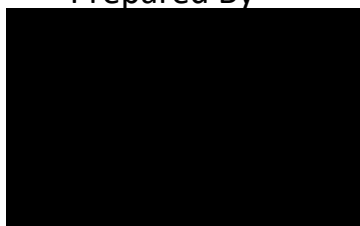


Draft Report For Discussion

2nd CMRA Follow-On Rotary Drilling Investigation

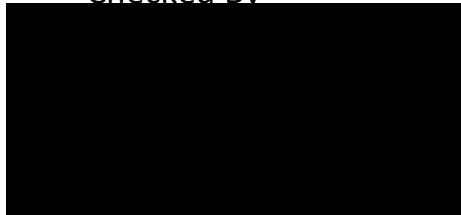
LOCATION	Terfynfa, 12 Smelt Road, Coedpoeth, Wrexham LL11 3SH
ISSUE DATE	19 November 2025
FOR	D Wardman
CLIENT REF.	
OUR REF.	G25382

Prepared By



Ross Nicolson BSc (Hons) MSc CEng MIMMM
Principal Mining Specialist

Checked By



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Appendix 2 – CA Mine Shaft Location & Initial ZOI Based On 1.8m Drift/Bedrock Depth

Appendix 3 – 1st Phase Borehole Locations & Revised ZOI Based On 4m Bedrock Depth in BH3

Appendix 4 – LiDAR Imagery

Appendix 5 – West Slope Photos & Possible Alternative Mine Shaft Location

Appendix 6 – New CA Drill Permit

Appendix 7 – Phase 1 & 2 Borehole Locations and Rotary Drilling Photos RH10 Black Coal Flush 9.80-10.60m

Appendix 8 – Vertical Drill Logs RH8-RH15

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1. Introduction

In accordance with your instruction, Geoinvestigate Ltd carried out a second phase of CMRA follow-on coal legacy drilling investigations at the above site where it is proposed to replace the existing dog kennel facility and adjacent garden area with a five unit detached housing development.

The approximate grid reference of the site centre is E327992, N351409 with surface ground height approximately ranging between 225-232m AOD. Site images and a development plan are shown in Appendix 1.

Steep wooded valley slope is present on the west side of the property, leading down to the River Clywedog. Ivor Owens Haulage Yard lies to the immediate north of the kennels with retaining wall along the boundary between the two properties. The haulage yard is up to several metres higher than the kennels. Terfynfa comprises an existing detached house, sheds, kennels, concrete hardstanding and a large area of lawn.

In November 2022 the Coal Authority (Mining Remediation Authority) issued CMRA Report 71008960745001 for the property including Consultants Coal Mining Report 71009090730001 identifying the following 3 risks to the development.

Probable shallow underground coal mining **MEDIUM RISK**

Mine Entry 327351-282 **HIGH**

Mine gas emissions or potential **MEDIUM**

The CMRA assessed **HIGH RISK** to the development overall from coal mining legacy hazards recommending intrusive site investigation was carried out before finalising the layout of the development. Both CA reports are available from the client upon request.

In July 2025 Geoinvestigate Ltd issued Report No G25090 on the first phase of intrusive site investigation works at the property comprising 7 rotary open holes (RH1-RH7) to depths of 30m, 4 window sampling boreholes (BH1-BH4) to 4m, installation of gas well and a subsequent period of extended gas monitoring. This report is also available from the client.

2. July 2025 Report Findings

2.1 Seam Mine Working

All 6 boreholes along the western site margin encountered an intact narrow coal horizon (0.20m to 0.50m thick) around 13m depth with an intact several metres thick ironstone horizon immediately below it and a further intact 'coaly' mudstone horizon at 23m the latter unlikely to have been worked because of its poor coal quality. In Geoinvestigate's opinion the initial drilling results on the west side of the property suggest the ground in this part of the site is not mined within 30m depth of the surface.

While the initial results on the west side were encouraging, further drilling was recommended to investigate the area of concrete apron and boarding kennels in the middle and northern end of the property where there were no boreholes were sunk, as the kennels were occupied at the time of the initial drilling works.

Rotary holes RH1 to RH6 on the west side of the lawned area record the following broadly similar ground conditions: -

3.7-8.5m	Brown Sandstone
13-13.5m	Thin Coal (20-50cm thick)
13-18m	Shale with occasional Ironstone (3.5-5m)
24-26.5m	Mudstone with much coaly/carbonaceous material/fragments? (2.4-3m)
26->30m	Light grey Sandstone

However, borehole RH7 at the far east corner of the site (on the east side of a suspected geological fault) was of particular concern as there is only one hole here and it encountered very different coal geology including a 1.5m thick (and therefore potentially workable) coal horizon at 9.4m depth the further difference here being Ironstone was absent.

From the CA's 2022 CMRA it was understood that earlier drilling investigation on higher ground to the north of the kennels at Ivor Owens Haulage Yard had identified grouted mine workings at 7m and 16m depth raising further concern about shallow mining beneath the adjacent Terfynfa site. The location of the previous drilling works on the north side of the site is unknown.

While the 2022 CMRA report suggested obtaining the previous site investigation reports for the haulage yard attempts by the client to negotiate their release with the yards current owners were unsuccessful as were Geoinvestigate's subsequent efforts to contact NKC Geotech Ltd, North Wales who carried out the drilling works.

It is speculated that the suspected mining at a depth of 16m under the haulage yard previously occupied in 1800s by the "Smelt" may perhaps have been ironstone working rather than coal, though interestingly according to a web AI source *'the term "Smelt" was used in place names in Wales to refer to areas where lead was smelted, such as the village of Coedpoeth where Terfynfa Kennels is located.'* In this regard the Minera Lead Mines were historically active to the west of the village and the site in the 1800s while a "Lead Level"/adit is recorded on historical maps to the south of the kennels.

The coal mining geology of the development area was also complicated by a possible unrecorded geological fault, believed to lie somewhere between boreholes (RH1-RH6) on the west side of the property and RH7 on the east side. Locating this fault was considered important, as it might control the distribution of mining activity (if any) beneath the development area. In this regard, it was Geoinvestigate's opinion that if coal mining was present, it was likely to be found on the eastern side of the fault, beneath the eastern half of the site, where notably thicker coal was encountered in RH7 at 9.4m depth.

Regarding underground mining, the July 2025 report concluded that while the initial results of the first phase of drilling investigation were encouraging, further exploratory drilling was required across the middle and northern kennel areas, where no boreholes had been located and below the east side where only a single hole (RH7) was positioned and, which, encountered locally thicker potentially mineable coal at 9.4m depth.

Subsequently the client Mr D Wardman instructed Geoinvestigate to carry out a second phase of drilling work at the kennels, to further investigate both possible coal and ironstone mining hazard to the development and to fill in the gaps in the coverage of the site. Additionally, the client instructed the drilling of a line of raking probe holes along the western site boundary, to search for Shaft 327351-282.

2.2 Mine Shaft 327351-282

According to the 2022 CMRA report, mine shaft 327351-282 is plotted at approximate coordinates E327881, N351403 placing it 9.5m from the site boundary, or perhaps up to 13m (as per the extract of UK Grid Reference Finder plan provided in Appendix 2). The shaft is located on steeply sloping woodland. The assumed shaft diameter is 2.5m and its departure/positional uncertainty is 10m.

On the other hand, given its positional uncertainty of 10m, the shaft could lie on or close to the west site boundary/fence line of Terfynfa, as shown in Appendix 3.

Based on "mechanical" bedrock depth of 4m returned by window sampling borehole BH3 (the closest sampled borehole to the shaft which encountered completely weathered mudstone between 3m to 4m) the calculated zone of influence (ZOI) of the shaft forms a segment of a circle of radius 15.25m extending up to 5.75m east into the development area, potentially impacting the rear of Plots 3 and 4 of the architects 5 Plot layout version of the development plan provided in Appendix 1. It is Geoinvestigate's experience that rotary drilling by nature of its destructive nature typically indicates bedrock position up to 1m deeper and sometimes more than found in cored boreholes.

As a consequence of the increase in ZOI size, the client, Mr D Wardman, had two options: either reduce the development to 4 Plots instead of 5, or drill a line of raking probe holes adjacent to the shaft with the hopeful expectation of confirming that the shaft was located on the slope with sufficient distance from the western site boundary so that its ZOI did not extend within the development area. After lengthy consideration the client chose the drilling option.

Geoinvestigate's July 2025 report was previously of the opinion that because shaft 327351-282 was plotted offsite on steep overgrown wooded slope it could not be searched for by drilling because of

ownership issues and neither was it possible for reasons of safe access to verify its position by walkover inspection, though the LiDAR imagery presented in Appendix 4 might provide evidence of its existence further south on the slope.

Subsequently the client notified Geoinvestigate that the uppermost section of slope on the west side of Terfynfa's fence line was under his ownership and therefore a drilling search for the shaft with raking holes passing under the western site boundary and the slope was feasible.

Prior to commencing the shaft drilling search a walkover inspection of the slope by our experienced drilling team led by Geoinvestigate's geotechnician drilling manager, Mr Anthony Montgomery, reported finding a prominent circular "crater like" depression of some 2.5m to 3m in diameter and 1m to 1.5m depth, on the slope perhaps 10 metres south of the position plotted by the CA and 10m to 15m west of the site boundary. This possible partially subsided mine shaft feature lies to the south of a clearing on the slope leading up to the path and gate on the west fence line. Photographs of the feature are provided in Appendix 5. The approximate position of the crater like "depression" is shown on the plan in Appendix 6.

