

REDACTED



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### Merchant Fields - preliminary findings

Further to completion of the recent fieldwork at the above site please find enclosed a summary of our preliminary findings.

To date, the following significant ground-related abnormalities have been identified:

- A total of 4 known shafts are present on site, 3 of which have been located and surveyed in
- Soakaways are highly unlikely to provide suitable means of surface water disposal and therefore surface water balancing may be required.
- Site regrade is likely to be required given existing topography
- No evidence of workings was encountered within the Wheatley Lime coal at shallow depth.
- Underground workings have been encountered within the Middleton 11 Yard Coal, therefore treatment of mineworkings may be required. Further drilling is recommended to confirm the extent of any workings and a such the risk to the development.

We expect to issue our final Geoenvironmental Appraisal Report by mid-April 2019.

Should you require any further information, please contact the undersigned.

Yours sincerely

REDACTED

Alan Swales  
Associate Director  
**for and on behalf of**  
**LITHOS CONSULTING LIMITED**

*enc*

Preliminary Summary of Geoenvironmental Issues  
Exploratory Hole Records (Rotary Probeholes)  
Drawing 2828/6 – Exploratory Hole Location Plan



These findings may be revised in the light of laboratory testing, and during the more rigorous review of field data that will be undertaken prior to issue of our comprehensive report.

### Proposed development

A sketch layout has been prepared by Harron, which shows 307no. 2 & 3 storey domestic dwellings, with associated gardens and adoptable roads\sewers.

### Preliminary investigation

Issue	Remarks
The site	1.2 km north of Cleckheaton town centre 21.1 ha (29.7 acres)
Former uses	Majority has remained undeveloped throughout history; a former colliery was present in the southeast until c. 1907 and a cricket pitch/tennis courts with pavilion was present in the far north between 1932 and 1957
Environmental setting	Site is underlain by Pennine Lower Coal Measures (sandstone, siltstone and mudstone) with Wheatley Lime Coal outcropping in the centre and north Nann Hall Beck is present in far northeast, flowing south Underlying coal measures bedrock is a Secondary A aquifer; not located within a groundwater SPZ Former landfill located 200m northwest

### Ground investigation.

Fieldwork was supervised by Lithos between the 13<sup>th</sup> and 15<sup>th</sup> March 2019 and comprised the exploratory holes listed below.

Technique	Exploratory holes	Final depth(s)	Remarks
Trial pitting (machine dug)	TPs 01 to 57	1.1m to 3.5m	Vane tests in cohesive soils
Topsoil strip			To determine location of shafts
Rotary open-hole probeholes	PHs 01 to 20	6.0m to 45.0m	
	PHs 01A to 06A & 08A to 20A	4.0m to 6.0m	Monitoring wells installed

Fieldwork findings are summarised below.

Issue	Remarks
Made ground	Encountered in 3 of 57 trial pits to shallow depth (c. 0.4m) comprising <b>Made Ground Topsoil</b> , <b>Granular</b> and <b>Cohesive Made Ground</b> . A relict wall and foundation were encountered in the far east (TP38) to 0.6m depth in the vicinity of former cottages.
Natural ground	<b>Topsoil</b> (typically 300mm in thickness), over <b>Cohesive Residual Soil</b> (firm to stiff gravelly clay) to between 0.6m and 3.5m depth (typically 1.7m) underlain by <b>Granular Residual Soil</b> (clayey gravel). Coal Measures bedrock was encountered in the majority of trial pits at between 1.1m and 3.5m depth (average 2.2m) and typically comprised moderately weak to medium strong sandstone, locally siltstone. Coal or weathered coal (most likely the Wheatley Lime outcrop) was encountered in 10 of the 57 trial pits predominantly in the centre and west.
Coal Seams	Geological maps suggest that 4 coal seams underlie the site at shallow depth. These are the: <ul style="list-style-type: none"> <li>• <b>Wheatley Lime Coal</b> (up to 1.1m thick) outcropping in the centre and north dipping northwest,</li> <li>• <b>Middleton 11 Yard Coal</b> (about 0.3m thick) at c. 10m depth,</li> <li>• <b>Blocking Rider Coal</b>, a thin (0.1m) seam, at c. 26m depth, and</li> <li>• <b>Blocking (Silkstone) Coal</b> (0.5m to 0.8m thick), at c. 33m depth</li> </ul> The Wheatley Lime Coal is shown to outcrop across the site. Given dip and topography, the Wheatley Lime seam is expected to underlie an area of about 5.5ha in the north and west. The remaining deeper seams are expected to underlie the entire site are. No further significant seams underlie the Blocking Coal within 25m.

Issue	Remarks
Mining	<p>A total of 20 'deep' probeholes were advanced across the site to investigate possible mine workings with a further 19 drilled to shallow depth to install monitoring wells.</p> <p>The <b>Wheatley Lime Coal</b> was encountered as solid coal in 13 of the 20 mining probeholes in the north and west, with a typical thickness of 0.8m (maximum 1.0m). No evidence of shallow workings (soft/broken ground, voids) was encountered in the Wheatley Lime Coal. Wheatley Lime Coal was not encountered in the remaining 7 holes.</p> <p>Evidence of mineworkings (soft/broken ground with loss of flush) were encountered in the <b>Middleton 11 Yard Coal</b> (3 of 20 holes) between 15.5m and 21.5m depth. Where solid coal was encountered the typical thickness was 1.3m (maximum 1.7m including thin mudstone band). No evidence of coal or mineworkings were encountered in a further 7 holes advanced to depths where the Middleton 11 Yard Coal was anticipated.</p> <p>A total of 3 deep holes (PHs 05, 10 &amp; 16) were advanced to confirm the known workings within the <b>Blocking Coal</b> are at sufficient depth. Solid coal was encountered in PH16 at 30m depth with a thickness of 0.5m. The Blocking Coal was not encountered in either PH05 or PH10.</p> <p>Of the 4 known <b>shafts</b> located on site, 3 in the far east associated with Merchant Fields Colliery have been located and surveyed in. An area of 400m<sup>2</sup> has been stripped of topsoil and inspected in the far west however, the fourth known shaft has not been located to date.</p>
Contamination	<p>No visual\olfactory evidence of hydrocarbon contamination was encountered.</p> <p>Samples of topsoil have been forwarded to the laboratory for analysis to determine its suitability for re-use.</p>
Hazardous gas	<p>A landfill is present within 200m.</p> <p>Shallow underground mineworkings also pose a potential risk of hazardous gas.</p> <p>Monitoring wells were installed during the rotary probing, gas monitoring comprising 9 visits over a 6 month period is now underway.</p>
Preparatory & \or Remediation	<p>Topsoil strip and stockpile.</p> <p>Some site regrade is likely to be necessary given existing topography.</p>
Treatment of Coal Workings	<p>Workings with insufficient competent cover (&lt;10x seam thickness) have been identified in the 11 Yard Coal in one probehole (PH9). Workings recorded in PHs 3 &amp; 13 are overlain by 11x and 12x competent cover.</p> <p>This seam lies at shallower depth to the south and although solid coal was identified in 5 further holes, as little as 2x competent cover was recorded (PH16). Therefore, to confirm the absence of shallow workings in the Middleton 11 Yard Coal in the south of the site it is recommended that further drilling is undertaken.</p>
Mine Shafts	<p>The 3 mine shafts shown on CA plans in the east were identified during the Topsoil strip and comprised roughly circular features between 2.6m and 3.2m diameter backfilled with colliery spoil, ash &amp; clinker 3.2m.</p> <p>No evidence of the shaft in the far west was noted, it may be that the shaft is located on the sloping western boundary where access was not possible with the excavator.</p>
Foundations	<p>Shallow strip foundations should be suitable for the majority of plots at the site. Where shallow mineworkings are encountered, even after treatment, reinforced strips/rafts will be required for overlying plots.</p>
Groundwater & excavations	<p>Groundwater was encountered as seepages or inflows in approximately half of the exploratory holes.</p> <p>Shallow excavations should remain stable during the construction phase in the short term.</p>
Drainage	<p>Based on observations made during the investigation, soakaways are highly unlikely to provide a suitable means of surface water disposal at the site. Consequently, there will be a need for surface water balancing.</p>
Development constraints	<p>Existing overhead and underground utilities.</p> <p>A total of 4 shafts are shown on CA plans, 3 of which have been identified during fieldwork. A suitable no build zone will be required around the identified shafts. For the shaft in the west a no build zone calculated from the anticipated shaft position and the certainty of that position will be required.</p>

