

THE IRON LINE, MILLOM MINING RISK ASSESSMENT

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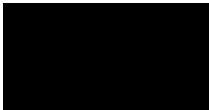
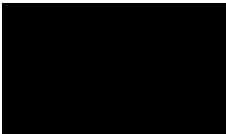
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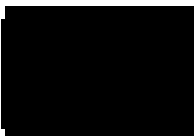
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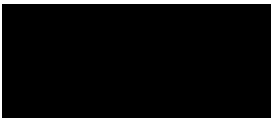
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EXECUTIVE SUMMARY

Appointment	Curtins were instructed by Cumberland Council to undertake a desk based Mining Risk Assessment (MRA) of a proposed development site known as The Iron Line, located in Millom, Cumbria, LA18 4LB. The site is a Site of Special Scientific Interest (SSSI), a Ramsar Site, a Special Protection Area and a Special Area of Conservation which comprises RSPB Hodbarrow and the southern side of the Redhills Quarry (owned by Cumbria County Council). The site is centred on SD 17877 79009 and covers an area of approximately 58 Ha. This desk based MRA has been undertaken principally to provide an overview of the geological setting of the site of interest, specifically in relation to past mining activities. The report provides an assessment of the risks that could be presented to site users and the built environment. The site itself has been split into distinct sections for the purposes of Curtins assessments, with a building being proposed within the north east of the site and predominantly civil improvements to ancillary areas in other zones.
Current Site Status	The site comprises RSPB Hodbarrow and the area beyond southern side of the Redhills Quarry (owned by Cumbria County Council). The Nature Reserve Park covers the majority of the site, except the north east of the site. The Hodbarrow Lagoon is located between the outer sea wall and RSPB Hodbarrow. A seawall is present, bounding the south of the site extending east to west. Heritage and historic structures are present such as the Hodbarrow Lighthouse and Hodbarrow Beacon. There is a large pond located within the south-eastern portion of the site, with the majority of site covered by grassland and tree cover. The site is a Site of Special Scientific Interest (SSSI), a Ramsar Site, a Special Protection Area and a Special Area of Conservation.
Site History	The site has an extensive mining history with Hodbarrow iron mine in operation between 1850 and 1968. Ore was removed by a form of pillar-and-stall working known as “top slicing”. Levels, some of which were accompanied by short rises, were driven from the shafts into the heart of the ore body, each level being separated from the one beneath by unrobbed ground known as ‘middling’s’. The earliest mapping shows the site to be largely undeveloped land, comprising predominantly marshland and part of the estuary, with some evidence of mineral extraction. From 1867, the Redhills quarry (located to the north-east) and the Hodbarrow Iron Mine / Hodbarrow Quarries (south-east) were visible on mapping, along with the ‘Hodbarrow Scar’, an engine house, a windmill and shafts in the south-east of the site. By 1898, Redhills Quarry and the Hodbarrow Iron Mine had undergone significant expansion, with various pits noted across the east of the site, and the addition of a major rail network, the construction of reservoirs and a number of spoil pits across the east of the site. The Hodbarrow Lighthouse was constructed in the south-east of the site, along with the Hodbarrow Sea Wall extending east to west. By 1924, the ‘Outer Barrier’, an additional sea wall, was constructed at the south of the site. During this time, the spoil pit areas on site had been increased and a reservoir previously present to the south-east of the site had been infilled. The Hodbarrow Iron Mine was closed in 1968. Anecdotal evidence suggests that the subsidence of the Inner Sea Wall caused the collapse and subsequent flooding of the Hodbarrow Iron Mine. The rail network within the site was dismantled, and buildings became disused. Several of the pits had been dismantled, with disused spoil pits remaining.

	During 1986, the majority of the site was converted into a Nature Reserve. The remaining buildings associated with the mine and quarry workings had been dismantled, with the majority of spoil and slag pits removed. One shaft remains on mapping within the northern area of the site. Heritage buildings such as the Old Mill, Hodbarrow Beacon and Hodbarrow Lighthouse remain on site. The original inner Hodbarrow Sea Wall has since been reduced in size to allow a connection between lakes, known as the Hodbarrow Lagoon. Redhills Quarry to the north of the site was noted as disused in 1973, with workings to the west noted as disused in 1993. Millom Raceway was opened on the former pit slag heap in 1995, before 2003 when it fell into disuse. A Household Waste Recycling Centre is now located at the former Redhills Quarry.
Geology	BGS mapping indicates the site is underlain by bedrock deposits of the Red Hill Limestone, Martin Limestone Formation, Low Furness Basal Formation, and the Dalton Formation only. No superficial deposits are indicated underlying the majority of site, excepting limited areas of Raised Marine Deposits and Glacial Till in the south-eastern corner of the site. Geological maps indicate that the site is heavily worked with numerous areas of infilled ground, including worked ground and Made Ground comprising voids and artificial deposits. It is likely that the Made Ground will comprise the iron works process arisings. The site and surrounding area are heavily faulted, with shallow dipping (5 – 15 degrees) SW and striking NW-SW cutting across all lithology types. There are a total of 160 borehole within 500m of the site, 23 boreholes are recorded within the site boundary. Bedrock was typically encountered from shallow depths, predominantly comprising grey limestone, red marl, red conglomerate, and iron ore. Some boreholes encountered sand, cobbles, and drift deposits up to a maximum depth of 61.87m bgl. Review of archive and mining related information indicates that iron ore was worked in large areas across the site at depths typically greater than 45m bgl, with numerous potential mine entries identified, many of which are in proximity to the wider development works.
Summary of Mining Risk: Development Zone 1 (Visitors Centre)	Development Zone 1 has been assessed independently due to the development, including a new Visitors Centre building. The MRA has identified the following risk ratings: • The risk from Deep Mining activities is assessed to be Low. • The risk from Shallow Mining activities is assessed to be Moderate – Low. • The risk from Mine Entries is assessed to be Moderate-Low. • The risk from Opencast Mining is assessed to be Low. • The risk from Structural Mining Geology is assessed to be Low. • The risk from Mine Gases is assessed to be Moderate – Low. • The risk from Expansive Material and Aggressive Ground is assessed to be Moderate – Low.
Summary of Mining Risk: Development Zones 3 to 10	Development Zones 3 to 10 have been assessed separately but the conclusions summarised collectively due to the proposed developments including improvements to birdhides, paths and roadways only. The MRA has identified the following risk ratings: • The risk from Deep Mining activities is assessed to be Low. • The risk from Shallow Mining activities is assessed to be Low. • The risk from Mine Entries is assessed to be Moderate-Low. • The risk from Opencast Mining is assessed to be Low. • The risk from Structural Mining Geology is assessed to be Low. • The risk from Mine Gases is assessed to be Low.

