



Mr & Mrs Stamper
9 Thurgoland Hall Fold
Thurgoland
Sheffield
S35 7EA

21st May 2016

Dear Mr & Mrs Stamper

Exploratory Drilling At Land Adjacent To 9 Thurgoland Hall Fold

Please find enclosed logs for thirteen boreholes drilled at the above site on 4th 28th & 29th April 2016. The work was undertaken to check ground conditions in relation possible shallow mine workings under the site, where a new build house is proposed.

The positions of the holes relative to surrounding features are shown on the attached plan No. THFBH1 drawn from our site measurements and information supplied by your advisor Mr Bruce East, the starting horizon for each hole can be taken as similar.

Bedrock was identified to be generally at around 1.5m depth, below clay and around 0.3 to 0.7m of general fill material at the surface. A coal seam around 1m thick was located in boreholes 2, 3, 4, 5, 6, & 7. Based on the depth in the boreholes, the coal seam was found to be dipping gently to the north west. Generally, all of the boreholes were drilled to the coal seam or voids however borehole 2 was continued down to 20.73m depth. There was no indication of any breaks or voiding in the strata below, however water flush was lost at 3m depth. The holes were tested at the time of drilling for the presence of mine gasses before they were sealed. None of the holes indicated the presence of gas.

A significant void of 2.13m starting at 5.79m depth was found in borehole 1. Boreholes 8, 9, 10, 11, 12 & 13 were drilled to attempt to identify the nature and position of the feature, which was proven to be below the south east corner of the proposed building corner. Referring to the attached plan, boreholes 1 & 10 were found to contain the most significant voiding, with the voiding decreasing to the north west. Using this information the most probable line of maximum and minimum voiding was drawn on the plan.

Based on the information gained from the drilling, the feature could be a mine drift entry used at some time in the past to access the coal seam below. However if it was an access roadway, from my interpolation of the results and my experience, the roadway appears unusually large. Additional exploratory drilling may further help identify the extent of the voiding and position of the feature.

This is a factual report based on the drilling information and my experience as a mining surveyor. To fully explore how the information effects the proposed development, I spoke to a structural engineer. My understanding from this is that if the voiding remains untreated, and the proposed house is built in its current location, there would be a significant risk of future structural damage occurring. I would suggest at this time you explore possible alternatives with your structural engineer, for example, house relocation, shape, foundation design etc. In the mean time, I have given this information to two contractors to price for ground stabilisation by grouting the void. As soon as I get this information I will forward it to you.

Yours sincerely
Paul Evans

Project : Thurgoland Hall Fold, Thurgoland, Sheffield.				Drillhole No. BH1
Client : Mr & Mrs Stamper				
Job no.	Date : 04.04.2016	Co-ordinates (m)	Ground Level (m)	Sheet : 1 of 1

RUN DETAILS			STRATA				Geology	Instrument/ Backfill
			Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION		
						Discontinuities	Detail	Main
				▽▽▽▽	0.30			SOIL
				▨▨▨▨	(1.22)			
				▨▨▨▨	1.52			CLAY, stiff, frequent stones
				▨▨▨▨	(0.92)			
				▨▨▨▨	2.44			MUDSTONE, weathered (weak)
				▨▨▨▨	(3.35)			
				▨▨▨▨	5.79			MUDSTONE with SILTSTONE Bands Strong
				▨▨▨▨	(2.13)			
				▨▨▨▨	7.92			VOID
				▨▨▨▨	(0.61)			
				▨▨▨▨	8.53			MUDSTONE

Drilling Progress and Water Observations							Rotary Flush				Method/ Plant used:
Date	Time	Depth	Casing	Core dia	Strike	Water Standing	From	To	Type	Returns	
							0 5.79	5.79 8.53	WATER	GOOD NONE	Hand held rotary rig, 37mm O/D, with water flush

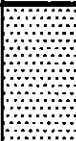
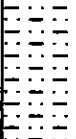
General Remarks

NO GAS, 2.13m VOID, 1m CASING, FLUSH to 5.79m.

REFERENCES TO STRATA TYPES & STRENGTHS ARE TAKEN FROM DRILLERS INTERPRETATION
 BASED ON FLUSH CURVINGS MATERIAL & COLOUR (WHEN AVAILABLE), FROM DRILLING
 PROGRESS AND CHARACTERISTICS AND FROM VISUAL SAMPLES (WHEN TAKEN).

