Earth Environmental & Geotechnical

CONSULTING ENGINEERS

Geotechnical
Environmental
Ecology
Geology
Drainage
Mining

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No: 8436152

OUR REF: A2728/18 13th December 2018
YOUR REF:

13th December 2018

Mr. Ben Carr

By Email: (carr365365@gmail.com)

Dear Ben,

Park Bungalow, Stoke-on-Trent

Background

A previous Coal Mining Risk Assessment (Appendix A), by the Coal Authority, has identified that the site lies within a Coal Authority Development High Risk Area.

At this stage it is worth mentioning that we consider the Coal Authority to be acting as a regulatory authority adviser and consultant, to be wholly inappropriate.

The Coal Mining Risk Assessment (CMRA) has attributed a medium risk for the site, due to the presence of shallow coal mine workings associated with the King Seam.

The King Seam is recorded to be have been worked (last mined in 1961) at 26m below ground level with an extraction thickness of 0.81m. These workings are shown on abandonment plan WM344 for workings at Moorland Colliery. The coal seam dips at 14 degrees to the south-east and outcrop 32.5m to the north-west of the site.

Potentially workings up to 1.5m in height could be found, associated with roadways.

The shallowest depth of the coal seam is 30m, with 4.57m to 6.9m of superficial cover. Given the extent of rock above the coal seam the risk of collapsed workings reaching the surface are low.

Unrecorded shallow workings associated with the King Seam are postulated at a depth of 9.9m below rockhead.

Fieldwork

Four boreholes (Appendix B for logs) were drilled by a rotary open holing technique using a water based flush. All drilling was completed on 26th November 2018.

All work was supervised by an Earth Environmental & Geotechnical(EEG) consultant with monitoring of potential mine gases. The mine gases (methane, carbon-dioxide, hydrogen sulphide and carbon-monoxide) were measured by use of a calibrated GA2000 instrument, upon the addition of drilling rods, every 3m.

Elevated gas concentrations were not encountered during the drilling process.

A shallow rockhead was encountered underlain by a sequence of mudstone, in places with coal traces.

Table 1 (below) provides a summary of the geology encountered.

Table 1 Summary of Geology Encountered

Location	Fill & Superficials	Mudstone	Mudstone with coal traces
RH1	Fill to 0.30m	0.30m to 17.80m	17.80m to 30.00m
RH2	Clay to 0.50m	0.50m to 16.50m	16.5m to 30.0m
RH3	Clay to 0.50m	0.50m to 17.80m	17.80m to 30.0m
RH4	Clay to 0.90m	0.90m to 17.90m	17.90m to 30.0m

A shallow mudstone rockhead was encountered with a thin mantle of made ground.

There was no evidence of loss of flush, voiding or broken strata.

Conclusions & Recommendations

No remedial measures are considered necessary with respect to potential shallow workings.

Yours Sincerely,

A Czarnecki

Adam Czarnecki FGS CGeol
Director
For and on behalf of Earth Environmental & Geotechnical Ltd