- The risk from Expansive Material and Aggressive Ground is assessed to be **Moderate- Low**.

Zone 1 (Visitors Centre)

1. Initial ground investigation for planning submissions and designs should determine the thickness of Made Ground, superficial deposits, and depth to bedrock across the site. Rotary open hole boreholes must be incorporated to depths of around 40m bgl. This can also be used to determine the risk from unrecorded shallow mine workings to identify the presence of voids, broken ground or potential backfill materials of former iron ore deposits that have been extracted.
2. Ground gas monitoring should be undertaken during drilling to check for mine gases. Where mine gases are found above action level works should be stopped and risk reassessed. Monitoring installation wells should be installed over a 12 week period.
3. The ground investigation should confirm the thickness and type of made ground, expansivity potential and aggressive ground should be considered.
4. The ventilation borehole on site should be located as part of construction works and decommissioned in accordance with EA guidance.
5. Should any evidence of shallow workings be encountered, production of a remedial / treatment specification document to be issued to the appropriate sub-contractors for tendering. The contents of which will be dependent on the findings of each stage of ground investigation.
6. Watching brief to be carried out during construction groundworks by geotechnical engineer to monitor for evidence of shafts. If any are recorded, construction works should be stopped and further risk assessment carried out. A remedial specification and capping measures may then need to be provided.

Zones 3,4,5,8,9 & 10 (Ancillary Development Areas)

1. Initial ground investigation for planning submissions and designs should determine the thickness and type of Made Ground and type of made ground, expansivity potential and aggressive ground should be considered.
2. Watching brief to be carried out during construction/groundworks by geotechnical engineer to monitor for evidence of shafts. If any are recorded during construction works should be stopped and further risk assessment carried out. A remedial specification and capping measures may then need to be provided.
All new or upgraded roads, paths and structures on Zones 3,4,5,7,8,9&10 to be underlain with geogrid to provide some mitigation against any shaft collapse.

Recommendations

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1 INTRODUCTION

Curtins were instructed by Cumberland Council to undertake a Mining Risk Assessment (MRA) of a proposed development site known as The Iron Line, located in Millom, Cumbria, LA18 4LB. Part of the site is a Site of Special Scientific Interest (SSSI), a Ramsar Site, a Special Protection area and a Special Area of Conservation which comprises RSPB Hodbarrow and land at the southern side of the Redhills Quarry (owned by Cumbria County Council). The site is centred on SD 17877 79009 and covers an area of approximately 58 Ha.

The development proposals are understood to include the erection of a visitor centre with café/shop, group room, staff/volunteer, toilet facilities and car park; consolidation, repair and installation of interpretive sculpture to Towsey Hole Windmill; refurbishment of existing Tern Island hide; new bird hides, pathways, gateway features and street furniture; enhancement of wildlife habitats; associated landscaping and drainage infrastructure; and maintenance of byway with restricted vehicular access.

1.1 Purpose of this Report

This desk based MRA has been undertaken principally to provide an overview of the geological setting of the site of interest, specifically in relation to past mining activities. The report provides an assessment of the risks that could be presented to site users and the built environment. The proposed development plan is contained within Appendix A.

More specifically, the MRA provides a review of the site with respect to the potential hazards associated with mining or mineral extraction activities including features including but not limited to; quarries (opencast mining), bell pits, abandoned worked seams, adits, shafts, fissures / break line features and geological faults.

Additionally, the MRA makes recommendations for the extent and nature of any additional work (non-intrusive or intrusive) required to the risks identified.

1.2 References

The MRA has been prepared with reference to the following information sources:

- Curtins Phase 1 Preliminary Risk Assessment (2023). (Ref.1);
- British Geological Society (BGS) 1:50,000 mapping (Ref. 2);
- BGS Geoindex (opensource website) (Ref. 3);
- Landmark Envirocheck Data (appended) (Ref. 4);
- Northern Mine Research Society (Ref.5)
- A. Harris (1970) Cumberland Iron: The Story of Hodbarrow Mine 1 (Ref.8).
- Cumbria Archive mapping (Ref.9).

2 PRELIMINARY RISK ASSESSMENT

This section presents a summary of the Phase 1 Preliminary Risk Assessment (PRA) that has been completed for the subject site. This incorporates the current site setting, history and geology as presented in the Curtins PRA (Ref. 1). Further information for the site has been obtained from freely available online sources. An Envirocheck Report (Ref. 4) and Cumbria Archive plans have also been ordered to provide additional background information.

2.1 Site Location and Current Details

Site use, location and description are shown below in *Table 1* and *Figure 1*.

Table 1 – Site Details

Site Address	The Iron Line, Millom, Cumbria, LA18 4LB
NGR	SD 17877 79009
Area of Site	Approximately 58 Ha.
Current Site Use and Description	The site comprises RSPB Hodbarrow which covers the majority of the site, and land to the southern side of the Redhills Quarry (owned by Cumbria County Council). A sea wall is present bounding the south of the site, extending from east to west. Heritage and historic structures are present such as the Hodbarrow lighthouse and Hodbarrow Beacon. There is a large lagoon located within the southeastern portion of the site, with the majority of the site is covered by grassland and tree cover. A footpath extending the entire length of the outer seawall is present, with several footpaths extending into the RSPB Hodbarrow site to the east. The site is a Site of Special Scientific Interest (SSSI), Ramsar Site, Special Protection Area and Special Area of Conservation. Due to the size of the site, it has been split into Development Zones (See <i>Figure 1</i> and <i>Appendix A</i>).
Development Proposals	The site itself has been split into distinct sections for the purposes of Curtins assessments, with a building being proposed within the north of the site in the proposed Visitors Centre and predominantly civil improvements to ancillary areas on other zones: • Zone 1: Visitors Centre ○ Proposed New Visitors Centre Building, car parking, roads and infrastructure. • Zone 3: Towsey Hole Windmill ○ Improvement of existing paths and construction of new paths. • Zone 4: Haverigg Lighthouse & Tern Island Hide ○ Improvement to paths/roads • Zone 5: Annie Lowther Hide ○ Improvement of existing paths and construction of new paths. • Zone 7: Quarry Hides ○ Improvement to paths/roads • Zone 8: Iron Line Railway ○ Improvement to paths/roads • Zone 9: Iron Line Entrance ○ Improvement to paths/roads • Zone 10: Mainsgate Road Entrance & Hodbarrow Car Park ○ Improvement to paths/roads The main development is proposed in Development Zone 1, where a Visitors Centre building will be constructed. The remainder of the Development Zones will receive some development such as new road, paths and hides.