However, because of uncertainty about the ownership of this lower section of slope and concerns over the safety of our staff scrambling over thickly overgrown, steep, slippery slope, the feature was not investigated further by Geoinvestigate. No fallen tree which might provide an explanation for the crater was observed near it. Whether the "crater" is indeed mine shaft 327351-282 remains unproven however both of Geoinvestigate's experienced geotechnicians who examined the feature were of the strong opinion that it resembled a partially subsided shaft. If so, the feature, which is located some 13m to the west of the site boundary and 10m south of the shafts currently plotted position, lies beyond influencing distance of the development area and therefore has no impact on it.

Notwithstanding the new information on a possible alternative shaft position further south, the shaft drilling search had to prioritise the search on the shafts currently plotted position identified by the Coal Authority - further north as this supersedes other speculative locations.

2.3 Mine Gas Hazard

Following a period of extended gas monitoring Geoinvestigate's July 2025 report identified no mine gas hazard to the development though it warned that additional gas wells and monitoring might be required if further drilling investigation at the property found shallow mine working however because further drilling investigation found no workings the July 2025 assessment remains unchanged.

3. Scope of 2nd Phase Intrusive Investigations

The 2nd phase intrusive investigation comprised the following components:

- Assisting the client, Mr D Wardman obtain a further drilling permit provided in Appendix 6
- 7 vertical rotary open holes (RH8 to RH15 without core sample recovery) sunk to depths of 30m on 22/10/25 and 23/10/25 to probe for unrecorded shallow mine workings. The boreholes were driven by Geoinvestigate's proprietary safe Microdrill® system using small diameter holes and small volume full water flush. Borehole positions and selected photographs are provided in Appendix 7. Vertical drill logs are provided in Appendix 8.
- 12 raking rotary open holes (RH16 to RH27 without core sample recovery) sunk on 24, 27 & 28/10/25 achieving declined/raking drill lengths of 16m (17m in RH28) at hole spacings of 1.5m. The holes were declined at 50° and set back 5m east of the west site fence heading west under the fence and under the steep west slope covering a horizontal distance of 10m. The desired outcome of these holes was not to reach the CAs plotted position of the shaft which lay some 10m west of the fence and 15m west of the drill starting line but to confirm the shaft was absent in a 10m wide search strip in which case assuming 5m bedrock depth the shafts ZOI does not extend into the development area. However, prior to the commencement of the search the client was warned that the shaft might be found in the strip. The shaft search logs are provided in Appendix 9. The measurements on these logs are not true depths but length along the drill string.
- Inspection of the slope by Geoinvestigate's experienced drilling manager Mr Anthony Montgomery assisted by lead driller Mr Conner Daniel to check its condition before drilling beneath the slope. It was Mr Daniel who found a crater/depression feature resembling a partially subsided shaft on the slope also inspected and confirmed to be a possible shaft by Mr Montgomery.
- Provision of a technical report including site plan, photographs, borehole logs and discussion of the investigation findings.

4. 2nd Phase Site Investigation Findings

4.1 Vertical Mine Drilling

As with previous holes RH1-RH6 on the west side of the geological fault and the property additional vertical Microdrill holes RH9, 10, 11, 12, 13, 14 and 15 also on the west side encountered a narrow intact coal horizon (0.20-0.50m thick) between 13m to 14.5m bgl followed by shale with occasional ironstone inclusions/bands up to 19m bgl followed by intact coaly mudstone between 23m to 27m. As with the earlier holes on the west side no mine working was found in any of the additional holes.

Like earlier hole RH7 on the east side of the fault additional holes RH8 & 10 on the east side encountered thin (0.4m -0.5m) intact coal around 3.60m bgl followed at 9.5m by thicker (0.80m- 1.20m) intact coal with intact coaly mudstone between 17m to 20.5m. As with RH7 no ironstone was found in either RH8 or RH10.

The approximate position of the fault is shown on the borehole plan. Comparison of the west and east boreholes indicates there has been vertical displacement of the bedrock strata across the fault.

Both sets of vertical drilling results totalling 13 holes across the development area and from west to east across the geological fault indicate the development area is not undermined within 30m depth.

4.2 Shaft Drilling Search

Holes RH16 to RH28 along the west site boundary encountered bedrock between vertical depths of 4.5 to 5m. Bedrock comprised brown sandstone between 5 to 9m (in places containing ironstone) in turn underlain by shale exceeding 12m depth. The thin coal horizon expected around 13m vertical depth was not reached by the raking holes, save for RH23 which extended to 17m with thin coal found at 12m vertical depth.

No evidence of mining disturbance, mine roof separation or upward mine void migration was identified in any of the 13 raking holes sunk under the west site fence and all returned full water flush.

No mine shaft was encountered in the 10m wide horizontal drilling search zone confirming that Shaft 327351-282 is absent in this zone and absent within 5m of the west site boundary fence. Therefore, its ZOI does not extend eastwards beyond the west site fence into the development area. Consequently, the proposed 5 Plot development layout for the site is viable and safe from mine shaft proximity hazard.

4.3 Mine Gas

As with Geoinvestigate's first phase drilling investigation no mine gas was detected during drilling in any of the 26 additional holes made in the 2nd phase ground investigation.

4.4 Slope Inspection

Recent inspection of the slope by Geoinvestigate identified a possible partially subsided mine shaft feature at the location shown to the south of the CAs plotted position. If this is shaft 327351-282 then it is too distant to impact ground stability within the development area.

5. Conclusions

Geoinvestigate's extensive phase 1 & 2 drilling investigations at the site found no evidence indicative of the presence of historical underground mining within 30m depth of the surface. Neither does Shaft 327351-282 located on the slope to the west of the west site boundary impact ground stability within the proposed 5 Plot development area. Therefore, in Geoinvestigate's opinion based on the drilling results historical mining poses a low-risk ground stability hazard to proposed the 5 Plot housing development. Consequently, regarding mining stability there is in Geoinvestigate's opinion no requirement for further mitigation neither further drilling investigation, special foundation design nor mine working stabilisation by grouting.

Because of the previous remediation of the site and the presence of a geo-membrane found at 0.50m depth in window sampling boreholes BH1 - BH4 consideration needs to be given to the safe installation of foundations through the made ground horizon into the firm natural clay commencing below this horizon at depths between 1m to 1.4m in BHs 1 - 4 but which may perhaps extend deeper approaching 3m the west site boundary. Similar care should be exercised regarding the installation of underground services across the site most importantly water supply.

While gas monitoring in the gas wells in BHs 1-4 found no hazard concentrations of ground gas owing to the nearby presence of a mine shaft and suspected historical underground mining to the north of the site beneath the haulage yard it is recommended that as a precaution new buildings within the site are fitted with gas-proof membranes. However, agreement for this precautionary mitigation should first be sought from the LPA.

END OF REPORT

The findings and contents of this (intrusive) Site Investigation Report pertain solely to the study area(s) outlined herein and are based solely on the findings of the excavations undertaken as part of the current exercise unless otherwise stated. The findings and/or recommendations of this report do not take into account any ground conditions that may be present but have hitherto not been encountered and as such further investigation and/or a reconsideration of the findings of this report should be undertaken if such conditions are subsequently encountered or an alternative development plan or land use is subsequently proposed.

This report considers various environmental and/or geological risks posed to the site and/or proposed development and offers advice accordingly as guidance only. The findings of this report will remain valid provided no change of ground or groundwater conditions, either natural or anthropogenic, take place and no warrantee is offered or implied.

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APPENDIX 1

SITE IMAGES & 5 HOUSING UNIT DEVELOPMENT LAYOUT







SITE PLAN AS PROPOSED
SCALE - 1:200

Ecology Mitigation Measures - Birds

The installation of a minimum of four bird boxes on mature trees around the site boundaries or on retained buildings will provide additional nesting habitat for birds e.g. Swallow No 17 Swift Nest Box (building) Swallow 15P Sparrow Terrace (building) Swallow 16 Nest Boxes (new) Swallow 20 Robin Boxes (new) Woodstone Nest Box (building or tree) or a similar alternative brand.

Tree boxes should be positioned approximately 3m above ground level where they will be sheltered from prevailing wind, rain and strong sunlight. Small hole boxes are best placed approximately 1-3m above ground on an edge of the tree trunk where foliage will not obscure the entrance hole.

Swift and sparrow boxes should be positioned at the eaves of a building and can be incorporated into the fabric of the building during construction.

Ecology Mitigation Measures - Planting

The following habitat creation and enhancement opportunities could be incorporated into the proposed development:

- Native tree, hedgerow and shrub planting.
- Creation of wildflower grassland.
- A green roof on new buildings.

Ecology Mitigation Measures - Bats

The installation of a minimum of five bat boxes on mature trees around the site boundaries or on the new residential dwelling will provide additional roosting habitat for bats e.g. 2F Swallow Bat Box (new) 1FF Swallow Bat Box (new) 2FF Swallow Bat Box (new) Swallow Bat Box (building) Vireo Pro Woodstone Bat Box (building) or a similar alternative brand.

Bat boxes should be positioned 3-5m above ground level facing in a south or south-westerly direction with a clear flight path to and from the entrance, away from artificial light.

Alternatively, bat boxes could be incorporated into the fabric of the new buildings on the site e.g. Habitat Bat Box Swallow 1FF Bat Tube Bat tubes should be inserted into the fabric of the building during construction, positioned 3-5m above ground level facing in a south or south-westerly direction with a clear flight path to and from the entrance and facing landscaped areas, away from artificial light.

