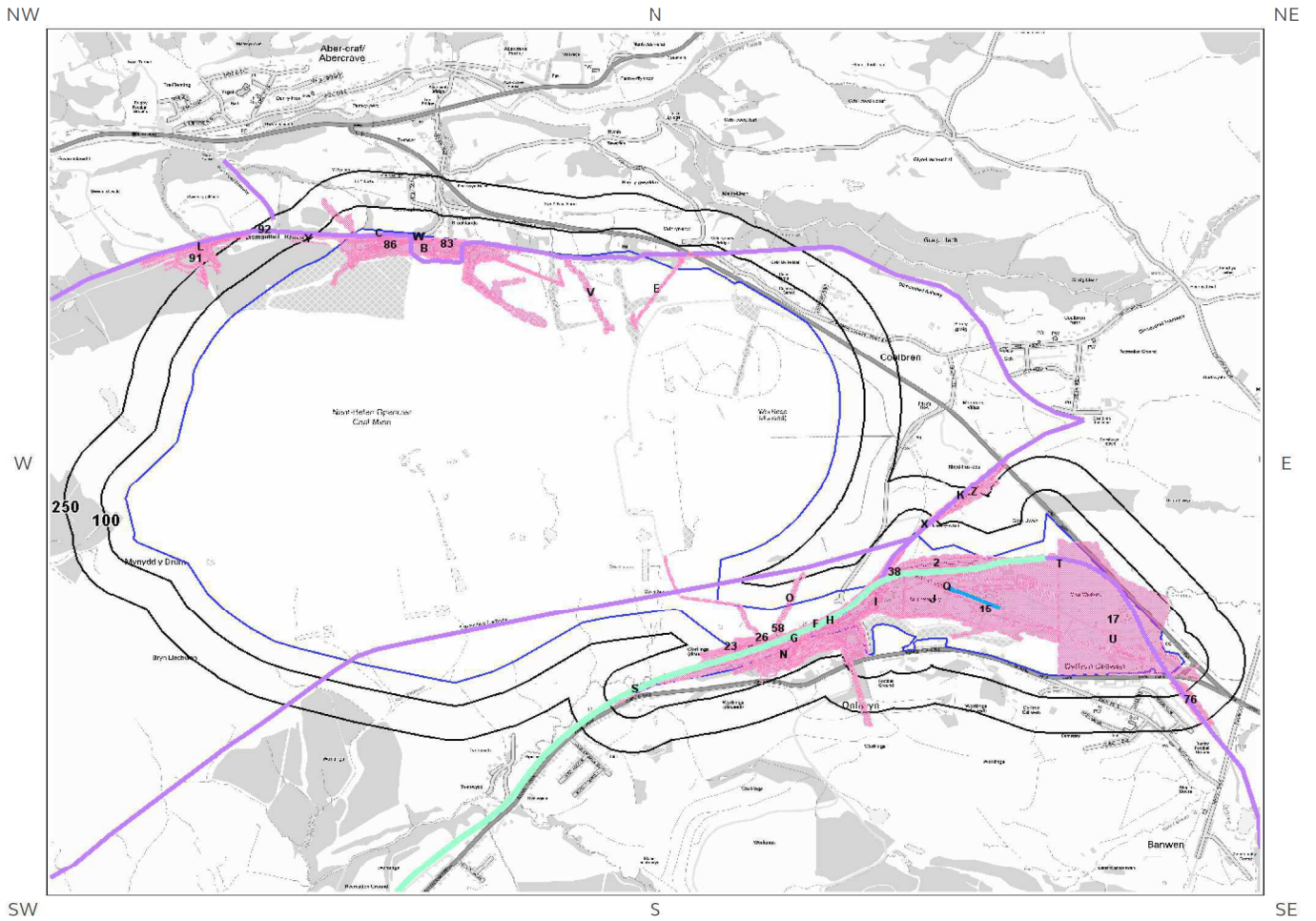


Distance (m)	Direction	Sample Type	Arsenic (As)	Cadmium (Cd)	Chromium (Cr)	Nickel (Ni)	Lead (Pb)
0.0	On Site	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	3.0 - 6.0 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	45 - 60 mg/kg	3.0 - 6.0 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	35 - 45 mg/kg	3.0 - 6.0 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	2.2 - 3.0 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	3.0 - 6.0 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	1.8 - 2.2 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	3.0 - 6.0 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	45 - 60 mg/kg	3.0 - 6.0 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	3.0 - 6.0 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
1.0	SE	Sediment	35 - 45 mg/kg	3.0 - 6.0 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
4.0	NE	Sediment	35 - 45 mg/kg	3.0 - 6.0 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
7.0	NE	Sediment	35 - 45 mg/kg	3.0 - 6.0 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
8.0	SE	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
10.0	N	Sediment	35 - 45 mg/kg	1.8 - 2.2 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
10.0	NW	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
11.0	SE	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
13.0	N	Sediment	35 - 45 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
13.0	NE	Sediment	45 - 60 mg/kg	3.0 - 6.0 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
14.0	N	Sediment	35 - 45 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
16.0	N	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
16.0	N	Sediment	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
20.0	N	Sediment	35 - 45 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
47.0	SW	Sediment	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg










*As this data is based upon underlying 1:50,000 scale geological information, a 50m buffer has been added to the search radius.