MERCHANT FIELDS, CLECKHEATON - SUMMARY OF FINDINGS TO DATE



Hole ID	Final Depth (m)	Depth to Base of Made Ground (m)	Depth to Base (mbgl)								Depth to Coal Measures Bedrock (m)	Penetration (m)	Remarks
			Made Ground				Natural Ground						
			Made Ground Topsoil	Granular Made Ground	Cohesive Made Ground	Topsoil	Cohesive Residual Soil	Granular Residual Soil	Cohesive Residual Soil	Granular Residual Soil			
TP01	3.3	-	-	-	-	0.2	1.7	2.1	-	-	2.1	1.2	At 2.1m, groundwater seepage
TP02	2.2	0.2	0.2	-	-	-	1.0	2	-	-	2.0	0.2	At 0.2m, groundwater seepage
TP03	1.7	-	-	-	-	0.3	1.3	1.7	-	-	1.7	0	At 1.7m, slight groundwater seepage
TP04	3.2	-	-	-	-	0.3	2.0	3.2	-	-	>3.2	-	At 0.5m, flowing terracotta land drain
TP05	2.6	-	-	-	-	0.3	1.3	2.6	-	-	2.6	0	At 2.6m, groundwater seepage
TP06	2.2	-	-	-	-	0.2	2.1	-	-	-	2.1	0.1	Unable to excavate beyond 2.1m
TP07	2.1	-	-	-	-	0.3	0.8	1.1	1.8	2.1	2.1	0	Unable to excavate beyond 2.1m
TP08	2.0	-	-	-	-	0.5	1.5	2.0	-	-	2.0	0	Unable to excavate beyond 2m
TP09	1.1	-	-	-	-	0.3	0.9	1.1	-	-	1.1	0	Unable to excavate beyond 1.1m
TP10	1.7	-	-	-	-	0.3	1.7	-	-	-	1.7	0	Unable to excavate beyond 1.7m
TP11	2.1	-	-	-	-	0.3	1.1	2.1	-	-	>2.1	0	At 2.0m, groundwater seepage
TP12	1.5	-	-	-	-	0.3	1.3	1.5	-	-	1.5	0	Unable to excavate beyond 1.5m
TP13	2.0	-	-	-	-	0.3	0.9	2.0	-	-	>2.0	-	At 2.0m, groundwater seepage
TP14	2.5	-	-	-	-	0.2	2.4	2.5	-	-	2.5	0	Unable to excavate beyond 2.5m
TP15	2.6	-	-	-	-	0.3	1.1	2.6	-	-	2.6	0	Unable to excavate beyond 2.6m
TP16	3.2	-	-	-	-	0.3	2.2	3.2	-	-	>3.2	-	
TP17	2.7	-	-	-	-	0.3	1.3	2.7	-	-	>2.7	-	At 2.7m, groundwater seepage
TP18	2.4	-	-	-	-	0.2	1.7	2.4	-	-	2.4	0	Unable to excavate beyond 2.4m
TP19	3.5	-	-	-	-	0.3	1.2	2.3	2.9, 3.5	3.4	3.5	0	Unable to excavate beyond 3.5m
TP20	2.1	-	-	-	-	0.2	1.7	2.0	-	-	2.0	0.1	At 0.6m, groundwater in land drain. Difficult to excavate beyond 2.1m
TP21	2.4	-	-	-	-	0.2	1.9	2.4	-	-	>2.4	-	Difficult to excavate beyond 2.4m
TP22	3.0	-	-	-	-	0.2	2.1	3.0	-	-	>3.0	-	At 0.6m, terracotta land drain
TP23	2.9	-	-	-	-	0.2	2.1	2.5	-	-	2.5	0.4	Difficult to excavate beyond 2.9m
TP24	2.9	-	-	-	-	0.2	2.3	2.7	-	-	2.7	0.2	Difficult to excavate beyond 2.9m
TP25	3.3	-	-	-	-	0.3	1.7	2.0	-	-	2.0	1.3	At 0.6m, terracotta land drain, At 1.0m groundwater inflow.
TP26	2.9	-	-	-	-	0.2	1.7	2.3	-	-	2.3	0.6	At 0.6m, terracotta land drain
TP27	2.6	-	-	-	-	0.2	1.7	2.3	-	-	2.3	0.3	
TP28	2.6	-	-	-	-	0.2	2.4	-	-	-	2.4	0.2	
TP29	3.1	-	-	-	-	0.2	1.7	1.9	2.5	2.7	2.7	0.4	Unable to excavate beyond 3.1m
TP30	1.6	-	-	-	-	0.3	0.7	1.6	-	-	1.6	0	At 1.6m, groundwater seepage
TP31	3.3	-	-	-	-	0.3	0.8	0.9	2.3	3.3	>3.2	-	At 3.3m, groundwater seepage

MERCHANT FIELDS, CLECKHEATON - SUMMARY OF FINDINGS TO DATE



Hole ID	Final Depth (m)	Depth to Base of Made Ground (m)	Depth to Base (mbgl)								Depth to Coal Measures Bedrock (m)	Penetration (m)	Remarks
			Made Ground				Natural Ground						
			Made Ground Topsoil	Granular Made Ground	Cohesive Made Ground	Topsoil	Cohesive Residual Soil	Granular Residual Soil	Cohesive Residual Soil	Granular Residual Soil			
TP32	1.5	-	-	-	-	0.2	0.6	0.8	1.5	-	1.5	0	Unable to excavate beyond 1.5m
TP33	3.4	-	-	-	-	0.2	0.9	1.0	1.5	3.4	>3.4	-	At 0.8m, groundwater seepage
TP34	2.0	-	-	-	-	0.2	1.7	1.9	-	-	1.9	0.1	Unable to excavate beyond 2.0m
TP35	2.4	-	-	-	-	0.3	1.7	2.4	-	-	2.4	0	Unable to excavate beyond 2.4m
TP36	1.5	-	-	-	-	0.2	1.4	-	-	-	1.4	0.1	At 0.6m, terracotta land drain, unable to excavate beyond 1.5m
TP37	2.9	-	-	-	-	0.3	2.3	2.9	-	-	2.9	0	At 2.5m, groundwater seepage. Unable to excavate beyond 2.9m
TP38	2.1	0.4	-	0.4	-	-	2.1	-	-	-	>2.1	-	From 0.0m to 0.6m brick wall with stone slab footing in East end of pit. At 1.2m, groundwater seepage
TP39	1.8	-	-	-	-	0.2	1.3	1.8	-	-	1.8	0	Unable to excavate beyond 1.8m
TP40	2.8	-	-	-	-	0.2	1.5	2.8	-	-	>2.8	-	At 0.5m terracotta land drain. At 2.0m groundwater seepage. Difficult to excavate beyond 2.8m.
TP41	2.1	-	-	-	-	0.3	1.5	2.1	-	-	2.1	0	Unable to excavate beyond 2.1m
TP42	2.8	0.5	0.2	-	0.5	-	1.1	1.6	-	-	1.6	0.2	At 1.6m groundwater inflow
TP43	2.4	-	-	-	-	0.3	1.4	2.4	-	-	2.4	0	At 0.7m, groundwater seepage. Unable to excavate beyond 2.3m
TP44	1.2	-	-	-	-	0.2	0.6	1.1	-	-	1.1	0.1	At 1.1m groundwater seepage. Unable to excavate beyond 1.2m
TP45	3.3	-	-	-	-	0.3	1.3	3.3	-	-	>3.3	-	At 0.5m, terracotta land drain.
TP46	2.2	-	-	-	-	0.2	1.4	1.8	-	-	1.8	0.4	At 0.5m land drain. At 1.9m groundwater. Unable to excavate beyond 2.2m.
TP47	3.3	-	-	-	-	0.2	1.2	3.0	-	-	>3.0	-	
TP48	3.1	-	-	-	-	0.3	2.9	3.1	-	-	>3.1	-	
TP49	3.3	-	-	-	-	0.3	1.6	3.3	-	-	>3.3	-	
TP50	3.5	-	-	-	-	0.3	1.8	3.5	-	-	>3.5	-	
TP51	2.3	-	-	-	-	0.2	1.6	2.3	-	-	2.3	0	Unable to excavate beyond 2.3m
TP52	3.0	-	-	-	-	0.3	0.6	3.0	-	-	3.0	0	At 3.0m, groundwater seepage. Unable to excavate beyond 3.0m.
TP53	3.0	-	-	-	-	0.2	1.5	3.0	-	-	3.0	0	Unable to excavate beyond 3.0m.
TP54	2.9	-	-	-	-	0.3	1.0	2.9	-	-	2.9	0	Unable to excavate beyond 2.9m
TP55	2.5	-	-	-	-	0.2	1.9	2.2	-	-	2.2	0.3	At 0.6m, terracotta land drain. Unable to excavate beyond 2.5m.
TP56	2.7	-	-	-	-	0.2	2.1	2.5	-	-	2.5	0.2	Difficult to excavate beyond 2.7m
TP57	2.0	-	-	-	-	0.2	0.7	1.6	1.9	-	1.9	0.1	At 2.0m unable to excavate.

