

12976/JJ

03 November 2022

Taylor Wimpey South Wales  
Eastern Business Park  
Building 2  
Wern Fawr Lane  
St Mellons  
Cardiff CF3 5EA

*For the attention of Samuel Clarke*

## **Land at Cefn-Yr-Hendy, Miskin – Addendum Geotechnical Site Investigation Report**

We have now completed the supplemental geotechnical site investigation works at the above site and can report as follows.

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### **Background**

Taylor Wimpey South Wales are proposing to develop a site at Cefn-Yr-Hendy, Miskin for residential end-use. The location of the site is shown in Figure 1.

A previous site investigation was undertaken by Intégral Géotechnique (Wales) Limited during 2022, as detailed in Site Investigation Report No.: 12976/JJ/22/SI/RevA, dated October 2022.

During the previous Site Investigation, an infilled mine shaft (ref: Shaft 304181-014) was identified in the north-western area of the site (at 304552E, 181911N). The diameter of the shaft was measured at approximately 3m. Further site investigation works, comprising rotary boreholes were recommended to confirm the depth of the shaft / infill material, and to check for potential evidence of any connected underground coal/ironstone mineworkings. In addition to the identified mine shaft, during the previous site investigation a suspected underground cavity/void, potentially associated with a solution feature, was recorded during the drilling of a borehole (BH4) at 304561.2E, 181962.1N, from 6.0m to 10.5m bgl. Further intrusive site investigation works, comprising a series of rotary boreholes and a borehole camera survey was recommended to assess this feature.

The recommended further intrusive site investigation works as outlined above have now been completed and the findings are detailed below.

Note that this is an addendum report intended to be read in conjunction with our previous Site Investigation Report No.: 12976/JJ/22/SI/RevA, dated October 2022.

### ***Supplemental Fieldworks***

A supplemental intrusive geotechnical site investigation was undertaken during October 2022.

The supplemental works included:

- 5 No. rotary drilled boreholes (referenced BH101 to BH105) positioned on/around Shaft 304181-014
- 4 No. rotary drilled boreholes (referenced BH4-redrill, BH4A, BH4B and BH4C) positioned on/around the suspected underground cavity/void previously recorded at BH4.
- A down borehole camera survey at BH4.

The fieldworks were supervised by a qualified Geotechnical Engineer from Intégral Géotechnique (Wales) Limited who also prepared their engineering logs.

Note that the strata descriptions relating to the rotary boreholes (drilled using open-hole methods) are based on the lead driller's description of the flushed arisings (drill cutting returns). Rock coring was initially attempted in BH4C but was terminated due to the lack of recovery.

The locations of the supplemental boreholes are shown in Figure 2.

Copies of the supplemental rotary borehole logs are presented in Appendix A.

A selection of photographs from the borehole camera survey are presented in Appendix B.

### ***Ground Conditions***

The ground conditions encountered during the drilling on/around Shaft 304181-014 and the cavity/void at BH4 have been summarised separately below.

#### **Shaft 304181-014 (BH101 to BH105)**

BH101 was drilled to confirm the depth of Shaft 304181-014 (at 304552E, 181911N).

The shaft has been confirmed to be approximately 19m deep and infilled with soft/uncompacted soils. No shaft lining or shaft cap was encountered.

The lead driller recorded 'very soft drill – no returns' while drilling through the shaft infill material. 'Normal drill' conditions (within bedrock strata) were encountered at a depth of 19m bgl. BH101 had to be terminated at a depth of approximately 22.5m bgl due to the lack of drilling returns.

BH102 to BH105 were positioned outside the footprint of Shaft 304181-014, at approximately 6m from the shaft centre. The purpose of these boreholes was to check for evidence of any potential underground coal/ironstone mineworkings connected to Shaft 304181-014.

BH102 to BH105 were terminated at depths of approximately 40m bgl. The encountered ground conditions comprised a layer of superficial soils comprising clay and boulders (proven to a depth of approximately 4.00m bgl) over dolomitic conglomerate bedrock strata (proven to extend down to depths ranging between approximately 22.5m and 24.5m bgl) over sandstone and mudstone bedrock strata at depth. No evidence of any coal seams, ironstone bands or old mine workings was encountered.

Groundwater was not encountered within the drilled depths of BH101 to BH105.

Based on the encountered ground conditions it is considered that Shaft 304181-014 represents an historical trial shaft/pit, likely sunk for prospecting purposes.

Shaft stabilisation / remedial works will be required at the location of this feature prior to development.

#### Solution Feature at BH4

During the previous site investigation, a suspected underground cavity/void was encountered at a depth of between approximately 6.5m and 10.5m bgl (4.5m thick) in BH4 (at 304561.2E, 181962.1N).

As part of the supplemental works, BH4A and BH4B were drilled approximately 5m either side of the previously drilled BH4. The purpose of these boreholes was to assess the stability of the ground prior to setting up and redrilling BH4 (and drilling BH4C) in preparation of a borehole camera survey.

BH4C was positioned adjacent to BH4.

The ground conditions encountered at BH4A and BH4B comprised a layer of superficial soils comprising clay and boulders (proven to depths of between approximately 5.9m and 6.9m bgl) over dolomitic conglomerate bedrock strata.

The ground conditions encountered at BH4C comprised a layer of superficial soils comprising clay and boulders (proven to a depth of approximately 7.0m bgl) over ground conditions described as 'very soft drill with cavities' by the lead driller. 'Normal drill' conditions (within bedrock strata) were encountered at a depth of 10.5m bgl. Upon pulling the casing much of the borehole collapsed at depth.