9 Railways and Tunnels map



Railways and Tunnels Legend

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Ordnance Survey licence 100035207.
© OpenStreetMapContributors

- | | | | |
|---|--|---|-------------------------------------|
|  | Underground or Partially Underground Railway / Subway System |  | Railway Track (OpenStreetMap) |
|  | Railway Tunnel (OS Mapping) |  | High Speed 2 |
|  | Abandoned or Dismantled Railway (OpenStreetMap) |  | High Speed 2 Revised Proposed Route |
|  | Railway Track (OS Mapping) |  | Crossrail 1 |
|  | Railway and/or Tunnel Feature from Historical Mapping | | |

9 Railways and Tunnels

9.1 Tunnels

This data is derived from OpenStreetMap and provides information on the possible locations of underground railway systems in the UK - the London Underground, the Tyne & Wear Metro and the Glasgow Subway.

Have any underground railway lines been identified within the study site boundary? No

Have any underground railway lines been identified within 250m of the study site boundary? No

Database searched and no data found.

Any records that have been identified are represented on the Railways and Tunnels map.

This data is derived from Ordnance Survey mapping and provides information on the possible locations of railway tunnels forming part of the UK overground railway network.

Have any other railway tunnels been identified within the site boundary? No

Have any other railway tunnels been identified within 250m of the site boundary? No

Database searched and no data found.

Any records that have been identified are represented on the Railways and Tunnels map.

9.2 Historical Railway and Tunnel Features

This data is derived from Groundsure's unique Historical Land-use Database and contains features relating to tunnels, railway tracks or associated works that have been identified from historical Ordnance Survey mapping.

Have any historical railway or tunnel features been identified within the study site boundary? Yes

Have any historical railway or tunnel features been identified within 250m of the study site boundary? Yes

ID	Distance (m)	Direction	NGR	Details	Date
1K	0	On Site	284576 210960	Railway Sidings	1921
2	0	On Site	284130 210683	Railway Sidings	1921
3A	0	On Site	282203 212067	Railway Sidings	1921
4B	0	On Site	282086 211994	Railway Sidings	1921
5A	0	On Site	282130 212064	Railway Sidings	1914
6B	0	On Site	282570 211973	Railway Sidings	1948

ID	Distance (m)	Direction	NGR	Details	Date
7B	0	On Site	282096 212030	Railway Sidings	1903
8C	0	On Site	282184 212125	Railway Sidings	1921
9C	0	On Site	282193 212121	Railway Sidings	1914
10W	0	On Site	282374 212107	Railway Sidings	1877
11D	0	On Site	282592 211920	Railway Sidings	1965
12D	0	On Site	282562 211966	Tramway Sidings	1921
13	0	On Site	282564 211961	Tramway Sidings	1914
14V	0	On Site	283067 211864	Tramway Sidings	1903
15	0	On Site	284385 210466	Railway Sidings	1948
16U	0	On Site	285233 210356	Railway Sidings	1977
17	0	On Site	285289 210506	Railway Sidings	1962
18E	0	On Site	283353 211886	Tramway Sidings	1921
19E	0	On Site	283349 211880	Tramway Sidings	1914
20	0	On Site	283357 211892	Tramway Sidings	1921
21R	0	On Site	283553 210544	Tramway Sidings	1903
22P	0	On Site	283571 210272	Railway Sidings	1921
23	0	On Site	283646 210326	Railway Sidings	1921
24F	0	On Site	284042 210395	Railway Sidings	1948
25O	0	On Site	283894 210537	Tramway Sidings	1903
26	0	On Site	283783 210366	Railway Sidings	1921
27F	0	On Site	284179 210511	Railway Sidings	1914
28F	0	On Site	284179 210511	Railway Sidings	1914
29G	0	On Site	283803 210354	Railway Sidings	1921
30F	0	On Site	284145 210479	Railway Sidings	1921
31G	0	On Site	283858 210398	Railway Sidings	1921
32H	0	On Site	284138 210479	Railway Sidings	1903
33F	0	On Site	284075 210469	Railway Sidings	1901
34N	0	On Site	283897 210309	Railway Sidings	1876
35H	0	On Site	284121 210503	Railway Sidings	1877

ID	Distance (m)	Direction	NGR	Details	Date
36M	0	On Site	283877 210338	Railway Sidings	1921
37H	0	On Site	284133 210491	Railway Sidings	1921
38	0	On Site	284325 210649	Railway Sidings	1901
39J	0	On Site	284163 210461	Mineral Railway Sidings	1987
40I	0	On Site	284249 210525	Railway Sidings	1921
41I	0	On Site	284261 210529	Railway Sidings	1921
42J	0	On Site	283953 210369	Railway Sidings	1965
52M	0	On Site	284071 210381	Tramway Sidings	1904
53N	0	On Site	283871 210292	Railway Sidings	1877
54F	0	On Site	283982 210408	Railway Sidings	1961
55F	0	On Site	283979 210408	Mineral Railway Sidings	1984
56N	0	On Site	283835 210307	Railway Sidings	1961
57H	0	On Site	284116 210510	Railway Sidings	1904
58	0	On Site	283847 210405	Railway Sidings	1918
59F	0	On Site	284168 210505	Railway Sidings	1918
60I	0	On Site	284202 210566	Mineral Railway Sidings	1962
61O	0	On Site	283894 210532	Tramway Sidings	1904
62P	0	On Site	283584 210268	Railway Sidings	1996
63Q	0	On Site	284538 210568	Mineral Railway Sidings	1997
64J	0	On Site	284569 210569	Mineral Railway Sidings	1986
65Q	0	On Site	284116 210365	Mineral Railway Sidings	1962
66R	0	On Site	283555 210542	Tramway Sidings	1904
67S	0	On Site	283249 210143	Mineral Railway Sidings	1986
68S	0	On Site	283249 210143	Mineral Railway Sidings	1984
69S	0	On Site	283266 210151	Railway Sidings	1961
70T	0	On Site	285005 210686	Railway Sidings	1989
71T	0	On Site	285005 210688	Railway Sidings	1978
72T	0	On Site	285005 210688	Railway Sidings	1989
73U	0	On Site	285225 210347	Mineral Railway Sidings	1978