Logged By:

Project : Thurgoland Hall Fold, Thurgoland, Sheffield.				Drillhole No. BH2
Client : Mr & Mrs Stamper				
Job no.	Date : 04.04.2016	Co-ordinates (m)	Ground Level (m)	Sheet : 1 of 2

RUN DETAILS			STRATA					Geology	Instrument/ Backfill	
			Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION				
						Discontinuities	Detail			Main
					0.61			SOIL		
					(1.22)					
					1.83			CLAY, stiff, occ stones		
					(1.22)					
					3.05	Last Flush	SANDSTONE, strong			
					(6.70)					
					9.75			MUDSTONE with SILTSTONE Bands Strong		
					10.67			COAL (probably)		

Drilling Progress and Water Observations							Rotary Flush				Method/ Plant used: Hand held rotary rig, 37mm O/D, with water flush
Date	Time	Depth	Casing	Core dia	Strike	Water Standing	From	To	Type	Returns	
							0 3.05	3.05 20.73	WATER	GOOD NONE	

General Remarks NO GAS, NO VOIDS, 1m CASING, FLUSH to 3.05m. REFERENCES TO STRATA TYPES & STRENGTHS ARE TAKEN FROM DRILLERS INTERPRETATION BASED ON FLUSH CURVINGS MATERIAL & COLOUR (WHEN AVAILABLE), FROM DRILLING PROGRESS AND CHARACTERISTICS AND FROM VISUAL SAMPLES (WHEN TAKEN).		Logged By:
--	--	------------

Project : Thurgoland Hall Fold, Thurgoland, Sheffield.				Drillhole No. BH2
Client : Mr & Mrs Stamper				
Job no.	Date : 04.04.2016	Co-ordinates (m)	Ground Level (m)	Sheet : 2 of 2

RUN DETAILS			STRATA						Geology	Instrument/ Backfill
			Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION				
						Discontinuities	Detail	Main		
					(9.33)					
					20.73	END	MUDSTONE with SILTSTONE Bands Strong			

Drilling Progress and Water Observations							Rotary Flush				Method/ Plant used:
Date	Time	Depth	Casing	Core dia	Strike	Water Standing	From	To	Type	Returns	
							0 3.05	3.05 20.73	WATER	GOOD NONE	Hand held rotary rig, 37mm O/D, with water flush

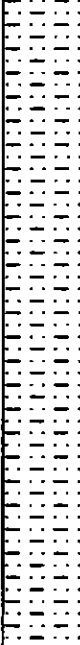
General Remarks

NO GAS, NO VOIDS, 1m CASING, FLUSH to 3.05m.

REFERENCES TO STRATA TYPES & STRENGTHS ARE TAKEN FROM DRILLERS INTERPRETATION BASED ON FLUSH CURVINGS MATERIAL & COLOUR (WHEN AVAILABLE), FROM DRILLING PROGRESS AND CHARACTERISTICS AND FROM VISUAL SAMPLES (WHEN TAKEN).

Logged By:

Project : Thurgoland Hall Fold, Thurgoland, Sheffield.				Drillhole No. BH3
Client : Mr & Mrs Stamper				
Job no.	Date : 28.04.2016	Co-ordinates (m)	Ground Level (m)	Sheet : 1 of 1

RUN DETAILS			STRATA						Geology	Instrument/ Backfill
			Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION				
						Discontinuities	Detail	Main		
					0.61			FILL		
					(0.91)					
					1.52			CLAY, stiff, occ stones		
					(1.53)					
					3.05			SANDSTONE, strong		
					(5.94)					
					8.99			MUDSTONE with SILTSTONE Bands Strong		
					10.21			COAL banded (possibly inferior)		
					10.52	END		SILTSTONE		

Drilling Progress and Water Observations							Rotary Flush				Method/ Plant used:
Date	Time	Depth	Casing	Core dia	Strike	Water Standing	From	To	Type	Returns	
							0	10.52	WATER	GOOD	
											Hand held rotary rig, 37mm O/D, with water flush

General Remarks

NO GAS, NO VOIDS, 1m CASING, FULL FLUSH

REFERENCES TO STRATA TYPES & STRENGTHS ARE TAKEN FROM DRILLERS INTERPRETATION
 BASED ON FLUSH CURVINGS MATERIAL & COLOUR (WHEN AVAILABLE), FROM DRILLING
 PROGRESS AND CHARACTERISTICS AND FROM VISUAL SAMPLES (WHEN TAKEN).