The previously drilled and plugged BH4 was also redrilled as part of the supplemental works.

A down borehole camera survey was completed at BH4 (and attempted at BH4C) upon completion of the drilling.

At BH4, the survey recorded a suspected clay infilled vertical fissure at a depth of approximately 6.0m bgl, opening up into an underlying cavity/void at a depth of approximately 7.7m bgl. It was not possible to confidently confirm the full thickness/height of the cavity/void due to the presence of groundwater (standing at approximately 8.0m bgl) and instability/collapse of the borehole. However, based on the footage obtained this feature does appear to be largely infilled with collapsed material.

It was not possible to carry out a successful camera survey at BH4C due to instability/collapse of the borehole.

A selection of images of the cavity/void observed in BH4 are presented in Appendix B.

The drilling results, together with and the results of the camera survey, indicate the presence of a partially infilled/collapsed solution feature with a residual cavity/void at BH4. Solution feature ground stabilisation / remedial works will be required at this location prior to development.

### ***Shaft 304181-014 Remedial Works***

Shaft 304181-014 has been confirmed to be present at 304552E, 181911N. The shaft is approximately 19m deep, with a diameter of approximately 3m.

Shaft 304181-014 has been proven to be infilled with soft/uncompacted soils.

No shaft lining or cap are evident.

Shaft 304181-014 is considered to represent an historical trial shaft/pit, likely sunk for prospecting purposes.

Due to the presence of Shaft 304181-014 and the poor/uncompacted nature of the infill material, there is considered to be an associated ground subsidence risk at this location.

In order to mitigate this risk, it is recommended that drilling and pressure grouting ground stabilisation works are undertaken at the location of Shaft 304181-014, as shown in Figure 2.

The drilling and grouting works will need to be designed to ensure full depth treatment of Shaft 304181-014.

Following appropriate stabilisation by drilling and grouting it is recommended that the treated shaft is capped.

The shaft cap should comprise a suitably designed reinforced slab constructed at rockhead level (at a depth of approximately 4m bgl, based on the ground conditions encountered at BH101 to BH104), in accordance with published guidance in CIRIA Report C758. The minimum diameter of the shaft cap should be twice the diameter of the shaft. A 6m diameter shaft cap is advised in this instance.

Following successful cap installation, a no-build zone should be applied around Shaft 304181-014.

Assuming a shaft cap diameter of 6m and a depth to bedrock of 4m, a 7m radius no build zone is advised around the centre of Shaft 304181-014 (i.e., around 304552E, 181911N). The extent of the advised no build zone is shown in Figure 2.

A mine entry treatment permit will be required from the Coal Authority prior to commencement of the recommended drilling and grouting and shaft capping works.

Additionally, the Coal Authority will be required to revise their database listing for Shaft 304181-014, to the coordinate of: 304552E, 181911N.

### ***BH4/BH4C Solution Feature Remedial Works***

The drilling results and the results of the borehole camera survey have confirmed the presence of solution feature comprising a collapsed underground cavity/void at depth of approximately 7.0m at BH4 (centred at 304561.2E, 181962.1N), located in the proposed rear garden area of Plot 69.

During the drilling of borehole BH4, competent ground was not encountered until a depth of approximately 10.5m bgl.

Due to the presence of the identified solution feature/voided ground at 304561.2E, 181962.1N, there is considered to be an associated ground subsidence risk.

In order to mitigate this risk, it is recommended that drilling and pressure grouting ground stabilisation works are undertaken at the location of BH4, as shown in Figure 2.

The drilling and grouting works will need to be designed to ensure full depth treatment of the solution feature recorded at BH4.

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

Yours faithfully,



**Jack Jones**  
**For**  
**Intégral Géotechnique (Wales) Limited**

*Encl.*


Appendix A – Supplemental Rotary Borehole Logs  
Appendix B – BH4 Borehole Camera Survey Photographs

Figure 1 – Site Location

Figure 2 – Supplemental Exploratory Hole Location Plan

## **APPENDIX A**


### **SUPPLEMENTAL ROTARY BOREHOLE LOGS**


		Integral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com		Project Name: <b>Cefn Yr Hendy</b>				Project No.: <b>12976</b>		Borehole No.: <b>BH101</b> Sheet 1 of 2	
		Location: <b>Miskin</b>				Client: <b>Taylor Wimpey South Wales</b>				Coordinates:	
Equipment: <b>KLEMM</b>		Diameter of Casing: <b>115mm</b>				Level:		Scale <b>1:100</b>			
Diameter of Boring: <b>115mm</b>		Depth of Casing: <b>5.00m</b>				Dates <b>26/10/2022 -</b>		Logged By: <b>CJ</b>			


Well	Water Strikes	Rotary Coring					Depth (m)	Level (m AOD)	N Value	Legend	Stratum Description	
		Depth (m)	TCR	SCR	RQD	FI						
											Very soft drill - No returns (driller's description) - Historical Shaft Infill.	1
												2
												3
												4
												5
												6
												7
												8
												9
												10
												11
												12
												13
												14
												15
												16
												17
												18
							19.00				Normal drill (driller's description).	19
												20