Encl. Appendix A Coal Mining Risk Assessment
Appendix B Borehole Logs

Earth Environmental
& Geotechnical

APPENDIX A

COAL MINING RISK ASSESSMENT

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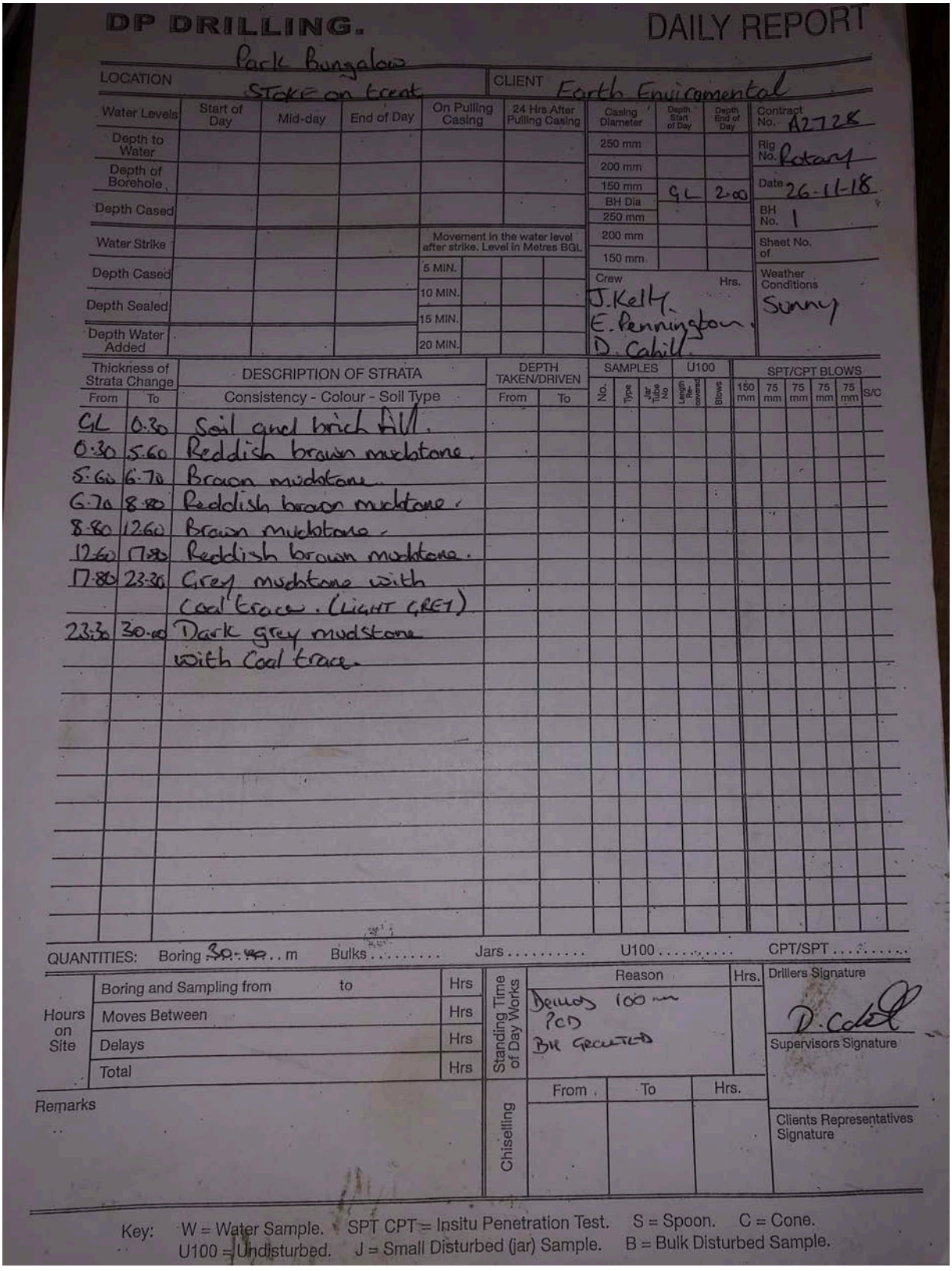
APPENDIX B

BOREHOLE LOGS



DP DRILLING. DAILY REPORT

LOCATION: Park Bungalow STOKE on trent
CLIENT: Earth Enviromental

Water Levels	Start of Day	Mid-day	End of Day	On Pulling Casing	24 Hrs After Pulling Casing
Depth to Water					
Depth of Borehole					
Depth Cased					
Water Strike				Movement in the water level after strike. Level in Metres BGL	
Depth Cased				5 MIN.	
Depth Sealed				10 MIN.	
Depth Water Added				15 MIN.	
				20 MIN.	

Casing Diameter	Depth Start of Day	Depth End of Day
250 mm		
200 mm		
150 mm	GL	2.00
BH Dia 250 mm		
200 mm		
150 mm		

Crew: J. Kelly. E. Pennington. D. Cahill. Hrs.