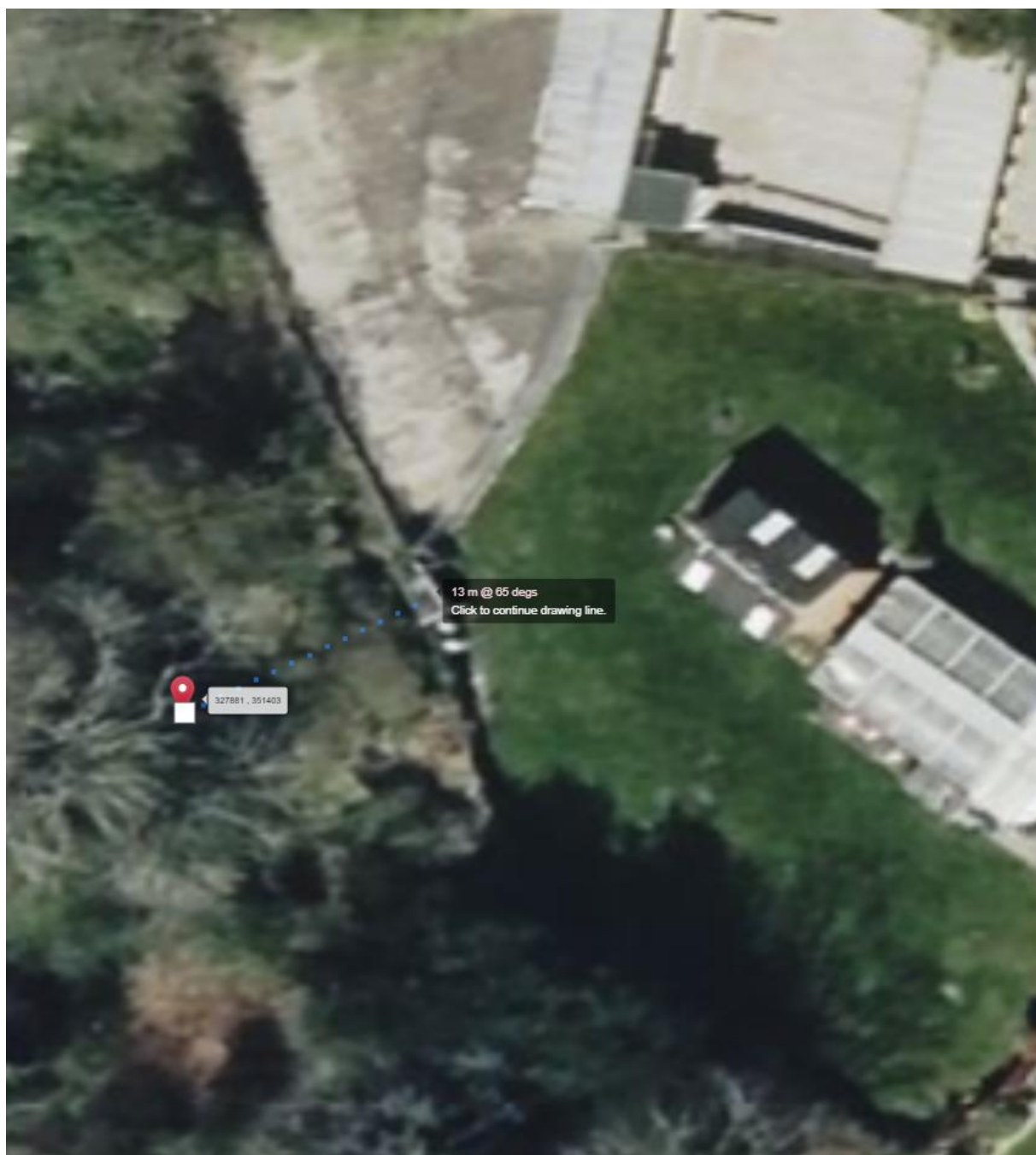


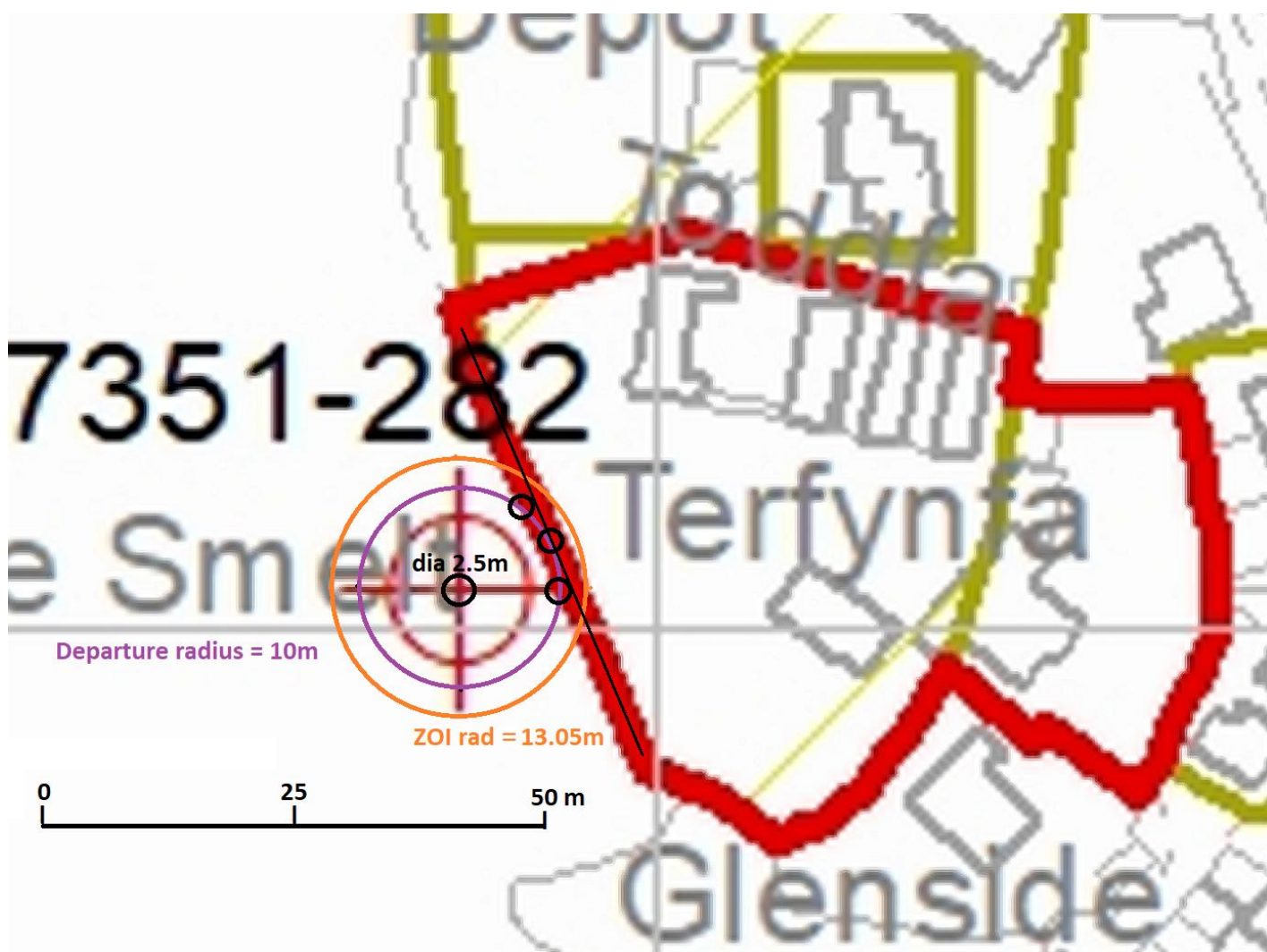
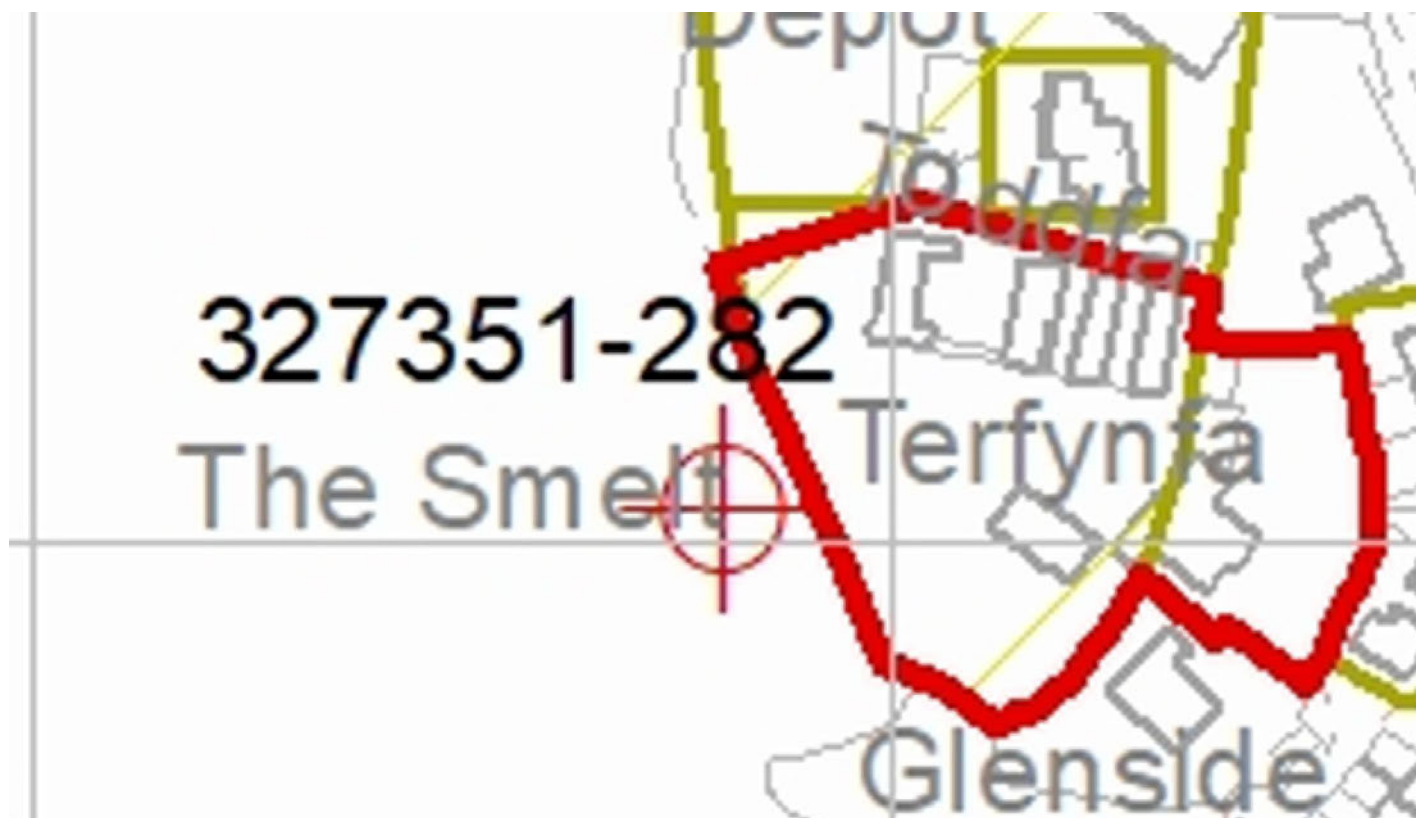
HDS ARCHITECTURAL SERVICES
125-127, Wrexham Road, Wrexham, LL11 3AB
01928 541111
hds@hdsarchitectural.co.uk