Figure 1 – Site Location Plan with Development Zones, site boundary shown in red

2.2 Historical Mapping Records

A review of the available historical mapping information for the site has been undertaken as part of the Curtins Phase 1 Preliminary Risk Assessment (Ref. 1) with specific reference to potential historic mining.

Earliest mapping records show the site to have been largely undeveloped comprising predominantly marshland and part of the estuary, with some evidence of mineral extraction. The industrial premises of Redhills Quarry (to the north-east) and the Hodbarrow Iron Mine / Hodbarrow Quarries (south-east of the site) can be seen in mapping from 1867, including the 'Hodbarrow Scar', an engine house, the Old Wind Mill and shafts in the south-east of the site. By 1898, Redhill Quarry and the Hodbarrow Iron Mine had undergone significant expansion, with various pits noted across the east of the site, and the addition of a major rail network, the construction of reservoirs and a number of spoil pits across the east of the site. The Hodbarrow Lighthouse was constructed in the south-east of the site, along with the Hodbarrow Sea Wall which extended across to Steel Green in the west.

By 1924, the 'Outer Barrier' Sea Wall was constructed at the south of the site, a large sea wall extending further out into the Duddon Channel, along with the construction of a lighthouse within the centre of the barrier. During this time, the spoil pit areas on site had been increased, and the reservoir previously present to the south-east had been infilled.

The Hodbarrow Iron Mine closed in 1968, anecdotal evidence suggests that subsidence of the Inner Sea Wall caused the collapse and subsequent flooding of the Hodbarrow Mine. The rail network within the site had been dismantled and buildings disused. Disused spoil pits remained during this time, with a slag heap noted in the east of the site. Buildings surrounding the Arnold and Annie Lowther Pits had been dismantled. The area behind the outer sea wall barrier became gravelled with the lighthouse becoming disused. During 1986, the majority of the site was converted into a Nature Reserve. The remaining buildings associated with the mine and quarry workings were dismantled, with the majority of spoil and slag pits removed. The reservoirs once throughout the site had been infilled. One shaft remained on mapping within the northern area of the site. Heritage buildings such as the Old Wind Mill, Hodbarrow Beacon and

Hodbarrow Lighthouse remain on site. The Hodbarrow Sea Wall had been reduced in size to allow the connection between lakes forming the Hodbarrow Lagoon.

Redhills Quarry to the north of the site is noted as disused in 1973, with the active workings to the west noted as disused in 1993. 'Millom Raceway' was opened in 1995 on the former pit slag heap, the track was formally known as the Redhills Raceway until 2003 when it fell into disuse. A Household Waste Recycling Centre is now located at Redhills Quarry immediately northeast of site (zone 1).

2.3 Hodbarrow Mine History

A review of Cumberland Iron: The Story of Hodbarrow Mine 1855-1968 (Ref.8) provides a historical account of the mining activity undertaken at Hodbarrow Mine, including its construction and mining activity.

Mining Techniques

Ore was removed by a form of pillar-and-stall working known as "top slicing". Levels, some of which were accompanied by short rises, were driven from the shafts into the heart of the ore body, each level being separated from the one beneath by unrobbed ground known as middling's.

Pillars of ore which had been left standing during the first robbing operations in each level were subsequently removed at a later date, as were the middling's, in order to bolster production numbers. As a result the extraction of ore consisted in slice after slice of ore, from 10 to 12 feet thick generally, beginning at the top of the deposit and working downward. In this way the masses of ore were gradually removed throughout their entire vertical extent.

By the 1920s, instead of ore being won from top to bottom, it was now bottom sliced. As the mining progressed upwards through the deposit in slices, places from which the haematite had been removed were filled systematically with sand.

Shafts

Shafts No.6 and No.7 were driven down to provide access to the main deposit, but these were situated on its edge rather than in its heart. As a result, they were connected to the ore bodies by underground roads, known as drives. The drives were constructed at approximately 7 feet wide and 7 feet high (2.1m wide and 2.1m high).

The drives off shafts No.6 & No.7 were connected with the seaward (western) workings by means of a long haulage road on the 60 fathom level (109m bgl). In the 1920s, an ore deposit was located to the east at Redhills, and a drive was driven towards this ore deposits from the No.6 shaft, where it was drawn up following a lengthy journey underground. On the 60 fathom level trains of ore were hauled by a diesel locomotive, while a main and tail haulage system was in operation on the 90 fathom level.

Infilling

Hydraulic stowing (or sand filling) was adopted from 1922. A mixture of sand and water was fed from the surface to the workings by means of specially constructed boreholes and existing mine shafts. Steel-lined boreholes with an internal diameter between 7½ " and 9" were sunk at the southern end of the main deposit, whilst access to the unstable area in the north was provided by a 8" steel pipe fitted in the shaft of William Pit. A controlled flow of slurry was introduced into the tubes and on arrival underground was conveyed to the working places. As the ore was extracted, the slurry was used to fill the voids created by its removal.

2.4 Archive Mapping Records (Cumbria Archives)

On the 15th February 2024, Curtins visited site to conduct a walkover and also visited the Cumbria Archives to gather information regarding the mining activities of the former Hodbarrow Iron Mine located on site. Table 2 below summarises the archive references along with pertinent information.

The information contained within the Table below has been accessed via the Cumbria Archives documents contained within Reference BDB 21 – The Hodbarrow Mining Company Limited – 1824 – 1969. The archive contains original copies of administrative records, financial records, legal records, production records and premises records. For this Mining Risk Assessment, the Premise Record Plans from 1866 – 1969 (BDB 21-5-5) and Items from the Millom Discovery Centre from 1862 – 1974 (BDB 21-5-9) were accessed.