Contract No. A2728
Rig No. Rotary
Date 26-11-18
BH No. 1
Sheet No. of
Weather Conditions: Sunny

Thickness of Strata Change From	To	DESCRIPTION OF STRATA Consistency - Colour - Soil Type	DEPTH TAKEN/DRIVEN From	To	SAMPLES No.	Type	Jar Tube No	U100 Length Recovered	Blows	SPT/CPT BLOWS 150 mm	75 mm	75 mm	75 mm	75 mm	S/C
GL	0.30	Soil and brick fill.													
0.30	5.60	Reddish brown mudstone.													
5.60	6.70	Brown mudstone.													
6.70	8.80	Reddish brown mudstone.													
8.80	12.60	Brown mudstone.													
12.60	17.80	Reddish brown mudstone.													
17.80	23.30	Grey mudstone with coal trace. (LIGHT GREY)													
23.30	30.00	Dark grey mudstone with coal trace.													

QUANTITIES: Boring ~~30.00~~ m Bulks ..... Jars ..... U100 ..... CPT/SPT .....

Hours on Site

Boring and Sampling from	to	Hrs
Moves Between		Hrs
Delays		Hrs
Total		Hrs

Standing Time of Day Works

Reason	Hrs.
Demob 100 mm PCD BH Grouted	

Drillers Signature: D. Cahill
Supervisors Signature

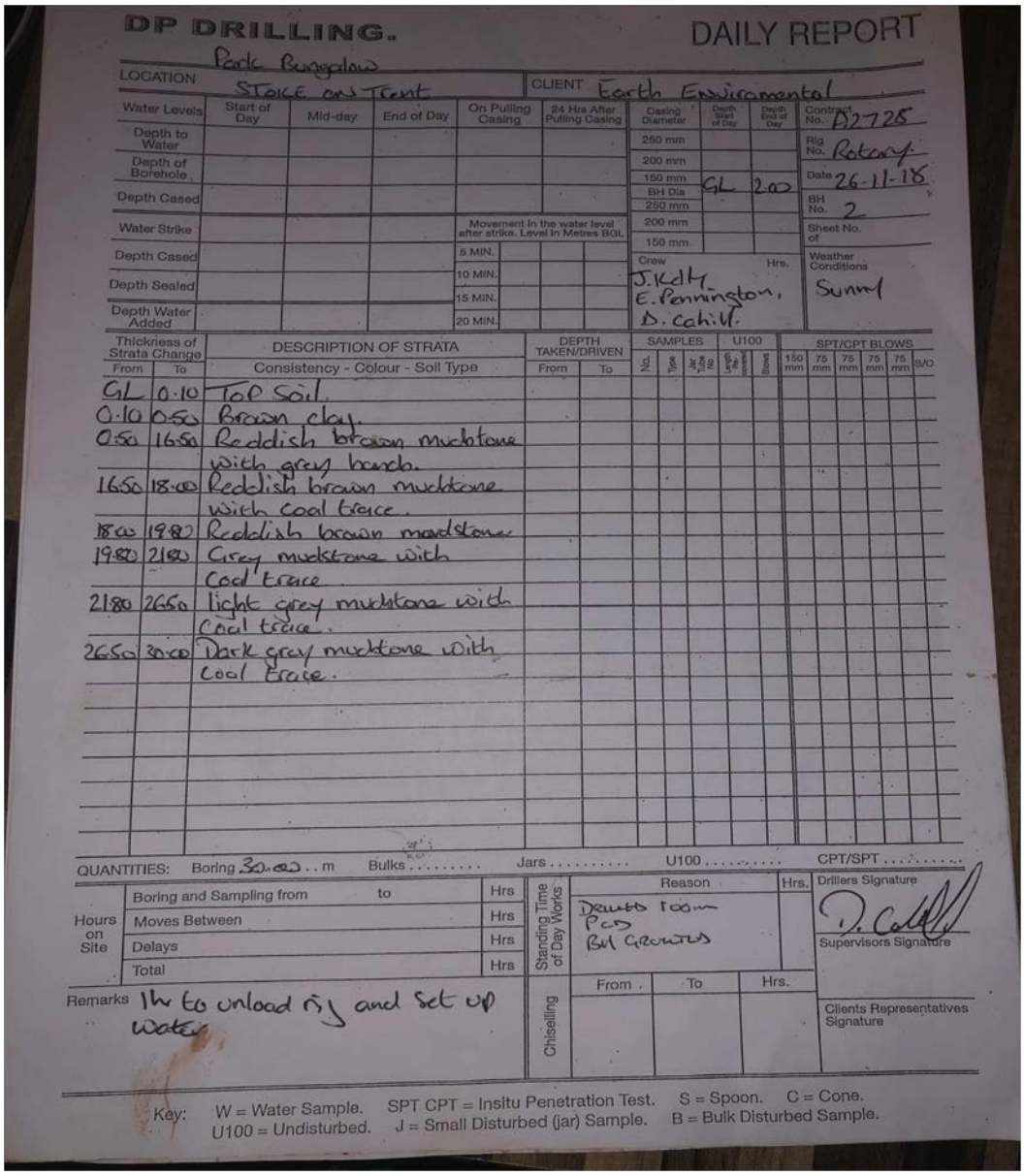
Chiselling

From	To	Hrs.

Clients Representatives Signature

Remarks

Key: W = Water Sample. SPT CPT = Insitu Penetration Test. S = Spoon. C = Cone.
U100 = Undisturbed. J = Small Disturbed (jar) Sample. B = Bulk Disturbed Sample.



DP DRILLING. DAILY REPORT

LOCATION Park Bungalow Stoke on Trent CLIENT Earth Environmental

Water Levels	Start of Day	Mid-day	End of Day	On Pulling Casing	24 Hrs After Pulling Casing