Project: Residential Development in Land at Terfynfa, 12 Smelt Road, Coedpoeth, Wrexham, LL11 3SH.	
Title: Site Plan as Proposed	Scale (A3): 1:200
Drawn By: HDS/PSD	Date: August 2022
Revisions:	

APPENDIX 2

CA MINE SHAFT LOCATION & INITIAL ZOI BASED ON 1.8m DRIFT/BEDROCK DEPTH

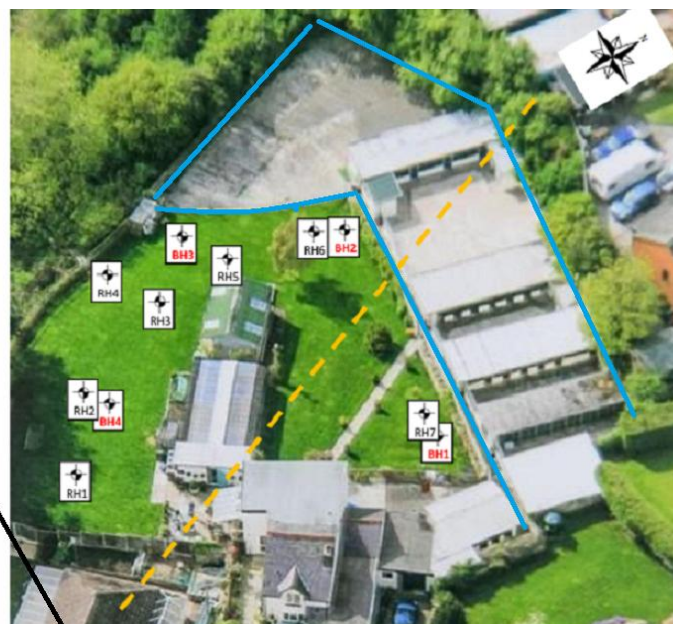
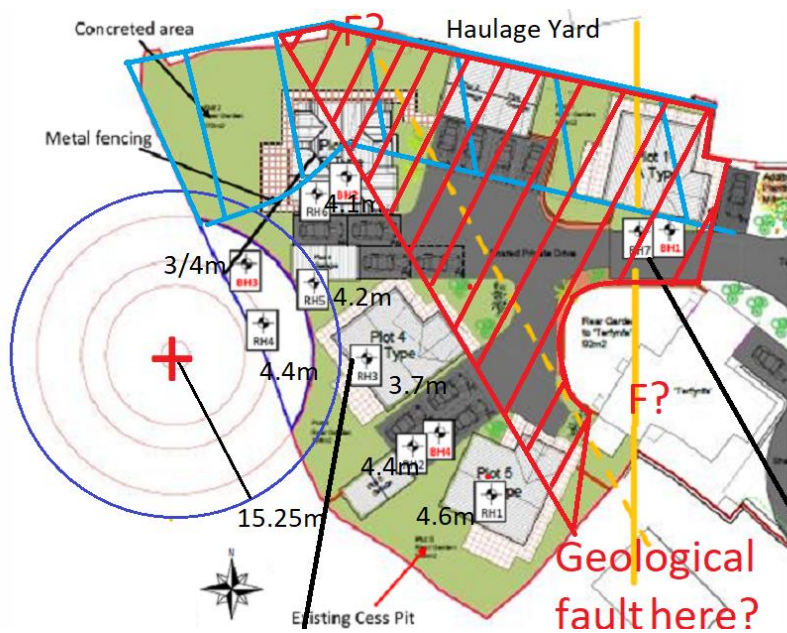
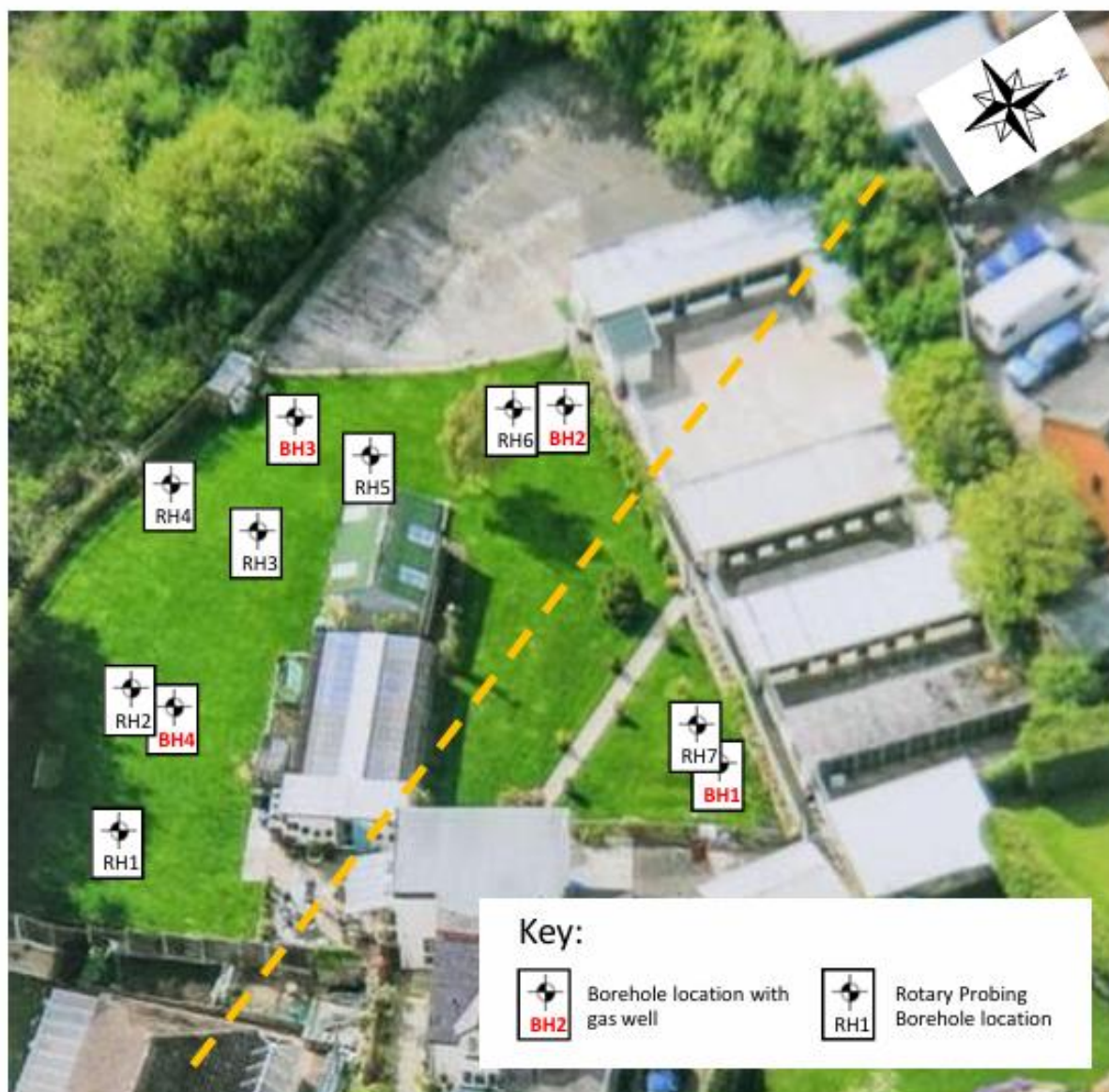