## MERCHANT FIELDS, CLECKHEATON - SUMMARY OF FINDINGS TO DATE



Hole	Final depth (m)	Depth to Rockhead (m)	Wheatley Lime Coal				Middleton 11 Yard Coal				Remarks
			Depth to base (m)	Evidence of workings	Thickness of coal (m)	Cover ratio	Depth to base (m)	Evidence of workings	Thickness of coal (m)	Cover ratio*	
PH01	27.0	2.5	9.5	no	1.0	7.0	Shallow hole#	-	-	-	
PH02	12.0	2.0	9.5	no	1.0	7.5	Shallow hole#	-	-	-	
PH03	27.0	3.0	10.5	no	1.0	7.5	21.5	Yes	1.7	10.9	Soft ground between 20m and 21.5m
PH04	18.0	2.0	2.5	no	0.5	1.0	Shallow hole#	-	-	-	
PH05	35.0	3.0	-	-	-	-	Shallow hole#	-	-	-	
PH06	15.0	2.5	-	-	-	-	Shallow hole#	-	-	-	
PH07	18.0	2.5	-	-	-	-	13.7	no	1.2	9.3	
PH08	6.0	2.5	2.6	no	0.1	1.0	-	-	-	-	
PH09	21.0	2.5	7.0	no	1.0	4.5	17.0	Yes	1.7	8.5	Soft broken ground between 15.5m and 17.0m
PH10	45.0	1.0	6.0	no	1.0	5.0	Shallow hole#	-	-	-	
PH11	9.0	1.5	5.5	no	0.5	8.0	-	-	-	-	
PH12	21.0	1.0	7.5	no	1.0	6.5	18.0	no	1.0	17.0	
PH13	24.0	1.0	8.5	no	1.0	7.5	21.0	Yes	1.7	11.8	Soft ground between 18m and 21m
PH14	12.0	1.2	8.0	no	1.0	6.8	-	-	-	-	
PH15	9.0	1.0	8.2	no	1.0	7.2	-	-	-	-	
PH16	33.0	2.0	-	-	-	-	5.2	no	1.7	1.9	Blocking coal (0.5m thick) at 30m depth
PH17	9.0	1.0	-	-	-	-	7.0	no	1.5	4.0	
PH18	15.0	1.0	-	-	-	-	Shallow hole#	-	-	-	
PH19	9.0	1.3	-	-	-	-	Shallow hole#	-	-	-	
PH20	16.0	1.2	3.0	no	0.5	3.6	14.0	no	1.0	12.8	

Notes: \* maximum recorded thickness (ie 1.7m) used to calculate cover ratio where mineworkings encountered in the Middleton 11 Yard Coal

# Hole not drilled deep enough to encounter Middleton 11 Yard Coal

- Seam not encountered, hole drilled beyond anticipated depth of Wheatley Lime Coal and Middleton 11 Yard Coal



NOTES

- TRIAL PIT LOCATION
- PROBEHOLE LOCATION
- GRASS & OVERGROWN AREAS
- TREES/DENSE VEGETATION
- CLEARED TREES/DENSE VEGETATION
- CUT HEDGEROW/TREES
- TARMAC HARDSTAND
- SURFACE WATER FEATURE
- CA RECORDED SHAFT
- MAPPED OUTCROP OF WHEATLEY LIME COAL
- INFERRED OUTCROP OF WHEATLEY LIME COAL
- APPROXIMATE SITE BOUNDARY

REV.	DESCRIPTION	DATE



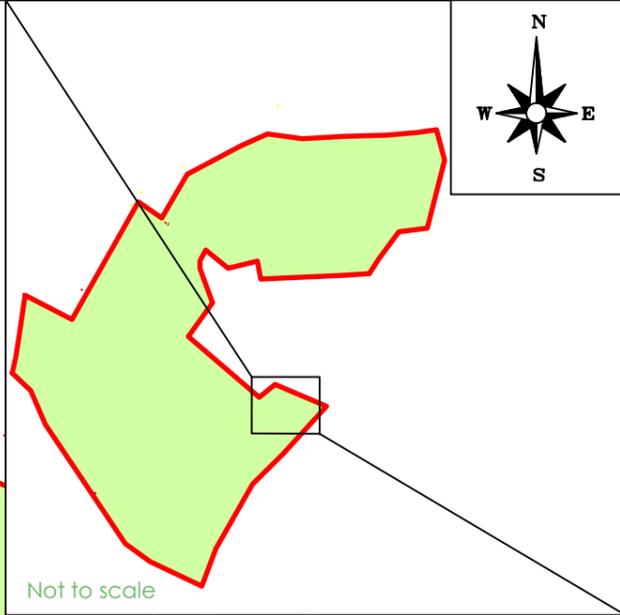
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HARRON HOMES

MERCHANT FIELDS, CLECKHEATON

EXPLORATORY HOLE LOCATIONS

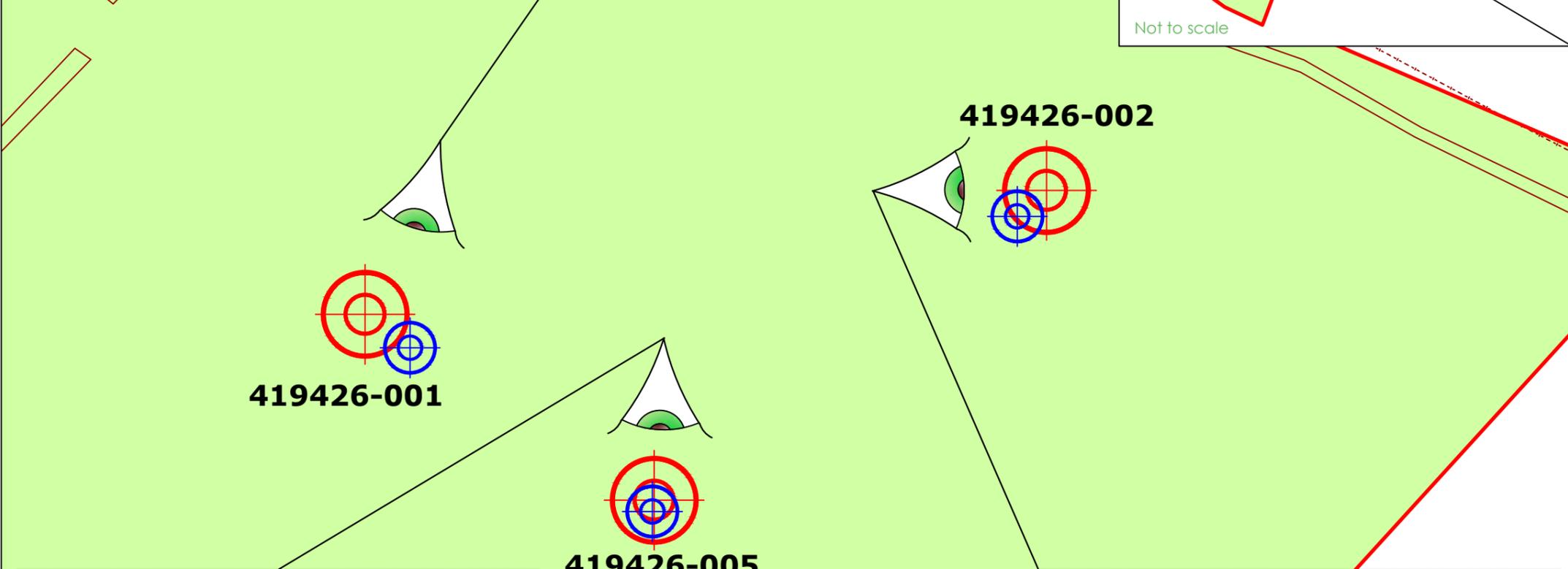
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				DRAFT	<input type="checkbox"/>
				FINAL	<input checked="" type="checkbox"/>
SCALE	1:2000	SHEET	A3	DRAWING NO.	2828/6
					REVISION



NOTES

-  CA RECORDED SHAFT
-  SHAFT LOCATION
-  LOCATION & ORIENTATION OF PHOTOGRAPH
-  APPROXIMATE SITE BOUNDARY

REV.	DESCRIPTION	DATE



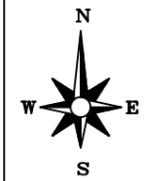
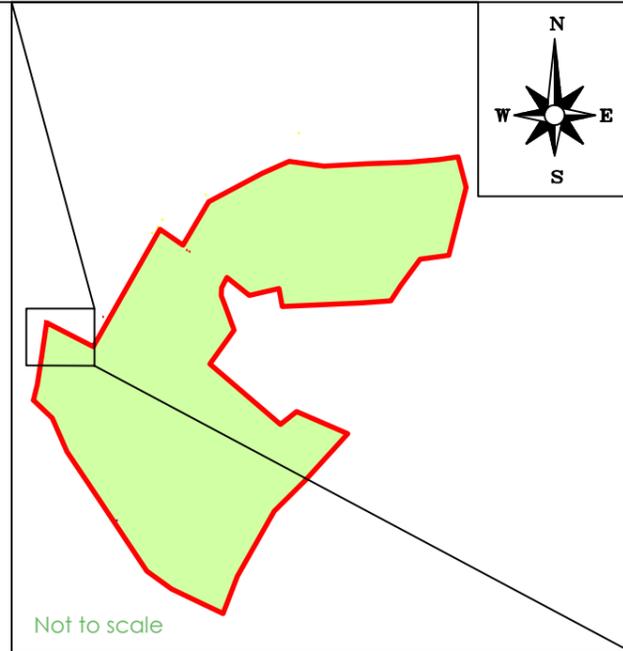