ID	Distance (m)	Direction	NGR	Details	Date
74U	0	On Site	285227 210348	Mineral Railway Sidings	1989
75U	0	On Site	285227 210348	Mineral Railway Sidings	1919
76	0	On Site	285533 210113	Mineral Railway Sidings	1905
77E	0	On Site	283350 211885	Tramway Sidings	1962
78V	0	On Site	283079 211867	Old Tramway Sidings	1919
79	0	On Site	282650 211869	Railway Sidings	1905
80	0	On Site	282819 211972	Tramway Sidings	1919
81W	0	On Site	282098 212026	Railway Sidings	1962
82W	0	On Site	282568 211989	Railway Sidings	1905
83	0	On Site	282540 212066	Mineral Railway Sidings	1877
84B	0	On Site	282421 212064	Railway Sidings	1962
85B	0	On Site	282380 212062	Colliery Railway Sidings	1921
86	0	On Site	282252 212073	Railway Sidings	1962
43X	6	NE	284449 210859	Railway Sidings	1919
87X	14	NE	284442 210857	Mineral Railway Sidings	1948
88K	14	NE	284605 211000	Railway Sidings	1921
44K	17	NE	284597 210989	Railway Sidings	1919
45K	17	NE	284599 210986	Railway Sidings	1904
89Y	38	NW	281912 212099	Railway Sidings	1965
90Y	63	NW	281908 212127	Railway Sidings	1919
46Z	140	N	284654 210998	Railway Sidings	1921
91	155	NW	281236 211992	Railway Sidings	1914
47L	166	NW	281272 212028	Railway Sidings	1921
48L	169	NW	281278 212023	Railway Sidings	1962
49L	173	NW	281280 212029	Railway Sidings	1903
92	199	NW	281730 212138	Mineral Railway Sidings	1904
50L	200	NW	281390 212037	Railway Sidings	1962
93L	206	NW	281415 212051	Railway Sidings	1948
94Z	234	N	284703 211028	Railway Sidings	

ID	Distance (m)	Direction	NGR	Details	Date
51L	239	NW	281390 212074	Railway Sidings	

Any records that have been identified are represented on the Railways and Tunnels map.

9.3 Historical Railways

This data is derived from OpenStreetMap and provides information on the possible alignments of abandoned or dismantled railway lines in proximity to the study site.

Have any historical railway lines been identified within the study site boundary? Yes

Have any historical railway lines been identified within 250m of the study site boundary? Yes

Distance (m)	Direction	Status
0	On Site	Abandoned
0	On Site	Razed
0	On Site	Razed
0	On Site	Abandoned
0	On Site	Razed
0	On Site	Abandoned
0	On Site	Abandoned
0	On Site	Razed
0	On Site	Razed
0	On Site	Abandoned
0	On Site	Razed
0	On Site	Abandoned
65	N	Abandoned
65	N	Razed
237	NW	Abandoned
237	NW	Razed

Multiple sections of the same track may be listed in the detail above
Any records that have been identified are represented on the Railways and Tunnels map.

9.4 Active Railways

These datasets are derived from Ordnance Survey mapping and OpenStreetMap and provide information on the possible locations of active railway lines in proximity to the study site.

Have any active railway lines been identified within the study site boundary? Yes

Have any active railway lines been identified within 250m of the study site boundary? Yes

Distance (m)	Direction	Name	Type
0	On Site	Not given	rail
0	On Site	Not given	Multi Track
0	On Site	Not given	Multi Track
0	On Site	Not given	Multi Track
0	On Site	Not given	Multi Track

Contact Details

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Web: www.bgs.ac.uk



BGS Geological Hazards Reports and general geological enquiries

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The Coal Authority

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DX 716176 Mansfield 5
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Website: <http://www.peterbrett.com/home>