<b>Remarks:</b> 1. Drilled at the location of Shaft 304181-014.		<b>Key:</b> D - Small disturbed sample B - Bulk disturbed sample ES - Environmental soil sample SPT - Standard Penetration Test (split spoon) CPT - Standard Penetration Test (solid cone)		W - Water sample U - Undisturbed sample TCR - Total Core Recovery SCR - Solid Core Recovery RQD - Rock Quality Designation		
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		Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com		Project Name: <b>Cefn Yr Hendy</b>				Project No.: <b>12976</b>		Borehole No.: <b>BH101</b> Sheet 2 of 2	
		Location: <b>Miskin</b>				Client: <b>Taylor Wimpey South Wales</b>				Coordinates:	
Equipment: <b>KLEMM</b>				Diameter of Casing: <b>115mm</b>				Level:		Scale <b>1:100</b>	
Diameter of Boring: <b>115mm</b>				Depth of Casing: <b>5.00m</b>				Dates <b>26/10/2022 -</b>		Logged By: <b>CJ</b>	


  

Well	Water Strikes	Rotary Coring					Depth (m)	Level (m AOD)	N Value	Legend	Stratum Description	
		Depth (m)	TCR	SCR	RQD	FI						
							22.50					21
												22
											End of Borehole at 22.50 m	23
												24
												25
												26
												27
												28
												29
												30
												31
												32
												33
												34
												35
												36
												37
												38
												39
												40

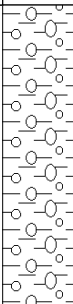
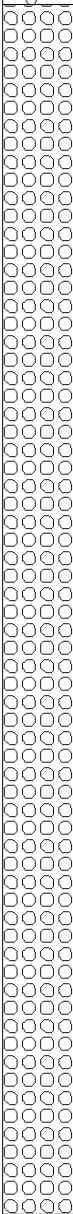
  

<b>Remarks:</b> 1. Drilled at the location of Shaft 304181-014.		<b>Key:</b> D - Small disturbed sample B - Bulk disturbed sample ES - Environmental soil sample SPT - Standard Penetration Test (split spoon) CPT - Standard Penetration Test (solid cone)		W - Water sample U - Undisturbed sample TCR - Total Core Recovery SCR - Solid Core Recovery RQD - Rock Quality Designation		
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		Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com		Project Name: <b>Cefn Yr Hendy</b>				Project No.: <b>12976</b>		Borehole No.: <b>BH102</b> Sheet 1 of 2	
		Location: <b>Miskin</b>				Client: <b>Taylor Wimpey South Wales</b>				Coordinates:	
Equipment: <b>KLEMM</b>		Diameter of Casing: <b>115mm</b>				Level:		Scale <b>1:100</b>			
Diameter of Boring: <b>115mm</b>		Depth of Casing: <b>4.00m</b>				Dates <b>26/10/2022 -</b>		Logged By: <b>CJ</b>			


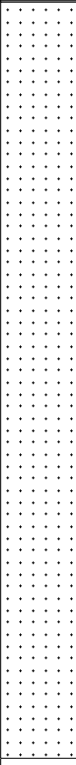
Well	Water Strikes	Rotary Coring					Depth (m)	Level (m AOD)	N Value	Legend	Stratum Description	
		Depth (m)	TCR	SCR	RQD	FI						
							4.00				CLAY and BOULDERS (driller's description).	1
											CONGLOMERATE (driller's description).	2
												3
												4
												5
												6
												7
												8
												9
												10
												11
												12
												13
												14
												15
												16
												17
												18
												19
												20


Remarks:		<b>Key:</b> D - Small disturbed sample B - Bulk disturbed sample ES - Environmental soil sample SPT - Standard Penetration Test (split spoon) CPT - Standard Penetration Test (solid cone)		W - Water sample U - Undisturbed sample TCR - Total Core Recovery SCR - Solid Core Recovery RQD - Rock Quality Designation			
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		Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com		Project Name: <b>Cefn Yr Hendy</b>				Project No.: <b>12976</b>		Borehole No.: <b>BH102</b> Sheet 2 of 2	
		Location: <b>Miskin</b>				Client: <b>Taylor Wimpey South Wales</b>				Coordinates:	
Equipment: <b>KLEMM</b>		Diameter of Casing: <b>115mm</b>				Level:		Scale <b>1:100</b>			
Diameter of Boring: <b>115mm</b>		Depth of Casing: <b>4.00m</b>				Dates <b>26/10/2022 -</b>		Logged By: <b>CJ</b>			

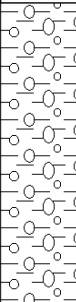

Well	Water Strikes	Rotary Coring					Depth (m)	Level (m AOD)	N Value	Legend	Stratum Description	
		Depth (m)	TCR	SCR	RQD	FI						
							22.50				MUDSTONE (driller's description).	21
												22
												23
												24
												25
												26
												27
												28
												29
												30
							30.00				SANDSTONE (driller's description).	31
												32
												33
												34
												35
												36
												37
												38
												39
							40.00					40
End of Borehole at 40.00 m												


Remarks:		<b>Key:</b> D - Small disturbed sample B - Bulk disturbed sample ES - Environmental soil sample SPT - Standard Penetration Test (split spoon) CPT - Standard Penetration Test (solid cone)		W - Water sample U - Undisturbed sample TCR - Total Core Recovery SCR - Solid Core Recovery RQD - Rock Quality Designation			
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 Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com		Project Name: <b>Cefn Yr Hendy</b>				Project No.: <b>12976</b>		Borehole No.: <b>BH103</b> Sheet 1 of 2	
		Client: Taylor Wimpey South Wales				Coordinates:		Hole Type: RO	
Location: Miskin		Equipment: KLEMM				Diameter of Casing: 115mm		Level: 1:100	
Diameter of Boring: 115mm		Depth of Casing: 4.00m				Dates 28/10/2022 -		Logged By: CJ	