Table 2 – Hodbarrow Iron Mine Archives

Archive Name & Reference	Date	Pertinent Information
Plan of Workings of Moorbank and Hodbarrow Mines. Sheet 2 Hodbarrow Mine, Owned by the Millom Haematite Ore and Iron Co., Ltd <i>BDB 21-5-5-123</i>	1940 – 1968	Plan showing the underground workings in the eastern part of the wider Hodbarrow Mine. - A number of shafts/boreholes are noted across the site, alongside the below ground access routes. - The map suggests that there are 2 no. worked ore bodies across the site.
Plan showing Numbers 1, 3 and 6 Shafts <i>BDB 21-5-5-143</i>	1959	Cross section through a number of boreholes, the eastern most of which is located within our site area. - Three boreholes show the depth to the iron ore body, along with ore extracted. - Ore was encountered in this location at depths ranging between 140 – 180ft (~40 – 55m bgl) with encountered thicknesses of up to 60ft/18m. 40ft / 12m of iron ore was extracted from BH5 in this location, BH5 is located approximately 100m from the site boundary at the north-western corner.
Sections through Borehole Number 48 <i>BDB 21-5-5-145</i>	Undated	Sketch (hand drawn) borehole logs (including No. 11 shaft) - These logs show that iron ore was encountered at varying depths. - Borehole 59: 12ft (3.5m) seam at 471ft bgl (135m bgl). - Borehole 48: 2ft (0.6m) seam at 269ft bgl (73m bgl), 5ft (1.5m) seam at 277ft bgl (76m bgl), 4ft (1.2m) seam at 298ft bgl (83m bgl). - Borehole 42: 12ft (3.5m) seam at 310ft bgl (87m bgl)
Hodbarrow Mines General Plan <i>BDB 21-5-5-190</i>	1899	General map of the Hodbarrow Iron Mine, with the proposal for (the now constructed) outer sea barrier to extend the iron mine further. - Shows an area of broken ground in the north of the site, labelled as a “proposed quarry site” which has since been flooded to create a large pond in Development Area 7. - Shows the Annie Lowther Pit and the New Lowther Pit adjacent to the original sea wall (which has since subsided) in close proximity to Development Zone 5. - Shows the location of a quarry north of Hodbarrow Point in close proximity to Development Zone 3 Towsey Hole. - Appears to show a Quarry Field in the location of Development Zone 1 (Visitors Centre).
Geological Map of Hodbarrow and Moorbank Haematite Mines <i>BDB 21-5-5-230</i>	1961	Surface map of the wider Hodbarrow Mine, noting several shafts and pits located on site (geology is not really noted on the map). - The Redhills Quarry and Red Hills Area is located north of the site on this mapping. - There is a ventilation borehole within Development Zone 1, appeared to be linked to the No. 6 & 7 shafts located to the south-west of Development Zone 1. - The No. 3 Shaft is located in Development Zone 9 and is close to Development Zone 10. - The Annie Lowther Shaft, No. 8 Shaft and No. 10 Shaft are in close proximity to Development Zone 5. - Development Zone 8 contains the ‘Old Shaft’ (Barratt).
Surface Plan of Hodbarrow and Moorbank Areas	1961	Surface map of the Hobarrow Mine site including buildings - Number of buildings shown associated with the mine - Shows the original Sea Wall along with the Outer Barrier along with several shafts and mine workings.

BDB 21-5-5-232		Shows a pump house south of the No.3 Shaft which now appears to be submerged in the Hodbarrow Lagoon.
Contour Map showing Probable Depths to Solid Rocks beneath Superficial Deposits BDB 21-5-5-237	1937	Contour map of probable depths to solid rocks (bedrock) across the Hodbarrow Mine area. - The Redhills Quarry along with the Quarry in Development Zone 3 are above the ordnance datum by up to 60ft (18m). - In Development Zone 1, the probable depth to bedrock is noted to be between 40ft and 150ft bgl (12m and 45m bgl). - In Development Zone 3, the probable depth to bedrock appears to be shallow, less than 25ft bgl (7m bgl). - In Development Zone 5, the probable depth to bedrock appears to be between 25ft and 50ft bgl (7m and 14m bgl).
Plan, underground main roads and surface, Hodbarrow Mine BDB 21-9-9	1961	Map noting the surface road and rail network associated with Hodbarrow mine. - Several (unlabelled) shaft locations on site, along with the location of iron ore bodies at the western edge of the Outer Sea Wall. - Shows the location of surface rail network between Development Zone 1 and Development Zone 9 in the north of the site.

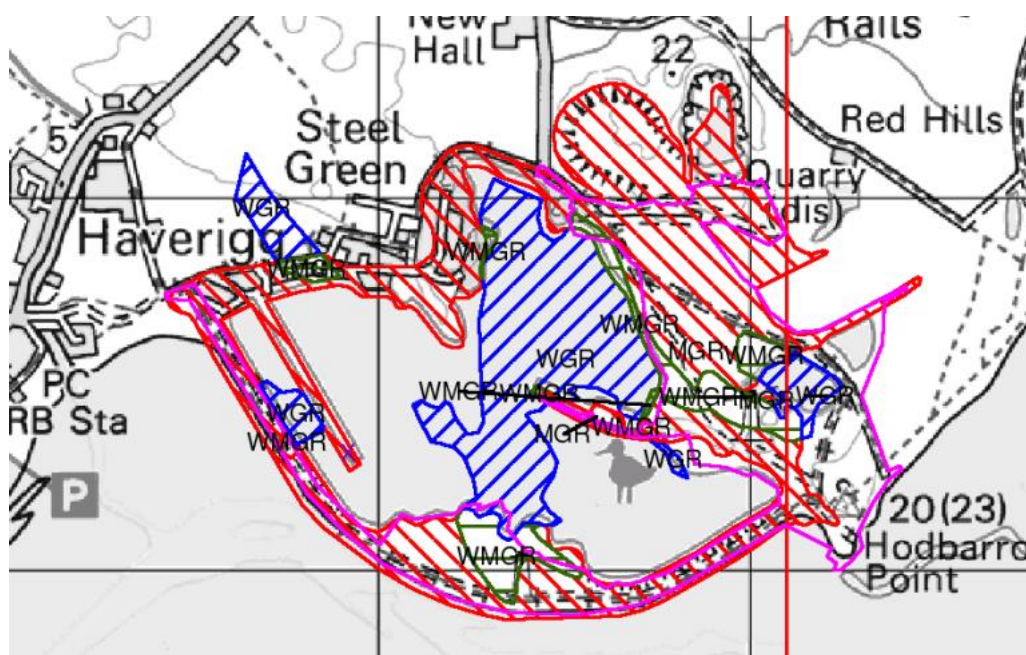
2.5 British Geological Survey Records

A study of the BGS mapping records (Sheet 048 for Ulverston), along with the Envirocheck Report (Ref. 4), indicates the following geological succession underlying the site:

2.5.1 Made Ground

Geological Maps indicate the site is heavily worked with numerous areas of infilled ground, worked ground (undivided) and Made Ground (undivided) indicated on mapping, comprising voids and artificial deposits.