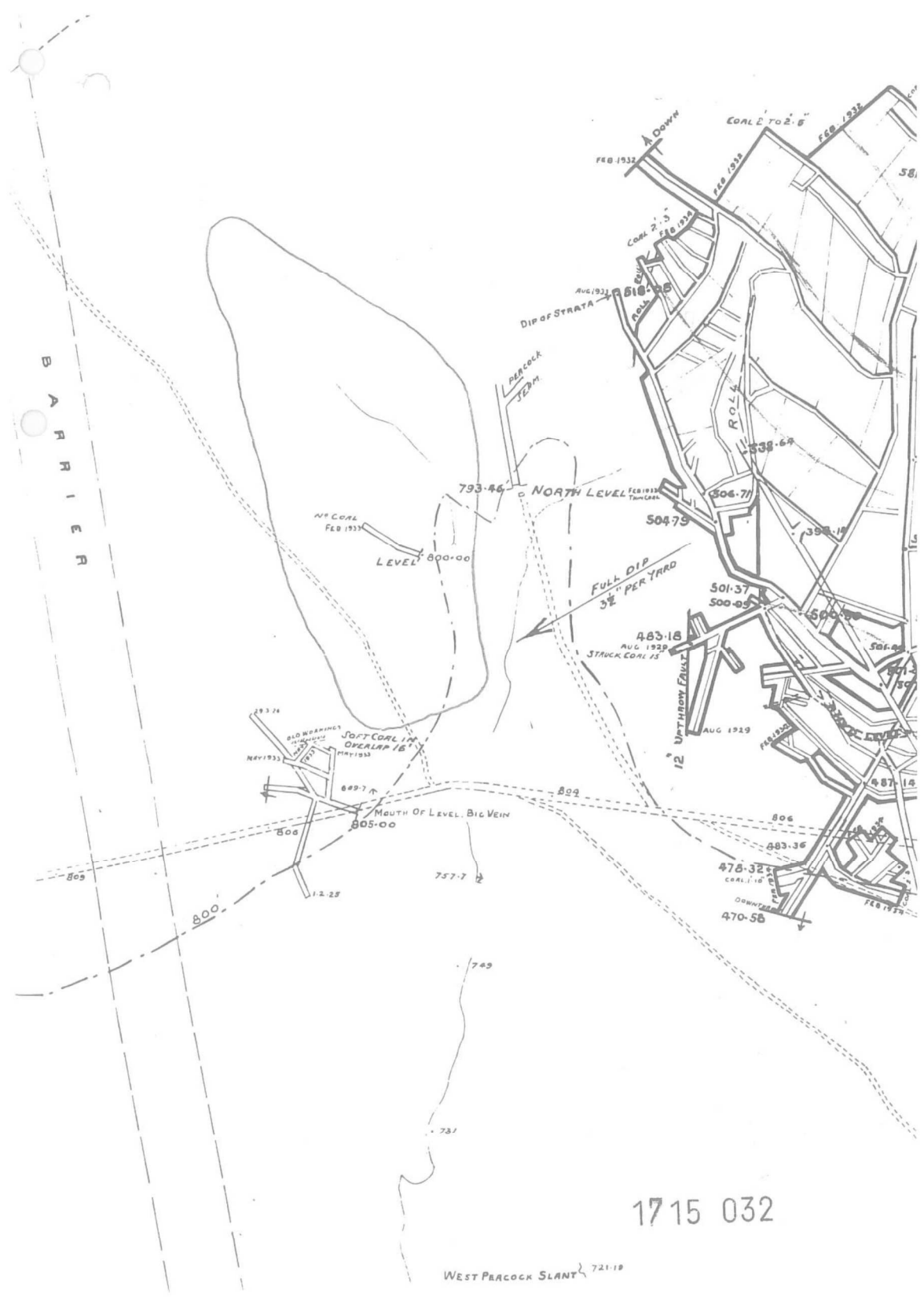
Acknowledgements: Ordnance Survey © Crown Copyright and/or Database Right. All Rights Reserved. Licence Number [03421028]. This report has been prepared in accordance with the Groundsure Ltd standard Terms and Conditions of business for work of this nature.

Standard Terms and Conditions

Groundsure's Terms and Conditions can be viewed online at this link:
<https://www.groundsure.com/terms-and-conditions-feb11-2019>