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HARRON HOMES

MERCHANT FIELDS, CLECKHEATON

SHAFT LOCATIONS & PHOTOGRAPHS

DRAWN	CC/LEW	DATE	11/03/19	STATUS	FOR COMMENT	<input type="checkbox"/>
CHECKED	MJT	DATE	11/03/19	FOR APPROVAL	DRAFT	<input type="checkbox"/>
					FINAL	<input checked="" type="checkbox"/>
SCALE	1:250	SHEET	A3	DRAWING NO.	2828/10A	REVISION



- NOTES
- AREA OF SHAFT SEARCH
  - INACCESSIBLE AREA (STEEP SLOPE)
  - CA RECORDED SHAFT
  - LOCATION & ORIENTATION OF PHOTOGRAPH
  - APPROXIMATE SITE BOUNDARY

REV.	DESCRIPTION	DATE

**418426-008**



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HARRON HOMES

MERCHANT FIELDS,  
CLECKHEATON

SHAFT SEARCH AREA &  
PHOTOGRAPHS

DRAWN	CC/LEW	DATE	11/03/19	STATUS	FOR COMMENT	<input type="checkbox"/>
CHECKED	MJT	DATE	11/03/19	FOR APPROVAL	DRAFT	<input type="checkbox"/>
					FINAL	<input checked="" type="checkbox"/>
SCALE	1:250	SHEET	A3	DRAWING NO.	2828/10B	REVISION

# Borehole Log

Borehole No.

**PH01**

Sheet 1 of 3

Project Name: Merchant Fields, Cleckheaton

Project No.  
2828

Co-ords: 419002.40 - 426630.79

Hole Type  
PH

Location: West Yorkshire

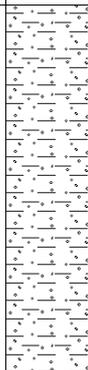
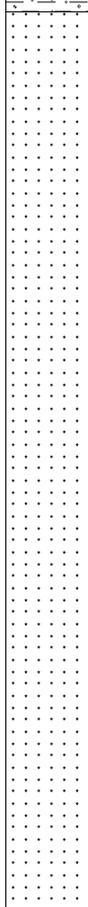
Level: 101.55

Scale  
1:50

Client: Harron Homes

Dates: 01/04/2019 - 01/04/2019

Logged By  
CC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
							Overburden.	1
				2.50	99.05		Light greyish brown interbedded SANDSTONE and MUDSTONE. (COAL MEASURES)	3
				8.50	93.05		Soft dark grey MUDSTONE with coal traces. (WHEATLEY LIME COAL)	9
				9.50	92.05		Light greyish brown interbedded SANDSTONE and MUDSTONE. (COAL MEASURES)	10

Continued on next sheet

**Remarks**

1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.



# Borehole Log

Borehole No.

**PH01**

Sheet 2 of 3

Project Name: Merchant Fields, Cleckheaton	Project No. 2828	Co-ords: 419002.40 - 426630.79	Hole Type PH
Location: West Yorkshire		Level: 101.55	Scale 1:50
Client: Harron Homes		Dates: 01/04/2019 - 01/04/2019	Logged By CC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
									11
									12
									13
									14
									15
									16
									17
									18
									19
									20

Continued on next sheet

Remarks  
 1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.



# Borehole Log

Borehole No.

**PH01**

Sheet 3 of 3

Project Name: Merchant Fields, Cleckheaton

Project No.  
2828

Co-ords: 419002.40 - 426630.79

Hole Type  
PH

Location: West Yorkshire

Level: 101.55

Scale  
1:50

Client: Harron Homes

Dates: 01/04/2019 - 01/04/2019

Logged By  
CC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
								21
								22
								23
								24
								25
								26
				27.00	74.55		End of borehole at 27.00 m	27
								28
								29
								30

**Remarks**

1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.



# Borehole Log

Borehole No.

**PH01A**

Sheet 1 of 1

Project Name: Merchant Fields, Cleckheaton

Project No.  
2828

Co-ords: 419005.06 - 426633.53

Hole Type  
PH

Location: West Yorkshire

Level: 101.55

Scale  
1:50

Client: Harron Homes

Dates: 01/04/2019 - 01/04/2019

Logged By  
CC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
							Overburden.		
					2.30	99.25			
							Light greyish brown interbedded SANDSTONE and MUDSTONE. (COAL MEASURES)		
					6.00	95.55			
							End of borehole at 6.00 m		

**Remarks**

1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.



# Borehole Log

Borehole No.

**PH02**

Sheet 1 of 2

Project Name: Merchant Fields, Cleckheaton

Project No.  
2828

Co-ords: 418967.90 - 426582.97

Hole Type  
PH

Location: West Yorkshire

Level: 101.35

Scale  
1:50

Client: Harron Homes

Dates: 01/04/2019 - 01/04/2019

Logged By  
CC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
							Overburden.	
					2.00	99.35	Light greyish brown interbedded SANDSTONE and MUDSTONE. (COAL MEASURES)	
					8.50	92.85	Black COAL. (WHEATLEY LIME COAL)	
					9.50	91.85	Light greyish brown interbedded SANDSTONE and MUDSTONE. (COAL MEASURES)	

Continued on next sheet

**Remarks**

1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.



# Borehole Log

Borehole No.

**PH02**

Sheet 2 of 2

Project Name: Merchant Fields, Cleckheaton

Project No.  
2828

Co-ords: 418967.90 - 426582.97

Hole Type  
PH

Location: West Yorkshire

Level: 101.35

Scale  
1:50

Client: Harron Homes

Dates: 01/04/2019 - 01/04/2019

Logged By  
CC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					12.00	89.35		End of borehole at 12.00 m	11 12 13 14 15 16 17 18 19 20

**Remarks**

1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.



# Borehole Log

Borehole No.

**PH02A**

Sheet 1 of 1

Project Name: Merchant Fields, Cleckheaton

Project No.  
2828

Co-ords: 418966.56 - 426580.95

Hole Type  
PH

Location: West Yorkshire

Level: 101.40

Scale  
1:50

Client: Harron Homes

Dates: 01/04/2019 - 01/04/2019

Logged By  
CC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
[Well ID]					2.00	99.40		Overburden.
					4.00	97.40		Light greyish brown interbedded SANDSTONE and MUDSTONE. (COAL MEASURES)
							----- End of borehole at 4.00 m	



Remarks  
1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.

# Borehole Log

Borehole No.

**PH03**

Sheet 1 of 3

Project Name: Merchant Fields, Cleckheaton

Project No.  
2828

Co-ords: 418911.78 - 426542.47

Hole Type  
PH

Location: West Yorkshire

Level: 101.65

Scale  
1:50

Client: Harron Homes

Dates: 01/04/2019 - 01/04/2019

Logged By  
CC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
							Overburden.		
					3.00	98.65	Light greyish brown interbedded SANDSTONE and MUDSTONE. (COAL MEASURES)		
					9.50	92.15	Black COAL (WHEATLEY LIME COAL)		

Continued on next sheet

**Remarks**

1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.



# Borehole Log

Borehole No.

**PH03**

Sheet 2 of 3

Project Name: Merchant Fields, Cleckheaton	Project No. 2828	Co-ords: 418911.78 - 426542.47	Hole Type PH
Location: West Yorkshire		Level: 101.65	Scale 1:50
Client: Harron Homes		Dates: 01/04/2019 - 01/04/2019	Logged By CC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
[Pattern]					10.50	91.15		
							[Pattern]	Light greyish brown interbedded SANDSTONE and MUDSTONE. (COAL MEASURES)
					20.00	81.65		



Continued on next sheet

Remarks  
 1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.



# Borehole Log

Borehole No.

**PH03**

Sheet 3 of 3

Project Name: Merchant Fields, Cleckheaton

Project No.  
2828

Co-ords: 418911.78 - 426542.47

Hole Type  
PH

Location: West Yorkshire

Level: 101.65

Scale  
1:50

Client: Harron Homes

Dates: 01/04/2019 - 01/04/2019

Logged By  
CC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
Well					21.50	80.15	Soft ground, lost flush. (MIDDLETON 11 YARD COAL) <i>From 20.0m, lost flush</i>		21
							Hard ground, no returns. (COAL MEASURES)		22
									23
									24
									25
									26
					27.00	74.65	End of borehole at 27.00 m		27
									28
									29
									30

**Remarks**

1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.



# Borehole Log

Borehole No.

**PH03A**

Sheet 1 of 1

Project Name: Merchant Fields, Cleckheaton

Project No.  
2828

Co-ords: 418908.89 - 426540.44

Hole Type  
PH

Location: West Yorkshire

Level: 101.50

Scale  
1:50

Client: Harron Homes

Dates: 01/04/2019 - 01/04/2019

Logged By  
CC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
							Overburden.	
					3.00	98.50		
					6.00	95.50	Light greyish brown interbedded SANDSTONE and MUDSTONE. (COAL MEASURES)	
							End of borehole at 6.00 m	

**Remarks**

1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.