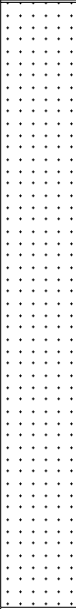
Well	Water Strikes	Rotary Coring					Depth (m)	Level (m AOD)	N Value	Legend	Stratum Description	
		Depth (m)	TCR	SCR	RQD	FI						
							4.00			 CLAY and BOULDERS (driller's description).		1
										 CONGLOMERATE (driller's description).		2
												3
												4
												5
												6
												7
												8
												9
												10
												11
												12
												13
												14
												15
												16
												17
												18
												19
												20


Remarks:	<b>Key:</b> D - Small disturbed sample B - Bulk disturbed sample ES - Environmental soil sample SPT - Standard Penetration Test (split spoon) CPT - Standard Penetration Test (solid cone)	W - Water sample U - Undisturbed sample TCR - Total Core Recovery SCR - Solid Core Recovery RQD - Rock Quality Designation	


		Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com		Project Name: <b>Cefn Yr Hendy</b>		Project No.: <b>12976</b>		Borehole No.: <b>BH103</b> Sheet 2 of 2	
		Location: <b>Miskin</b>		Client: <b>Taylor Wimpey South Wales</b>		Coordinates:		Hole Type: <b>RO</b>	
Equipment: <b>KLEMM</b>		Diameter of Casing: <b>115mm</b>		Level:		Scale <b>1:100</b>			
Diameter of Boring: <b>115mm</b>		Depth of Casing: <b>4.00m</b>		Dates <b>28/10/2022 -</b>		Logged By: <b>CJ</b>			

Well	Water Strikes	Rotary Coring					Depth (m)	Level (m AOD)	N Value	Legend	Stratum Description	
		Depth (m)	TCR	SCR	RQD	FI						
							23.10					21
											MUDSTONE (driller's description).	22
												23
												24
												25
												26
												27
												28
												29
												30
												31
							32.00				SANDSTONE (driller's description).	32
												33
												34
												35
												36
												37
												38
												39
							40.00					40
End of Borehole at 40.00 m												


Remarks:	<b>Key:</b> D - Small disturbed sample B - Bulk disturbed sample ES - Environmental soil sample SPT - Standard Penetration Test (split spoon) CPT - Standard Penetration Test (solid cone)		W - Water sample U - Undisturbed sample TCR - Total Core Recovery SCR - Solid Core Recovery RQD - Rock Quality Designation		


 Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com		Project Name: <b>Cefn Yr Hendy</b>		Project No.: <b>12976</b>		Borehole No.: <b>BH104</b> Sheet 1 of 2	
		Location: <b>Miskin</b>		Client: <b>Taylor Wimpey South Wales</b>		Coordinates:	
Equipment: <b>KLEMM</b>		Diameter of Casing: <b>115mm</b>		Level:		Scale <b>1:100</b>	
Diameter of Boring: <b>115mm</b>		Depth of Casing: <b>40.00m</b>		Dates <b>28/10/2022 -</b>		Logged By: <b>CJ</b>	


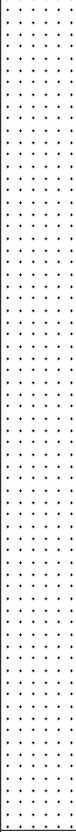
Well	Water Strikes	Rotary Coring					Depth (m)	Level (m AOD)	N Value	Legend	Stratum Description	
		Depth (m)	TCR	SCR	RQD	FI						
							4.00				CLAY and BOULDERS (driller's description).	1
											CONGLOMERATE (driller's description).	2
												3
												4
												5
												6
												7
												8
												9
												10
												11
												12
												13
												14
												15
												16
												17
												18
												19
												20

Remarks:	<b>Key:</b> D - Small disturbed sample B - Bulk disturbed sample ES - Environmental soil sample SPT - Standard Penetration Test (split spoon) CPT - Standard Penetration Test (solid cone)	W - Water sample U - Undisturbed sample TCR - Total Core Recovery SCR - Solid Core Recovery RQD - Rock Quality Designation	


		Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com		Project Name: <b>Cefn Yr Hendy</b>				Project No.: <b>12976</b>		Borehole No.: <b>BH104</b> Sheet 2 of 2	
		Location: <b>Miskin</b>				Client: <b>Taylor Wimpey South Wales</b>				Coordinates:	
Equipment: <b>KLEMM</b>		Diameter of Casing: <b>115mm</b>				Level:		Scale <b>1:100</b>			
Diameter of Boring: <b>115mm</b>		Depth of Casing: <b>40.00m</b>				Dates <b>28/10/2022 -</b>		Logged By: <b>CJ</b>			


  


Well	Water Strikes	Rotary Coring					Depth (m)	Level (m AOD)	N Value	Legend	Stratum Description	
		Depth (m)	TCR	SCR	RQD	FI						
							22.50				MUDSTONE (driller's description).	21
												22
												23
												24
												25
												26
												27
												28
							29.00					29
										SANDSTONE (driller's description).		30
											31	
											32	
											33	
											34	
											35	
											36	
											37	
											38	
											39	
							40.00				40	

End of Borehole at 40.00 m

Remarks:		<b>Key:</b> D - Small disturbed sample B - Bulk disturbed sample ES - Environmental soil sample SPT - Standard Penetration Test (split spoon) CPT - Standard Penetration Test (solid cone)		W - Water sample U - Undisturbed sample TCR - Total Core Recovery SCR - Solid Core Recovery RQD - Rock Quality Designation		