It is likely that the Made Ground will comprise the iron works process arisings.



Map Colour	Lex Code	Rock Name	Rock Type
	WMGR	Infilled Ground	Artificial Deposit
	WGR	Worked Ground (Undivided)	Void
	MGR	Made Ground (Undivided)	Artificial Deposit

Figure 2 – Extract from BGS 1:50,000 mapping (Artificial Ground)

2.5.2 Superficial Deposits

Superficial deposits are not recorded to be present on the majority of the site.

A limited area of Raised Marine Deposits are noted to be present in the far east of the site, with a limited area of Glacial Till recorded in the south-eastern corner of the site.

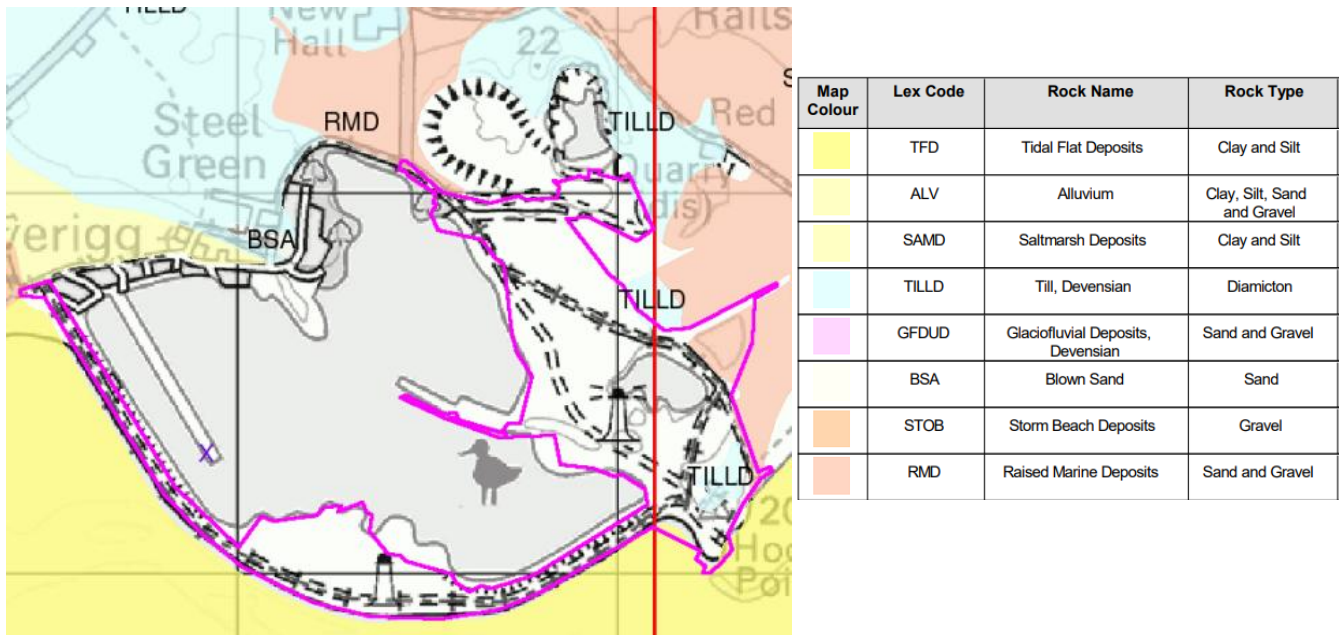


Figure 3 – Extract from BGS 1:50,000 mapping (Superficial Deposits)

2.5.3 Bedrock Deposits

Bedrock geology comprises multiple lithologies across the site, recorded as the Red Hill Limestone, Martin Limestone formation, Low Furness Basal Formation, and the Dalton Formation.

- The Red Hill Limestone Formation is described as a carbonate bioclastic, intraclastic and peloidid grainstones, coarse-grained and virtually structureless following bioturbation;
- the Martin Limestone formation described as mainly carbonate mudstones with significant grainstones, locally cross-bedded, and oolites in the upper part, ranging from peritidal to marine;
- the Low Furness Basal formation as conglomerate, sandstones, siltstones and mudstones with subordinate evaporites, the upper part of limestones and siltstones, mostly red with interbedded conglomerates, all presumed of marine origin; and,
- the Dalton Formation at base as a mid to dark grey, even bedded carbonate grainstone and packstone, with dark grey thinly bedded backstones and wackestones with shaly interbeds, with the upper part comprising even bedded packstones and grainstones.

