.50	Brown sandy CLAY.			
					(0.40) 0.90	Reddish brown sandy CLAY.			
					(2.60)	Firm grey thinly laminated CLAY.			
					3.00 - 3.50	Becoming soft.			
					3.50	Yellow very silty SAND.			
					(0.50) 4.00	Brown silty very sandy GRAVEL. Gravel is fine to medium angular to sub-rounded flint and sandstone. Sand is coarse.			
					(2.00)				
					6.00	Soft grey slightly sandy CLAY.			
		6.20	Soft bluish grey CLAY. [WHITBY MUDSTONE FORMATION]						
		6.50	END OF BOREHOLE						

GROUNDWATER							REMARKS / INSTALLATIONS	DRILLING		
Date	Depth of hole	Depth of casing	Depth to water	Depth struck	Depth after 20 mins	Depth sealed	Drilling from ground level to 6.50m depth using rotary auger method.	Plant: RC40		
30/10/19				3.5				Crew: M Hughes O.Abbot		
								Type and Diameter	Depth m	
								Continuous Flight Auger 150mm	6.50	
							LOGGED BY	R.White		



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Project No. BRE/EA/CJC/2989/01		Ground Level (mAOD)	Co-ordinates () E 483 350. N 262 550.	Borehole No. 6
Contractor Hughes Exploration & Environmental Ltd.		Location Earls Barton, Northamptonshire		Sheet 1 of 1

Scale	SAMPLES & TESTS			STRATA				Water	Instrument/ Backfill
	Depth	Type No	Test Result	Reduced Level	Depth (Thick-ness)	DESCRIPTION	Legend		
1	0.75-2.40	B			0.15	Dark brown slightly sandy CLAY with frequent rootlets. [TOPSOIL]			
					(0.60)	Dark brown sandy CLAY.			
2					0.75	Reddish brown silty gravelly SAND. Gravel is fine to medium angular to rounded flint and sandstone.			
					(1.75)				
3	2.50-4.00	B			2.50	Light yellow slightly gravelly SAND. Gravel is fine to medium angular to rounded flint and sandstone.			
					(1.50)				
4					4.00	Orangish brown very clayey SAND.			
					4.20				
5	4.30-5.00	B			(1.50)	Orangish brown silty very sandy GRAVEL. Gravel is fine to medium angular to rounded flint and sandstone.			
					5.70				
6					5.80	Orangish brown very silty gravelly SAND. Gravel is fine to medium angular to rounded flint and sandstone.			
					6.00				
					(0.50)	Soft greyish blue CLAY. [WHITBY MUDSTONE FORMATION]			
					6.50	Greyish blue thinly laminated MUDSTONE. [WHITBY MUDSTONE FORMATION]			
						END OF BOREHOLE			

GROUNDWATER							REMARKS / INSTALLATIONS	DRILLING	
Date	Depth of hole	Depth of casing	Depth to water	Depth struck	Depth after 20 mins	Depth sealed	Drilling from ground level to 6.50m depth using rotary auger method.	Plant: RC40	
30/10/19				4.2					Crew: M Hughes O.Abbot
								Type and Diameter	Depth m
								Continuous Flight Auger 150mm	6.50
							LOGGED BY	R.White	



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Project No. <b>BRE/EA/CJC/2989/01</b>	Ground Level (mAOD)	Co-ordinates ( <b>E 483 440. N 262 494.</b>		Borehole No. <b>7</b>
Contractor <b>Hughes Exploration &amp; Environmental Ltd.</b>		Location <b>Earls Barton, Northamptonshire</b>		Sheet <b>1 of 1</b>

Scale	SAMPLES & TESTS			STRATA				Water	Instrument/ Backfill
	Depth	Type No	Test Result	Reduced Level	Depth (Thickness)	DESCRIPTION	Legend		
1	3.50-5.50	B			0.15	Dark brown slightly sandy CLAY with frequent rootlets. [TOPSOIL]		▽	
					(1.65)	Orangish brown slightly sandy thin laminated CLAY.			
				1.80					
2					(0.50)	Orangish brown sandy slightly gravelly CLAY. Gravel is fine to medium angular to sub-angular flint.			
					2.30				
3					(1.20)	Orangish brown sandy gravelly CLAY.			
					3.50				
				4		(0.80)	Orangish brown silty very gravelly SAND. Gravel is angular to sub-rounded flint and sandstone.		
					4.30				
5		(1.20)	Grey very silty SAND.						
		5.50							
6		(0.50)	Firm bluish grey CLAY. [WHITBY MUDSTONE FORMATION]						
		6.00	END OF BOREHOLE						

GROUNDWATER							REMARKS / INSTALLATIONS		DRILLING		
Date	Depth of hole	Depth of casing	Depth to water	Depth struck	Depth after 20 mins	Depth sealed			Type and Diameter	Depth m	
30/10/19				3.5					Drilling from ground level to 6.0m depth using rotary auger method.	Plant: RC40 Crew: M Hughes O.Abbot	Continuous Flight Auger 150mm
								LOGGED BY			R.White





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Project Earls Barton Quarry		Client Breedon Southern Limited		Date Completed 30/10/2019
Project No. BRE/EA/CJC/2989/01		Ground Level (mAOD)	Co-ordinates ( E 483 340. N 262 491.	Borehole No. 8
Contractor Hughes Exploration & Environmental Ltd.		Location Earls Barton, Northamptonshire		Sheet 1 of 1

Scale	SAMPLES & TESTS			STRATA				Water	Instrument/ Backfill
	Depth	Type No	Test Result	Reduced Level	Depth (Thickness)	DESCRIPTION	Legend		
1           2           3           4	3.30-4.30	B			0.15	Dark brown slightly sandy CLAY with frequent rootlets. [TOPSOIL]			
					(1.05)	Firm brownish grey thinly laminated CLAY.			
					1.20	Orangish brown very clayey SAND. Sand is fine to medium.			
					(0.30)				
					1.50	Soft brownish grey CLAY.			
					(1.70)	2.40 - 3.10 Becoming firm and slightly gravelly. Gravel is fine to medium sub-angular flint.			
					3.20				
					3.30	3.10 - 3.20 Becoming soft and sandy.			
					(1.00)	Soft light bluish grey CLAY.			
					4.30	Orangish brown silty very sandy GRAVEL. Gravel is angular to sub-angular flint and ironstone.			
	4.50	Soft greyish blue CLAY. [WHITBY MUDSTONE FORMATION]							
		END OF BOREHOLE							

GROUNDWATER							REMARKS / INSTALLATIONS	DRILLING	
Date	Depth of hole	Depth of casing	Depth to water	Depth struck	Depth after 20 mins	Depth sealed		Type and Diameter	Depth m
30/10/19				3.3				Drilling from ground level to 4.50m depth using rotary auger method.	Plant: RC40 Crew: M Hughes O.Abbot
							LOGGED BY	R.White	Continuous Flight Auger 150mm 4.50