Logged By:

Project : Thurgoland Hall Fold, Thurgoland, Sheffield.				Drillhole No. BH4
Client : Mr & Mrs Stamper				
Job no.	Date : 28.04.2016	Co-ordinates (m)	Ground Level (m)	Sheet : 1 of 1

RUN DETAILS			STRATA				Geology	Instrument/ Backfill	
			Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION			
						Discontinuities			Detail
					0.61			FILL (under 100mm concrete)	
					(0.91)				
					1.52			CLAY, stiff, occ stones	
					(2.44)				
					3.96			SANDSTONE, strong	
					(6.04)				
					10.00	Continued		MUDSTONE with SILTSTONE Bands Strong	

Drilling Progress and Water Observations							Rotary Flush				Method/ Plant used:
Date	Time	Depth	Casing	Core dia	Strike	Water Standing	From	To	Type	Returns	
							0	12.19	WATER	INT'ENT	

Hand held rotary rig,
37mm O/D, with
water flush

General Remarks

NO GAS, NO VOIDS, 1m CASING, FULL FLUSH (INTERMITTENT)
REFERENCES TO STRATA TYPES & STRENGTHS ARE TAKEN FROM DRILLERS INTERPRETATION
BASED ON FLUSH CURVINGS MATERIAL & COLOUR (WHEN AVAILABLE), FROM DRILLING
PROGRESS AND CHARACTERISTICS AND FROM VISUAL SAMPLES (WHEN TAKEN).

Logged By:

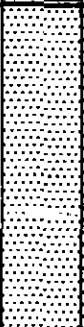
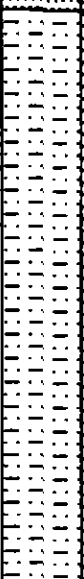
Project : Thurgoland Hall Fold, Thurgoland, Sheffield.				Drillhole No. BH4
Client : Mr & Mrs Stamper				
Job no.	Date : 28.04.2016	Co-ordinates (m)	Ground Level (m)	Sheet : 1 of 1

[illegible]

Drilling Progress and Water Observations							Rotary Flush				Method/ Plant used:
Date	Time	Depth	Casing	Core dia	Strike	Water Standing	From	To	Type	Returns	
							0	12.19	WATER	INT'ENT	

General Remarks NO GAS, NO VOIDS, 1m CASING, FULL FLUSH (INTERMITTENT) REFERENCES TO STRATA TYPES & STRENGTHS ARE TAKEN FROM DRILLERS INTERPRETATION BASED ON FLUSH CURVINGS MATERIAL & COLOUR (WHEN AVAILABLE), FROM DRILLING PROGRESS AND CHARACTERISTICS AND FROM VISUAL SAMPLES (WHEN TAKEN)		Logged By:
--	--	-------------------

Project : Thurgoland Hall Fold, Thurgoland, Sheffield.				Drillhole No. BH5
Client : Mr & Mrs Stamper				
Job no.	Date : 28.04.2016	Co-ordinates (m)	Ground Level (m)	Sheet : 1 of 1

RUN DETAILS			STRATA					Geology	Instrument/ Backfill	
			Red'od Level	Legend	Depth (Thick- ness)	DESCRIPTION				
						Discontinuities	Detail			Main
					0.91			FILL		
					(0.61) 1.52			CLAY, stiff, occ stones		
					(2.75) 4.27			SANDSTONE, strong		
					(4.87) 9.14			MUDSTONE with SILTSTONE Bands Strong		
					(0.92) 10.06			COAL banded (possibly inferior)		
					10.67	END		SILTSTONE		

Drilling Progress and Water Observations							Rotary Flush				Method/ Plant used:
Date	Time	Depth	Casing	Core dia	Strike	Water Standing	From	To	Type	Returns	
							0	10.67	WATER	GOOD	

Hand held rotary rig,
37mm O/D, with
water flush

General Remarks

NO GAS, NO VOIDS, 1m CASING, FULL FLUSH

REFERENCES TO STRATA TYPES & STRENGTHS ARE TAKEN FROM DRILLERS INTERPRETATION
BASED ON FLUSH CURVINGS MATERIAL & COLOUR (WHEN AVAILABLE), FROM DRILLING
PROGRESS AND CHARACTERISTICS AND FROM VISUAL SAMPLES (WHEN TAKEN).