Appendix F

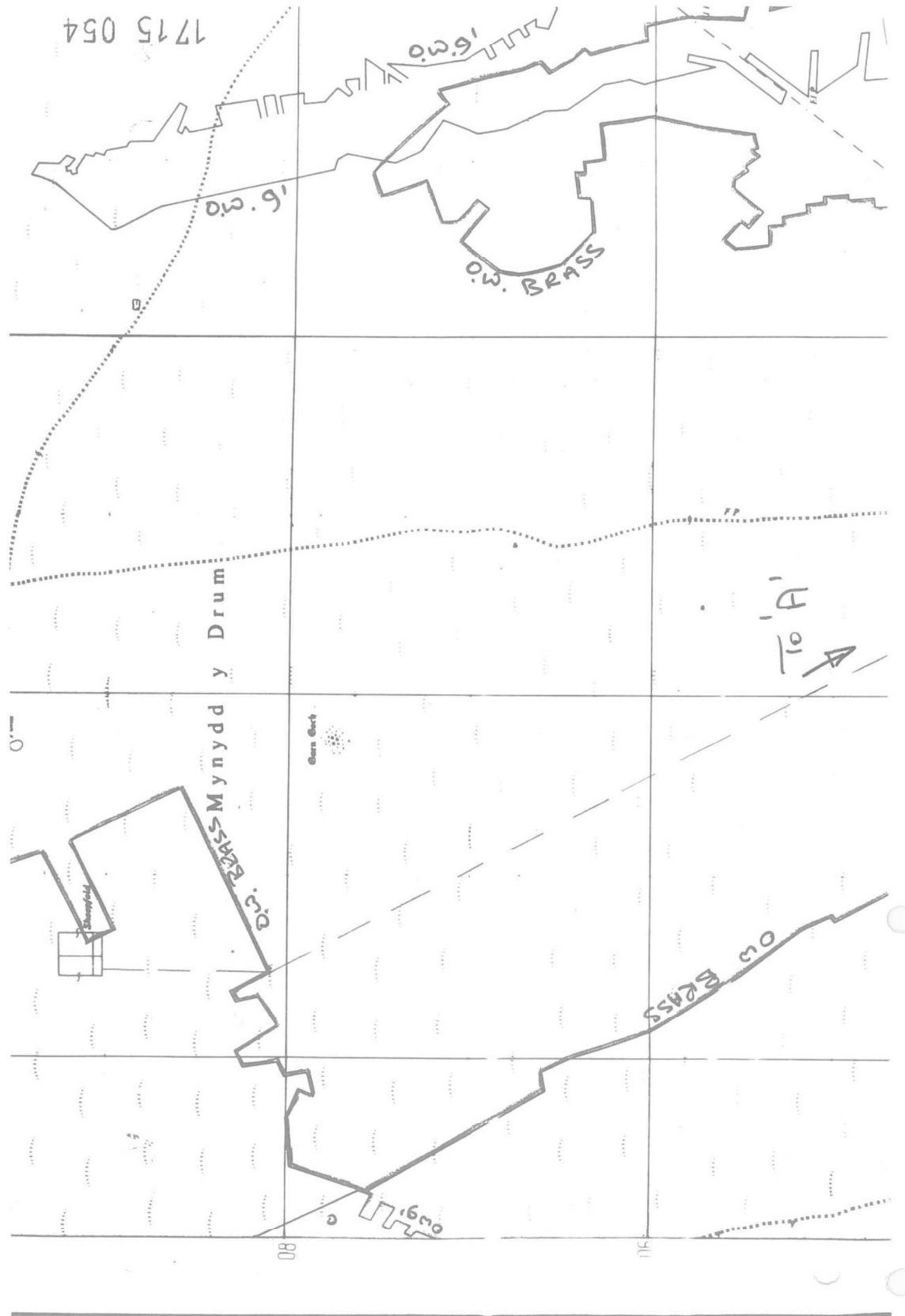
Nant Helen Underground
Workings - Celtic Energy