# Borehole Log

Borehole No.

**PH04**

Sheet 1 of 2

Project Name: Merchant Fields, Cleckheaton

Project No.  
2828

Co-ords: 419107.28 - 426641.55

Hole Type  
PH

Location: West Yorkshire

Level: 96.25

Scale  
1:50

Client: Harron Homes

Dates: 02/04/2019 - 02/04/2019

Logged By  
CC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
Well	Water Strikes						Overburden.	1
					2.00	94.25	Black COAL. (WHEATLEY LIME COAL)	2
					2.50	93.75	Light greyish brown interbedded SANDSTONE and MUDSTONE. (COAL MEASURES)	3
								4
								5
								6
								7
								8
								9
								10

Continued on next sheet

**Remarks**

1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.



# Borehole Log

Borehole No.

**PH04**

Sheet 2 of 2

Project Name: Merchant Fields, Cleckheaton	Project No. 2828	Co-ords: 419107.28 - 426641.55	Hole Type PH
Location: West Yorkshire		Level: 96.25	Scale 1:50
Client: Harron Homes		Dates: 02/04/2019 - 02/04/2019	Logged By CC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
									11
									12
									13
									14
									15
									16
									17
					18.00	78.25			18
								End of borehole at 18.00 m	19
									20

Remarks  
 1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.



# Borehole Log

Borehole No.

**PH04A**

Sheet 1 of 1

Project Name: Merchant Fields, Cleckheaton	Project No. 2828	Co-ords: 419110.35 - 426640.42	Hole Type PH
Location: West Yorkshire		Level: 95.90	Scale 1:50
Client: Harron Homes		Dates: 02/04/2019 - 02/04/2019	Logged By CC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
							Overburden.	1	
					2.00	93.90		Black COAL. (WHEATLEY LIME COAL)	2
					2.50	93.40		Light greyish brown interbedded SANDSTONE and MUDSTONE. (COAL MEASURES)	3
				4.00	91.90		End of borehole at 4.00 m	4	
								5	
								6	
								7	
								8	
								9	
								10	

Remarks  
 1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.



# Borehole Log

Borehole No.

**PH05**

Sheet 1 of 4

Project Name: Merchant Fields, Cleckheaton	Project No. 2828	Co-ords: 419243.36 - 426633.84	Hole Type PH
Location: West Yorkshire		Level: 87.10	Scale 1:50
Client: Harron Homes		Dates: 02/04/2019 - 02/04/2019	Logged By CC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					3.00	84.10		Overburden.	1
								Light greyish brown interbedded SANDSTONE and MUDSTONE. (COAL MEASURES)	3
									2
									4
									5
									6
									7
									8
									9
									10

Continued on next sheet

Remarks  
 1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.



# Borehole Log

Borehole No.

**PH05**

Sheet 2 of 4

Project Name: Merchant Fields, Cleckheaton	Project No. 2828	Co-ords: 419243.36 - 426633.84	Hole Type PH
Location: West Yorkshire		Level: 87.10	Scale 1:50
Client: Harron Homes		Dates: 02/04/2019 - 02/04/2019	Logged By CC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
									11
									12
									13
									14
									15
									16
									17
									18
									19
									20

Continued on next sheet

Remarks  
 1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.



# Borehole Log

Borehole No.

**PH05**

Sheet 3 of 4

Project Name: Merchant Fields, Cleckheaton	Project No. 2828	Co-ords: 419243.36 - 426633.84	Hole Type PH
Location: West Yorkshire		Level: 87.10	Scale 1:50
Client: Harron Homes		Dates: 02/04/2019 - 02/04/2019	Logged By CC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
								21
								22
								23
								24
								25
								26
								27
								28
								29
								30

Continued on next sheet

Remarks  
 1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.



# Borehole Log

Borehole No.

**PH05**

Sheet 4 of 4

Project Name: Merchant Fields, Cleckheaton

Project No.  
2828

Co-ords: 419243.36 - 426633.84

Hole Type  
PH

Location: West Yorkshire

Level: 87.10

Scale  
1:50

Client: Harron Homes

Dates: 02/04/2019 - 02/04/2019

Logged By  
CC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
								31
								32
								33
								34
				35.00	52.10		End of borehole at 35.00 m	35
								36
								37
								38
								39
								40

**Remarks**

1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.

# Borehole Log

Borehole No.

**PH05A**

Sheet 1 of 1

Project Name: Merchant Fields, Cleckheaton	Project No. 2828	Co-ords: 419240.69 - 426633.79	Hole Type PH
Location: West Yorkshire		Level: 87.35	Scale 1:50
Client: Harron Homes		Dates: 02/04/2019 - 02/04/2019	Logged By CC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
							Overburden.	
					3.00	84.35		
					6.00	81.35	Light greyish brown interbedded SANDSTONE and MUDSTONE. (COAL MEASURES)	
							End of borehole at 6.00 m	

Remarks  
 1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.

# Borehole Log

Borehole No.

**PH06**

Sheet 1 of 2

Project Name: Merchant Fields, Cleckheaton

Project No.  
2828

Co-ords: 419159.45 - 426604.72

Hole Type  
PH

Location: West Yorkshire

Level: 90.55

Scale  
1:50

Client: Harron Homes

Dates: 02/04/2019 - 02/04/2019

Logged By  
CC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					2.50	88.05		Overburden.	1
								Light greyish brown interbedded SANDSTONE and MUDSTONE. (COAL MEASURES)	3
									2
									4
									5
									6
									7
									8
									9
									10

Continued on next sheet

**Remarks**

1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.



# Borehole Log

Borehole No.

**PH06**

Sheet 2 of 2

Project Name: Merchant Fields, Cleckheaton

Project No.  
2828

Co-ords: 419159.45 - 426604.72

Hole Type  
PH

Location: West Yorkshire

Level: 90.55

Scale  
1:50

Client: Harron Homes

Dates: 02/04/2019 - 02/04/2019

Logged By  
CC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
									11
									12
									13
									14
					15.00	75.55		End of borehole at 15.00 m	15
									16
									17
									18
									19
									20

**Remarks**

1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.



# Borehole Log

Borehole No.

**PH06A**

Sheet 1 of 1

Project Name: Merchant Fields, Cleckheaton	Project No. 2828	Co-ords: 419162.05 - 426603.53	Hole Type PH
Location: West Yorkshire		Level: 90.40	Scale 1:50
Client: Harron Homes		Dates: 02/04/2019 - 02/04/2019	Logged By CC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					2.50	87.90		Overburden.
					6.00	84.40		Light greyish brown interbedded SANDSTONE and MUDSTONE (COAL MEASURES)
								End of borehole at 6.00 m

Remarks  
 1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.

# Borehole Log

Borehole No.

**PH07**

Sheet 1 of 2

Project Name: Merchant Fields, Cleckheaton

Project No.  
2828

Co-ords: 419196.53 - 426571.84

Hole Type  
PH

Location: West Yorkshire

Level: 87.25

Scale  
1:50

Client: Harron Homes

Dates: 02/04/2019 - 02/04/2019

Logged By  
CC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
[Pattern]					2.50	84.75	[Pattern]	Overburden.	1
							[Pattern]	Light greyish brown interbedded SANDSTONE and MUDSTONE. (COAL MEASURES)	3
[Pattern]									2
[Pattern]									4
[Pattern]									5
[Pattern]									6
[Pattern]									7
[Pattern]									8
[Pattern]									9
[Pattern]									10

Continued on next sheet

**Remarks**

1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.



# Borehole Log

Borehole No.

**PH07**

Sheet 2 of 2

Project Name: Merchant Fields, Cleckheaton

 Project No.  
2828

Co-ords: 419196.53 - 426571.84

 Hole Type  
PH

Location: West Yorkshire

Level: 87.25

 Scale  
1:50

Client: Harron Homes

Dates: 02/04/2019 - 02/04/2019

 Logged By  
CC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					12.50	74.75		
					12.70	74.55		Black COAL. (MIDDLETON 11 YARD COAL)
								Light greyish brown MUDSTONE. (COAL MEASURES)
					13.50	73.75		Black COAL. (MIDDLETON 11 YARD COAL)
					13.70	73.55		Light greyish brown interbedded SANDSTONE and MUDSTONE. (COAL MEASURES)
					18.00	69.25		End of borehole at 18.00 m

**Remarks**

1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.

# Borehole Log

Borehole No.

**PH08**

Sheet 1 of 1

Project Name: Merchant Fields, Cleckheaton

 Project No.  
2828

Co-ords: 419093.10 - 426548.43

 Hole Type  
PH

Location: West Yorkshire

Level: 94.90

 Scale  
1:50

Client: Harron Homes

Dates: 02/04/2019 - 02/04/2019

 Logged By  
CC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
							Overburden.	
				2.50 2.60	92.40 92.30		Black COAL. (WHEATLEY LIME COAL)	
							Light greyish brown interbedded SANDSTONE and MUDSTONE. (COAL MEASURES)	
				6.00	88.90		End of borehole at 6.00 m	

**Remarks**

1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.

# Borehole Log

Borehole No.