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Project No. <b>BRE/EA/CJC/2989/01</b>		Ground Level (mAOD)	Co-ordinates () <b>E 483 267. N 262 513.</b>		Borehole No. <b>9</b>
Contractor <b>Hughes Exploration &amp; Environmental Ltd.</b>			Location <b>Earls Barton, Northamptonshire</b>		Sheet <b>1 of 1</b>

Scale	SAMPLES & TESTS			STRATA				Water	Instrument/ Backfill
	Depth	Type No	Test Result	Reduced Level	Depth (Thickness)	DESCRIPTION	Legend		
1          2          3          4          5	4.00-4.50	B				0.15	Dark brown slightly sandy CLAY with frequent rootlets. [TOPSOIL] Firm orangish brown CLAY.		▽
			(1.35)			1.50	Orangish brown very sandy gravelly CLAY. Gravel is fine to medium angular to rounded flint and sandstone.		
			(0.50)			2.00	Firm orangish brown CLAY.		
			(1.60)			3.60	Orangish brown very clayey coarse SAND.		
			(0.30)			4.00	Soft dark grey very sandy CLAY.		
			(0.50)			4.50	Orangish brown silty very sandy GRAVEL. Gravel is fine to medium angular to rounded flint and sandstone.		
						4.60	Soft greyish blue CLAY.		
			(0.30)			4.70	Grey sandy slightly gravelly CLAY. Gravel is fine to medium angular to rounded flint and sandstone.		
						5.00	Dark bluish grey CLAY. [WHITBY MUDSTONE FORMATION] END OF BOREHOLE		

GROUNDWATER							REMARKS / INSTALLATIONS	DRILLING	
Date	Depth of hole	Depth of casing	Depth to water	Depth struck	Depth after 20 mins	Depth sealed		Type and Diameter	Depth m
30/10/19				4.0				Continuous Flight Auger 150mm	5.00
LOGGED BY							R.White		

Drilling from ground level to 5.0m depth using rotary auger method.

Plant: RC40

Crew: M Hughes O.Abbot

Type and Diameter

Continuous Flight Auger 150mm

Depth m

5.00

LOGGED BY

R.White



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Project <b>Earls Barton Quarry</b>		Client <b>Breedon Southern Limited</b>		Date Completed <b>29/10/2019</b>
Project No. <b>BRE/EA/CJC/2989/01</b>		Ground Level (mAOD)	Co-ordinates () <b>E 483 273. N 262 454.</b>	Borehole No. <b>10</b>
Contractor <b>Hughes Exploration &amp; Environmental Ltd.</b>		Location <b>Earls Barton, Northamptonshire</b>		Sheet <b>1 of 1</b>

Scale	SAMPLES & TESTS			STRATA					Water	Instrument/ Backfill
	Depth	Type No	Test Result	Reduced Level	Depth (Thick-ness)	DESCRIPTION	Legend			
1	2.70-3.90	B			0.15	Dark brown slightly sandy CLAY with frequent rootlets. [TOPSOIL]		▽		
				(1.85)	Firm greyish brown CLAY.					
2				2.00	Reddish brown very clayey SAND. Sand is coarse.					
				(0.50)						
				2.50	Orangish brown very silty gravelly SAND. Gravel is fine to medium angular flint.					
3				2.70	Orangish brown very silty very gravelly SAND. Gravel is fine to medium angular flint.					
				(0.80)						
				3.50	Orangish brown very silty very sandy GRAVEL. Gravel is fine to medium angular flint.					
4	(0.40)	3.90	Soft greyish blue CLAY. [WHITBY MUDSTONE FORMATION]							
5		5.00	END OF BOREHOLE							

GROUNDWATER							REMARKS / INSTALLATIONS	DRILLING		
Date	Depth of hole	Depth of casing	Depth to water	Depth struck	Depth after 20 mins	Depth sealed	Drilling from ground level to 5.0m depth using rotary auger method.	Plant: RC40		
29/10/19				2.5				Crew: M Hughes O.Abbot		
								Type and Diameter	Depth m	
							LOGGED BY	R.White	Continuous Flight Auger 150mm	5.00



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Project No. BRE/EA/CJC/2989/01		Ground Level (mAOD)	Co-ordinates () E 483 214. N 262 471.	Borehole No. 11
Contractor Hughes Exploration & Environmental Ltd.		Location Earls Barton, Northamptonshire		Sheet 1 of 1

Scale	SAMPLES & TESTS			STRATA				Water	Instrument/ Backfill
	Depth	Type No	Test Result	Reduced Level	Depth (Thickness)	DESCRIPTION	Legend		
1					0.15	Dark brown slightly sandy CLAY with frequent rootlets. [TOPSOIL]			
					(0.95)	Firm greyish brown CLAY.			
2	2.00-4.00	B			1.10	Reddish brown very silty SAND. Sand is coarse.			
					(0.70)				
3					1.80	Firm greyish brown CLAY.			
					2.00	Brown silty very sandy GRAVEL. Gravel is fine to medium angular to sub-rounded flint and sandstone. Sand is coarse.			
4					(2.00)	3.50 - 4.50 Gravel becoming fine.			
					4.00	Soft bluish grey CLAY. [WHITBY MUDSTONE FORMATION]			
5					(1.00)				
					5.00	END OF BOREHOLE			

GROUNDWATER							REMARKS / INSTALLATIONS	DRILLING		
Date	Depth of hole	Depth of casing	Depth to water	Depth struck	Depth after 20 mins	Depth sealed	Drilling from ground level to 5.0m depth using rotary auger method.	Plant: RC40		
29/10/19				3.5					Crew: M Hughes O.Abbot	
								Type and Diameter	Depth m	
								Continuous Flight Auger 150mm	5.00	
							LOGGED BY	R.White		



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Project No. BRE/EA/CJC/2989/01		Ground Level (mAOD)	Co-ordinates () E 483 134. N 262 416.	Borehole No. 12
Contractor Hughes Exploration & Environmental Ltd.		Location Earls Barton, Northamptonshire		Sheet 1 of 1

Scale	SAMPLES & TESTS			STRATA				Water	Instrument/ Backfill
	Depth	Type No	Test Result	Reduced Level	Depth (Thickness)	DESCRIPTION	Legend		
1          2          3          4          5          6	2.20-6.20	B			0.15	Dark brown slightly sandy CLAY with frequent rootlets. [TOPSOIL]			
					(0.95)	Firm orangish brown CLAY.			
					1.10	Reddish brown very sandy CLAY.			
					1.40	Soft orangish brown CLAY.			
					(0.80)				
					2.20	Brown silty very sandy GRAVEL. Gravel is angular to sub-rounded flint and sandstone. Sand is coarse.			
					4.90	Soft orangish brown very sandy gravelly CLAY. Gravel is angular to sub-rounded flint and sandstone. Sand is coarse.			
					5.20	Brown silty very sandy GRAVEL. Gravel is angular to sub-rounded flint and sandstone. Sand is coarse.			
					(1.10)				
					6.30	Firm greyish blue CLAY. [WHITBY MUDSTONE FORMATION]			
	6.50	END OF BOREHOLE							

