Our Ref: 16248//LO.002/AMG

Mr. D. Beaman
A J Beaman Construction Limited
Unit 1
Pine View
Hillside Industrial Estate
Draycott Cross Road
CHEADLE
ST10 1PN

9 May 2017

Dear Daniel

MINING INVESTIGATION
160 FROGHALL ROAD, CHEADLE, ST10 2DN

Background

Georisk Management Limited (Georisk) has been instructed by A J Beaman Construction Limited to carry out a ground investigation for the presence of shallow coal workings beneath the above site.

The site has been subject of a '*Mining Risk Assessment*' by Keith Edmondson Limited (KEL) reference 261003 dated October 2015 – reference should be made to this report for full details.

The site is within a '*Development High Risk Area*' as defined by The Coal Authority and KEL recommended an investigation comprising 3 No. exploratory holes drilled to a depth of 30 m to establish the geological sequence and confirm the spatial distribution of any coals. If coals were found to be absent, or at a depth where even if worked voids would have no influence on surface stability, no further investigative work would be deemed necessary.

This report provides information and recommendations on this exploratory investigation.

Georisk has employed Sonic Drilling Limited (Sonic) to drill the exploratory holes, which was carried out in accordance with permit reference 13801 issued by The Coal Authority.

Works

The investigation works were carried out by Sonic under direct supervision of Georisk on 2 and 3 May 2017 and comprise 3 No. holes drilled by rotary open hole methods with water flush using a Klemm 802 rig to a depth of 30 m below existing ground level (begl).

Exploratory hole records are included in Appendix A together with Drawing No. 16248/1 showing the location of the exploratory holes.

Findings and Recommendations

The ground conditions encountered in the exploratory holes can be summarised as follows:

- superficial deposits comprising 'brown clay' were recorded to depths of between 2.0 and 2.6 m begl;
- the Coal Measures strata encountered comprise 'grey mudstone' rock to a depth of approximately 25 m begl overlying red-brown sandstone to 30 m begl;
- thin coal bands were recorded between 6.0 and 6.3 m begl in BH2 and between 6.7 and 7.0 m begl in BH3;
- 'soft grey mudstone' was recorded between 10.2 and 11.0 m begl in BH1; between 10.2 and 12.2 m begl in BH2 and between 10.6 and 12.3 m begl in BH3. No loss of flush was recorded in BH1 and BH3 and in BH2, 70% flush returns were noted below 10.2 m begl associated with the 'soft mudstone' – these are believed to represent weathered zones within the Coal Measures sequence;
- no voids or evidence of coal workings were recorded in the boreholes.

This investigation has not identified the Cobble Coal seam within 30 m of the ground surface and; therefore, as it is approximately 0.5 m thick, even if it has been worked beneath the site at depth, there would be sufficient rock cover above the workings not to pose a significant risk to the proposed development.

There is approximately 76 m separation between the Cobble Coal and Woodhead Coal and; therefore, the Woodhead Coal will be present at too great a depth to pose any significant risk to be built development at the surface.

Based on the findings of the initial ground investigation at the site, it is considered that the proposed development can proceed without further mitigation with respect to risks posed by shallow mining to new built development at the surface.

We trust that this letter meets your requirements; however, and should you require any clarification please do not hesitate to contact us.

Yours sincerely



Mark Gill
Director

mobile: 07966 933495
mark.gill@georisk-uk.com

APPENDIX A

EXPLORATORY HOLE RECORDS AND DRAWING REFERENCE 16248/1

Georisk Management Ltd
Tel: 0121 553 4044
email: enquiries@georisk-uk.com
www.georisk-uk.com

Borehole No. **BH1** Sheet 1 of 3

Project Name Froghall Road, Cheadle	**Project No.** 16248	**Co-ords:** -	**Hole Type** RO
Equipment: Klemm 802		**Level:** -	**Scale** 1:50
Client: A. J. Beaman		**Dates:** 02-05-2017	**Bit Type** PCD

Well	Water Strikes	Depth (m)	Level (m AOD)	Flush Return (%)	Legend	Stratum Description
						Brown CLAY. (Drillers Description).
		2.60				Light grey MUDSTONE. (Drillers Description).
		6.00				Dark grey MUDSTONE with traces of coal. (Drillers Description).
		6.20				Light grey MUDSTONE. (Drillers Description).
		8.00				Dark grey MUDSTONE. (Drillers Description).
		8.60				Light grey MUDSTONE. (Drillers Description).

Continued next sheet

Remarks: Borehole backfilled with arisings upon completion.

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Borehole No. BH1
Sheet 2 of 3

Project Name Froghall Road, Cheadle	**Project No.** 16248	**Co-ords:** -	**Hole Type** RO
Equipment: Klemm 802		**Level:** -	**Scale** 1:50
Client: A. J. Beaman		**Dates:** 02-05-2017	**Bit Type** PCD

Well	Water Strikes	Depth (m)	Level (m AOD)	Flush Return (%)	Legend	Stratum Description
		10.20				Soft light grey MUDSTONE. (Drillers Description).
		11.00				Hard light grey MUDSTONE. (Drillers Description).
				100 %		
		19.30				Medium grey MUDSTONE. (Drillers Description).
						Continued next sheet

Remarks: Borehole backfilled with arisings upon completion.