**PH08A**

Sheet 1 of 1

Project Name: Merchant Fields, Cleckheaton	Project No. 2828	Co-ords: 419094.47 - 426548.84	Hole Type PH
Location: West Yorkshire		Level: 94.70	Scale 1:50
Client: Harron Homes		Dates: 02/04/2019 - 02/04/2019	Logged By CC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
							Overburden		
					2.50 2.60	92.20 92.10		Black COAL. (WHEATLEY LIME COAL)	
								Light greyish brown interbedded SANDSTONE and MUDSTONE. (COAL MEASURES)	
					6.00	88.70		End of borehole at 6.00 m	

Remarks  
 1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.

# Borehole Log

Borehole No.

**PH09**

Sheet 1 of 3

Project Name: Merchant Fields, Cleckheaton

Project No.  
2828

Co-ords: 418867.45 - 426462.49

Hole Type  
PH

Location: West Yorkshire

Level: 99.45

Scale  
1:50

Client: Harron Homes

Dates: 03/04/2019 - 03/04/2019

Logged By  
CC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
Well	Water Strikes							Overburden.	1
					2.50	96.95		Light greyish brown interbedded SANDSTONE and MUDSTONE. (COAL MEASURES)	2 3 4
					6.00	93.45		Soft Black COAL. (WHEATLEY LIME COAL)	5 6
					7.00	92.45		Light greyish brown interbedded SANDSTONE and MUDSTONE. (COAL MEASURES)	7 8 9 10

Continued on next sheet

**Remarks**

1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.



# Borehole Log

Borehole No.

**PH09**

Sheet 2 of 3

Project Name: Merchant Fields, Cleckheaton	Project No. 2828	Co-ords: 418867.45 - 426462.49	Hole Type PH
Location: West Yorkshire		Level: 99.45	Scale 1:50
Client: Harron Homes		Dates: 03/04/2019 - 03/04/2019	Logged By CC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					15.50	83.95		Soft broken ground, lost flush (MIDDLETON 11 YARD COAL) <u>From 15.5m, lost flush.</u>
					17.00	82.45		Hard ground, no returns. (COAL MEASURES)



Continued on next sheet

Remarks  
 1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.



# Borehole Log

Borehole No.

**PH09**

Sheet 3 of 3

Project Name: Merchant Fields, Cleckheaton

Project No.  
2828

Co-ords: 418867.45 - 426462.49

Hole Type  
PH

Location: West Yorkshire

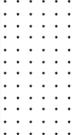
Level: 99.45

Scale  
1:50

Client: Harron Homes

Dates: 03/04/2019 - 03/04/2019

Logged By  
CC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					21.00	78.45		End of borehole at 21.00 m <div style="text-align: right;">             21 22 23 24 25 26 27 28 29 30           </div>

**Remarks**

1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.



# Borehole Log

Borehole No.

**PH09A**

Sheet 1 of 1

Project Name: Merchant Fields, Cleckheaton	Project No. 2828	Co-ords: 418870.11 - 426461.23	Hole Type PH
Location: West Yorkshire		Level: 99.50	Scale 1:50
Client: Harron Homes		Dates: 03/04/2019 - 03/04/2019	Logged By CC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					2.50	97.00		Overburden.
					6.00	93.50		Light greyish brown interbedded SANDSTONE and MUDSTONE. (COAL MEASURES)
								End of borehole at 6.00 m

Remarks  
 1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.

# Borehole Log

Borehole No.

**PH10**

Sheet 1 of 5

Project Name: Merchant Fields, Cleckheaton	Project No. 2828	Co-ords: 418929.55 - 426429.83	Hole Type PH
Location: West Yorkshire		Level: 98.55	Scale 1:50
Client: Harron Homes		Dates: 03/04/2019 - 03/04/2019	Logged By CC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
							Overburden.		
					1.00	97.55		Light greyish brown interbedded SANDSTONE and MUDSTONE. (COAL MEASURES)	1
									2
									3
									4
					5.00	93.55		Black COAL. (WHEATLEY LIME COAL)	5
					6.00	92.55		Light greyish brown interbedded SANDSTONE and MUDSTONE. (COAL MEASURES)	6
									7
									8
									9
									10

Continued on next sheet

Remarks  
1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.



# Borehole Log

Borehole No.

**PH10**

Sheet 2 of 5

Project Name: Merchant Fields, Cleckheaton	Project No. 2828	Co-ords: 418929.55 - 426429.83	Hole Type PH
Location: West Yorkshire		Level: 98.55	Scale 1:50
Client: Harron Homes		Dates: 03/04/2019 - 03/04/2019	Logged By CC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
									11
									12
									13
									14
									15
									16
									17
									18
									19
									20

Continued on next sheet

Remarks  
 1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.





# Borehole Log

Borehole No.

**PH10**

Sheet 4 of 5

Project Name: Merchant Fields, Cleckheaton

Project No.  
2828

Co-ords: 418929.55 - 426429.83

Hole Type  
PH

Location: West Yorkshire

Level: 98.55

Scale  
1:50

Client: Harron Homes

Dates: 03/04/2019 - 03/04/2019

Logged By  
CC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
									31
									32
									33
									34
									35
									36
									37
									38
									39
									40

Continued on next sheet

**Remarks**

1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.



# Borehole Log

Borehole No.

**PH10**

Sheet 5 of 5

Project Name: Merchant Fields, Cleckheaton	Project No. 2828	Co-ords: 418929.55 - 426429.83	Hole Type PH
Location: West Yorkshire		Level: 98.55	Scale 1:50
Client: Harron Homes		Dates: 03/04/2019 - 03/04/2019	Logged By CC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
								41
								42
								43
								44
				45.00	53.55		End of borehole at 45.00 m	45
								46
								47
								48
								49
								50

Remarks  
 1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.

# Borehole Log

Borehole No.

**PH10A**

Sheet 1 of 1

Project Name: Merchant Fields, Cleckheaton

Project No.  
2828

Co-ords: 418932.35 - 426428.49

Hole Type  
PH

Location: West Yorkshire

Level: 98.45

Scale  
1:50

Client: Harron Homes

Dates: 03/04/2019 - 03/04/2019

Logged By  
CC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
[Well ID]					1.00	97.45		Overburden.	
					4.00	94.45		Light greyish brown interbedded SANDSTONE and MUDSTONE. (COAL MEASURES)	1 2 3 4 5 6 7 8 9 10
End of borehole at 4.00 m									

**Remarks**

1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.



# Borehole Log

Borehole No.

**PH11**

Sheet 1 of 1

Project Name: Merchant Fields, Cleckheaton

 Project No.  
2828

Co-ords: 418901.90 - 426384.91

 Hole Type  
PH

Location: West Yorkshire

Level: 96.40

 Scale  
1:50

Client: Harron Homes

Dates: 03/04/2019 - 03/04/2019

 Logged By  
CC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
							Overburden.		
					1.50	94.90		Light greyish brown interbedded SANDSTONE and MUDSTONE. (COAL MEASURES)	1
					5.00	91.40		Black COAL (WHEATLEY LIME COAL)	2
					5.50	90.90		Light greyish brown interbedded SANDSTONE and MUDSTONE. (COAL MEASURES)	3
					9.00	87.40		End of borehole at 9.00 m	4
									5
									6
									7
									8
									9
									10

**Remarks**

1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.

# Borehole Log

Borehole No.

**PH11A**

Sheet 1 of 1

Project Name: Merchant Fields, Cleckheaton	Project No. 2828	Co-ords: 418902.60 - 426382.85	Hole Type PH
Location: West Yorkshire		Level: 96.30	Scale 1:50
Client: Harron Homes		Dates: 03/04/2019 - 03/04/2019	Logged By CC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
[Well ID]					1.50	94.80		Overburden.	1
					4.00	92.30		Light greyish brown interbedded SANDSTONE and MUDSTONE. (COAL MEASURES)	2
							End of borehole at 4.00 m	3	
								4	
								5	
								6	
								7	
								8	
								9	
								10	

Remarks  
 1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.

# Borehole Log

Borehole No.

**PH12**

Sheet 1 of 3

Project Name: Merchant Fields, Cleckheaton

Project No.  
2828

Co-ords: 418853.78 - 426417.55

Hole Type  
PH

Location: West Yorkshire

Level: 96.50

Scale  
1:50

Client: Harron Homes

Dates: 03/04/2019 - 03/04/2019

Logged By  
CC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
							Overburden.		
					1.00	95.50	Light greyish brown interbedded SANDSTONE and MUDSTONE. (COAL MEASURES)	1	
								2	
								3	
								4	
								5	
					6.50	90.00	Black COAL. (WHEATLEY LIME COAL)	7	
					7.50	89.00	Light greyish brown MUDSTONE. (COAL MEASURES)	8	
								9	
								10	

Continued on next sheet

**Remarks**

1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.



# Borehole Log

Borehole No.