GROUNDWATER							REMARKS / INSTALLATIONS		DRILLING		
Date	Depth of hole	Depth of casing	Depth to water	Depth struck	Depth after 20 mins	Depth sealed	Drilling from ground level to 6.50m depth using rotary auger method.		Plant: RC40		
29/10/19				3.0					Crew: M Hughes O.Abbot		
							Type and Diameter	Depth m			
							Continuous Flight Auger 150mm	6.50			
							LOGGED BY	R.White			



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Project Earls Barton Quarry		Client Breedon Southern Limited		Date Completed 29/10/2019
Project No. BRE/EA/CJC/2989/01		Ground Level (mAOD)	Co-ordinates () E 483 127. N 262 486.	Borehole No. 13
Contractor Hughes Exploration & Environmental Ltd.		Location Earls Barton, Northamptonshire		Sheet 1 of 1

Scale	SAMPLES & TESTS			STRATA				Water	Instrument/ Backfill
	Depth	Type No	Test Result	Reduced Level	Depth (Thickness)	DESCRIPTION	Legend		
0 1 2 3 4 5 6 7	3.10-4.50	B		0.15		Dark brown slightly sandy CLAY with frequent rootlets. [TOPSOIL]		▽	
				(1.15)		Soft orangish brown CLAY.			
				1.30		Orangish brown sandy gravelly CLAY.			
				(1.60)					
				2.90					
				3.10		Orangish brown very silty gravelly SAND. Gravel is fine to medium angular to sub-rounded flint and sandstone.			
				(1.70)		Orangish brown silty very sandy GRAVEL. Gravel is fine to medium angular to sub-rounded flint and sandstone.			
				4.80		Soft greyish blue CLAY. [WHITBY MUDSTONE FORMATION]			
4.90		Dark greyish blue thinly laminated MUDSTONE. [WHITBY MUDSTONE FORMATION]							
			5.50		END OF BOREHOLE				

GROUNDWATER							REMARKS / INSTALLATIONS		DRILLING	
Date	Depth of hole	Depth of casing	Depth to water	Depth struck	Depth after 20 mins	Depth sealed			Type and Diameter	Depth m
29/10/19				3.0			Drilling from ground level to 5.50m depth using rotary auger method.		Plant: RC40 Crew: M Hughes O.Abbot	
							LOGGED BY		R.White	Continuous Flight Auger 150mm 5.50



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# BOREHOLE LOG

Project <b>Earls Barton Quarry</b>		Client <b>Breedon Southern Limited</b>		Date Completed <b>29/10/2019</b>
Project No. <b>BRE/EA/CJC/2989/01</b>		Ground Level (mAOD)	Co-ordinates () <b>E 483 074. N 262 523.</b>	Borehole No. <b>14</b>
Contractor <b>Hughes Exploration &amp; Environmental Ltd.</b>		Location <b>Earls Barton, Northamptonshire</b>		Sheet <b>1 of 1</b>

Scale	SAMPLES & TESTS			STRATA					Water	Instrument/ Backfill
	Depth	Type No	Test Result	Reduced Level	Depth (Thickness)	DESCRIPTION	Legend			
1 2 3 4 5 6 7	2.50-5.00	B			0.15	Dark brown slightly sandy CLAY with frequent rootlets. [TOPSOIL]				
					(0.85)	Firm yellowish grey CLAY.				
					1.00	Orangish brown very sandy slightly gravelly CLAY. Gravel is angular flints.				
					(0.50) 1.50					
					(1.00)	Orangish brown sandy CLAY.				
					2.50	Orangish brown silty very sandy GRAVEL. Gravel is fine to medium angular to sub-rounded flint and sandstone.				
					(3.60)					
					5.00 - 6.00 Gravel becoming coarser.					
	6.10	Stiff greyish blue MUDSTONE. [WHITBY MUDSTONE FORMATION]								
	(0.40) 6.50	END OF BOREHOLE								

GROUNDWATER							REMARKS / INSTALLATIONS	DRILLING		
Date	Depth of hole	Depth of casing	Depth to water	Depth struck	Depth after 20 mins	Depth sealed	Drilling from ground level to 6.50m depth using rotary auger method.	Plant: RC40		
29/10/19				3.5				Crew: M Hughes O.Abbot		
							Type and Diameter		Depth m	
							Continuous Flight Auger 150mm		6.50	
							LOGGED BY	R.White		



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# BOREHOLE LOG

Project <b>Earls Barton Quarry</b>		Client <b>Breedon Southern Limited</b>		Date Completed <b>29/10/2019</b>
Project No. <b>BRE/EA/CJC/2989/01</b>		Ground Level (mAOD)	Co-ordinates () <b>E 483 037. N 262 463.</b>	Borehole No. <b>15</b>
Contractor <b>Hughes Exploration &amp; Environmental Ltd.</b>		Location <b>Earls Barton, Northamptonshire</b>		Sheet <b>1 of 1</b>

Scale	SAMPLES & TESTS			STRATA				Water	Instrument/ Backfill
	Depth	Type No	Test Result	Reduced Level	Depth (Thick-ness)	DESCRIPTION	Legend		
0 1 2 3 4 5 6 7	2.00-4.00	B		0.15		Dark brown slightly sandy CLAY with frequent rootlets. [TOPSOIL]			
				(0.95)		Firm yellowish grey CLAY.			
				1.10		Orangish brown very clayey gravelly SAND. Gravel is angular flint.			
				(0.70)					
				1.80		Orangish brown silty sandy CLAY.			
				2.00					
				(2.20)					Orangish brown silty very sandy GRAVEL. Gravel is fine to medium angular to sub-rounded flint and sandstone.
						2.60 - 3.00 Gravel is blackish brown.			
		3.00 - 4.00 Gravel is orangish brown and coarse.							
			4.20		Soft greyish blue CLAY. [WHITBY MUDSTONE FORMATION]				
			(0.80)						
			5.00		END OF BOREHOLE				

GROUNDWATER							REMARKS / INSTALLATIONS		DRILLING		
Date	Depth of hole	Depth of casing	Depth to water	Depth struck	Depth after 20 mins	Depth sealed	Drilling from ground level to 5.0m depth using rotary auger method.		Plant: RC40		
29/10/19				3.0					Crew: M Hughes O.Abbot		
								Type and Diameter	Depth m		
								Continuous Flight Auger 150mm	5.00		
							LOGGED BY	R.White			