<div>Intégral Géotechnique</div>		Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com		Project Name: <b>Cefn Yr Hendy</b>				Project No.: <b>12976</b>		Borehole No.: <b>BH105</b> Sheet 1 of 2			
Location: <b>Miskin</b>				Client: <b>Taylor Wimpey South Wales</b>				Coordinates:		Hole Type: <b>RO</b>			
Equipment: <b>KLEMM</b>				Diameter of Casing: <b>115mm</b>				Level:		Scale <b>1:100</b>			
Diameter of Boring: <b>115mm</b>				Depth of Casing: <b>4.00m</b>				Dates <b>26/10/2022 -</b>		Logged By: <b>CJ</b>			
Well	Water Strikes	Rotary Coring					Depth (m)	Level (m AOD)	N Value	Legend	Stratum Description		
		Depth (m)	TCR	SCR	RQD	FI							
							4.00				CLAY and BOULDERS (driller's description).		1
											CONGLOMERATE (driller's description).		2
													3
													4
													5
													6
													7
													8
													9
													10
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													14
													15
													16
													17
													18
													19
													20
Remarks:										<div>Key: D - Small disturbed sample B - Bulk disturbed sample ES - Environmental soil sample SPT - Standard Penetration Test (split spoon) CPT - Standard Penetration Test (solid cone) W - Water sample U - Undisturbed sample TCR - Total Core Recovery SCR - Solid Core Recovery RQD - Rock Quality Designation</div>			
										<div>AGS</div>			

		Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com		Project Name: <b>Cefn Yr Hendy</b>				Project No.: <b>12976</b>		Borehole No.: <b>BH105</b> Sheet 2 of 2	
		Location: <b>Miskin</b>				Client: <b>Taylor Wimpey South Wales</b>				Coordinates:	
Equipment: <b>KLEMM</b>		Diameter of Casing: <b>115mm</b>				Level:		Scale <b>1:100</b>			
Diameter of Boring: <b>115mm</b>		Depth of Casing: <b>4.00m</b>				Dates <b>26/10/2022 -</b>		Logged By: <b>CJ</b>			


  

Well	Water Strikes	Rotary Coring					Depth (m)	Level (m AOD)	N Value	Legend	Stratum Description	
		Depth (m)	TCR	SCR	RQD	FI						
							24.50					21
												22
												23
												24
												25
												26
												27
												28
												29
												30
												31
												32
												33
												34
												35
												36
												37
												38
												39
							40.00					40

Remarks:		Key: D - Small disturbed sample B - Bulk disturbed sample ES - Environmental soil sample SPT - Standard Penetration Test (split spoon) CPT - Standard Penetration Test (solid cone)		W - Water sample U - Undisturbed sample TCR - Total Core Recovery SCR - Solid Core Recovery RQD - Rock Quality Designation			
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		Integral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com		Project Name: <b>Cefn Yr Hendy</b>				Project No.: <b>12976</b>		Borehole No.: <b>BH04-Redrill</b> Sheet 1 of 1	
Location: <b>Miskin</b>				Client: <b>Taylor Wimpey South Wales</b>				Coordinates:		Hole Type: <b>RO</b>	
Equipment: <b>KLEMM</b>				Diameter of Casing: <b>115mm</b>				Level:		Scale <b>1:100</b>	
Diameter of Boring: <b>115mm</b>				Depth of Casing: <b>4.50m</b>				Dates <b>03/08/2022 -</b>		Logged By: <b>CJ</b>	

Well	Water Strikes	Rotary Coring					Depth (m)	Level (m AOD)	N Value	Legend	Stratum Description	
		Depth (m)	TCR	SCR	RQD	FI						
											CLAY and BOULDERS (driller's description).	1
							4.50					2
												3
												4
							6.00				Broken Ground - Loss of flush - No returns (driller's description).	5
												6
											Suspected cavity/void (driller's description) - solution feature.	7
											...borehole camera survey results indicate the presence of cavity/void that appears to be largely infilled with collapsed material and groundwater.	8
												9
												10
							10.50				Normal drill - No returns (driller's description).	11
												12
												13
												14
							15.00					15
											End of Borehole at 15.00 m	16
												17
												18
												19
												20


Remarks:				Key: D - Small disturbed sample B - Bulk disturbed sample ES - Environmental soil sample SPT - Standard Penetration Test (split spoon) CPT - Standard Penetration Test (solid cone)				W - Water sample U - Undisturbed sample TCR - Total Core Recovery SCR - Solid Core Recovery RQD - Rock Quality Designation					
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		Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com		Project Name: <b>Cefn Yr Hendy</b>		Project No.: <b>12976</b>		Borehole No.: <b>BH04A</b> Sheet 1 of 1	
		Location: <b>Miskin</b>		Client: <b>Taylor Wimpey South Wales</b>		Coordinates:		Hole Type: <b>RO</b>	
Equipment: <b>KLEMM</b>		Diameter of Casing: <b>115mm</b>		Level:		Scale <b>1:100</b>			
Diameter of Boring: <b>115mm</b>		Depth of Casing: <b>6.00m</b>		Dates <b>27/10/2022 -</b>		Logged By: <b>CJ</b>			

Well	Water Strikes	Rotary Coring					Depth (m)	Level (m AOD)	N Value	Legend	Stratum Description	
		Depth (m)	TCR	SCR	RQD	FI						
											CLAY and BOULDERS (driller's description).	1
							5.90					2
												3
												4
												5
											CONGLOMERATE (driller's description).	6
												7
												8
												9
							10.00					10
											End of Borehole at 10.00 m	11
												12
												13
												14
												15
												16
												17
												18
												19
												20