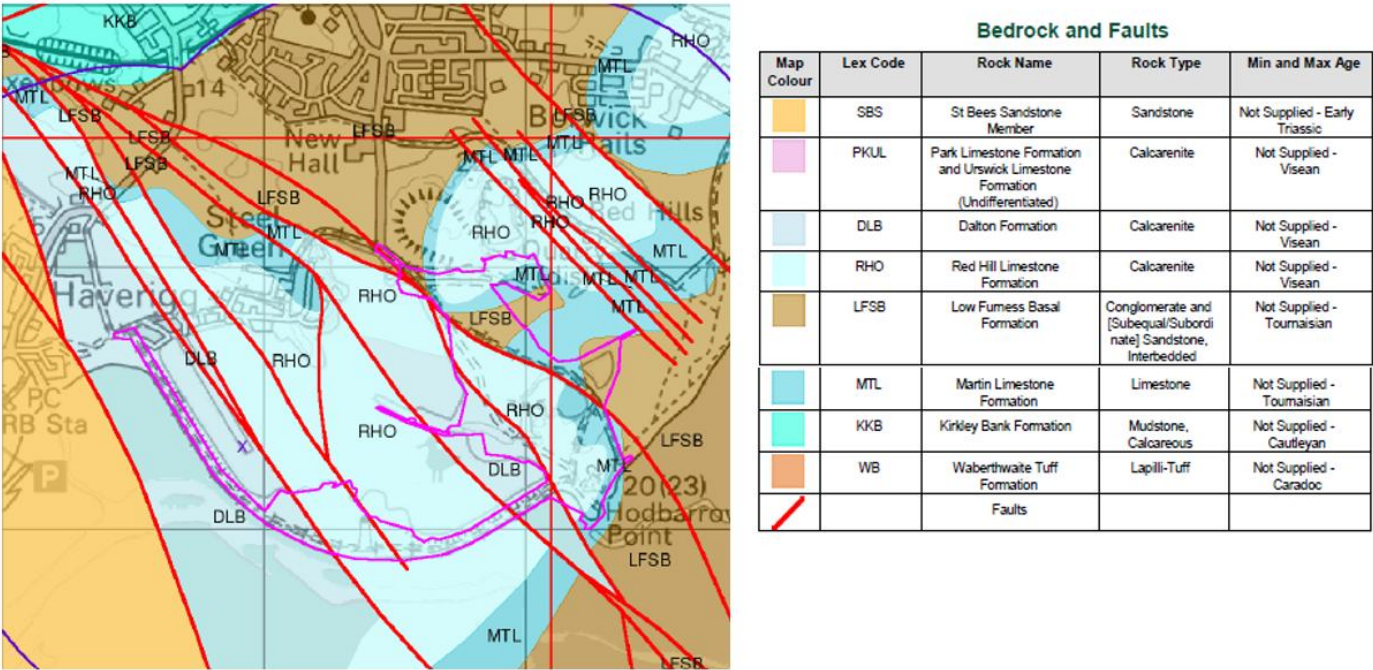


Figure 4 – Extract from BGS 1:50,000 mapping (Bedrock).
Site outlined in purple.

The site and surrounding area are heavily faulted, with shallow dipping (5-15 degrees) SW and striking NW-SE cutting across all lithology types.

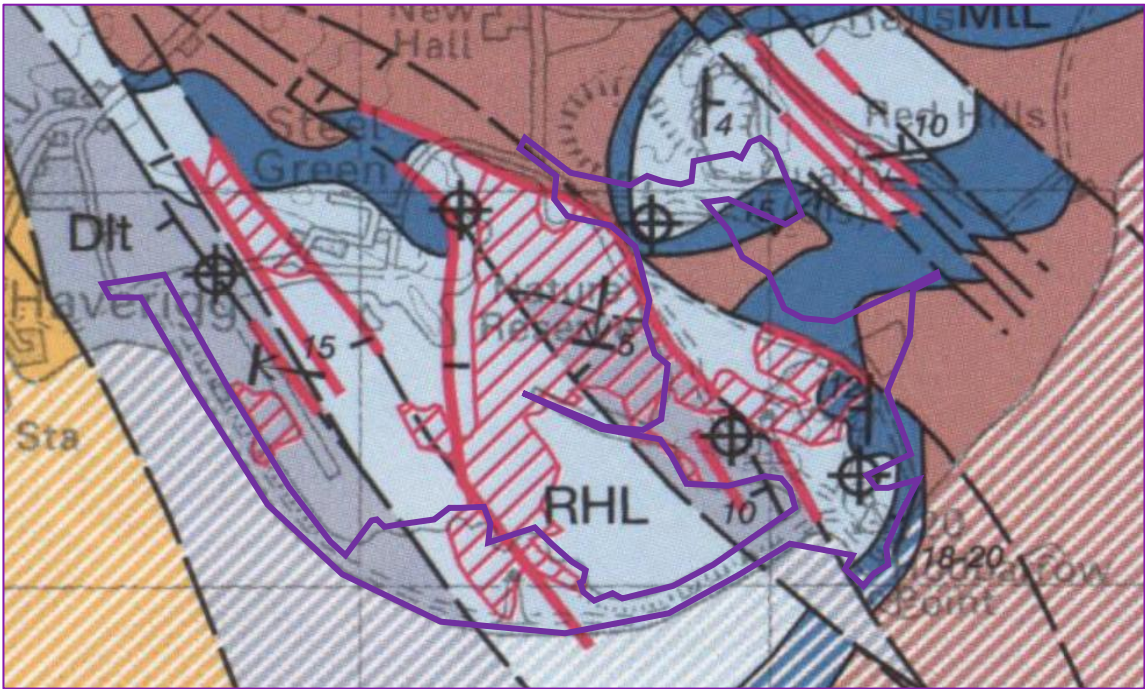


Figure 5 – Extract from BGS 1:50,000 mapping (Bedrock)
Approximate Site Boundary in Purple.
Red lines showing haematite veins
Red cross-hatched showing hematite deposits, worked at rockhead and at depth
Black lines showing faults
Black Crossed circles showing abandoned mine shafts.

2.5.4 BGS Borehole Records

There are 160 noted boreholes located within 500m of the site. 23 No. boreholes are recorded within the site boundary, 21 No. of which are deep boreholes (greater than 30m), 1 No. is moderately deep (between 10 – 30m) and 1 No. is shallow (between 0 – 10m). The boreholes on and around the site were undertaken between 1882 and 1971, with depths between 5.00m and 222.99m bgl, all of which progressed into the bedrock strata.

The majority of boreholes located within 500m of the site are located within the artificial lagoon of RSPB Hodbarrow and are therefore unlikely to affect the development of the site into the future.

Bedrock was typically encountered from ground level, comprising predominantly grey limestone, red marl, red conglomerate, and iron ore.

There are eight available BGS borehole logs available within 250m of the site boundary, which have been considered to better inform the likely underlying geology within the areas of proposed development. Table 3 below provides the descriptions provided on the respective logs.

Table 3 – BGS Borehole Logs

Record Reference	Location	Details	
SD17NE106	317860, 479059 Approx. 70m northwest.	0.00m to 42.98m bgl 42.98m to 45.42m bgl 45.42m to 48.16m bgl 48.16m to 49.68m bgl End of borehole	Limestone with traces of ore Dark grey and green shale Green limestone Green shale
SD17NE107	317901, 479066 Approx. 75m north.	0.00m to 43.59m bgl 43.59m to 44.81m bgl 44.81m to 46.33m bgl 46.33m to 46.94m bgl 46.94m to 49.68m bgl End of borehole	Grey limestone Green shale Reddish limestone with shale Conglomerate Limestone with shale
SD17NE108	317929, 479105 Approx. 120m northeast.	0.00m to 42.67m bgl 42.67m to 50.60m bgl 50.60m to 52.12m bgl 52.12m to 52.73m bgl 52.73m to 53.64m bgl End of borehole	Grey limestone Green marl with limestone and shale Reddish limestone and marl Grey limestone Brown conglomerate
SD17NE196	317739, 478796 Approx. 220m southwest.	0.00m to 61.87m bgl 61.87m to 64.92m bgl End of borehole	Drift Limestone
SD17NE91	318108, 479123 Approx. 240m northeast.	0.00m to 19.20m bgl 19.20m to 40.84m bgl 40.84m to 41.76m bgl 41.76m to 52.12m bgl 52.12m to 52.73m bgl 52.73m to 84.73m bgl End of borehole	Drift Grey limestone with jointing Iron ore Dark grey limestone Iron ore Grey limestone with iron ore , interbedded with ore
SD17NE94	318181, 478999 Approx. 240m east.	0.00m to 18.29m bgl 18.92m to 60.96m bgl 60.96m to 61.87m bgl 61.87m to 63.09m bgl 63.09m to 67.06m bgl 67.06m to 70.10m bgl	Sand and cobbles Interbedded grey jointed limestone with ore Red sandy marl Ore Red marl with sandstone Grey limestone and sandstone