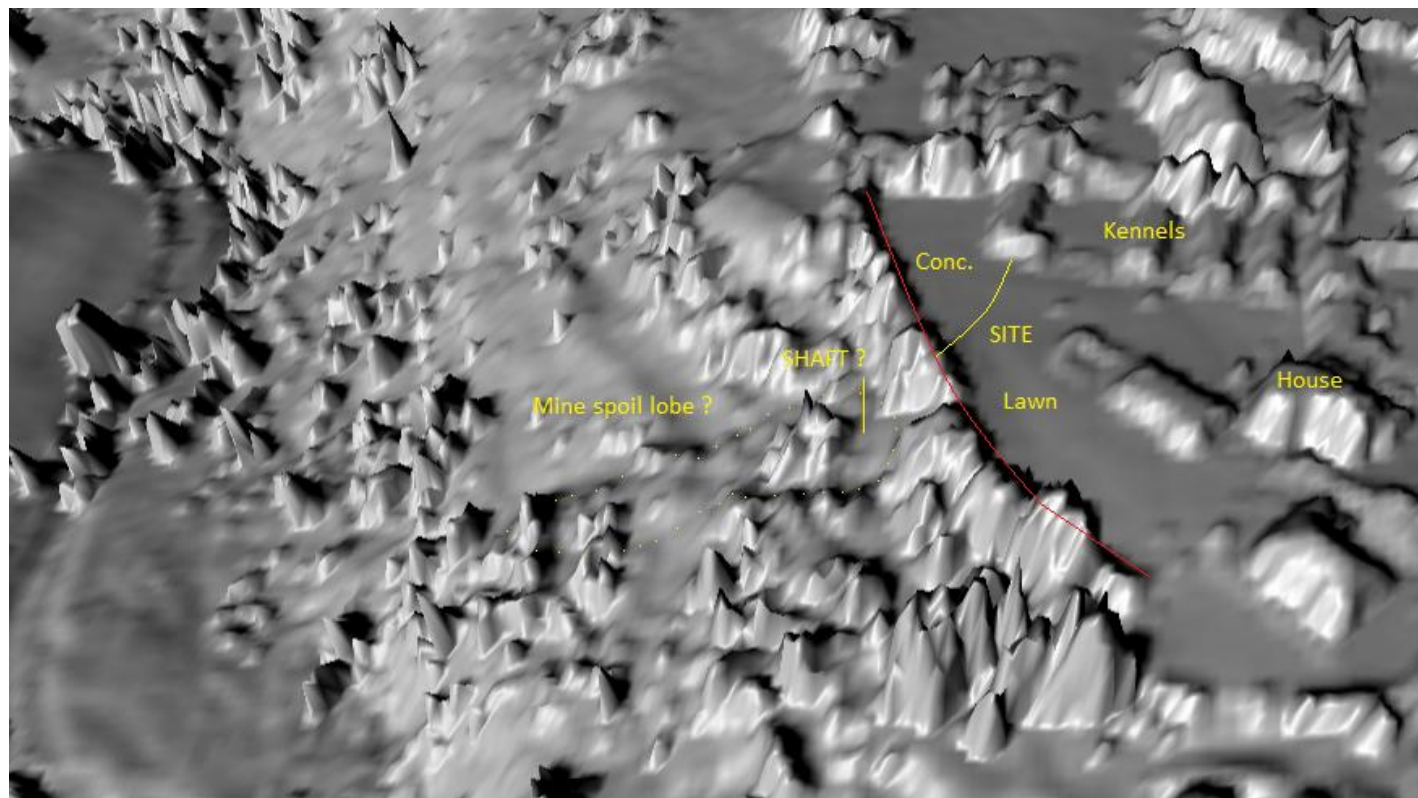
APPENDIX 3

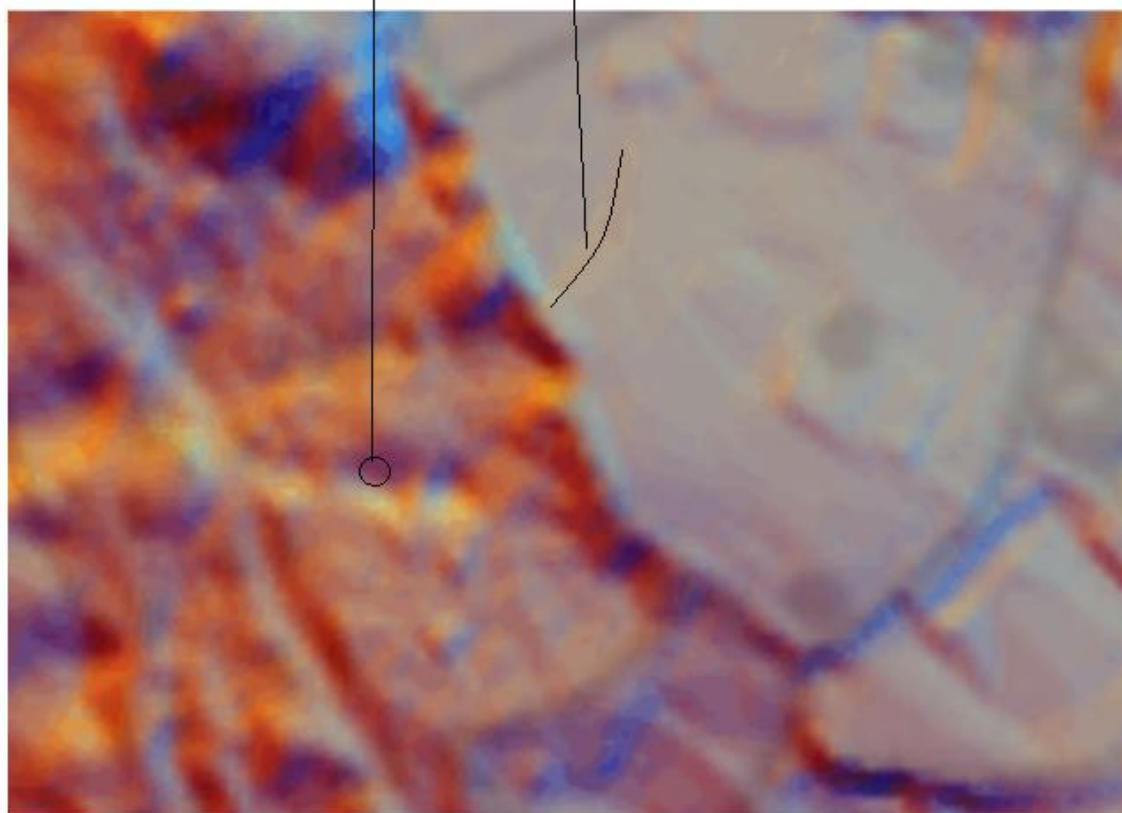
1st PHASE BOREHOLE LOCATIONS & REVISED ZOI BASED ON 4m BEDROCK DEPTH IN BH3



APPENDIX 4

LiDAR IMAGERY





APPENDIX 5

WEST SLOPE PHOTOS & POSSIBLE ALTERNATIVE MINE SHAFT LOCATION









APPENDIX 6

NEW CA DRILL PERMIT



Mining
Remediation
Authority

Permit to Enter or Disturb Mining Remediation Authority Interests

Permit 30528

Name and Address of Permit Holder:

David Wardman
Terfynfa Kennels
12 Smelt Road
Coedpoeth
LL11 3SH

Site Location:

Land at
Terfynfa Kennels
12 Smelt Road
Coedpoeth
LL11 3SH

This certificate hereby grants the above named Permit Holder a Permit to carry out:-

Ground investigation by 8 boreholes to 30m to determine presence of shallow mine workings and investigation of mine entry 327351-282 by 12 boreholes to 15m

within the Authority's interests at the identified site location above as shown on the Grant Permit Boundary (overleaf) for the period of 12 months from the granted date shown below. *The granting of this Permit does not constitute advice given by the Authority in relation to the proposed operations. It is the Permit Holder's responsibility to obtain appropriate health, safety, environmental, technical and legal advice.*

Conditions:

- *Manned entry (i.e.) into mine entries/workings) is strictly prohibited.*
- *Water flush*
- *Gas Monitoring CO, CH₄, CO₂, O₂, H₂S at borehole and rig*
- *Operators undertaking the work must be in possession of this certificate and the Permit boundary plan at the time of works*
- *Appropriate borehole sealing without delay and to withstand site level changes*

Signed: Amy McKenna Granted Date: 17th October 2025

For and on behalf of the Mining Remediation Authority

Nominated Representative: Amy McKenna, Permitting Manager;

Mining Remediation Authority, Permitting Office, 200 Lichfield Lane, Mansfield, Notts, NG18 4RG

Tel: 01623 637450; E-Mail: permissions@coal.gov.uk



Mining
Remediation
Authority

Granted Permit Boundary

Permit Ref: 30528

Permit Boundary:

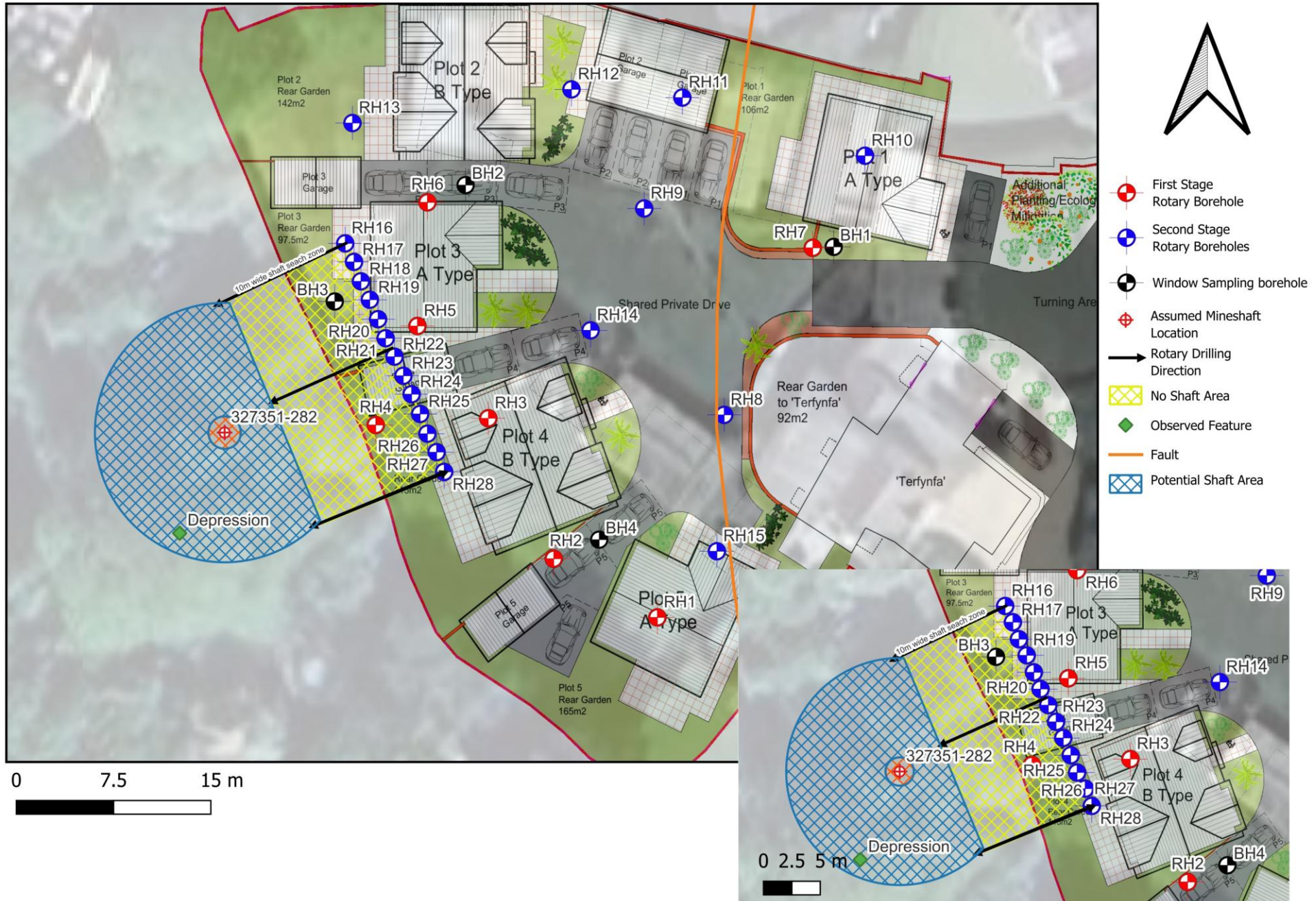


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The Mining Remediation Authority is the trading name of the Coal Authority ('TCA') established pursuant to Section 1 of the Coal Industry Act 1994, of 200 Lichfield Lane, Berry Hill, Mansfield, Nottinghamshire, NG18 4RG. The Coal Authority remains the legal name of the Authority

APPENDIX 7

PHASE 1 & 2 BOREHOLE LOCATIONS
AND ROTARY DRILLING PHOTOS
RH10 BLACK COAL FLUSH 9.80-10.60m







APPENDIX 8

VERTICAL DRILL LOGS RH8-RH15



Client Ref:

Our Ref: G25382

Date: 22/10/2025

Location: Terfynfa Kennels, 12 Smelt Road, Wrexham LL11

Comments:

RH 8

Sheet No 1 of 2

Depth (m)	Description of Strata	Thick-ness	Legend	Flush	Depth (m)
3.30	TURF / brown and dark brown DRIFT.	3,300			2.50
3.60	Grey MUDSTONE.	300			
4.10	Black COAL.	500			
5.90	Grey MUDSTONE.	1,800			5.00
7.20	Dark grey MUDSTONE and COAL.	1,300			7.50
9.30	Grey SHALE.	2,100			
10.50	Black COAL.	1,200			10.00
12.20	Grey MUDSTONE.	1,800			
17.10	Grey SHALE.	4,900			12.50
					15.00
					17.50
	Dark grey MUDSTONE with many COAL fragments.	3,500			20.00
20.60					
	Grey SHALE and SANDSTONE.	9,400			22.50
					25.00
	Rotary hole continued on page 2				
Remarks: Casing to 2.00m Microdrill rotary open hole borehole to 30.00 m No cores recovered from borehole No gas detected from borehole on completion Full flush maintained. No voids encountered.				RH 8 Drilled by: AM Logged by: AM	



Rotary Borehole Log

Client Ref:

Our Ref: G25382

Date: 22/10/2025

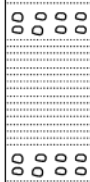
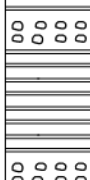
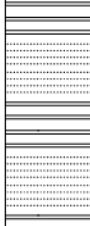
Location: Terfynfa Kennels, 12 Smelt Road, Wrexham LL11

Comments:

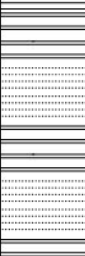
RH 8

Sheet No 2 of 2

Depth (m)	Description of Strata	Thick -ness	Legend	Flush	Depth (m)
30.00	Grey SHALE and SANDSTONE.	9,400		Full Flush	30.00
	Rotary hole terminated at 30.00m				
Remarks: Casing to 2.00m Microdrill rotary open hole borehole to 30.00 m No cores recovered from borehole No gas detected from borehole on completion Full flush maintained. No voids encountered.				RH 8 Drilled by: AM Logged by: AM	

		Client Ref: G25382	RH 9		
		Our Ref: G25382	Sheet No 1 of 2		
		Date: 22/10/2025			
		Location: Terfynfa Kennels, 12 Smelt Road, Wrexham LL11			
Rotary Borehole Log		Comments:			
Depth (m)	Description of Strata	Thick-ness	Legend	Flush	Depth (m)
3.50	TURF / Brown and dark brown DRIFT.	3,500			2.50
8.70	Brown SANDSTONE with occasional hard IRONSTONE inclusions.	5,200			5.00
					7.50
14.10	Grey SHALE.	5,400			10.00
					12.50
14.40	Black COAL.	300			15.00
18.90	Grey SHALE with occasional IRONSTONE inclusions.	4,500			17.50
					20.00
23.70	Grey SHALE and SANDSTONE.	4,800			22.50
	Dark grey MUDSTONE with many COAL fragments.	2,400			25.00
	Rotary hole continued on page 2				
Remarks:				RH 9	
Casing to 3.00m				Drilled by: AM	
Microdrill rotary open hole borehole to 30.00 m				Logged by: AM	
No cores recovered from borehole					
No gas detected from borehole on completion					
Full flush maintained. No voids encountered.					

		Client Ref:		RH 9	
		Our Ref: G25382			
Rotary Borehole Log		Date: 22/10/2025		Sheet No 2 of 2	
		Location: Terfynfa Kennels, 12 Smelt Road, Wrexham LL11		Comments:	
Depth (m)	Description of Strata	Thick -ness	Legend	Flush	Depth (m)
26.10	Dark grey MUDSTONE with many COAL fragments.	2,400			
	Grey SANDSTONE.	3,900			27.50
30.00				Full Flush	30.00
	Rotary hole terminated at 30.00m				
Remarks: Casing to 3.00m Microdrill rotary open hole borehole to 30.00 m No cores recovered from borehole No gas detected from borehole on completion Full flush maintained. No voids encountered.				RH 9 Drilled by: AM Logged by: AM	

		Client Ref: G25382	RH 10		
		Our Ref: G25382	Sheet No 1 of 2		
		Date: 22/10/2025			
		Location: Terfynfa Kennels, 12 Smelt Road, Wrexham LL11			
Rotary Borehole Log		Comments:			
Depth (m)	Description of Strata	Thick-ness	Legend	Flush	Depth (m)
2.90	PAVING / Brown and dark brown DRIFT.	2,900			2.50
3.80	Grey MUDSTONE.	900			
4.20	Black COAL.	400			
5.80	Grey MUDSTONE.	1,600			5.00
7.50	Dark grey MUDSTONE and COAL.	1,700			7.50
9.80	Grey SHALE.	2,300			10.00
10.60	Black COAL.	800			
12.50	Grey MUDSTONE.	1,900			12.50
17.60	Grey SHALE.	5,100			15.00
21.10	Dark grey MUDSTONE with many COAL fragments.	3,500			17.50
	Grey SHALE and SANDSTONE.	8,900			20.00
	Rotary hole continued on page 2				22.50
					25.00
Remarks: Casing to 2.00m Microdrill rotary open hole borehole to 30.00 m No cores recovered from borehole No gas detected from borehole on completion Full flush maintained. No voids encountered.				RH 10 Drilled by: AM Logged by: AM	



Rotary Borehole Log

Client Ref:

Our Ref: G25382

Date: 22/10/2025

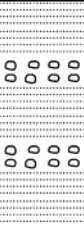
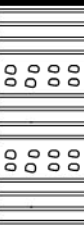
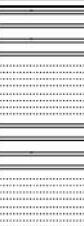
Location: Terfynfa Kennels, 12 Smelt Road, Wrexham LL11

Comments:

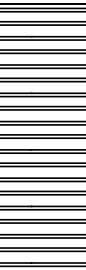
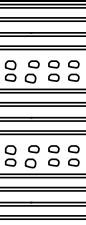
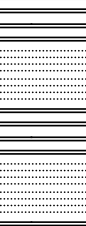
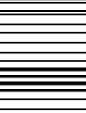
RH 10

Sheet No 2 of 2

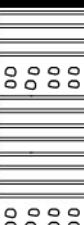
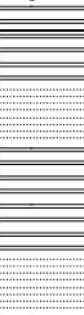
Depth (m)	Description of Strata	Thick -ness	Legend	Flush	Depth (m)
30.00	Grey SHALE and SANDSTONE.	8,900		Full Flush	30.00
	Rotary hole terminated at 30.00m				
Remarks: Casing to 2.00m Microdrill rotary open hole borehole to 30.00 m No cores recovered from borehole No gas detected from borehole on completion Full flush maintained. No voids encountered.				RH 10 Drilled by: AM Logged by: AM	