Remarks:		<b>Key:</b> D - Small disturbed sample B - Bulk disturbed sample ES - Environmental soil sample SPT - Standard Penetration Test (split spoon) CPT - Standard Penetration Test (solid cone)		W - Water sample U - Undisturbed sample TCR - Total Core Recovery SCR - Solid Core Recovery RQD - Rock Quality Designation		
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		Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com		Project Name: <b>Cefn Yr Hendy</b>				Project No.: <b>12976</b>		Borehole No.: <b>BH04B</b> Sheet 1 of 1	
		Location: <b>Miskin</b>				Client: <b>Taylor Wimpey South Wales</b>				Coordinates:	
Equipment: <b>KLEMM</b>		Diameter of Casing: <b>115mm</b>				Level:		Scale <b>1:100</b>			
Diameter of Boring: <b>115mm</b>		Depth of Casing: <b>6.00m</b>				Dates <b>27/10/2022 -</b>		Logged By: <b>CJ</b>			


Well	Water Strikes	Rotary Coring					Depth (m)	Level (m AOD)	N Value	Legend	Stratum Description	
		Depth (m)	TCR	SCR	RQD	FI						
											CLAY and BOULDERS (driller's description).	1
							6.90					2
												3
												4
												5
												6
											CONGLOMERATE (driller's description).	7
												8
												9
							10.00					10
											End of Borehole at 10.00 m	11
												12
												13
												14
												15
												16
												17
												18
												19
												20


Remarks:		<b>Key:</b> D - Small disturbed sample B - Bulk disturbed sample ES - Environmental soil sample SPT - Standard Penetration Test (split spoon) CPT - Standard Penetration Test (solid cone)		W - Water sample U - Undisturbed sample TCR - Total Core Recovery SCR - Solid Core Recovery RQD - Rock Quality Designation			
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		Intégral House, 7 Beddau Way Castlegate Business Park Caerphilly CF83 2AX Tel. 029 20807991 Fax. 029 20862176 mail@integralgeotec.com		Project Name: <b>Cefn Yr Hendy</b>				Project No.: <b>12976</b>		Borehole No.: <b>BH04C</b> Sheet 1 of 1	
		Location: <b>Miskin</b>				Client: <b>Taylor Wimpey South Wales</b>				Coordinates:	
Equipment: <b>KLEMM</b>		Diameter of Casing: <b>115mm</b>				Level:		Scale <b>1:100</b>			
Diameter of Boring: <b>115mm</b>		Depth of Casing: <b>9.00m</b>				Dates <b>27/10/2022 -</b>		Logged By: <b>CJ</b>			

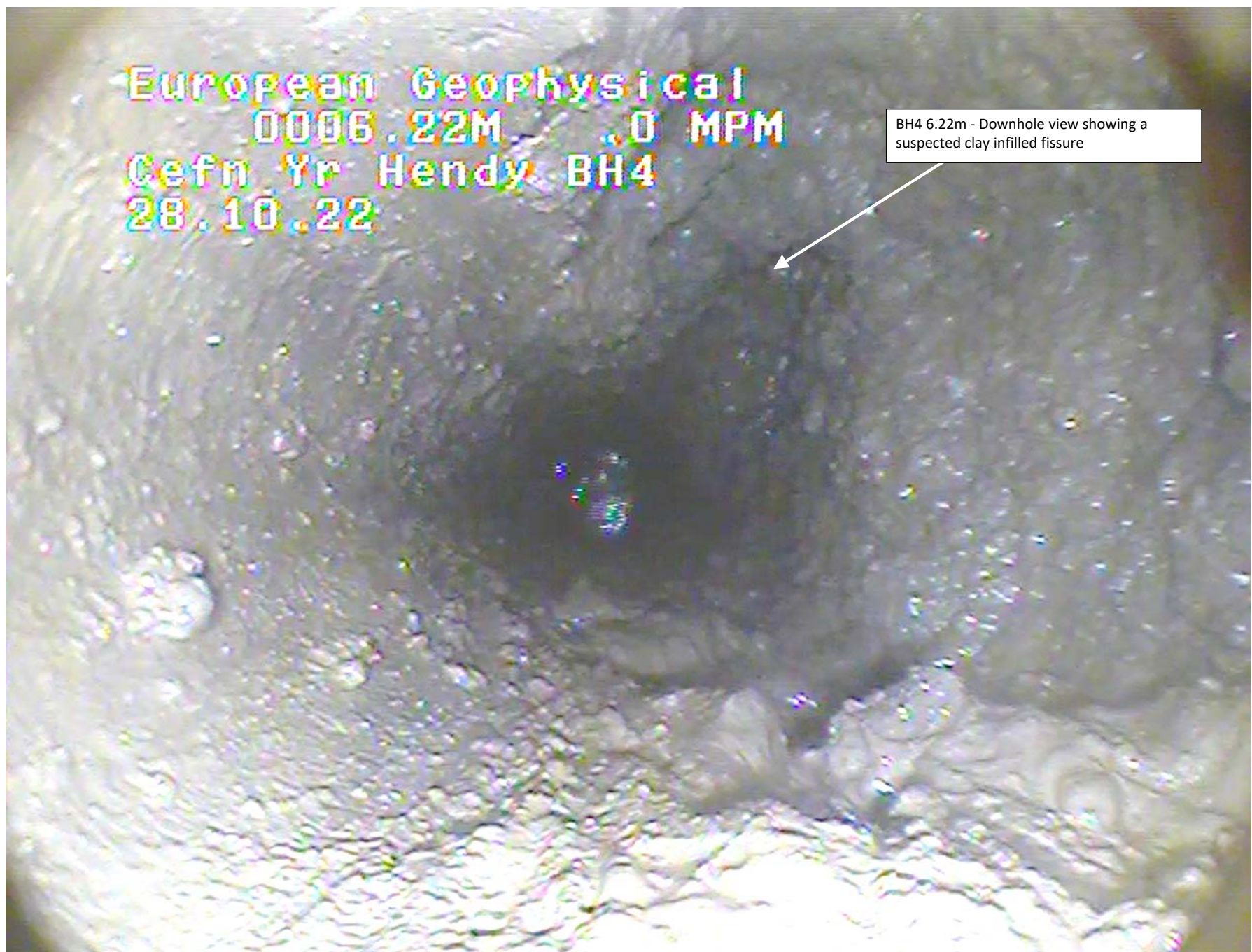
Well	Water Strikes	Rotary Coring					Depth (m)	Level (m AOD)	N Value	Legend	Stratum Description	
		Depth (m)	TCR	SCR	RQD	FI						
											CLAY and BOULDERS (driller's description).	1
							7.00					2
												3
												4
												5
												6
												7
	8.00 										Very soft drill with cavities - No returns (driller's description).	8
												9
							10.50					10
											Normal drill - No returns (driller's description).	11
												12
												13
												14
							15.00					15
											End of Borehole at 15.00 m	16
												17
												18
												19
												20