Logged By:

Project : Thurgoland Hall Fold, Thurgoland, Sheffield.				Drillhole No. BH6
Client : Mr & Mrs Stamper				
Job no.	Date : 28.04.2016	Co-ordinates (m)	Ground Level (m)	Sheet : 1 of 1

RUN DETAILS			STRATA				Geology	Instrument/ Backfill
			Red'ed Level	Legend	Depth (Thick-ness)	DESCRIPTION		
						Discontinuities	Detail	Main
					0.76			FILL
					(0.78) 1.52			CLAY, stiff, occ stones
					(1.22) 2.74			SANDSTONE, strong
					(4.87) 8.99			MUDSTONE with SILTSTONE Bands Strong
					(0.92) 10.06			COAL banded (possibly inferior)
					10.67	END		SILTSTONE

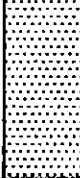
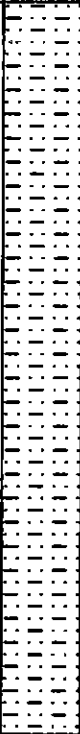
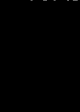
Drilling Progress and Water Observations							Rotary Flush				Method/ Plant used:
Date	Time	Depth	Casing	Core dia	Strike	Water Standing	From	To	Type	Returns	
							0	10.67	WATER	GOOD	Hand held rotary rig, 37mm O/D, with water flush

General Remarks

NO GAS, NO VOIDS, 1m CASING, FULL FLUSH
 REFERENCES TO STRATA TYPES & STRENGTHS ARE TAKEN FROM DRILLERS INTERPRETATION
 BASED ON FLUSH CURVINGS MATERIAL & COLOUR (WHEN AVAILABLE), FROM DRILLING
 PROGRESS AND CHARACTERISTICS AND FROM VISUAL SAMPLES (WHEN TAKEN).

Logged By:

Project : Thurgoland Hall Fold, Thurgoland, Sheffield.				Drillhole No. BH7
Client : Mr & Mrs Stamper				
Job no.	Date : 28.04.2016	Co-ordinates (m)	Ground Level (m)	Sheet : 1 of 1

RUN DETAILS			STRATA					Geology	Instrument/ Backfill	
			Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION				
						Discontinuities	Detail			Main
					0.76			FILL		
					(0.78) 1.52			CLAY, stiff, occ stones		
					(1.52) 3.04			SANDSTONE, strong		
					(6.10) 9.14			MUDSTONE with SILTSTONE Bands Strong		
					(1.07) 10.06			COAL banded (possibly inferior)		
					10.67	END		SILTSTONE		

Drilling Progress and Water Observations							Rotary Flush				Method/ Plant used:
Date	Time	Depth	Casing	Core dia	Strike	Water Standing	From	To	Type	Returns	
							0	10.67	WATER	GOOD	

Hand held rotary rig,
37mm O/D, with
water flush

General Remarks

NO GAS, NO VOIDS, 1m CASING, FULL FLUSH
REFERENCES TO STRATA TYPES & STRENGTHS ARE TAKEN FROM DRILLERS INTERPRETATION
BASED ON FLUSH CURVINGS MATERIAL & COLOUR (WHEN AVAILABLE), FROM DRILLING
PROGRESS AND CHARACTERISTICS AND FROM VISUAL SAMPLES (WHEN TAKEN).