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Borehole No. BH1
Sheet 3 of 3

Project Name Froghall Road, Cheadle	**Project No.** 16248	**Co-ords:** -	**Hole Type** RO
Equipment: Klemm 802		**Level:** -	**Scale** 1:50
Client: A. J. Beaman		**Dates:** 02-05-2017	**Bit Type** PCD

Well	Water Strikes	Depth (m)	Level (m AOD)	Flush Return (%)	Legend	Stratum Description
		24.60				Red SANDSTONE with bands of light grey sandstone. (Drillers Description).
		30.00				End of Borehole at 30.00 m

21 22 23 24 25 26 27 28 29

Remarks: Borehole backfilled with arisings upon completion.

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Borehole No. **BH2** Sheet 1 of 3

Project Name	**Project No.**	**Co-ords:**	**Hole Type**
Froghall Road, Cheadle	16248	-	RO
Equipment: Klemm 802		**Level:** -	**Scale** 1:50
Client: A. J. Beaman		**Dates:** 02-05-2017	**Bit Type** PCD

Well	Water Strikes	Depth (m)	Level (m AOD)	Flush Return (%)	Legend	Stratum Description
						Brown CLAY. (Drillers Description).
		2.00				Light grey MUDSTONE. (Drillers Description).
				100 %		
		6.00				COAL. (Drillers Description).
		6.30				Dark grey MUDSTONE. (Drillers Description).
		6.60				Light grey MUDSTONE. (Drillers Description).
						Continued next sheet

Remarks: Borehole backfilled with arisings upon completion.

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Borehole No. BH2
Sheet 2 of 3

Project Name Froghall Road, Cheadle	**Project No.** 16248	**Co-ords:** -	**Hole Type** RO
Equipment: Klemm 802		**Level:** -	**Scale** 1:50
Client: A. J. Beaman		**Dates:** 02-05-2017	**Bit Type** PCD

Well	Water Strikes	Depth (m)	Level (m AOD)	Flush Return (%)	Legend	Stratum Description
		10.20				Soft light grey MUDSTONE. (Drillers Description).
		12.20				Hard light grey MUDSTONE. (Drillers Description).
		18.30				Medium grey MUDSTONE. (Drillers Description).

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Remarks: Borehole backfilled with arisings upon completion.

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Borehole No. **BH2** Sheet 3 of 3

Project Name Froghall Road, Cheadle	**Project No.** 16248	**Co-ords:** -	**Hole Type** RO
Equipment: Klemm 802		**Level:** -	**Scale** 1:50
Client: A. J. Beaman		**Dates:** 02-05-2017	**Bit Type** PCD

Well	Water Strikes	Depth (m)	Level (m AOD)	Flush Return (%)	Legend	Stratum Description
				70 %		
		25.00				Red SANDSTONE with bands of light grey sandstone. (Drillers Description).
		30.00				End of Borehole at 30.00 m

21 22 23 24 25 26 27 28 29

Remarks: Borehole backfilled with arisings upon completion.

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Borehole No. **BH3** Sheet 1 of 3

Project Name Froghall Road, Cheadle	**Project No.** 16248	**Co-ords:** -	**Hole Type** RO
Equipment: Klemm 802		**Level:** -	**Scale** 1:50
Client: A. J. Beaman		**Dates:** 03-05-2017	**Bit Type** PCD

Well	Water Strikes	Depth (m)	Level (m AOD)	Flush Return (%)	Legend	Stratum Description
						Brown CLAY. (Drillers Description).
		2.00				Light grey MUDSTONE. (Drillers Description).
		6.70				COAL. (Drillers Description).
		7.00				Dark grey MUDSTONE. (Drillers Description).
		7.60				Light grey MUDSTONE. (Drillers Description).
						Continued next sheet

Remarks: Borehole backfilled with arisings upon completion.

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Borehole No. BH3
Sheet 2 of 3

Project Name Froghall Road, Cheadle	**Project No.** 16248	**Co-ords:** -	**Hole Type** RO
Equipment: Klemm 802		**Level:** -	**Scale** 1:50
Client: A. J. Beaman		**Dates:** 03-05-2017	**Bit Type** PCD

Well	Water Strikes	Depth (m)	Level (m AOD)	Flush Return (%)	Legend	Stratum Description
		10.60				Soft light grey MUDSTONE. (Drillers Description).
		12.30				Hard light grey MUDSTONE. (Drillers Description).
				100 %		
		19.00				Medium grey MUDSTONE. (Drillers Description).
						Continued next sheet

Remarks: Borehole backfilled with arisings upon completion.