17 15 032

WEST PERCOCK SLANT 721-19



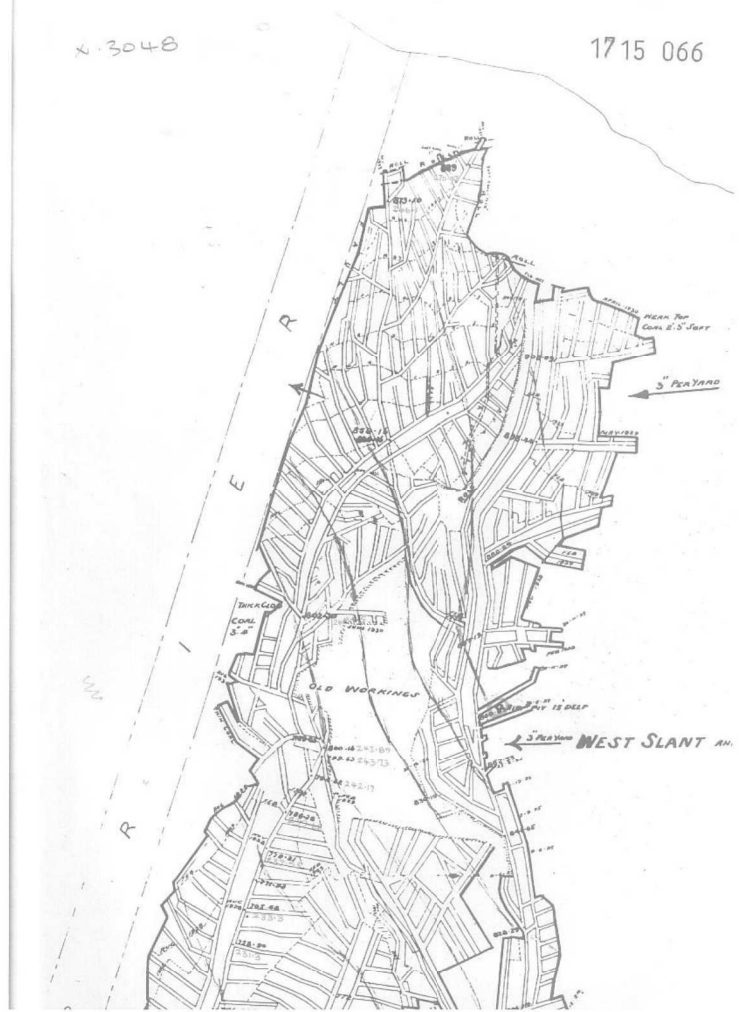


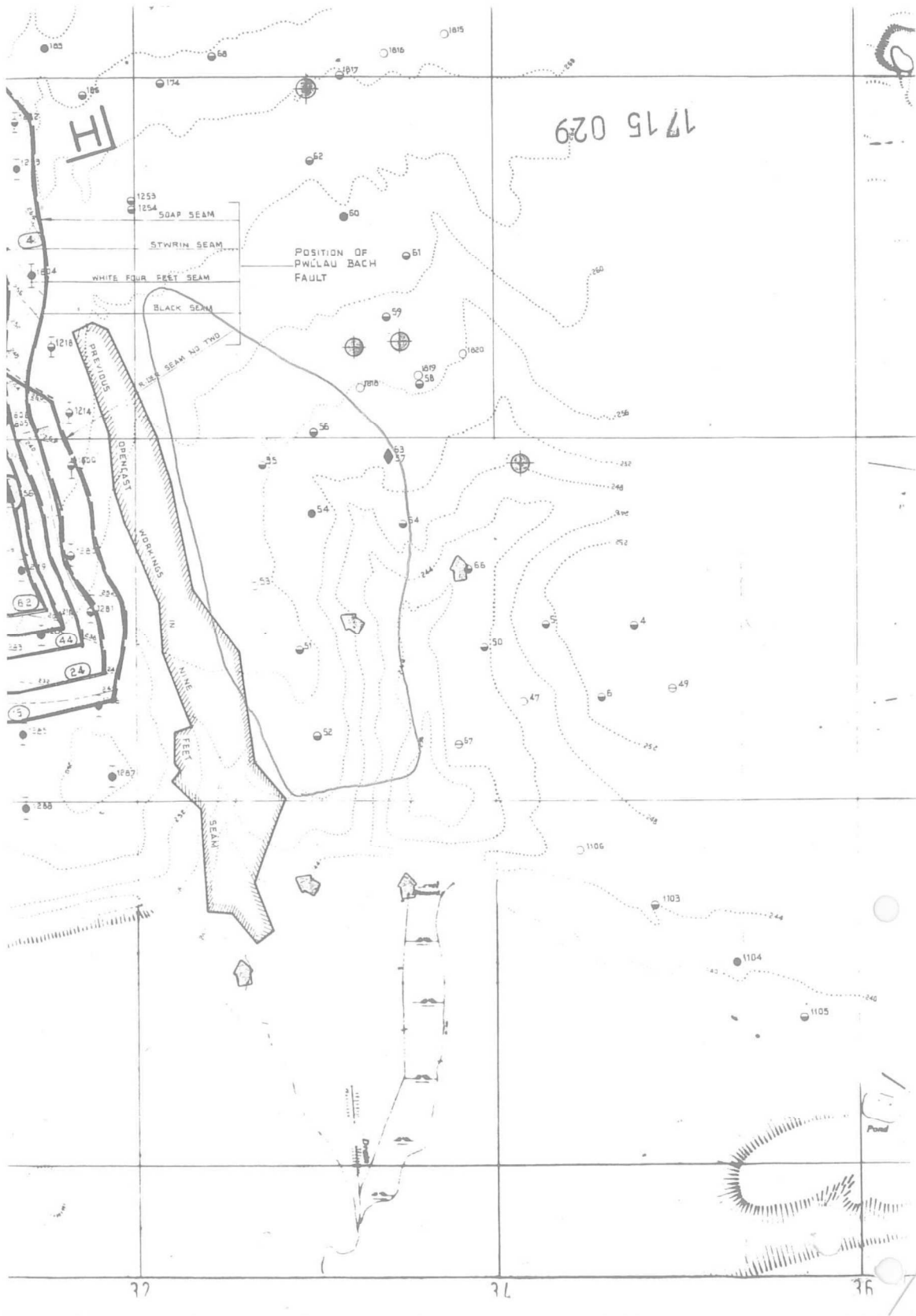
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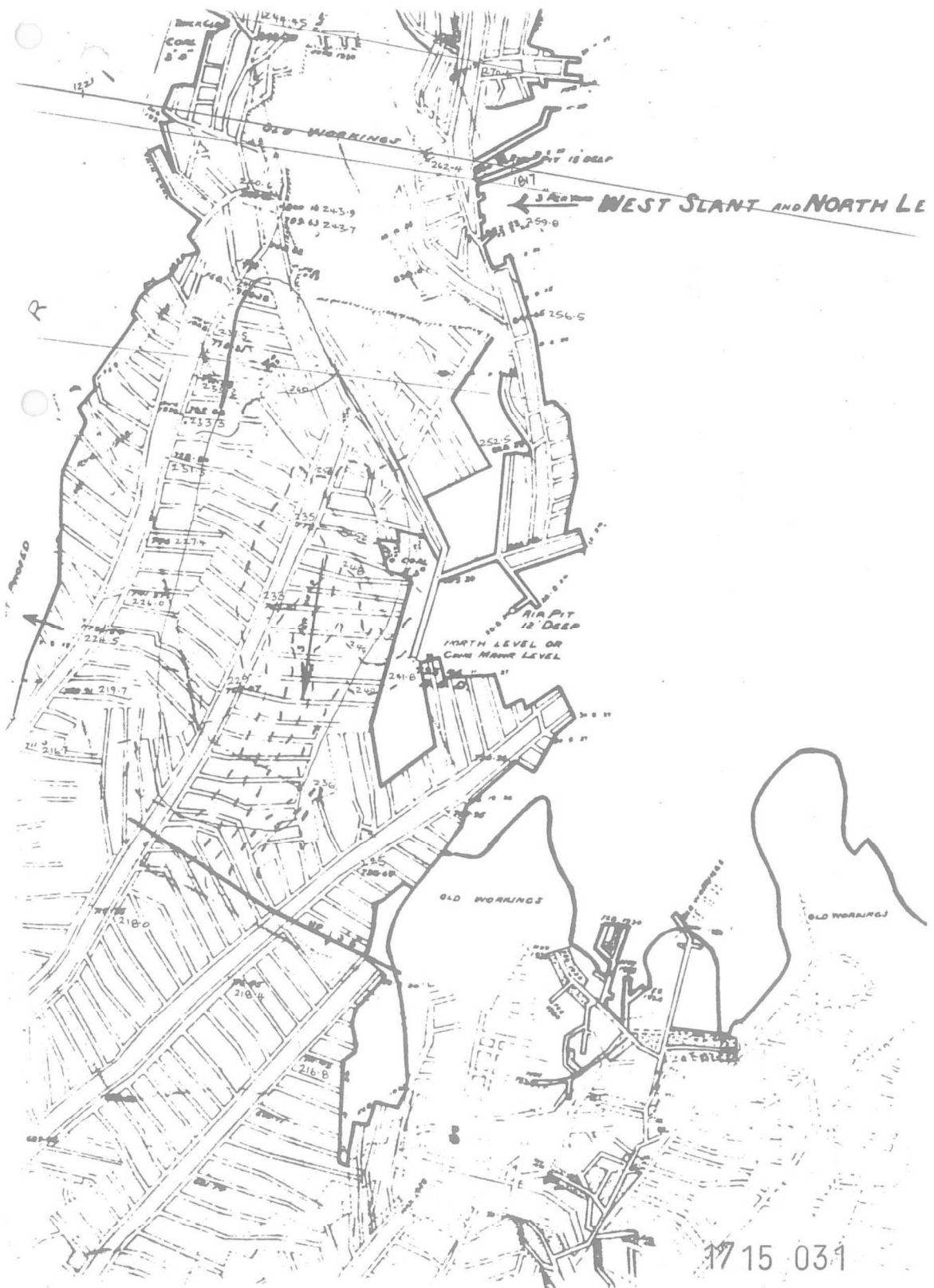