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# BOREHOLE LOG

Project <b>Earls Barton Quarry</b>		Client <b>Breedon Southern Limited</b>		Date Completed <b>29/10/2019</b>
Project No. <b>BRE/EA/CJC/2989/01</b>		Ground Level (mAOD)	Co-ordinates () <b>E 483 034. N 262 386.</b>	Borehole No. <b>16</b>
Contractor <b>Hughes Exploration &amp; Environmental Ltd.</b>		Location <b>Earls Barton, Northamptonshire</b>		Sheet <b>1 of 1</b>

Scale	SAMPLES & TESTS			STRATA				Water	Instrument/ Backfill
	Depth	Type No	Test Result	Reduced Level	Depth (Thickness)	DESCRIPTION	Legend		
0 1 2 3 4 5 6 7	1.70-4.50	B			0.15	Dark brown slightly sandy CLAY with frequent rootlets. [TOPSOIL] Firm orangish brown CLAY.		▽	
					(1.35)				
					1.50				
					1.70	Orangish brown very sandy CLAY. Sand is coarse. 1.60 - 1.70 Becoming slightly gravelly. Gravel is fine to medium angular flints.			
					(2.80)	Orangish brown silty very sandy GRAVEL. Gravel is fine to medium sub-angular to sub-rounded flint, sandstone and quartz. Sand is coarse.			
					4.50	4.00 - 4.50 Rare cobbles of rounded flint and sandstone approximately 7cm in diameter.			
					(0.50)	Soft orangish brown sandy CLAY.			
					5.00				
		(0.50)	Light greyish blue slightly gravelly CLAY. Gravel is medium sub-angular limestone. [WHITBY MUDSTONE FORMATION]						
		5.50	END OF BOREHOLE						

GROUNDWATER							REMARKS / INSTALLATIONS	DRILLING	
Date	Depth of hole	Depth of casing	Depth to water	Depth struck	Depth after 20 mins	Depth sealed	Drilling from ground level to 5.50m depth using rotary auger method.	Plant: RC40	
29/10/19				3.0					Crew: M Hughes O.Abbot
								Type and Diameter	Depth m
								Continuous Flight Auger 150mm	5.50
							LOGGED BY	R.White	



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# BOREHOLE LOG

Project Earls Barton Quarry		Client Breedon Southern Limited		Date Completed 28/10/2019
Project No. BRE/EA/CJC/2989/01		Ground Level (mAOD)	Co-ordinates () E 484 636. N 262 051.	Borehole No. 17
Contractor Hughes Exploration & Environmental Ltd.		Location Earls Barton, Northamptonshire		Sheet 1 of 1

Scale	SAMPLES & TESTS			STRATA				Water	Instrument/ Backfill
	Depth	Type No	Test Result	Reduced Level	Depth (Thickness)	DESCRIPTION	Legend		
1  2  3  4  5  6  7	2.00-2.60	B			0.15	Dark brown slightly sandy CLAY with frequent rootlets. [TOPSOIL]		▽	
					(1.25)	Greyish brown silty CLAY.			
					1.40	Brownish orange very silty gravelly SAND. Sand is coarse and gravel is fine angular to sub-angular flint.			
					(0.42) 1.82				
					2.00	Brownish orange sandy gravelly CLAY. Gravel is fine angular to sub-angular flint.			
					(0.60) 2.60	Orangish brown silty very gravelly SAND. Gravel is angular to rounded flint and sandstone.			
					(0.40) 3.00	Dark greyish blue MUDSTONE. [WHITBY MUDSTONE FORMATION]			
		END OF BOREHOLE							

GROUNDWATER							REMARKS / INSTALLATIONS		DRILLING			
Date	Depth of hole	Depth of casing	Depth to water	Depth struck	Depth after 20 mins	Depth sealed	Drilling from ground level to 3.0m depth using rotary auger method.		Plant: RC40			
28/10/19				2.0					Crew: M Hughes O.Abbot			
									Type and Diameter	Depth m		
							LOGGED BY		R.White		Continuous Flight Auger 150mm	3.00



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# BOREHOLE LOG

Project Earls Barton Quarry		Client Breedon Southern Limited		Date Completed 28/10/2019
Project No. BRE/EA/CJC/2989/01		Ground Level (mAOD)	Co-ordinates () E 484 450. N 262 026.	Borehole No. 18
Contractor Hughes Exploration & Environmental Ltd.		Location Earls Barton, Northamptonshire		Sheet 1 of 1

Scale	SAMPLES & TESTS			STRATA				Water	Instrument/ Backfill
	Depth	Type No	Test Result	Reduced Level	Depth (Thickness)	DESCRIPTION	Legend		
1 2 3 4 5 6 7	1.50-4.20	B		0.15		Dark brown slightly sandy CLAY with frequent rootlets. [TOPSOIL]		▽	
				(1.35)		Soft brown silty CLAY.			
				1.50		1.00 - 1.50 Becoming sandy.			
				(0.70)		Brown very clayey very gravelly SAND. Gravel is fine to medium angular to sub-rounded flint, sandstone and quartz.			
				2.20					
				2.40		Grey sandy CLAY.			
				(1.80)		Brown very clayey gravelly SAND. Gravel is fine to medium angular to sub-rounded flint, sandstone and quartz.			
				4.20		3.00 - 4.00 Becoming less clayey and very gravelly.			
4.50		Dark blue MUDSTONE. [WHITBY MUDSTONE FORMATION]							
		END OF BOREHOLE							

GROUNDWATER							REMARKS / INSTALLATIONS	DRILLING		
Date	Depth of hole	Depth of casing	Depth to water	Depth struck	Depth after 20 mins	Depth sealed	Drilling from ground level to 4.50m depth using rotary auger method.	Plant: RC40		
28/10/19				1.5					Crew: M Hughes O.Abbot	
								Type and Diameter	Depth m	
								Continuous Flight Auger 150mm	4.50	
							LOGGED BY	R.White		



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# BOREHOLE LOG

Project Earls Barton Quarry		Client Breedon Southern Limited		Date Completed 28/10/2019
Project No. BRE/EA/CJC/2989/01		Ground Level (mAOD)	Co-ordinates ( ) E 484 473. N 261 915.	Borehole No. 19
Contractor Hughes Exploration & Environmental Ltd.		Location Earls Barton, Northamptonshire		Sheet 1 of 1

Scale	SAMPLES & TESTS			STRATA				Water	Instrument/ Backfill
	Depth	Type No	Test Result	Reduced Level	Depth (Thickness)	DESCRIPTION	Legend		
1 2 3 4 5 6 7	1.50-3.30	B		0.15		Dark brown slightly sandy CLAY with frequent rootlets. [TOPSOIL]		▽	
				(0.55)		Orangish brown slightly sandy CLAY.			
				0.70		Orangish brown sandy slightly gravelly CLAY. Sand is medium to coarse. Gravel is fine to medium rounded flint and quartz.			
				(0.80)					
				1.50		Orangish brown silty very gravelly SAND. Gravel is angular to sub-rounded flint, sandstone and quartz.  2.50 - 3.00 Gravel is coarse.			
				(1.80)					
3.30		Greyish blue MUDSTONE. [WHITBY MUDSTONE FORMATION]							
3.50		END OF BOREHOLE							