Logged By:

Project : Thurgoland Hall Fold, Thurgoland, Sheffield.				Drillhole No. BH8
Client : Mr & Mrs Stamper				
Job no.	Date : 29.04.2016	Co-ordinates (m)	Ground Level (m)	Sheet : 1 of 1

RUN DETAILS			STRATA					Geology	Instrument/ Backfill	
			Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION				
						Discontinuities	Detail			Main
				▽▽▽▽	0.30			SOIL		
				▬▬▬▬	(1.22)					
				▬▬▬▬	1.52			CLAY, stiff, frequent stones		
				▬▬▬▬	(4.58)					
				▬▬▬▬	6.1			MUDSTONE with SILTSTONE Bands Strong		
				▬▬▬▬	(1.82)					
				▬▬▬▬	7.92			VOID, with mushy ground at base		
				▬▬▬▬	(0.61)					
				▬▬▬▬	8.53			MUDSTONE		
				▬▬▬▬						

Drilling Progress and Water Observations							Rotary Flush				Method/ Plant used:
Date	Time	Depth	Casing	Core dia	Strike	Water Standing	From	To	Type	Returns	
							0 6.10	6.10 8.53	WATER	GOOD NONE	Hand held rotary rig, 37mm O/D, with water flush

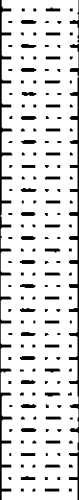
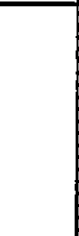
General Remarks

NO GAS, 1.82m VOID, 1m CASING, FLUSH to 6.1m.

REFERENCES TO STRATA TYPES & STRENGTHS ARE TAKEN FROM DRILLERS INTERPRETATION
BASED ON FLUSH CURVINGS MATERIAL & COLOUR (WHEN AVAILABLE), FROM DRILLING
PROGRESS AND CHARACTERISTICS AND FROM VISUAL SAMPLES (WHEN TAKEN).

Logged By:

Project : Thurgoland Hall Fold, Thurgoland, Sheffield.				Drillhole No. BH10
Client : Mr & Mrs Stamper				
Job no.	Date : 29.04.2016	Co-ordinates (m)	Ground Level (m)	Sheet : 1 of 1

RUN DETAILS			STRATA					Geology	Instrument/ Backfill	
			Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION				
						Discontinuities	Detail			Main
					0.30			SOIL		
					(1.22)					
					1.52			CLAY, stiff, frequent stones		
					(4.27)					
					5.79			MUDSTONE with SILTSTONE Bands Strong		
					(2.13)					
					7.92			VOID, with mushy ground at base		
					(0.61)					
		8.53			MUDSTONE					
										

Drilling Progress and Water Observations							Rotary Flush				Method/ Plant used:
Date	Time	Depth	Casing	Core dia	Strike	Water Standing	From	To	Type	Returns	
							0 5.79	5.79 8.53	WATER	GOOD NONE	

Hand held rotary rig,
37mm O/D, with
water flush

General Remarks

NO GAS, 2.13m VOID, 1m CASING, FLUSH to 5.79m.

REFERENCES TO STRATA TYPES & STRENGTHS ARE TAKEN FROM DRILLERS INTERPRETATION
BASED ON FLUSH CURVINGS MATERIAL & COLOUR (WHEN AVAILABLE), FROM DRILLING
PROGRESS AND CHARACTERISTICS AND FROM VISUAL SAMPLES (WHEN TAKEN).

Logged By:

Project : Thurgoland Hall Fold, Thurgoland, Sheffield.				Drillhole No. BH9 & 11	
Client : Mr & Mrs Stamper					
Job no.	Date : 29.04.2016	Co-ordinates (m)	Ground Level (m)	Sheet : 1 of 1	

RUN DETAILS			STRATA				Geology	Instrument/ Backfill
			Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION		
						Discontinuities	Detail	Main
				▽▽▽▽	0.30			SOIL
					(1.22)			
					1.52			CLAY, stiff, frequent stones
					(4.88)			
					6.40			MUDSTONE with SILTSTONE Bands Strong
					(1.52)			
					7.92			VOID. with mushy ground at base
					(0.61)			
					8.53			MUDSTONE

Drilling Progress and Water Observations							Rotary Flush				Method/ Plant used:
Date	Time	Depth	Casing	Core dia	Strike	Water Standing	From	To	Type	Returns	
							0 6.40	6.40 8.53	WATER	GOOD NONE	

Hand held rotary rig,
37mm O/D, with
water flush

General Remarks

NO GAS, 1.52m VOID, 1m CASING, FLUSH to 6.4m.

