

12494/PD/HP

31 November 2019

Jehu Group
Number One
Waterton Park
Bridgend CF31 3PH

For the attention of Mr Jon Dobbs

Dear Sirs,

Coed D'Arcy – Proof Drilling of Plots

Further to your instruction, we confirm that we have recently carried out the rotary proof drilling works beneath the above site, in order to establish the potential shallow mine workings risk beneath the above plots (highlighted in red on the attached Figure 1). We are now able to report as follows:

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Background

Previously Intégral Géotechnique carried out a coal mining risk assessment beneath the site, which entailed drilling thirty rotary borehole across the site in order to more clearly define the shallow mining risk across the site. The findings of these works were given in our letter report reference 12494/PD/PB dated 30 September 2019.

The report identified the above plots to be in a high-risk mining subsidence zone and recommended proof drilling in order to establish whether a programme of ground stabilisation by drilling and grouting would be required to infill any shallow mine workings beneath the plots.

Drilling Works

A permit to enter or disturb Coal Authority Mining Interests was obtained from the Coal Authority to undertake the drilling works, Permit No 18988.

The rotary drilling works were carried out by Apex Drilling Services Limited in November 2019. Thirty-Nine boreholes were drilled beneath the above plots by using either a Fraste or a Klemm rotary drilling rig. The hydraulically operated drilling rigs used compressed air and water as the flushing medium.

The borehole locations are shown on the attached plan and a summary borehole table, which is based on the driller's logs, are presented in Appendix A.

The rotary probeholes were drilled between approximately 10 to 23mbgl. Superficial deposits were encountered between 0.0 to 7.2mbgl and thereafter encountered bands of sandstone or mudstone and the Bodwr coal seam.

The thickness of the Bodwr coal seam recorded ranged from 0.2m to 1.1m, at depths ranging from 3.5 to 20.5mbgl but, a 2.0m coal with a mudstone parting was encountered in P25. The Bodwr coal seam was not encountered in P31 which indicated that it had outcropped at this location and together with the varying thickness of the Bodwr coal seam encountered, indicates that some faulting is present in the area.

No shallow mine workings were encountered in any of the nine probeholes drilled.

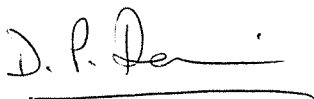
Recommendations

No shallow mine workings have been encountered in any of the thirty-nine probeholes drilled or the previous drilling carried out.

Hence, no precautionary measures are required beneath any of the plots on site for shallow mine workings.

We trust that the above is to your satisfaction. However, if you have any queries or require any further information, please do not hesitate to contact us.

Yours faithfully,



D P Davies
For
Intégral Géotechnique (Wales) Limited

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Appendix A

Probehole Summary Table

Probehole Summary Table

PH No	Depth (m)	Depth Rock (m)	Depth to Coal (m)	Rock Cover (m)	Comments
P1	15.0	0.3	11.0-11.5=0.5	10.7	
P2	15.0	0.8	7.0-7.2=0.2	6.2	
P3	23.5	3.5	21.6-22.5=0.9	18.1	
P4	21.5	3.2	19.6-20.5=0.9	16.4	
P5	23.0	1.4	20.2-21.0=0.8	18.8	
P6	20.5	6.2	18.5-19.5=1.0	12.3	
P7	17.5	7.2	15.5-10.4=0.9	8.3	
P8	23.0	1.1	20.5-21.2=0.7	19.4	
P9	19.6	3.0	17.9-18.6=0.7	14.9	
P10	13.5	3.5	11.7-12.5=0.8	8.2	
P11	10.0	3.4	8.0-8.8=0.8	4.6	
P12	23.0	1.3	7.5-8.2=0.7	6.2	
P13	16.7	3.3	15.0-15.7=0.7	11.7	
P14	15.0	0.6	8.8-9.5=0.7	8.2	
P15	23.0	2.1	12.3-13.0=0.7	10.2	
P16	23.0	2.7	6.3-7.2=0.9	3.6	
P17	15.0	0.4	5.2-5.9=0.7	4.8	
P18	23.0	2.3	8.9-10.0=1.1	6.6	
P19	15.0	3.9	9.0-9.6=0.6	5.1	
P20	15.0	2.2	10.0-11.5=1.5	7.8	
P21	23.0	0.1	4.0-4.5=0.5	3.9	
P22	23.0	0.6	8.2-8.8=0.6	7.6	
P23	15.9	1.0	3.5-4.5=1.0	2.5	
P24	15.0	0.0	9.5-10.0=0.5	9.5	
P25	23.0	4.0	19.0-21.0=2.0	15.0	(Mudstone band in Coal)
P26	15.0	2.6	2.9-3.2=0.3		(Dirty Coal)
P27	15.0	1.1	7.1-7.7=0.6	6.0	
P28	18.0	0.6	14.5-15.0=0.5		
P29	15.0	1.2	7.0-7.6=0.6	5.8	
P30	23.0	2.4	14.5-15.0=0.5	16.6	(Mudstone band in Coal)
P31	15.0	3.0			Coal outcropped
P32	15.0	0.6	12.1-12.8=0.8	11.5	
P33	20.0	0.6	16.5-17.1=0.6	15.9	
P34	18.0	1.5	13.8-15.0=1.2	12.3	
P35	23.0	0.7	13.0-14.0=1.0	12.3	
P36	15.0	0.7	8.5-9.2=0.7	7.8	
P37	15.0	1.6	7.0-8.0=1.0	5.4	
P38	15.0	0.7	11.0-12.0=2.1	10.3	
P39	15.0	0.7	6.5-7.2=0.7	5.8	

Figure