Depth to Water					
Depth of Borehole					
Depth Cased					
Water Strike				Movement in the water level after strike. Level in Metres BGL	
Depth Cased				5 MIN.	
Depth Sealed				10 MIN.	
Depth Water Added				15 MIN.	
				20 MIN.	

Casing Diameter	Depth Start of Day	Depth End of Day
250 mm		
200 mm		
150 mm	GL	2.00
BH Dia		
250 mm		
200 mm		
150 mm		

Crew J. Kelly, E. Pennington, D. Cahill Hrs.

Contract No. A2725 Rig No. Rotary Date 26-11-18 BH No. 2 Sheet No. of Weather Conditions Sunny

Thickness of Strata Change From	To	DESCRIPTION OF STRATA Consistency - Colour - Soil Type	DEPTH TAKEN/DRIVEN From	To	SAMPLES No.	Type	Jar/Tub No.	U100 Length recovered	Blows	SPT/CPT BLOWS 150 mm	75 mm	75 mm	75 mm	75 mm	B/O
GL	0.10	Top Soil.													
0.10	0.50	Brown clay.													
0.50	16.50	Reddish brown mudstone with grey bands.													
16.50	18.00	Reddish brown mudstone with coal trace.													
18.00	19.80	Reddish brown mudstone													
19.80	21.80	Grey mudstone with coal trace													
21.80	26.50	light grey mudstone with coal trace.													
26.50	30.00	Dark grey mudstone with coal trace.													

QUANTITIES: Boring 30.00 m Bulks ..... Jars ..... U100 ..... CPT/SPT .....

Hours on Site		Hrs
	Boring and Sampling from to	Hrs
	Moves Between	Hrs
	Delays	Hrs
	Total	Hrs

Standing Time of Day Works: Reason — Hrs. Demob from PCD BH Grouted

Chiselling: From — To — Hrs.