GROUNDWATER							REMARKS / INSTALLATIONS	DRILLING		
Date	Depth of hole	Depth of casing	Depth to water	Depth struck	Depth after 20 mins	Depth sealed	Drilling from ground level to 3.50m depth using rotary auger method.	Plant: RC40		
28/10/19				1.5					Crew: M Hughes O.Abbot	
								Type and Diameter	Depth m	
								Continuous Flight Auger 150mm	3.50	
							LOGGED BY	R.White		



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# BOREHOLE LOG

Project Earls Barton Quarry		Client Breedon Southern Limited		Date Completed 28/10/2019
Project No. BRE/EA/CJC/2989/01		Ground Level (mAOD)	Co-ordinates () E 484 558. N 261 993.	Borehole No. 20
Contractor Hughes Exploration & Environmental Ltd.		Location Earls Barton, Northamptonshire		Sheet 1 of 1

Scale	SAMPLES & TESTS			STRATA				Water	Instrument/ Backfill
	Depth	Type No	Test Result	Reduced Level	Depth (Thickness)	DESCRIPTION	Legend		
1 2 3 4 5 6 7	1.30-3.00	B		0.15		Dark brown slightly sandy CLAY with frequent rootlets. [TOPSOIL]			
				(0.95)		Soft yellowish brown CLAY.			
				1.10		Orangish brown very silty slightly to very gravelly SAND. Gravel is fine to medium angular flint, sandstone and quartz. 1.30 Becoming very gravelly.			
				(1.90)					
3.00		Bluish grey thinly laminated MUDSTONE. [WHITBY MUDSTONE FORMATION]							
				3.20		END OF BOREHOLE			

GROUNDWATER							REMARKS / INSTALLATIONS	DRILLING		
Date	Depth of hole	Depth of casing	Depth to water	Depth struck	Depth after 20 mins	Depth sealed	Drilling from ground level to 3.20m depth using rotary auger method.	Plant: RC40		
								Crew: M Hughes O.Abbot		
								Type and Diameter	Depth m	
							LOGGED BY	R.White	Continuous Flight Auger 150mm	3.20



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## BOREHOLE LOG

Project <b>Earls Barton Quarry</b>			Client <b>Breedon Southern Limited</b>			Date Completed <b>28/10/2019</b>
Project No. <b>BRE/EA/CJC/2989/01</b>		Ground Level (mAOD)		Co-ordinates () <b>E 484 616. N 261 993.</b>		Borehole No. <b>21</b>
Contractor <b>Hughes Exploration &amp; Environmental Ltd.</b>			Location <b>Earls Barton, Northamptonshire</b>			Sheet <b>1 of 1</b>

Scale	SAMPLES & TESTS			STRATA				Water	Instrument/ Backfill
	Depth	Type No	Test Result	Reduced Level	Depth (Thick-ness)	DESCRIPTION	Legend		
					0.15	Dark brown slightly sandy CLAY with frequent rootlets. [TOPSOIL]			
					(1.45)	Firm grey CLAY.			
					1.60				
1					1.80	Orangish brown sandy CLAY.			
	1.80-2.00	B							
					(0.90)	Grey silty gravelly SAND. Gravel is fine to medium sub-angular to sub-rounded flint and sandstone. 2.00 Becoming very gravelly. 2.30 - 2.70 Becoming very clayey. Clay is bluish grey in colour.			
2	2.30-3.00	B			2.70				
					3.00	Brown very silty gravelly SAND.			
3					(0.50)	Bluish grey MUDSTONE. [WHITBY MUDSTONE FORMATION]			
					3.50	END OF BOREHOLE			
4									
5									
6									
7									

GROUNDWATER							REMARKS / INSTALLATIONS	DRILLING	
Date	Depth of hole	Depth of casing	Depth to water	Depth struck	Depth after 20 mins	Depth sealed		Type and Diameter	Depth m
							Drilling from ground level to 3.50m depth using rotary auger method.	Plant: RC40	
								Crew: M Hughes O.Abbot	
								Continuous Flight Auger 150mm	3.50
							LOGGED BY	R.White	



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# BOREHOLE LOG

Project <b>Earls Barton Quarry</b>		Client <b>Breedon Southern Limited</b>		Date Completed <b>28/10/2019</b>
Project No. <b>BRE/EA/CJC/2989/01</b>		Ground Level (mAOD)	Co-ordinates () <b>E 484 739. N 261 950.</b>	Borehole No. <b>22</b>
Contractor <b>Hughes Exploration &amp; Environmental Ltd.</b>		Location <b>Earls Barton, Northamptonshire</b>		Sheet <b>1 of 1</b>

Scale	SAMPLES & TESTS			STRATA				Water	Instrument/ Backfill
	Depth	Type No	Test Result	Reduced Level	Depth (Thickness)	DESCRIPTION	Legend		
	1.70-2.30	B			0.15	Dark brown slightly sandy CLAY with frequent rootlets. [TOPSOIL]			
			(1.35)	Soft grey silty CLAY.					
			1.50						
			1.70				Soft yellowish brown very sandy CLAY. Sand is fine to medium.		
			2.30			(0.60)	Brown silty very sandy GRAVEL. Sand is coarse. Gravel is angular to sub-rounded flint and quartz.		
			(0.70)				Bluish grey MUDSTONE. [WHITBY MUDSTONE FORMATION]		
					3.00	END OF BOREHOLE			

GROUNDWATER							REMARKS / INSTALLATIONS	DRILLING	
Date	Depth of hole	Depth of casing	Depth to water	Depth struck	Depth after 20 mins	Depth sealed	Drilling from ground level to 3.0m depth using rotary auger method.	Plant:	Depth m
									RC40
								Crew: M Hughes O.Abbot	
								Type and Diameter	
								Continuous Flight Auger 150mm	3.00
							LOGGED BY	R.White	



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# BOREHOLE LOG

Project <b>Earls Barton Quarry</b>		Client <b>Breedon Southern Limited</b>		Date Completed <b>28/10/2019</b>
Project No. <b>BRE/EA/CJC/2989/01</b>		Ground Level (mAOD)	Co-ordinates () <b>E 484 827. N 261 959.</b>	Borehole No. <b>23</b>
Contractor <b>Hughes Exploration &amp; Environmental Ltd.</b>		Location <b>Earls Barton, Northamptonshire</b>		Sheet <b>1 of 1</b>