		Client Ref: Our Ref: G25382 Date: 22/10/2025 Location: Terfynfa Kennels, 12 Smelt Road, Wrexham LL11			RH 11 Sheet No 1 of 2	
		Comments:				
Depth (m)	Description of Strata	Thickness	Legend	Flush	Depth (m)	
4.10	CONCRETE / Brown and dark brown DRIFT.	4,100			2.50	
8.70	Brown SANDSTONE with occasional hard IRONSTONE inclusions.	4,600			5.00	
13.60	Grey SHALE.	4,900			10.00	
13.80	Black COAL.	200			12.50	
18.50	Grey SHALE with occasional IRONSTONE inclusions.	4,700			15.00	
23.10	Grey SHALE and SANDSTONE.	4,600			17.50	
	Dark grey MUDSTONE with many COAL fragments.	3,400			20.00	
	Rotary hole continued on page 2				22.50	
					25.00	
Remarks: Casing to 2.00m Microdrill rotary open hole borehole to 30.00 m No cores recovered from borehole No gas detected from borehole on completion Full flush maintained. No voids encountered.					RH 11 Drilled by: AM Logged by: AM	

		Client Ref:		RH 11	
		Our Ref: G25382			
Rotary Borehole Log		Date: 22/10/2025		Sheet No 2 of 2	
		Location: Terfynfa Kennels, 12 Smelt Road, Wrexham LL11		Comments:	
Depth (m)	Description of Strata	Thick -ness	Legend	Flush	Depth (m)
26.50	Dark grey MUDSTONE with many COAL fragments.	3,400			
30.00	Grey SANDSTONE.	3,500			27.50
	Rotary hole terminated at 30.00m			Full Flush	30.00
Remarks: Casing to 2.00m Microdrill rotary open hole borehole to 30.00 m No cores recovered from borehole No gas detected from borehole on completion Full flush maintained. No voids encountered.					
				RH 11	
				Drilled by: AM Logged by: AM	

		Client Ref: Our Ref: G25382 Date: 22/10/2025 Location: Terfynfa Kennels, 12 Smelt Road, Wrexham LL11			RH 12 Sheet No 1 of 2	
		Comments:				
Depth (m)	Description of Strata	Thickness	Legend	Flush	Depth (m)	
3.90	CONCRETE / Brown and dark brown DRIFT.	3,900			2.50	
8.50	Brown SANDSTONE with occasional hard IRONSTONE inclusions.	4,600			5.00	
13.30	Grey SHALE.	4,800			7.50	
13.60	Black COAL.	300			10.00	
18.10	Grey SHALE with occasional IRONSTONE inclusions.	4,500			12.50	
22.50	Grey SHALE and SANDSTONE.	4,400			15.00	
	Dark grey MUDSTONE with many COAL fragments.	3,600			17.50	
	Rotary hole continued on page 2				20.00	
					22.50	
					25.00	
Remarks: Casing to 3.00m Microdrill rotary open hole borehole to 30.00 m No cores recovered from borehole No gas detected from borehole on completion Full flush maintained. No voids encountered.				RH 12 Drilled by: AM Logged by: AM		

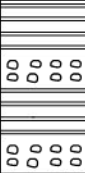
		Client Ref:		RH 12	
		Our Ref: G25382			
Rotary Borehole Log		Date: 22/10/2025		Sheet No 2 of 2	
		Location: Terfynfa Kennels, 12 Smelt Road, Wrexham LL11		Comments:	
Depth (m)	Description of Strata	Thick -ness	Legend	Flush	Depth (m)
26.10	Dark grey MUDSTONE with many COAL fragments.	3,600			
	Grey SANDSTONE.	3,900			27.50
30.00				Full Flush	30.00
	Rotary hole terminated at 30.00m				
Remarks: Casing to 3.00m Microdrill rotary open hole borehole to 30.00 m No cores recovered from borehole No gas detected from borehole on completion Full flush maintained. No voids encountered.				RH 12	
				Drilled by: AM Logged by: AM	

		Client Ref: Our Ref: G25382 Date: 22/10/2025 Location: Terfynfa Kennels, 12 Smelt Road, Wrexham LL11		RH 13 Sheet No 1 of 2	
Rotary Borehole Log		Comments:			
Depth (m)	Description of Strata	Thickness	Legend	Flush	Depth (m)
4.10	CONCRETE / Brown and dark brown DRIFT.	4,100			2.50
8.90	Brown SANDSTONE.	4,800			5.00 7.50
13.70	Grey SHALE.	4,800			10.00 12.50
14.10	Black COAL.	400			
18.70	Grey SHALE with occasional IRONSTONE inclusions.	4,600			15.00 17.50
24.10	Grey SHALE and SANDSTONE.	5,400			20.00 22.50
	Dark grey MUDSTONE with many COAL fragments. Rotary hole continued on page 2	2,700			25.00
Remarks: Casing to 3.00m Microdrill rotary open hole borehole to 30.00 m No cores recovered from borehole No gas detected from borehole on completion Full flush maintained. No voids encountered.				RH 13 Drilled by: AM Logged by: AM	

		Client Ref:		RH 13	
		Our Ref: G25382			
Rotary Borehole Log		Date: 22/10/2025		Sheet No 2 of 2	
		Location: Terfynfa Kennels, 12 Smelt Road, Wrexham LL11		Comments:	

Depth (m)	Description of Strata	Thick -ness	Legend	Flush	Depth (m)
26.80	Dark grey MUDSTONE with many COAL fragments.	2,700			27.50
30.00	Grey SANDSTONE.	3,200			
	Rotary hole terminated at 30.00m			Full Flush	30.00

Remarks: Casing to 3.00m Microdrill rotary open hole borehole to 30.00 m No cores recovered from borehole No gas detected from borehole on completion Full flush maintained. No voids encountered.		RH 13
Drilled by: AM Logged by: AM		

		Client Ref: G25382 Our Ref: 22/10/2025 Date: 22/10/2025 Location: Terfynfa Kennels, 12 Smelt Road, Wrexham LL11	RH 14 Sheet No 1 of 2		
Rotary Borehole Log		Comments:			
Depth (m)	Description of Strata	Thick-ness	Legend	Flush	Depth (m)
3.90	TURF / Brown and dark brown DRIFT.	3,900			2.50
8.10	Brown SANDSTONE.	4,200			5.00
13.50	Grey SHALE.	5,400			7.50
13.90	Black COAL.	400			10.00
18.40	Grey SHALE with occasional IRONSTONE inclusions.	4,500			12.50
23.30	Grey SHALE and SANDSTONE.	4,900			15.00
	Dark grey MUDSTONE with many COAL fragments.	2,500			17.50
	Rotary hole continued on page 2				20.00
					22.50
					25.00
Remarks: Casing to 3.00m Microdrill rotary open hole borehole to 30.00 m No cores recovered from borehole No gas detected from borehole on completion Full flush maintained. No voids encountered.				RH 14 Drilled by: AM Logged by: AM	



Rotary Borehole Log

Client Ref:

Our Ref: G25382

Date: 22/10/2025

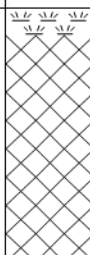
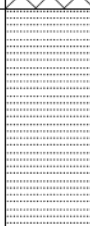
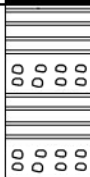
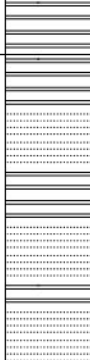
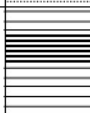
Location: Terfynfa Kennels, 12 Smelt Road, Wrexham LL11

Comments:

RH 14

Sheet No 2 of 2

Depth (m)	Description of Strata	Thick -ness	Legend	Flush	Depth (m)
25.80	Dark grey MUDSTONE with many COAL fragments.	2,500			
	Grey SANDSTONE.	4,200			27.50
30.00				Full Flush	30.00
	Rotary hole terminated at 30.00m				
Remarks: Casing to 3.00m Microdrill rotary open hole borehole to 30.00 m No cores recovered from borehole No gas detected from borehole on completion Full flush maintained. No voids encountered.				RH 14 Drilled by: AM Logged by: AM	

		Client Ref: G25382	RH 15		
		Our Ref: 22/10/2025	Sheet No 1 of 2		
Rotary Borehole Log		Date: 22/10/2025	Terfynfa Kennels, 12 Smelt Road, Wrexham LL11		
		Location: Terfynfa Kennels, 12 Smelt Road, Wrexham LL11			
		Comments:			
Depth (m)	Description of Strata	Thick-ness	Legend	Flush	Depth (m)
4.40	TURF / Brown and dark blackish brown DRIFT.	4,400			2.50
8.40	Brown SANDSTONE.	4,000			5.00
13.00	Grey SHALE.	4,600			7.50
13.50	Black COAL.	500			10.00
17.30	Grey SHALE with occasional IRONSTONE inclusions.	3,800			12.50
23.10	Grey SHALE and SANDSTONE.	5,800			15.00
	Dark grey MUDSTONE with many COAL fragments.	3,000			17.50
	Rotary hole continued on page 2				20.00
					22.50
					25.00
Remarks: Casing to 3.00m Microdrill rotary open hole borehole to 30.00 m No cores recovered from borehole No gas detected from borehole on completion Full flush maintained. No voids encountered.				RH 15	
				Drilled by:	AM
				Logged by:	AM

		Client Ref:		RH 15	
		Our Ref: G25382			
Rotary Borehole Log		Date: 22/10/2025		Sheet No 2 of 2	
		Location: Terfynfa Kennels, 12 Smelt Road, Wrexham LL11			
		Comments:			
Depth (m)	Description of Strata	Thick -ness	Legend	Flush	Depth (m)
26.10	Dark grey MUDSTONE with many COAL fragments.	3,000			
	Grey SANDSTONE.	3,900			27.50
30.00				Full Flush	30.00
	Rotary hole terminated at 30.00m				
Remarks: Casing to 3.00m Microdrill rotary open hole borehole to 30.00 m No cores recovered from borehole No gas detected from borehole on completion Full flush maintained. No voids encountered.				RH 15	
				Drilled by:	AM
				Logged by:	AM