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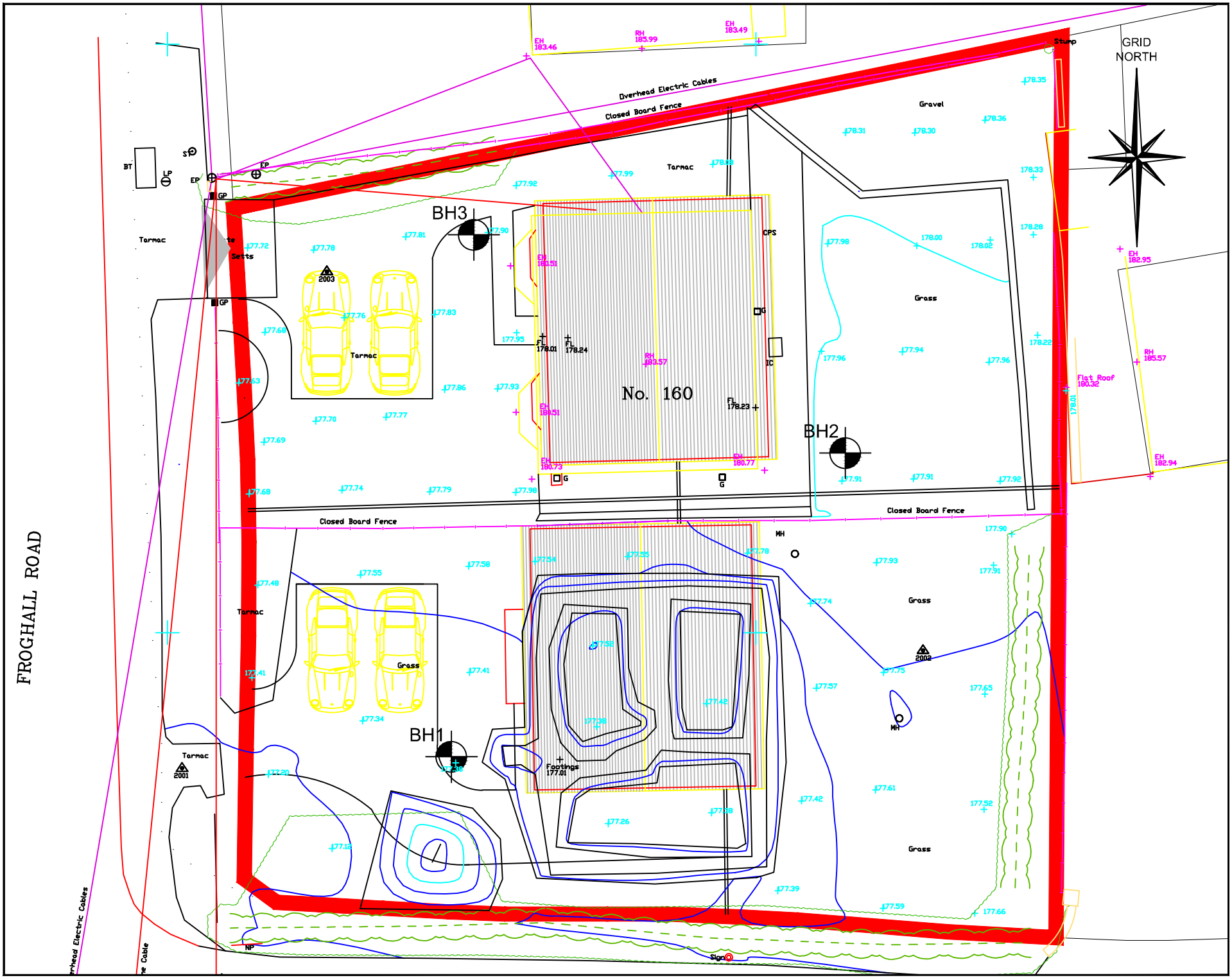
Borehole No. **BH3** Sheet 3 of 3

Project Name Froghall Road, Cheadle	**Project No.** 16248	**Co-ords:** -	**Hole Type** RO
Equipment: Klemm 802		**Level:** -	**Scale** 1:50
Client: A. J. Beaman		**Dates:** 03-05-2017	**Bit Type** PCD

Well	Water Strikes	Depth (m)	Level (m AOD)	Flush Return (%)	Legend	Stratum Description
		25.00				Red SANDSTONE with bands of light grey sandstone. (Drillers Description).
		30.00				End of Borehole at 30.00 m

21 22 23 24 25 26 27 28 29

Remarks: Borehole backfilled with arisings upon completion.



Notes

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This drawing is to be read in conjunction with all development drawings, and designers risk assessments.

This drawing must not be scaled. Work to figured dimensions only.

KEY

BH1 — Rotary Probehole (BH1 - BH3; Georisk 2017)

Rev	Date	Description	Initials

Client

A J BEAMAN CONSTRUCTION LIMITED

georisk MANAGEMENT

Summit Point, Summit Crescent, Smethwick, Birmingham B66 1BT
t. 0121 553 4044, f. 0121 553 1112
www.georisk-uk.com, email. enquiries@georisk-uk.com

Contract

160 FROGHALL ROAD, CHEADLE

Drawing Title

EXPLORATORY HOLE LOCATION PLAN

Drawing Status	FINAL		
Drawn By	AMG	Date	07/05/17
Checked/Approved	AMG	Date	07/05/17
Scale	NTS	Drawing Number	16248/1