Scale	SAMPLES & TESTS			STRATA				Water	Instrument/ Backfill
	Depth	Type No	Test Result	Reduced Level	Depth (Thickness)	DESCRIPTION	Legend		
1 2 3 4 5 6 7	1.20-2.90	B			0.15	Dark brown slightly sandy CLAY with frequent rootlets. [TOPSOIL]		▽	
					(0.85)	Orangish brown very sandy CLAY. Sand is coarse.			
					1.00				
					1.20	Orangish brown sandy slightly gravelly CLAY. Gravel is medium to coarse rounded sandstone and quartz.			
					(1.00)	Orangish brown silty very gravelly SAND. Sand is coarse. Gravel is angular to sub-rounded flint and sandstone.			
					2.20				
					(0.70)	Orangish brown silty very sandy GRAVEL. Sand is coarse. Gravel is angular to sub-rounded flint and sandstone.			
					2.90				
					(0.40)	Soft grey CLAY. [WHITBY MUDSTONE FORMATION]			
	3.30								
	3.50	Greyish blue MUDSTONE. [WHITBY MUDSTONE FORMATION]							
						END OF BOREHOLE			

GROUNDWATER							REMARKS / INSTALLATIONS	DRILLING		
Date	Depth of hole	Depth of casing	Depth to water	Depth struck	Depth after 20 mins	Depth sealed	Drilling from ground level to 3.50m depth using rotary auger method.	Plant: RC40		
28/10/19				2.2				Crew: M Hughes O.Abbot		
								Type and Diameter	Depth m	
							LOGGED BY	R.White	Continuous Flight Auger 150mm	3.50





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# BOREHOLE LOG

Project Earls Barton Quarry		Client Breedon Southern Limited		Date Completed 29/10/2019
Project No. BRE/EA/CJC/2989/01		Ground Level (mAOD) 52.64	Co-ordinates () E 483 239. N 262 582.	Borehole No. GW1
Contractor Hughes Exploration & Environmental Ltd.		Location Earls Barton, Northamptonshire		Sheet 1 of 1

Scale	SAMPLES & TESTS			STRATA				Water	Instrument/ Backfill
	Depth	Type No	Test Result	Reduced Level	Depth (Thickness)	DESCRIPTION	Legend		
1				52.49	0.15	Dark brown slightly sandy CLAY with frequent rootlets. [TOPSOIL]			
					(1.05)	Orangish brown very sandy CLAY.			
2				51.44	1.20	Firm orangish brown CLAY.			
					(1.70)	2.00 Becoming soft, damp and sandy.			
3	2.90-4.00	B		49.74	2.90	Orangish brown silty gravelly SAND. Gravel is fine to medium angular flint and quartz.			
					(1.10)	3.50 Becoming very gravelly.			
4	4.00-5.80	B		48.64	4.00	Orangish brown silty SAND AND GRAVEL. Gravel is fine to medium angular flint and quartz.			
					(2.20)				
6				46.44	6.20				
				46.14	6.50	Bluish grey MUDSTONE. [WHITBY MUDSTONE FORMATION]			
7						END OF BOREHOLE			

GROUNDWATER							REMARKS / INSTALLATIONS	DRILLING	
Date	Depth of hole	Depth of casing	Depth to water	Depth struck	Depth after 20 mins	Depth sealed		Type and Diameter	Depth m
29/10/19			3.9	4			Drilling from ground level to 6.50m depth using rotary auger method. Slotted approximately 50mm internal diameter pipe with a filter geotextile wrap from approximately 5mbgl to approximately 2mbgl. Borehole collapsed below 5mbgl. Annulus between borehole and slotted section filled with gravel pack. Plain approximately 50mm internal diameter pipe from approximately 2mbgl to approximately ground level fitted with a lockable cylindrical headworks. Annulus between borehole and plain section filled progressively with bentonite pellets from 2mbgl to ground level.	Plant: RC40	
29/10/19			3.63					Crew: M Hughes O.Abbot	
30/10/19								Continuous Flight Auger 150mm	6.50
							LOGGED BY	R.White	



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# BOREHOLE LOG

Project <b>Earls Barton Quarry</b>		Client <b>Breedon Southern Limited</b>		Date Completed <b>30/10/2019</b>
Project No. <b>BRE/EA/CJC/2989/01</b>	Ground Level (mAOD) <b>51.00</b>	Co-ordinates () <b>E 483 138. N 262 362.</b>		Borehole No. <b>GW2</b>
Contractor <b>Hughes Exploration &amp; Environmental Ltd.</b>		Location <b>Earls Barton, Northamptonshire</b>		Sheet <b>1 of 1</b>

Scale	SAMPLES & TESTS			STRATA				Water	Instrument/ Backfill
	Depth	Type No	Test Result	Reduced Level	Depth (Thickness)	DESCRIPTION	Legend		
0 1 2 3 4 5 6 7	2.00-4.20	B		50.85	0.15	Dark brown slightly sandy CLAY with frequent rootlets. [TOPSOIL]			
					(1.45)	Firm grey thinly laminated CLAY.			
				49.40	1.60	Reddish brown very clayey SAND. Sand is coarse.			
				49.00	(0.40)	1.80 - 2.00 Becoming gravelly. Gravel is fine to medium angular flints.			
					2.00	Orangish brown very silty very sandy GRAVEL. Gravel is fine to medium angular flint and quartz.			
					(2.20)				
			46.80	4.20	Dark bluish grey thinly laminated MUDSTONE. [WHITBY MUDSTONE FORMATION]				
			46.00	5.00	END OF BOREHOLE				

GROUNDWATER							REMARKS / INSTALLATIONS		DRILLING	
Date	Depth of hole	Depth of casing	Depth to water	Depth struck	Depth after 20 mins	Depth sealed				
30/10/19			2.26	3.4				Drilling from ground level to 5.0m depth using rotary auger method. Slotted approximately 50mm internal diameter pipe with a filter geotextile wrap from approximately 5mbgl to approximately 2mbgl. Annulus between borehole and slotted section filled with gravel pack. Plain approximately 50mm internal diameter pipe from approximately 2mbgl to approximately ground level fitted with a lockable cylindrical headworks. Annulus between borehole and plain section filled progressively with bentonite pellets from 2mbgl to ground level.	Plant: RC40	
30/10/19								LOGGED BY	R.White	
								Type and Diameter	Depth m	
								Continuous Flight Auger 150mm	5.00	



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# BOREHOLE LOG

<b>Project</b> Earls Barton Quarry		<b>Client</b> Breedon Southern Limited		<b>Date Completed</b> 25/10/2019
<b>Project No.</b> BRE/EA/CJC/2989/01		<b>Ground Level (mAOD)</b> 50.14	<b>Co-ordinates ( )</b> E 483 624. N 262 494.	<b>Borehole No.</b> GW3
<b>Contractor</b> Hughes Exploration & Environmental Ltd.		<b>Location</b> Earls Barton, Northamptonshire		<b>Sheet</b> 1 of 1