REFERENCES TO STRATA TYPES & STRENGTHS ARE TAKEN FROM DRILLERS INTERPRETATION
BASED ON FLUSH CURVINGS MATERIAL & COLOUR (WHEN AVAILABLE), FROM DRILLING
PROGRESS AND CHARACTERISTICS AND FROM VISUAL SAMPLES (WHEN TAKEN).

Logged By:

Project : Thurgoland Hall Fold, Thurgoland, Sheffield.				Drillhole No. BH12
Client : Mr & Mrs Stamper				
Job no.	Date : 29.04.2016	Co-ordinates (m)	Ground Level (m)	Sheet : 1 of 1

RUN DETAILS			STRATA				Geology	Instrument/ Backfill
			Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION		
						Discontinuities	Detail	Main
				▽▽▽▽	0.30			SOIL
				▬▬▬				

Drilling Progress and Water Observations							Rotary Flush				Method/ Plant used:
Date	Time	Depth	Casing	Core dia	Strike	Water Standing	From	To	Type	Returns	
							0 7.62	7.62 8.53	WATER	GOOD NONE	

Hand held rotary rig,
37mm O/D, with
water flush

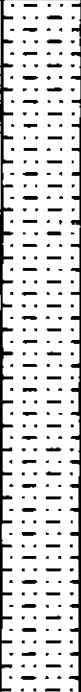
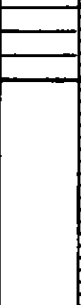
General Remarks

NO GAS, 0.30m VOID, 1m CASING, FLUSH to 7.62m.

REFERENCES TO STRATA TYPES & STRENGTHS ARE TAKEN FROM DRILLERS INTERPRETATION
BASED ON FLUSH CURVINGS MATERIAL & COLOUR (WHEN AVAILABLE), FROM DRILLING
PROGRESS AND CHARACTERISTICS AND FROM VISUAL SAMPLES (WHEN TAKEN).

Logged By:

Project : Thurgoland Hall Fold, Thurgoland, Sheffield.				Drillhole No. BH13
Client : Mr & Mrs Stamper				
Job no.	Date : 29.04.2016	Co-ordinates (m)	Ground Level (m)	Sheet : 1 of 1

RUN DETAILS			STRATA				Geology	Instrument/ Backfill		
			Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION				
						Discontinuities			Detail	Main
				▽▽▽▽	0.30			soil		
					(1.22)					
					1.52			CLAY, stiff, frequent stones		
					(5.80)					
					7.32			MUDSTONE with SILTSTONE Bands Strong		
					(0.60)					
					7.92			VOID, with mushy ground at base		
					(0.61)					
			8.53			MUDSTONE				
										

Drilling Progress and Water Observations							Rotary Flush				Method/ Plant used:
Date	Time	Depth	Casing	Core dia	Strike	Water Standing	From	To	Type	Returns	
							0 7.32	7.32 8.53	WATER	GOOD NONE	