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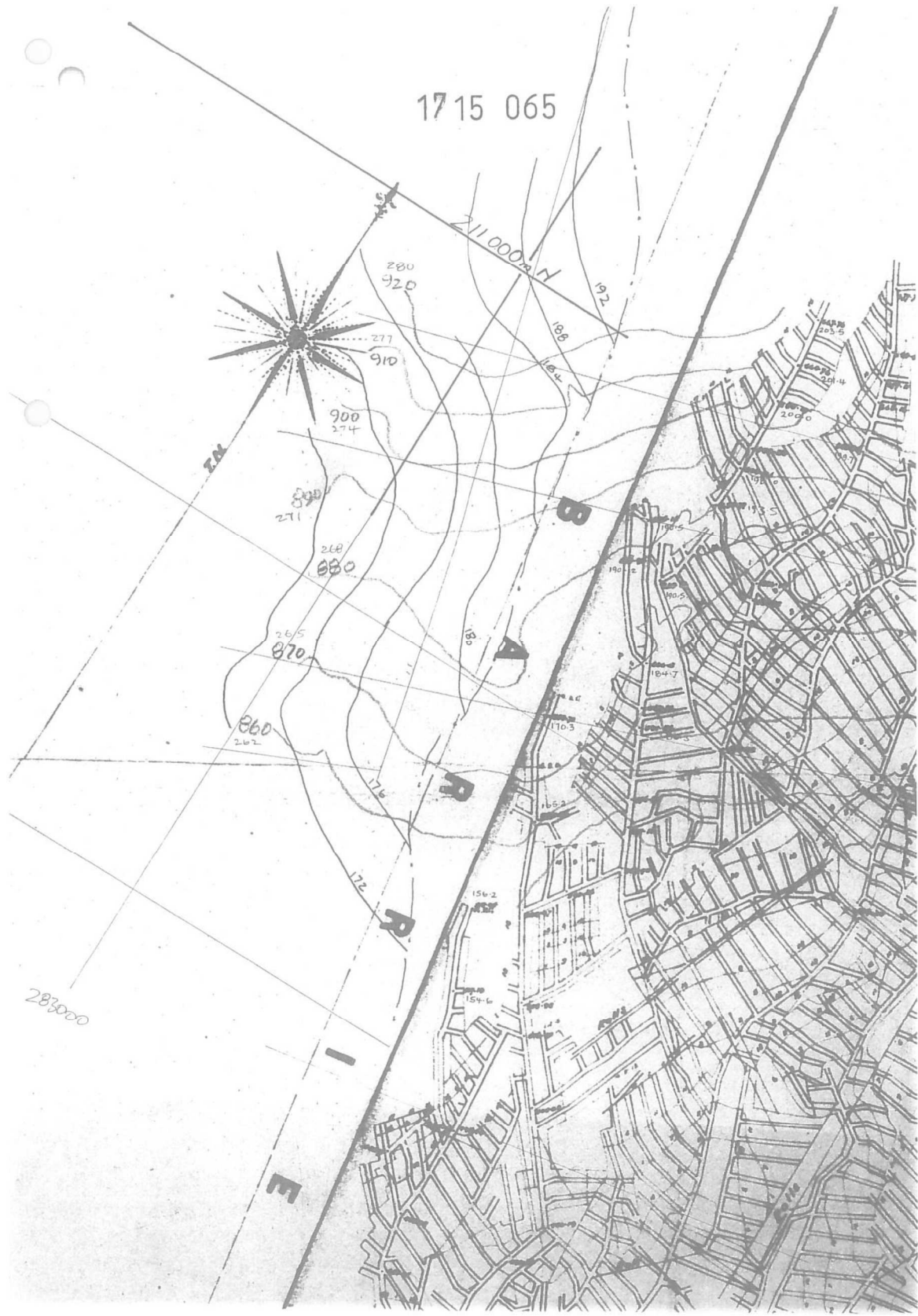
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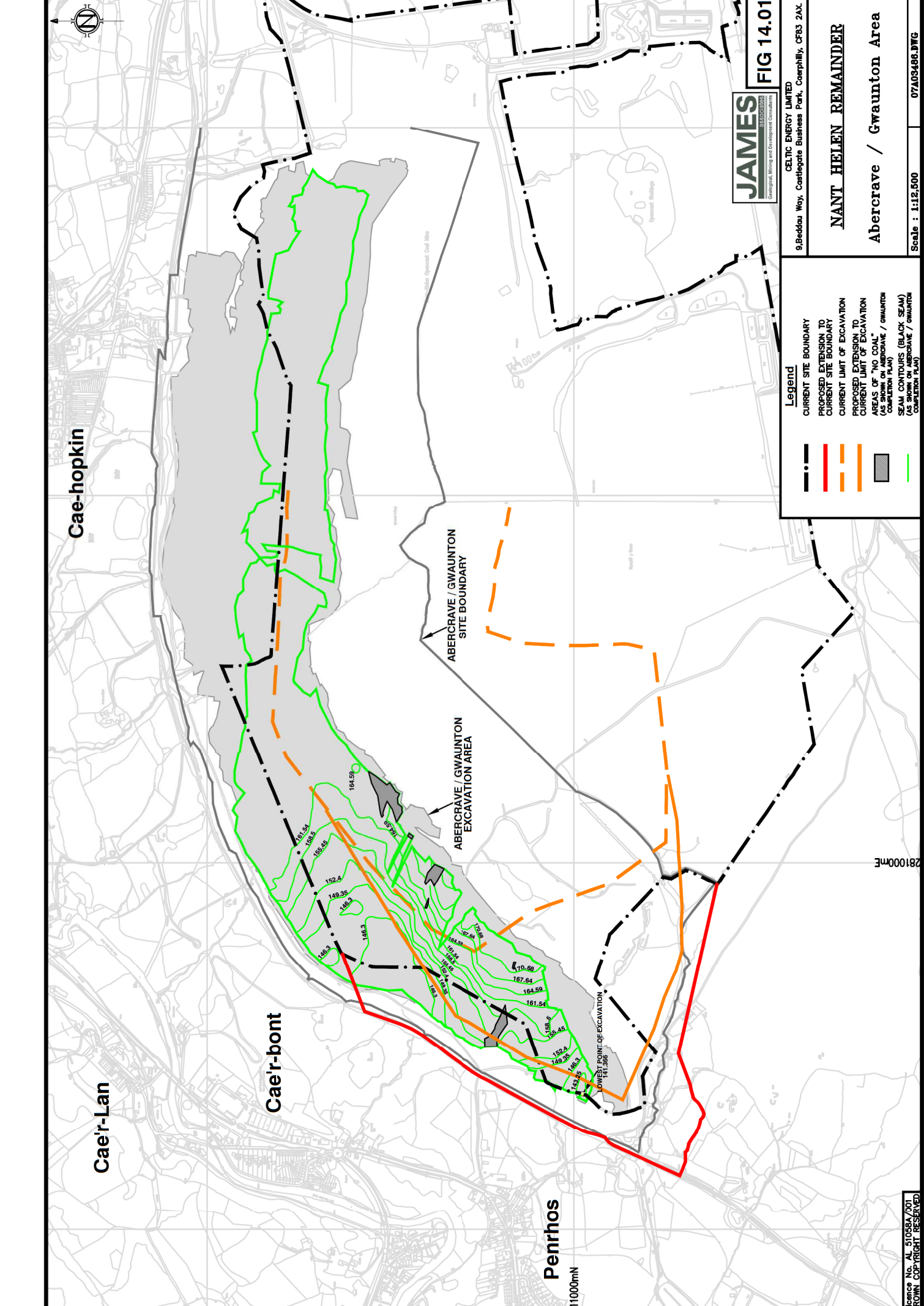
17 15 065