Remarks:		<b>Key:</b> D - Small disturbed sample B - Bulk disturbed sample ES - Environmental soil sample SPT - Standard Penetration Test (split spoon) CPT - Standard Penetration Test (solid cone)		W - Water sample U - Undisturbed sample TCR - Total Core Recovery SCR - Solid Core Recovery RQD - Rock Quality Designation			
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## **APPENDIX B**

### **BH4 BOREHOLE CAMERA SURVEY PHOTOGRAPHS**



BH4 6.22m - Downhole view showing a suspected clay infilled fissure

## Appendix B: BH4 Camera Survey Photographs (6.22m) - Downhole View

Land at Cefn-Yr-Hendy

**Intégral**  
Géotechnique

Intégral House  
7 Beddau Way  
Castlegate Business Park  
Caerphilly  
CF83 2AX  
Tel: 029 2080 7991





Appendix B: BH4 Camera Survey Photographs (6.96m) - Side View

Land at Cefn-Yr-Hendy



Intégral House  
7 Beddau Way  
Castlegate Business Park  
Caerphilly  
CF83 2AX  
Tel: 029 2080 7991





Appendix B: BH4 Camera Survey Photographs (7.73m bgl) - Side View

Land at Cefn-Yr-Hendy

**Intégral**  
Géotechnique

Intégral House  
7 Beddau Way  
Castlegate Business Park  
Caerphilly  
CF83 2AX  
Tel: 029 2080 7991