**PH12**

Sheet 2 of 3

Project Name: Merchant Fields, Cleckheaton

Project No.  
2828

Co-ords: 418853.78 - 426417.55

Hole Type  
PH

Location: West Yorkshire

Level: 96.50

Scale  
1:50

Client: Harron Homes

Dates: 03/04/2019 - 03/04/2019

Logged By  
CC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					17.00	79.50		Black COAL. (MIDDLETON 11 YARD COAL)
					18.00	78.50		Light greyish brown interbedded SANDSTONE and MUDSTONE. (COAL MEASURES)
								Continued on next sheet

11  
12  
13  
14  
15  
16  
17  
18  
19  
20

Remarks  
1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.



# Borehole Log

Borehole No.

**PH12**

Sheet 3 of 3

Project Name: Merchant Fields, Cleckheaton	Project No. 2828	Co-ords: 418853.78 - 426417.55	Hole Type PH
Location: West Yorkshire		Level: 96.50	Scale 1:50
Client: Harron Homes		Dates: 03/04/2019 - 03/04/2019	Logged By CC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					21.00	75.50		End of borehole at 21.00 m <div style="text-align: right;">             21 22 23 24 25 26 27 28 29 30           </div>

Remarks  
 1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.



# Borehole Log

Borehole No.

**PH12A**

Sheet 1 of 1

Project Name: Merchant Fields, Cleckheaton

Project No.  
2828

Co-ords: 418855.00 - 426415.44

Hole Type  
PH

Location: West Yorkshire

Level: 96.50

Scale  
1:50

Client: Harron Homes

Dates: 03/04/2019 - 03/04/2019

Logged By  
CC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
[Well ID]					1.00	95.50		Overburden.	
					6.00	90.50		Light greyish brown interbedded SANDSTONE and MUDSTONE. (COAL MEASURES)	
							End of borehole at 6.00 m		

**Remarks**

1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.

# Borehole Log

Borehole No.

**PH13**

Sheet 1 of 3

Project Name: Merchant Fields, Cleckheaton	Project No. 2828	Co-ords: 418912.56 - 426481.11	Hole Type PH
Location: West Yorkshire		Level: 100.65	Scale 1:50
Client: Harron Homes		Dates: 03/04/2019 - 03/04/2019	Logged By CC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
							Overburden.		
					1.00	99.65		Light greyish brown interbedded SANDSTONE and MUDSTONE. (COAL MEASURES)	1
									2
									3
									4
									5
									6
					7.50	93.15		Black COAL. (WHEATLEY LIME COAL)	8
					8.50	92.15		Light greyish brown interbedded SANDSTONE and MUDSTONE. (COAL MEASURES)	9
									10

Continued on next sheet

Remarks  
1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.



# Borehole Log

Borehole No.

**PH13**

Sheet 2 of 3

Project Name: Merchant Fields, Cleckheaton

Project No.  
2828

Co-ords: 418912.56 - 426481.11

Hole Type  
PH

Location: West Yorkshire

Level: 100.65

Scale  
1:50

Client: Harron Homes

Dates: 03/04/2019 - 03/04/2019

Logged By  
CC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
Well									11
									12
									13
									14
									15
									16
									17
					18.00	82.65	Soft ground, lost flush. (MIDDLETON 11 YARD COAL) <i>From 18.0m, lost flush.</i>		18
									19
									20

Continued on next sheet

**Remarks**

1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.



# Borehole Log

Borehole No.

**PH13**

Sheet 3 of 3

Project Name: Merchant Fields, Cleckheaton	Project No. 2828	Co-ords: 418912.56 - 426481.11	Hole Type PH
Location: West Yorkshire		Level: 100.65	Scale 1:50
Client: Harron Homes		Dates: 03/04/2019 - 03/04/2019	Logged By CC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
Well					21.00	79.65	+	Hard ground, no returns. (COAL MEASURES)	21
					24.00	76.65	.		22 23 24 25 26 27 28 29 30
End of borehole at 24.00 m									

Remarks  
 1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.

# Borehole Log

Borehole No.

**PH13A**

Sheet 1 of 1

Project Name: Merchant Fields, Cleckheaton	Project No. 2828	Co-ords: 418914.20 - 426482.47	Hole Type PH
Location: West Yorkshire		Level: 100.70	Scale 1:50
Client: Harron Homes		Dates: 03/04/2019 - 03/04/2019	Logged By CC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
[Redacted]					1.00	99.70		Overburden.	
					6.00	94.70		Light greyish brown interbedded SANDSTONE and MUDSTONE. (COAL MEASURES)	1 2 3 4 5 6 7 8 9 10
							End of borehole at 6.00 m		

Remarks  
 1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.

# Borehole Log

Borehole No.

**PH14**

Sheet 1 of 2

Project Name: Merchant Fields, Cleckheaton

Project No.  
2828

Co-ords: 418964.97 - 426495.30

Hole Type  
PH

Location: West Yorkshire

Level: 100.35

Scale  
1:50

Client: Harron Homes

Dates: 03/04/2019 - 03/04/2019

Logged By  
CC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
							Overburden.		
					1.20	99.15		Light greyish brown interbedded SANDSTONE and MUDSTONE. (COAL MEASURES)	1
									2
									3
									4
									5
									6
					7.00	93.35		Black COAL (WHEATLEY LIME COAL)	7
					8.00	92.35		Light greyish brown interbedded SANDSTONE and MUDSTONE. (COAL MEASURES)	8
									9
									10

Continued on next sheet

**Remarks**

1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.



# Borehole Log

Borehole No.

**PH14**

Sheet 2 of 2

Project Name: Merchant Fields, Cleckheaton	Project No. 2828	Co-ords: 418964.97 - 426495.30	Hole Type PH
Location: West Yorkshire		Level: 100.35	Scale 1:50
Client: Harron Homes		Dates: 03/04/2019 - 03/04/2019	Logged By CC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					12.00	88.35		End of borehole at 12.00 m	11 12 13 14 15 16 17 18 19 20

Remarks  
 1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.



# Borehole Log

Borehole No.

**PH14A**

Sheet 1 of 1

Project Name: Merchant Fields, Cleckheaton	Project No. 2828	Co-ords: 418967.23 - 426496.23	Hole Type PH
Location: West Yorkshire		Level: 100.30	Scale 1:50
Client: Harron Homes		Dates: 03/04/2019 - 03/04/2019	Logged By CC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
[Well ID]					1.20	99.10		Overburden.	1
					6.00	94.30		Light greyish brown interbedded SANDSTONE and MUDSTONE. (COAL MEASURES)	2 3 4 5 6
End of borehole at 6.00 m								6	
								7	
								8	
								9	
								10	

Remarks  
 1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.



# Borehole Log

Borehole No.

**PH15**

Sheet 1 of 1

Project Name: Merchant Fields, Cleckheaton	Project No. 2828	Co-ords: 419021.10 - 426572.83	Hole Type PH
Location: West Yorkshire		Level: 100.05	Scale 1:50
Client: Harron Homes		Dates: 03/04/2019 - 03/04/2019	Logged By CC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
							Overburden.		
					1.00	99.05		Light greyish brown interbedded SANDSTONE and MUDSTONE. (COAL MEASURES)	1
									2
									3
									4
									5
									6
					7.20	92.85		Black COAL. (WHEATLEY LIME COAL)	7
					8.20	91.85		Light greyish brown interbedded SANDSTONE and MUDSTONE. (COAL MEASURES)	8
					9.00	91.05		End of hole at 9.0m, ran out of water. End of borehole at 9.00 m	9
									10

Remarks  
 1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.



# Borehole Log

Borehole No.

**PH15A**

Sheet 1 of 1

Project Name: Merchant Fields, Cleckheaton	Project No. 2828	Co-ords: 419023.56 - 426573.15	Hole Type PH
Location: West Yorkshire		Level: 99.90	Scale 1:50
Client: Harron Homes		Dates: 04/04/2019 - 04/04/2019	Logged By CC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
[Well ID]					1.00	98.90	[Legend Symbol]	Overburden.	
					6.00	93.90	[Legend Symbol]	Light greyish brown interbedded SANDSTONE and MUDSTONE. (COAL MEASURES)	1 2 3 4 5 6 7 8 9 10
End of borehole at 6.00 m									

Remarks  
 1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.



# Borehole Log

Borehole No.

**PH16**

Sheet 1 of 4

Project Name: Merchant Fields, Cleckheaton

Project No.  
2828

Co-ords: 418990.41 - 426188.26

Hole Type  
PH

Location: West Yorkshire

Level: 82.55

Scale  
1:50

Client: Harron Homes

Dates: 04/04/2019 - 04/04/2019

Logged By  
CC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
							Overburden.		
					2.00	80.55		Light greyish brown interbedded SANDSTONE and MUDSTONE. (COAL MEASURES)	1 2 3
					3.50	79.05		Black COAL. (MIDDLETON 11 YARD COAL)	4
					4.50	78.05		Light greyish brown MUDSTONE. (COAL MEASURES)	5
					5.00	77.55		Black COAL. (MIDDLETON 11 YARD COAL)	6
					5.20	77.35		Light greyish brown interbedded SANDSTONE and MUDSTONE. (COAL MEASURES)	7 8 9 10

Continued on next sheet

**Remarks**

1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.