Record Reference	Location	Details
		70.10m to 103.02m bgl Conglomerate with sandy marl End of borehole
SD17NE93	318180, 478840 Approx. 250m southeast.	0.00m to 6.10m bgl Fine sand 6.10m to 32.92m bgl Clay, sand, and gravel 32.92m to 36.58m bgl Brown limestone 36.58m to 49.38m bgl Conglomerate End of borehole
SD17NE187	317869, 478723 Approx. 250m south.	0.00m to 58.83m bgl Drift of sand, peat, and sandy loam 58.83m to 115.82m bgl Red conglomerate with sandy marl End of borehole

2.5.5 BGS Mineral Sites

The site is not situated within a coal mining reporting area, and as such risks associated with coal mining are considered Very Low.

Iron mining was undertaken at Hodbarrow Iron Mine on site. The mine opened ~1850 and was in operation until 1968. Online searches suggest surface extraction and shallow mining was undertaken and that subsidence of historic structures (the inner barrier) occurred as a result of underground mining. At present it is unknown if the proposed development area is affected by any shallow mining which may have occurred at Hodbarrow Iron Mine.

There are 5 No. opencast workings recorded within 500m of the surrounding area, detailed in Table 4 below:

Table 4 – BGS Recorded Mineral Sites within 500m of the Development Area.

Site Name	Operator	Distance from Site (m)	Commodity	Status
Red Hills Quarry	Unknown	1	Limestone	Ceased
Red Hills Slag Bank	Millom Aggregates	119	Slag	Ceased
Red Hills Quarry	Unknown	188	Limestone	Ceased
Whitriggs Close Clay Pits	Unknown	300	Common Clay and Shale	Ceased
Whitriggs Close Clay Pits	Unknown	411	Common Clay and Shale	Ceased

2.5.6 Other Ground Stability Issues

The Envirocheck Report confirms the following in relation to potential geotechnical hazards highlighted in Table 5 below:

Table 5 – Ground Stability Hazards for the site and surrounding area.

Ground Stability Hazard	Hazard Potential On-site	Hazard Potential Off-site
Collapsible Ground	No Hazard	No Hazard
Compressible Ground	Very Low - Moderate	Moderate

Ground Stability Hazard	Hazard Potential On-site	Hazard Potential Off-site
Ground Dissolution (Soluble Rocks)	No Hazard - Low	Low
Landslide	Very Low – Low	Very Low - Moderate
Running Sand	No Hazard - Moderate	Low
Shrinking or Swelling Clay	No Hazard - Low	Very Low

Given the information above there is unlikely to be a need to address any of the ground stability hazards mentioned above. However, slope stability should be considered for Zone 1 due to the steep slope down to Redhills Quarry at the north. Intrusive ground investigation works will confirm the nature of the ground conditions at the subject site.

2.5.7 Radon Potential

The Envirocheck Report (Ref. 4) and Radon Mapping (Ref. 6) confirm that the site is located within a varied area, ranging from a Lower Probability Radon Area (less than 1% of homes are estimated to be at or above the Action Level) to a Higher Probability Radon Area (10% to 30% of homes are estimated to be at or above the Action Level).

Guidance suggests that within Intermediate to High Probability Radon Areas basic to full radon protective measures are necessary in the construction of new dwellings or extensions.

2.6 Mining Geology

2.6.1 Past Underground Mining

The Hodbarrow Mine, when operational, was a large iron ore mine which had twice extended its capacity. Firstly, by building the inner sea barrier, and then again through construction of the outer sea barrier to allow them to mine ore which was previously beneath the sea/estuary. This area has since been flooded and is known as the Hodbarrow Lagoon.

Table 6 below provides a summary of the minerals that are recorded or likely to have been worked beneath the footprint of the site.

Table 6 – Past Underground Mining

Mine	Geology	Mineral	Depth (m)	Direction to Working	Extraction Thickness (cm)
Hodbarrow Iron Mine	Red Hill Limestone Formation Martin Limestone Formation Low Furness Basal Formation Dalton Formation	Iron Ore	Unknown	Beneath Site	Unknown

The Iron Ore containing Red Hill Limestone Formation along with the Dalton Formation are present beneath the site, and further dip towards the south-west.

2.6.2 Mine Entries

The following sources have been used to understand the presence of mine entries to the site.

- Curtins Phase 1 Envirocheck Mapping (Ref. 1)
- Curtins Phase 1 Envirocheck data (Ref. 1)
- Historical Archive Mapping (See section 2.3 above)
- Northern Mine Research Society (Ref. 5)

A full list of the data sets assessed has been compiled and included within Appendix D. A number of potential mine entries identified across the data sets above are likely to be duplications, however given the inaccuracies in mapping the exact co-ordinates are unknown. Figure 6 shows the approximate locations of these extracted potential mine entries.