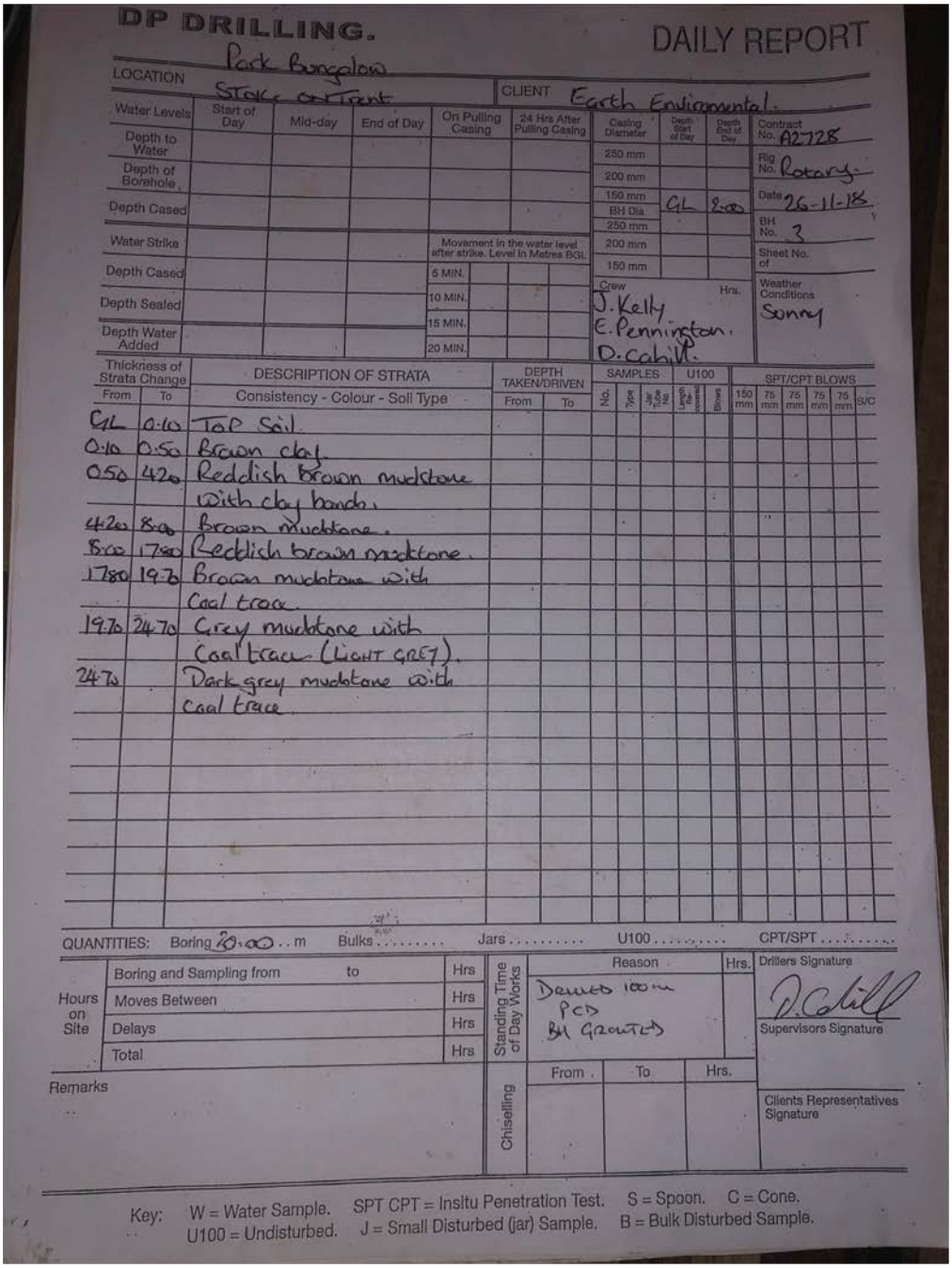
Drillers Signature D. Cahill

Supervisors Signature

Clients Representatives Signature

Remarks 1hr to unload rig and set up water

Key: W = Water Sample. U100 = Undisturbed. SPT CPT = Insitu Penetration Test. J = Small Disturbed (jar) Sample. S = Spoon. C = Cone. B = Bulk Disturbed Sample.



DP DRILLING. DAILY REPORT

LOCATION: Park Bungalow, Stoke on Trent

CLIENT: Earth Environmental.

Water Levels	Start of Day	Mid-day	End of Day	On Pulling Casing	24 Hrs After Pulling Casing
Depth to Water					
Depth of Borehole					
Depth Cased					
Water Strike				Movement in the water level after strike. Level in Metres BGL	
Depth Cased				5 MIN.	
Depth Sealed				10 MIN.	
Depth Water Added				15 MIN.	
				20 MIN.	