Scale	SAMPLES & TESTS			STRATA				Water	Instrument/ Backfill	
	Depth	Type No	Test Result	Reduced Level	Depth (Thickness)	DESCRIPTION	Legend			
1  2  3  4  5  6  7	2.20-3.50	B		49.99	0.15	Dark brown slightly sandy CLAY with frequent rootlets. [TOPSOIL]		▼  ▼  ▽		
					(2.15)	Orangish brown silty thinly laminated CLAY.				
					47.84	2.30	1.00 - 2.00 Becoming sandy. Sand is coarse.			
						(1.50)	Orangish brown silty very gravelly SAND. Gravel is fine to medium sub-angular flint. 2.60 Wet and becoming very silty.			
					46.34	3.80	Soft grey CLAY. [WHITBY MUDSTONE FORMATION]			
					45.14	5.00	END OF BOREHOLE			

GROUNDWATER							REMARKS / INSTALLATIONS		DRILLING		
Date	Depth of hole	Depth of casing	Depth to water	Depth struck	Depth after 20 mins	Depth sealed	Drilling from ground level to 5.0m depth using rotary auger method. Slotted approximately 50mm internal diameter pipe with a filter geotextile wrap from approximately 4.6mbgl to approximately 1mbgl. Annulus between borehole and slotted section filled with gravel pack. Plain approximately 50mm internal diameter pipe from approximately 1mbgl to approximately ground level fitted with a lockable cylindrical headworks. Annulus between borehole and plain section filled progressively with bentonite pellets from 1mbgl to ground level.	Plant: RC40			
25/10/19			2.17	2.6				Crew: M. Hughes R.Saunders			
30/10/19			1.68					Type and Diameter	Depth m		
							LOGGED BY	R.White		Continuous Flight Auger 150mmmm	5.00



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# BOREHOLE LOG

Project <b>Earls Barton Quarry</b>		Client <b>Breedon Southern Limited</b>		Date Completed <b>30/10/2019</b>
Project No. <b>BRE/EA/CJC/2989/01</b>		Ground Level (mAOD) <b>51.96</b>	Co-ordinates ( ) <b>E 484 497. N 262 535.</b>	Borehole No. <b>GW4</b>
Contractor <b>Hughes Exploration &amp; Environmental Ltd.</b>		Location <b>Earls Barton, Northamptonshire</b>		Sheet <b>1 of 1</b>

Scale	SAMPLES & TESTS			STRATA				Water	Instrument/ Backfill
	Depth	Type No	Test Result	Reduced Level	Depth (Thick-ness)	DESCRIPTION	Legend		
1 2 3 4 5 6 7	0.70-2.60	B		51.81	0.15	Dark brown slightly sandy CLAY with frequent rootlets. [TOPSOIL]		Water level indicated by inverted triangle at approximately 3.2m depth.	
					(0.55)	Brown slightly sandy CLAY.			
		51.26	0.70	Orangish brown silty gravelly SAND. Gravel is fine to medium sub-angular flints.					
			(1.90)						
	2.60-2.80 2.80-4.00	B B		49.36	2.60	Yellowish brown very clayey SAND AND GRAVEL. Gravel is fine to medium sub-angular flints.			
				49.16	2.80				
			(1.20)	Yellowish brown very clayey gravelly SAND. Gravel is fine to medium sub-angular flints.					
	4.00-4.20	B		47.96	4.00	Orangish brown silty very sandy GRAVEL. Gravel is fine to medium angular to rounded flint and sandstone.			
				47.76	4.20				
				47.66	4.30				Yellowish brown very silty SAND. Soft to firm yellowish brown sandy CLAY.
		(2.20)	5.30 Becoming firm.						
		45.46	6.50	Yellowish brown very clayey SAND.					
		(0.50)							
		44.96	7.00	END OF BOREHOLE					

GROUNDWATER							REMARKS / INSTALLATIONS	DRILLING		
Date	Depth of hole	Depth of casing	Depth to water	Depth struck	Depth after 20 mins	Depth sealed	Drilling from ground level to 7.0m depth using rotary auger method. Slotted approximately 50mm internal diameter pipe with a filter geotextile wrap from approximately 6mbgl to approximately 2mbgl. Annulus between borehole and slotted section filled with gravel pack. Plain approximately 50mm internal diameter pipe from approximately 2mbgl to approximately ground level fitted with a lockable cylindrical headworks. Annulus between borehole and plain section filled progressively with bentonite pellets from 2mbgl to ground level.	Plant: RC40		
30/10/19			3.5					Crew: M Hughes O.Abbot	Type and Diameter	Depth m
30/10/19			3.5					Continuous Flight Auger 150mm	7.00	
							LOGGED BY	R.White		



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# BOREHOLE LOG

Project Earls Barton Quarry		Client Breedon Southern Limited		Date Completed 28/10/2019
Project No. BRE/EA/CJC/2989/01		Ground Level (mAOD) 48.51	Co-ordinates ( ) E 484 628. N 262 102.	Borehole No. GW5
Contractor Hughes Exploration & Environmental Ltd.		Location Earls Barton, Northamptonshire		Sheet 1 of 1

Scale	SAMPLES & TESTS			STRATA				Water	Instrument/ Backfill
	Depth	Type No	Test Result	Reduced Level	Depth (Thickness)	DESCRIPTION	Legend		
1 2 3 4 5 6 7	1.10-1.40	B		48.36	0.15	Dark brown slightly sandy CLAY with frequent rootlets. [TOPSOIL]		 	
					(0.95)	Firm orangish brown CLAY.			
	1.40-3.00	B		47.41	1.10	Orangish brown very silty slightly gravelly SAND. Sand is fine to medium.			
				47.11	1.40	Brown silty gravelly SAND. Sand is coarse. Gravel is fine to medium angular to sub-angular flint and sandstone.			
					(1.60)	2.30 - 3.00 Gravel becoming coarse.			
				45.51	3.00	Firm bluish grey CLAY. [WHITBY MUDSTONE FORMATION]			
				(1.00)					
			44.51	4.00	END OF BOREHOLE				

GROUNDWATER							REMARKS / INSTALLATIONS	DRILLING	
Date	Depth of hole	Depth of casing	Depth to water	Depth struck	Depth after 20 mins	Depth sealed		Type and Diameter	Depth m
28/10/19 30/10/19			15	2.4			Drilling from ground level to 4.0m depth using rotary auger method. Slotted approximately 50mm internal diameter pipe with a filter geotextile wrap from approximately 4mbgl to approximately 1mbgl. Annulus between borehole and slotted section filled with gravel pack. Plain approximately 50mm internal diameter pipe from approximately 1mbgl to approximately ground level fitted with a lockable cylindrical headworks. Annulus between borehole and plain section filled progressively with bentonite pellets from 1mbgl to ground level.	Plant: RC40 Crew: M Hughes O.Abbot	
							LOGGED BY	R.White	Continuous Flight Auger 150mm 4.00