## FIGURES

Site Location

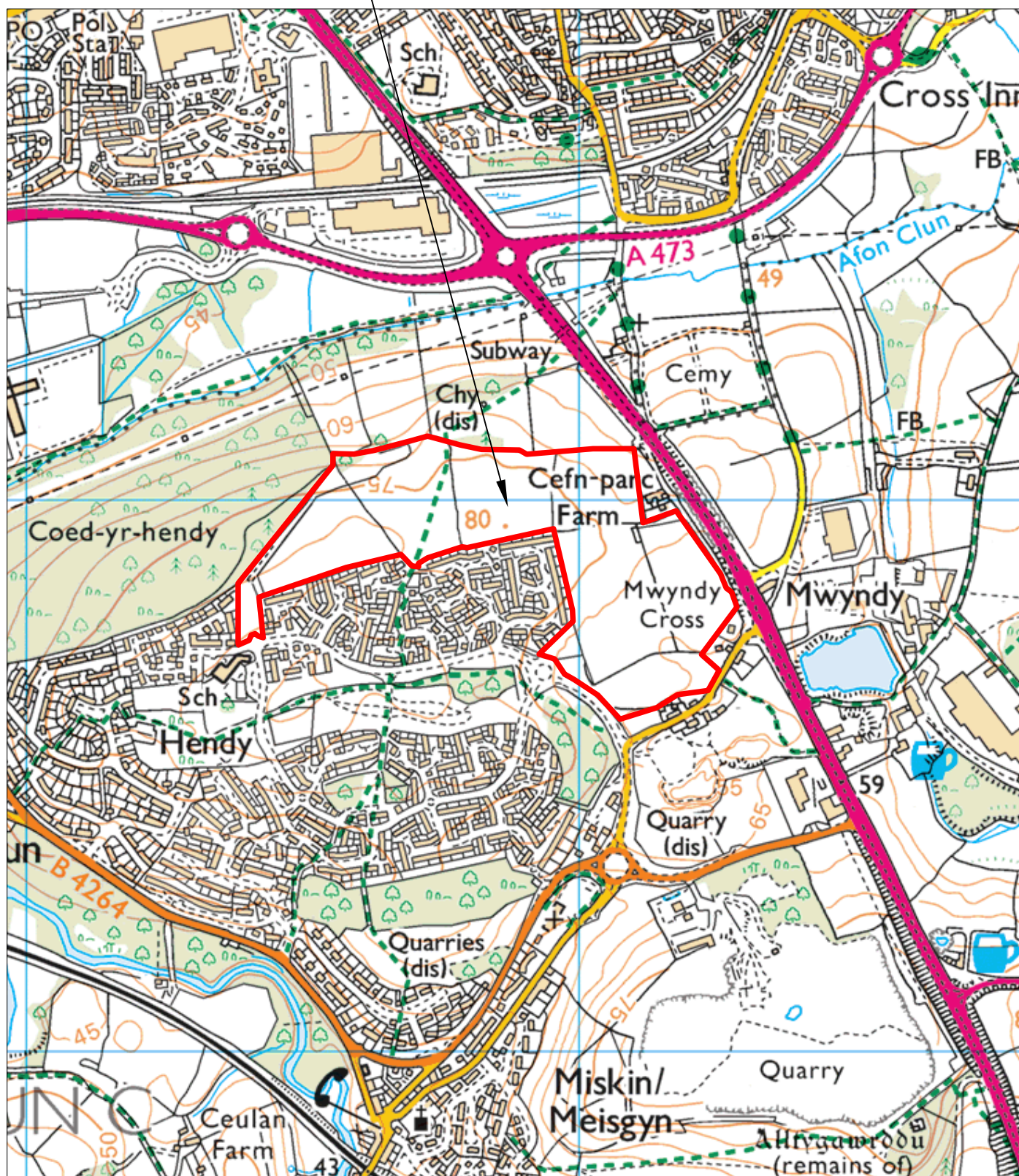


Figure 1: Site Location

Project: Land at Cefn-Yr-Hendy

Job no.: 12976

Client: Taylor Wimpey South Wales

Scale: 1:10,000 at A4

**Intégral**  
Géotechnique

Integral House,  
7 Beddau Way,  
Castlegate Business Park,  
Caerphilly,  
CF83 2AX.  
Tel: 029 2080 7991



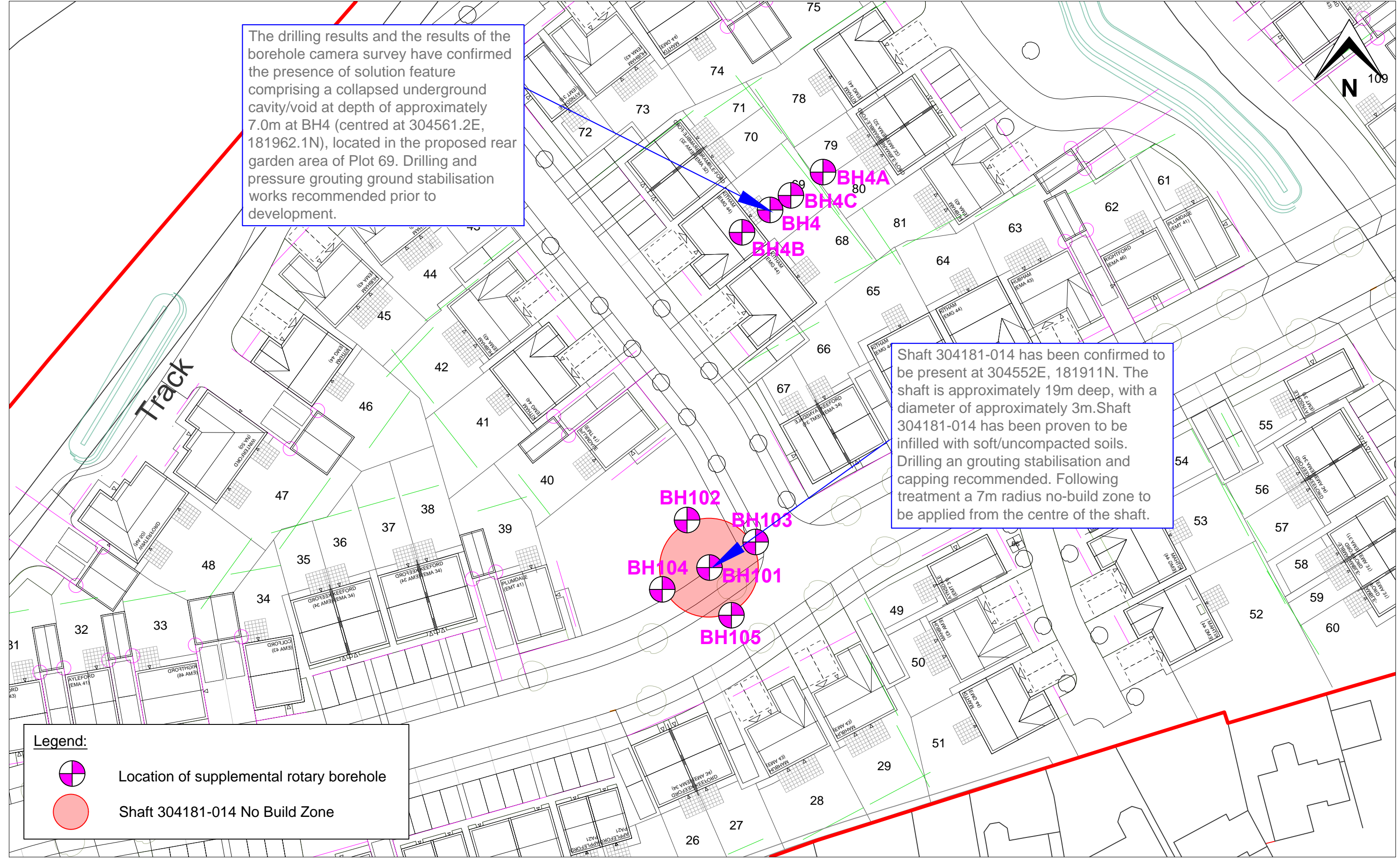


Figure 2: Supplemental Exploratory Hole Location Plan