Casing Diameter	Depth Start of Day	Depth End of Day
250 mm		
200 mm		
150 mm	GL	2.00
BH Dia		
250 mm		
200 mm		
150 mm		

Crew: J. Kelly, E. Pennington, D. Cahill. Hrs.

Contract No. A2728

Rig No. Rotary.

Date 26-11-18

BH No. 3

Sheet No. of

Weather Conditions: Sunny

Thickness of Strata Change From	To	DESCRIPTION OF STRATA Consistency - Colour - Soil Type	DEPTH TAKEN/DRIVEN From	To	SAMPLES No.	Type	Jar Tube No.	U100 Length Recovered	Blows	SPT/CPT BLOWS 150 mm	75 mm	75 mm	75 mm	75 mm	S/C
GL	0.10	Top Soil													
0.10	0.50	Brown clay.													
0.50	4.20	Reddish brown mudstone with clay bands.													
4.20	8.00	Brown mudstone.													
8.00	17.80	Reddish brown mudstone.													
17.80	19.70	Brown mudstone with coal trace.													
19.70	24.70	Grey mudstone with coal trace (LIGHT GREY).													
24.70		Dark grey mudstone with coal trace.													

QUANTITIES: Boring 20.00 m Bulks ..... Jars ..... U100 ..... CPT/SPT .....

Hours on Site		Hrs
	Boring and Sampling from to	Hrs
	Moves Between	Hrs
	Delays	Hrs
	Total	Hrs

Standing Time of Day Works: Reason: Drilled 100m PCD BH Grouted. Hrs.

Chiselling: From / To / Hrs.