283000

Appendix G

Opencast Completion Plans - Celtic Energy



JAMES
Geological, Mining and Development Consultants

CELTIC ENERGY LIMITED
 9,Beckdau Way, Castellgate Business Park, Ceorphilly, CF83 2AX.

FIG 14.01

Legend

- CURRENT SITE BOUNDARY
- PROPOSED EXTENSION TO CURRENT SITE BOUNDARY
- CURRENT LIMIT OF EXCAVATION
- PROPOSED EXTENSION TO CURRENT LIMIT OF EXCAVATION
- AREAS OF "NO COAL" (AS SHOWN ON ABERCRAIVE / GWAUNTON COMPLETION PLAN)
- SEAM CONTOURS (BLACK SEAM) (AS SHOWN ON ABERCRAIVE / GWAUNTON COMPLETION PLAN)

NANT HELEN REMAINDER

Abercraive / Gwaunton Area

Scale : 1:12,500

License No. AL 51068A/001
 CROWN COPYRIGHT RESERVED

Cae-hopkin

Cae'r-Lan

Cae'r-bont

Penrhos

**ABERCRAIVE / GWAUNTON
 SITE BOUNDARY**

**ABERCRAIVE / GWAUNTON
 EXCAVATION AREA**

LOWER POINT OF EXCAVATION