APPENDIX 9

RAKING/DECLINED SHAFT SEARCH DRILL LOGS

RH16-RH28



Rotary Borehole Log

Client Ref:

Our Ref: G25382

Date: 22/10/2025

Location: Terfynfa Kennels, 12 Smelt Road, Wrexham LL11

Comments:

RH 16

Sheet No 1 of 1

[illegible]

GEO INVESTIGATE
Rotary Borehole Log

Client Ref:

Our Ref: G25382

Date: 22/10/2025

Location: Terfynfa Kennels, 12 Smelt Road, Wrexham LL11

Comments:

RH 17

Sheet No 1 of 1

[illegible]



Rotary Borehole Log

Client Ref:

Our Ref: G25382

Date: 22/10/2025

Location: Terfynfa Kennels, 12 Smelt Road, Wrexham LL11

Comments:

RH 18

Sheet No 1 of 1

[illegible]



Rotary Borehole Log

Client Ref:

Our Ref: G25382

Date: 22/10/2025

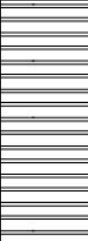
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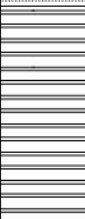
Comments:

RH 19

Sheet No 1 of 1

[illegible]

 GEO INVESTIGATE		Client Ref: Our Ref: G25382 Date: 22/10/2025 Location: Terfynfa Kennels, 12 Smelt Road, Wrexham LL11 Comments:	RH 20 Sheet No 1 of 1		
Rotary Borehole Log					
Depth (m)	Description of Strata	Thick -ness	Legend	Flush	Depth (m)
6.00	CONCRETE / Brown and black DRIFT. >Becoming brown from 3.40m.	6,000			2.50 5.00
11.70	Brown SANDSTONE.	5,700			7.50 10.00
16.00	Grey SHALE.	4,300			12.50 15.00
	Rotary hole terminated at 16.00m			Full Flush	16.00
Remarks: Casing to 3.00m Microdrill rotary open hole borehole to 16.00 m Rotary hole drilled at 40° No gas detected from borehole on completion Full flush maintained. No voids encountered.				RH 20 Drilled by: AM Logged by: AM	

 Rotary Borehole Log		Client Ref: G25382 Our Ref: G25382 Date: 22/10/2025 Location: Terfynfa Kennels, 12 Smelt Road, Wrexham LL11 Comments:	RH 21 Sheet No 1 of 1		
Depth (m)	Description of Strata	Thickness	Legend	Flush	Depth (m)
5.90	CONCRETE / Brown and black DRIFT. >Becoming brown from 3.50m.	5,900			2.50 5.00
11.90	Brown SANDSTONE.	6,000			7.50 10.00
16.00	Grey SHALE.	4,100			12.50 15.00
	Rotary hole terminated at 16.00m			Full Flush	16.00
Remarks: Casing to 3.00m Microdrill rotary open hole borehole to 16.00 m Rotary hole drilled at 40° No gas detected from borehole on completion Full flush maintained. No voids encountered.				RH 21 Drilled by: AM Logged by: AM	

Client Ref:

Our Ref: G25382

Date: 22/10/2025

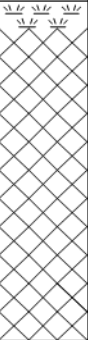
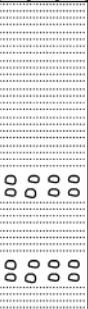
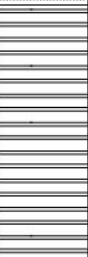
Location: Terfynfa Kennels, 12 Smelt Road, Wrexham LL11

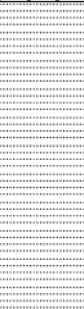
RH 22

Sheet No 1 of 1

Comments:

Rotary Borehole Log

Depth (m)	Description of Strata	Thick-ness	Legend	Flush	Depth (m)
6.20	TURF / Brown and black DRIFT. >Becoming brown from 3.40m	6,200			2.50 5.00
11.80	Brown SANDSTONE. >Occasional hard IRONSTONE inclusions from 9.10m.	5,600			7.50 10.00
16.00	Grey SHALE.	4,200			12.50 15.00
	Rotary hole terminated at 16.00m			Full Flush	16.00
Remarks: Casing to 3.00m Microdrill rotary open hole borehole to 16.00 m Rotary hole drilled at 40° No gas detected from borehole on completion Full flush maintained. No voids encountered.				RH 22 Drilled by: AM Logged by: AM	

		Client Ref: Our Ref: G25382 Date: 22/10/2025 Location: Terfynfa Kennels, 12 Smelt Road, Wrexham LL11		RH 23 Sheet No 1 of 1	
Rotary Borehole Log		Comments:			
Depth (m)	Description of Strata	Thickness	Legend	Flush	Depth (m)
6.10	TURF / Brown and black DRIFT. >Becoming brown from 3.40m	6,100			2.50 5.00
11.60	Brown SANDSTONE.	5,500			7.50 10.00
16.00	Grey SHALE.	4,400			12.50 15.00
				Full Flush	16.00
	Rotary hole terminated at 16.00m				
Remarks: Casing to 3.00m Microdrill rotary open hole borehole to 16.00 m Rotary hole drilled at 40° No gas detected from borehole on completion Full flush maintained. No voids encountered.				RH 23 Drilled by: AM Logged by: AM	



Client Ref:

Our Ref: G25382

Date: 22/10/2025

Location: Terfynfa Kennels, 12 Smelt Road, Wrexham LL11

Comments:

RH 24

Sheet No 1 of 1

[illegible]

Rotary Borehole Log

Client Ref:

Our Ref: G25382

Date: 22/10/2025

Location: Terfynfa Kennels, 12 Smelt Road, Wrexham LL11

Comments:

RH 25

Sheet No 1 of 1

Depth (m)	Description of Strata	Thick- ness	Legend	Flush	Depth (m)
6.20	TURF / Brown and black DRIFT. >Becoming brown from 3.80m	6,200			2.50 5.00
12.10	Brown SANDSTONE.	5,900			7.50 10.00
16.00	Grey SHALE.	3,900			12.50 15.00
	Rotary hole terminated at 16.00m			Full Flush	16.00
Remarks: Casing to 3.00m Microdrill rotary open hole borehole to 16.00 m Rotary hole drilled at 40° No gas detected from borehole on completion Full flush maintained. No voids encountered.				RH 25 Drilled by: AM Logged by: AM	

Client Ref:

Our Ref: G25382

Date: 22/10/2025

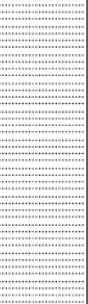
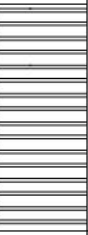
Location: Terfynfa Kennels, 12 Smelt Road, Wrexham LL11

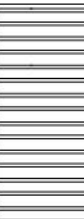
RH 26

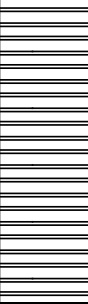
Sheet No 1 of 1

Comments:

Rotary Borehole Log

Depth (m)	Description of Strata	Thick -ness	Legend	Flush	Depth (m)
6.40	TURF / Brown and black DRIFT. >Becoming brown from 3.90m	6,400			2.50 5.00
12.20	Brown SANDSTONE.	5,800			7.50 10.00
16.00	Grey SHALE.	3,800			12.50 15.00
	Rotary hole terminated at 16.00m			Full Flush	16.00
Remarks: Casing to 3.00m Microdrill rotary open hole borehole to 16.00 m Rotary hole drilled at 40° No gas detected from borehole on completion Full flush maintained. No voids encountered.				RH 26 Drilled by: AM Logged by: AM	

		Client Ref: Our Ref: G25382 Date: 22/10/2025 Location: Terfynfa Kennels, 12 Smelt Road, Wrexham LL11		RH 27 Sheet No 1 of 1	
Rotary Borehole Log		Comments:			
Depth (m)	Description of Strata	Thickness	Legend	Flush	Depth (m)
6.30	TURF / Brown and black DRIFT. >Becoming brown from 4.10m	6,300			2.50 5.00
11.90	Brown SANDSTONE.	5,600			7.50 10.00
16.00	Grey SHALE.	4,100		Full Flush	12.50 15.00 16.00
	Rotary hole terminated at 16.00m				
Remarks: Casing to 4.00m Microdrill rotary open hole borehole to 16.00 m Rotary hole drilled at 40° No gas detected from borehole on completion Full flush maintained. No voids encountered.				RH 27 Drilled by: AM Logged by: AM	

 Client Ref: Our Ref: G25382 Date: 22/10/2025 Location: Terfynfa Kennels, 12 Smelt Road, Wrexham LL11 Comments: RH 28 <i>Sheet No 1 of 1</i>					
Depth (m)	Description of Strata	Thickness	Legend	Flush	Depth (m)
6.30	TURF / Brown DRIFT.	6,300			2.50 5.00
10.50	Brown SANDSTONE. Weak.	4,200			7.50 10.00
16.10	Grey SHALE.	5,600			12.50 15.00
16.20	Black COAL.	100			
17.00	Grey SHALE with hard IRONSTONE inclusions.	800			17.00
Remarks: Casing to 5.00m Microdrill rotary open hole borehole to 17.00 m Rotary hole drilled at 40° No gas detected from borehole on completion Full flush maintained. No voids encountered.				RH 28 Drilled by: AM Logged by: AM	