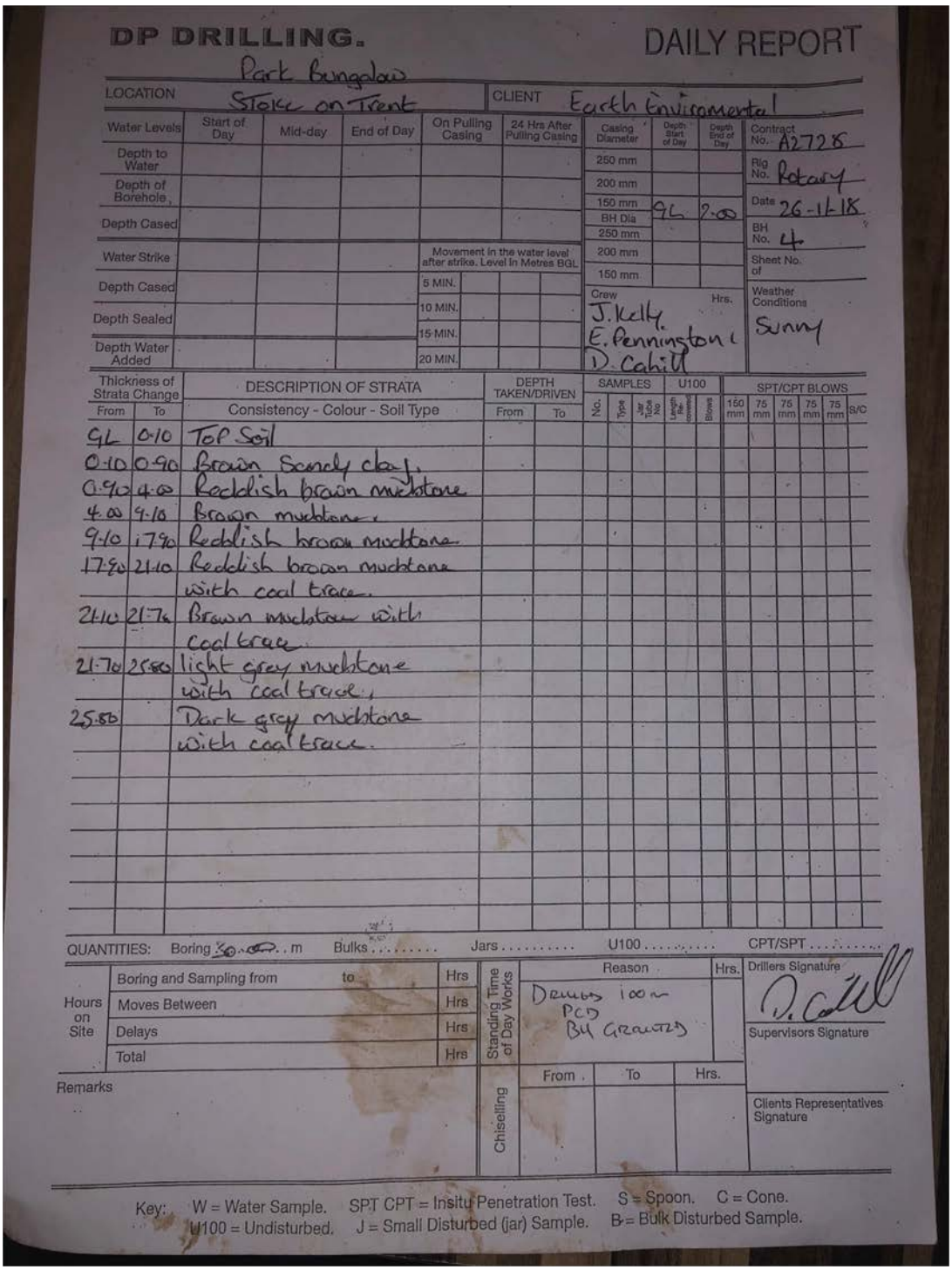
Drillers Signature: D. Cahill

Supervisors Signature

Clients Representatives Signature

Remarks

Key: W = Water Sample. SPT CPT = Insitu Penetration Test. S = Spoon. C = Cone. U100 = Undisturbed. J = Small Disturbed (jar) Sample. B = Bulk Disturbed Sample.



DP DRILLING. DAILY REPORT

Park Bungalow

LOCATION Stoke on Trent CLIENT Earth Environmental

Water Levels	Start of Day	Mid-day	End of Day	On Pulling Casing	24 Hrs After Pulling Casing
Depth to Water					
Depth of Borehole					
Depth Cased					
Water Strike				Movement in the water level after strike. Level in Metres BGL	
Depth Cased				5 MIN.	
Depth Sealed				10 MIN.	
Depth Water Added				15 MIN.	
				20 MIN.	

Casing Diameter	Depth Start of Day	Depth End of Day
250 mm		
200 mm		
150 mm	GL	2.00
BH Dia		
250 mm		
200 mm		
150 mm		

Crew J. Kelly. E. Pennington C. D. Cahill Hrs.

Contract No. A2728
Rig No. Rotary
Date 26-1-18
BH No. 4
Sheet No. of
Weather Conditions Sunny

Thickness of Strata Change From	To	DESCRIPTION OF STRATA Consistency - Colour - Soil Type	DEPTH TAKEN/DRIVEN From	To	SAMPLES No.	Type	Jar Tube No.	U100 Length Rec. covered	Blows	SPT/CPT BLOWS 150 mm	75 mm	75 mm	75 mm	75 mm	S/C
GL	0.10	Top Soil													
0.10	0.90	Brown Sandy clay.													
0.90	4.00	Reddish brown mudstone.													
4.00	9.10	Brown mudstone.													
9.10	17.80	Reddish brown mudstone.													
17.80	21.10	Reddish brown mudstone with coal trace.													
21.10	21.70	Brown mudstone with coal trace.													
21.70	25.80	light grey mudstone with coal trace.													
25.80		Dark grey mudstone with coal trace.													

QUANTITIES: Boring 30.00 m Bulks ..... Jars ..... U100 ..... CPT/SPT .....

Hours on Site		Hrs
	Boring and Sampling from to	Hrs
	Moves Between	Hrs
	Delays	Hrs
	Total	Hrs

Standing Time of Day Works — Reason: Drilled 100 m PCD BH Grouted — Hrs.

Chiselling — From / To / Hrs.

Drillers Signature D. Cahill

Supervisors Signature

Clients Representatives Signature

Remarks

Key: W = Water Sample. SPT CPT = Insitu Penetration Test. S = Spoon. C = Cone.
U100 = Undisturbed. J = Small Disturbed (jar) Sample. B = Bulk Disturbed Sample.