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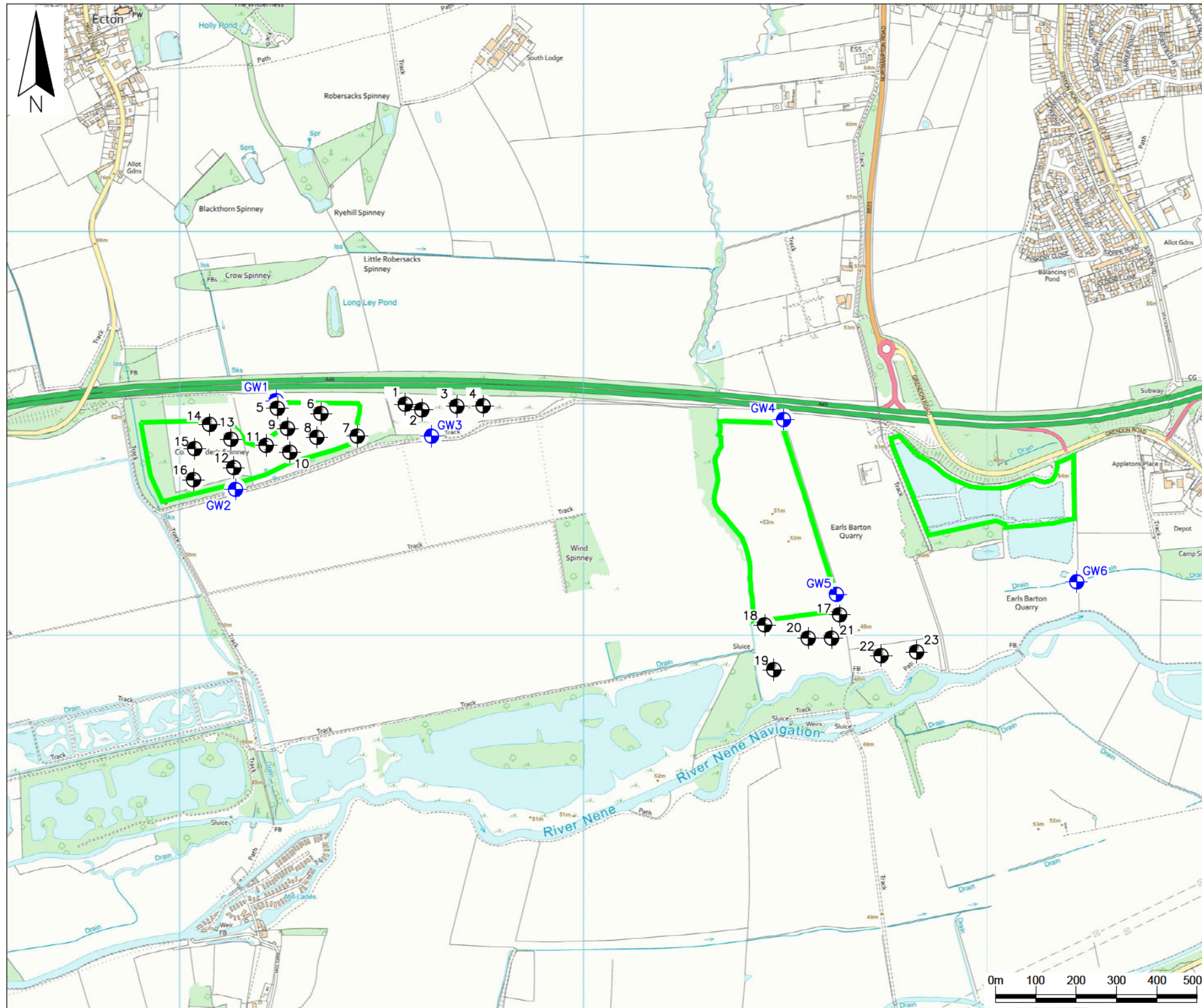
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# BOREHOLE LOG

Project <b>Earls Barton Quarry</b>		Client <b>Breedon Southern Limited</b>		Date Completed <b>29/10/2019</b>
Project No. <b>BRE/EA/CJC/2989/01</b>	Ground Level (mAOD) <b>47.56</b>	Co-ordinates () <b>E 485 224. N 262 133.</b>		Borehole No. <b>GW6</b>
Contractor <b>Hughes Exploration &amp; Environmental Ltd.</b>		Location <b>Earls Barton, Northamptonshire</b>		Sheet <b>1 of 1</b>

Scale	SAMPLES & TESTS			STRATA				Water	Instrument/ Backfill
	Depth	Type No	Test Result	Reduced Level	Depth (Thickness)	DESCRIPTION	Legend		
1 2 3 4 5 6 7	1.50-2.40	B		47.41	0.15	Dark brown slightly sandy CLAY with frequent rootlets. [TOPSOIL]			
					(1.25)	Very soft orangish brown slightly sandy CLAY.			
					46.16	1.40	Orangish brown very clayey SAND. Sand is fine to medium.		
					46.06	1.50	Orangish brown very silty sandy GRAVEL. Gravel is angular flint.		
						(0.90)			
						45.16	2.40	Firm bluish grey CLAY. [WHITBY MUDSTONE FORMATION]	
				(0.60)					
				44.56	3.00	END OF BOREHOLE			

GROUNDWATER							REMARKS / INSTALLATIONS	DRILLING	
Date	Depth of hole	Depth of casing	Depth to water	Depth struck	Depth after 20 mins	Depth sealed	Drilling from ground level to 3.0m depth using rotary auger method. Slotted approximately 50mm internal diameter pipe with a filter geotextile wrap from approximately 3mbgl to approximately 1mbgl. Annulus between borehole and slotted section filled with gravel pack. Plain approximately 50mm internal diameter pipe from approximately 1mbgl to approximately ground level fitted with a lockable cylindrical headworks. Annulus between borehole and plain section filled progressively with bentonite pellets from 1mbgl to ground level.	Type and Diameter	Depth m
29/10/19 29/10/19 30/10/19			1.50 0.70	1.50				Plant: RC40 Crew: M Hughes O.Abbot	Continuous Flight Auger 150mm
							LOGGED BY	R.White	



### Key / Notes

- Approximate boundary of the site the subject of the Environmental Permit application
  
- 1 Approximate location of a mineral proving borehole drilled in October 2019
  
- GW1  Approximate location of a groundwater monitoring borehole drilled in October 2019

Note:  
 The location of borehole 2 is indicative.  
 The approximate site boundary is based on SLR drawing reference EB1 entitled "Working Phasing Scheme" dated August 2015

	Draft	KR	LBA	GT	08/12/21		
Rev	Status	Drn	App	Chk	Date		

Site  
 EARLS BARTON QUARRY  
 Client

Title  
 Plan showing the locations of the boreholes drilled during the site investigation in October 2019

Figure 1      Scale  
 1:10,000@A3

Drawing Ref  
 BRE/EA/09-21/22758

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