# Borehole Log

Borehole No.

**PH16**

Sheet 2 of 4

Project Name: Merchant Fields, Cleckheaton	Project No. 2828	Co-ords: 418990.41 - 426188.26	Hole Type PH
Location: West Yorkshire		Level: 82.55	Scale 1:50
Client: Harron Homes		Dates: 04/04/2019 - 04/04/2019	Logged By CC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
								11 12 13 14 15 16 17 18 19 20

Continued on next sheet

Remarks  
 1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.



# Borehole Log

Borehole No.

**PH16**

Sheet 3 of 4

Project Name: Merchant Fields, Cleckheaton	Project No. 2828	Co-ords: 418990.41 - 426188.26	Hole Type PH
Location: West Yorkshire		Level: 82.55	Scale 1:50
Client: Harron Homes		Dates: 04/04/2019 - 04/04/2019	Logged By CC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
								21
								22
								23
								24
								25
								26
								27
								28
								29
					30.00	52.55		30

Continued on next sheet

Remarks  
 1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.



# Borehole Log

Borehole No.

**PH16**

Sheet 4 of 4

Project Name: Merchant Fields, Cleckheaton	Project No. 2828	Co-ords: 418990.41 - 426188.26	Hole Type PH
Location: West Yorkshire		Level: 82.55	Scale 1:50
Client: Harron Homes		Dates: 04/04/2019 - 04/04/2019	Logged By CC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					30.50	52.05		Black COAL. (BLOCKING COAL)	
								Light greyish brown MUDSTONE. (COAL MEASURES)	31
					33.00	49.55			32
									33
								End of borehole at 33.00 m	34
									35
									36
									37
									38
									39
									40

Remarks  
 1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.

# Borehole Log

Borehole No.

**PH16A**

Sheet 1 of 1

Project Name: Merchant Fields, Cleckheaton	Project No. 2828	Co-ords: 418988.68 - 426188.22	Hole Type PH
Location: West Yorkshire		Level: 82.60	Scale 1:50
Client: Harron Homes		Dates: 04/04/2019 - 04/04/2019	Logged By CC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
							Overburden.	1
				2.00	80.60		Light greyish brown interbedded SANDSTONE and MUDSTONE. (COAL MEASURES)	2
				3.50	79.10		Black COAL. (MIDDLETON 11 YARD COAL)	3
				4.50	78.10		Light greyish brown MUDSTONE. (COAL MEASURES)	4
				6.00	76.60	End of borehole at 6.00 m		5
								6
								7
								8
								9
								10

Remarks  
 1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.



# Borehole Log

Borehole No.

**PH17**

Sheet 1 of 1

Project Name: Merchant Fields, Cleckheaton	Project No. 2828	Co-ords: 418967.95 - 426281.29	Hole Type PH
Location: West Yorkshire		Level: 87.45	Scale 1:50
Client: Harron Homes		Dates: 04/04/2019 - 04/04/2019	Logged By CC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
							Overburden.		
					1.00	86.45		Light greyish brown interbedded SANDSTONE and MUDSTONE. (COAL MEASURES)	1
									2
									3
									4
									5
					5.50	81.95		Black COAL. (MIDDLETON 11 YARD COAL)	6
									7
					7.00	80.45		Light greyish brown MUDSTONE. (COAL MEASURES)	7
									8
					9.00	78.45		End of borehole at 9.00 m	9
									10

Remarks  
 1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.



# Borehole Log

Borehole No.

**PH17A**

Sheet 1 of 1

Project Name: Merchant Fields, Cleckheaton

Project No.  
2828

Co-ords: 418967.36 - 426282.97

Hole Type  
PH

Location: West Yorkshire

Level: 87.50

Scale  
1:50

Client: Harron Homes

Dates: 04/04/2019 - 04/04/2019

Logged By  
CC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
Well	Water Strikes							Overburden.	
					1.00	86.50		Light greyish brown interbedded SANDSTONE and MUDSTONE. (COAL MEASURES)	1
					5.50	82.00		Black COAL. (MIDDLETON 11 YARD COAL)	2
			6.00	81.50			End of borehole at 6.00 m	3	
								4	
								5	
								6	
								7	
								8	
								9	
								10	

**Remarks**

1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.

# Borehole Log

Borehole No.

**PH18**

Sheet 1 of 2

Project Name: Merchant Fields, Cleckheaton	Project No. 2828	Co-ords: 418961.64 - 426380.64	Hole Type PH
Location: West Yorkshire		Level: 92.50	Scale 1:50
Client: Harron Homes		Dates: 04/04/2019 - 04/04/2019	Logged By CC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
							Overburden.		
					1.00	91.50	Light greyish brown interbedded SANDSTONE and MUDSTONE. (COAL MEASURES)	1	
								2	
								3	
								4	
								5	
								6	
								7	
								8	
								9	
								10	

Continued on next sheet

Remarks  
 1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.



# Borehole Log

Borehole No.

**PH18**

Sheet 2 of 2

Project Name: Merchant Fields, Cleckheaton	Project No. 2828	Co-ords: 418961.64 - 426380.64	Hole Type PH
Location: West Yorkshire		Level: 92.50	Scale 1:50
Client: Harron Homes		Dates: 04/04/2019 - 04/04/2019	Logged By CC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
									11
									12
									13
									14
					15.00	77.50			15
								End of borehole at 15.00 m	16
									17
									18
									19
									20

Remarks  
 1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.

# Borehole Log

Borehole No.

**PH18A**

Sheet 1 of 1

Project Name: Merchant Fields, Cleckheaton

Project No.  
2828

Co-ords: 418962.29 - 426378.91

Hole Type  
PH

Location: West Yorkshire

Level: 92.40

Scale  
1:50

Client: Harron Homes

Dates: 04/04/2019 - 04/04/2019

Logged By  
CC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
[Well ID]					1.00	91.40		Overburden.	
					6.00	86.40		Light greyish brown interbedded SANDSTONE and MUDSTONE. (COAL MEASURES)	1 2 3 4 5 6 7 8 9 10
End of borehole at 6.00 m									

**Remarks**

1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.



# Borehole Log

Borehole No.

**PH19A**

Sheet 1 of 1

Project Name: Merchant Fields, Cleckheaton

Project No.  
2828

Co-ords: 419029.37 - 426344.86

Hole Type  
PH

Location: West Yorkshire

Level: 88.05

Scale  
1:50

Client: Harron Homes

Dates: 04/04/2019 - 04/04/2019

Logged By  
CC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
[Well ID]					1.30	86.75	[Legend]	Overburden.
					6.00	82.05	[Legend]	Light greyish brown interbedded SANDSTONE and MUDSTONE. (COAL MEASURES)
							End of borehole at 6.00 m	

**Remarks**

1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.



# Borehole Log

Borehole No.

**PH20**

Sheet 1 of 2

Project Name: Merchant Fields, Cleckheaton	Project No. 2828	Co-ords: 418852.84 - 426366.81	Hole Type PH
Location: West Yorkshire		Level: 92.45	Scale 1:50
Client: Harron Homes		Dates: 04/04/2019 - 04/04/2019	Logged By CC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
Well							Overburden.		1
					1.20	91.25	Light greyish brown SANDSTONE. (COAL MEASURES)		2
					2.50	89.95	Black COAL. (WHEATLEY LIME COAL)		3
					3.00	89.45	Light greyish brown interbedded SANDSTONE and MUDSTONE. (COAL MEASURES)		4
								5	
								6	
								7	
								8	
								9	
								10	

Continued on next sheet

Remarks  
 1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.



# Borehole Log

Borehole No.

**PH20**

Sheet 2 of 2

Project Name: Merchant Fields, Cleckheaton

Project No.  
2828

Co-ords: 418852.84 - 426366.81

Hole Type  
PH

Location: West Yorkshire

Level: 92.45

Scale  
1:50

Client: Harron Homes

Dates: 04/04/2019 - 04/04/2019

Logged By  
CC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
				13.00	79.45		Black COAL. (MIDDLETON 11 YARD COAL)	
				14.00	78.45		Light greyish brown interbedded SANDSTONE. (COAL MEASURES)	
				16.00	76.45		End of borehole at 16.00 m	

Remarks  
1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.

# Borehole Log

Borehole No.

**PH20A**

Sheet 1 of 1

Project Name: Merchant Fields, Cleckheaton	Project No. 2828	Co-ords: 418854.56 - 426367.28	Hole Type PH
Location: West Yorkshire		Level: 92.70	Scale 1:50
Client: Harron Homes		Dates: 04/04/2019 - 04/04/2019	Logged By CC

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
Well	Strikes				1.20	91.50		Overburden.	1
					2.50	90.20		Light greyish brown SANDSTONE. (COAL MEASURES)	2
					3.00	89.70		Black COAL. (WHEATLEY LIME COAL)	3
					6.00	86.70		Light greyish brown interbedded SANDSTONE and MUDSTONE (COAL MEASURES)	4 5 6
End of borehole at 6.00 m								6	
								7	
								8	
								9	
								10	

Remarks  
 1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.