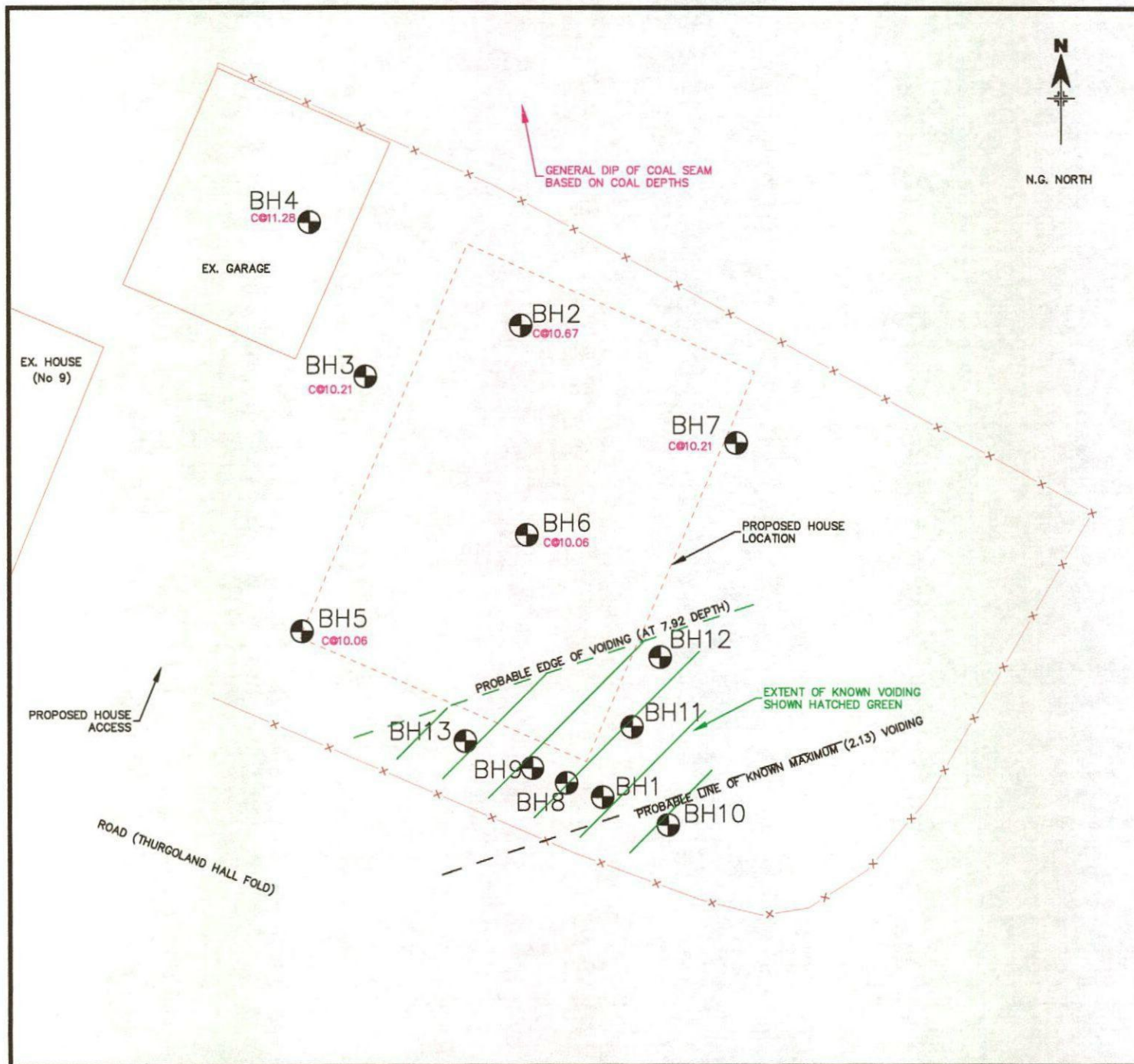
Hand held rotary rig,
37mm O/D, with
water flush

General Remarks

NO GAS, 0.60m VOID, 1m CASING, FLUSH to 7.32m.

REFERENCES TO STRATA TYPES & STRENGTHS ARE TAKEN FROM DRILLERS INTERPRETATION
BASED ON FLUSH CURVINGS MATERIAL & COLOUR (WHEN AVAILABLE), FROM DRILLING
PROGRESS AND CHARACTERISTICS AND FROM VISUAL SAMPLES (WHEN TAKEN).

Logged By:



KEY



BH7

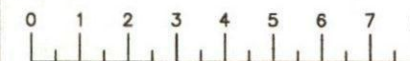
BOREHOLE WITH REFERENCE

C@10.67

COAL BASE DEPTH



FENCE



SCALE ON METRES

ALL DIMENSIONS SHOWN IN METRES

CLIENT

Mr & Mrs STAMPER

9 THURGOLAND HALL FOLD
THURGOLAND, SHEFFIELD, S75 7EA

TITLE

PROPOSED HOUSE BUILD ADJACENT
TO 9 THURGOLAND HALL FOLD
BOREHOLE LOCATION PLAN

Site Centre 428833mE, 401410mN, 242.7mAOD

Geol-Consultants Ltd

3, Gladstone Terrace, Gateshead, NE8 4DY
Tel: 0191 4772020, Mobile 07803 199360
E-Mail, paul-evans-surveying@btconnect.com

Date
29.04.16

Scale
1:100 on A3

Plan No.
THFBH1