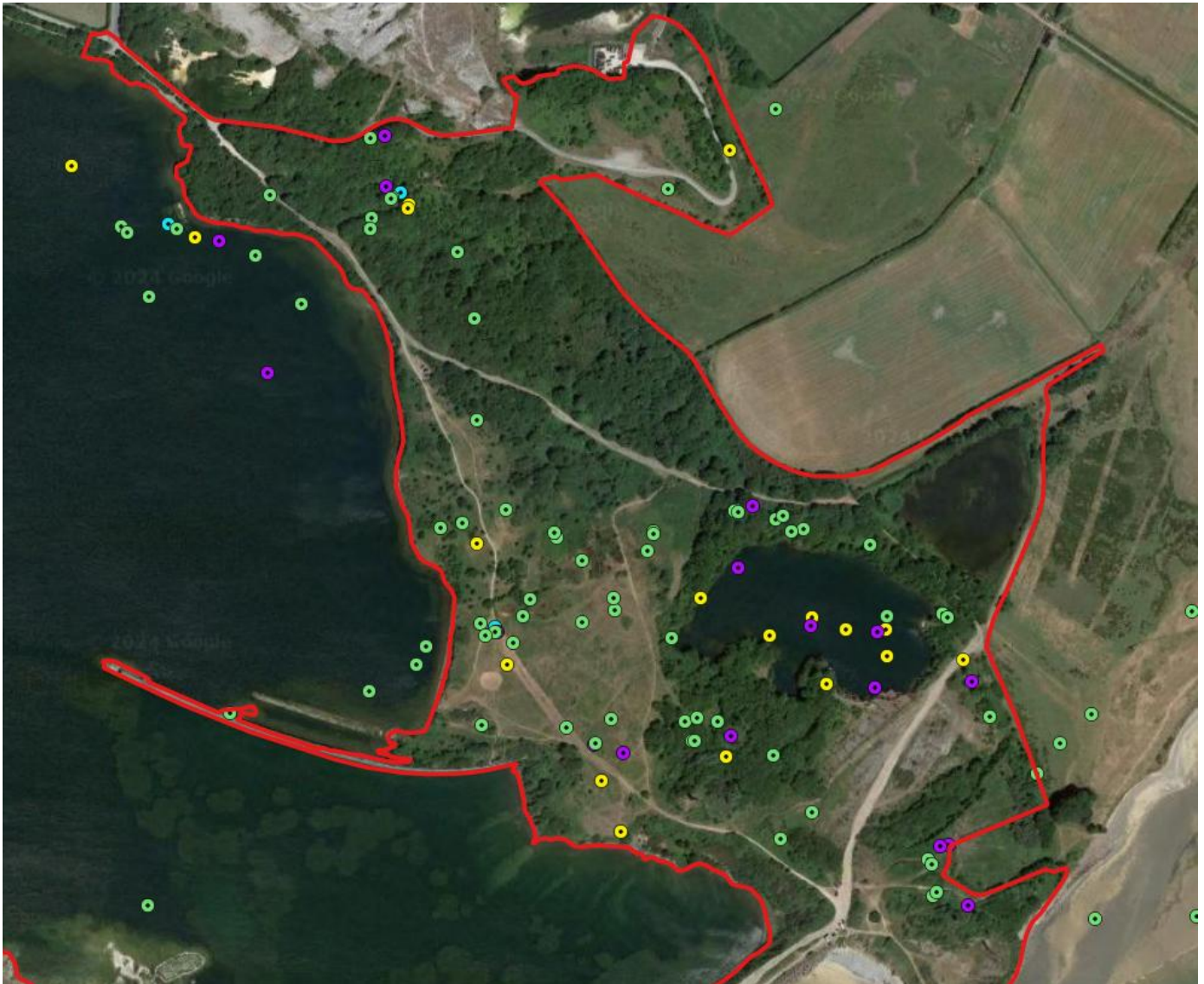


Figure 6 – Extract of Potential Mine Entry Data
Blue data from Curtins Phase 1 Envirocheck Mapping (Ref. 1)
Green data from Curtins Phase 1 Envirocheck data (Ref. 1)
 data from Northern Mine Research Society (Ref. 5) interactive map
Yellow data from Historical Archive Mapping (See section 2.3 above)
 Approximate Site Boundary in **Red**. Refer to Table 7 above for further information

Curtins Phase 1 Envirocheck Mapping (Ref. 1)

Four shafts have been located within the site boundary identified from Curtins Phase 1 Envirocheck historical mapping. No information is available regarding the diameters and depths of the shafts or pits.

Approximate grid references only, note accuracy of grid references have been acquired from historical mapping which may be inaccurate.

Curtins Phase 1 Envirocheck data (Ref. 1)

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Eighty-one shafts or 'unspecified pits' located within the site boundary identified from Curtins Phase 1 Envirocheck Mining Data set. It should be noted that 'unspecified pits' could represent a shaft or any extractive process such as a quarry/opencast mine or excavation. No information is available regarding the diameters and depths of the shafts or pits.

Approximate grid references only, note accuracy of grid references to nearest whole values.

Historical Archive Mapping (See section 2.3 above)

Twenty-one shafts/boreholes have been located within the site boundary identified from historical archive maps.

Approximate grid references only, note accuracy of grid references have been acquired from historical mapping which may be inaccurate.

Northern Mine Research Society (Ref. 5)

Sixteen mine shafts/pits located within the site boundary. No information is available regarding the diameters and depths of the shafts or pits. Information taken from the Northern Mine Research Society (Ref. 5) interactive map of the Iron Mines of the British Isles.

Approximate grid references only, note accuracy of grid references to nearest whole values.

3 DISCUSSION & RISK ASSESSMENT

Risk assessment has been undertaken for each of the development 'Zones' as identified in Section 2.1 using the pertinent mining records and information discussed in previous sections. Curtins drawing titled 'Summary of Historical Iron Mining and Associated Features' is enclosed in Appendix A with extracts used within the assessment below.

3.1 Development Zone 1 – Visitors Centre

The aim of the Mining Risk Assessment is to determine if mining related hazards are present and where present, the risk they present to the proposed development. Development Zone 1 has been assessed independently due to the development including new structures.

Hazards associated with mining can be broadly characterised by the scenarios summarised in Table 7.

Table 7 – Development Zone 1 Potential Mining Risk Summary

Mining Issue	Yes	No	Risk Assessment
Underground Mining (recorded or probable at shallow depths) <30m below rockhead	Y		See further commentary below in section 3.1.1
Underground Mining (probable at deeper depths) >30m below rockhead	Y		See further commentary below in section 3.1.1
Mine entries (shafts and adits)	Y		See further commentary below in section 3.1.2
Mining Geology	Y		See further commentary below in section 3.1.3
Record of past mine gas emissions	Y		See further commentary below in section 3.1.4
Recorded Mining Surface Hazard	Y		See further commentary below in section 3.1.5
Surface Mining (open cast workings)	Y		See further commentary below in section 3.1.6

For those mining issues identified as “yes” a more detailed discussion and assessment is made of the risks to the application site and the proposed development.

The underground constraints noted for Development Zone 1 are shown on Figure 7.



*Figure 7 – Underground Mining Constraints – Development Zone 1
Site outlined in Red with Zone in Orange Hatching; Shafts/boreholes noted with green and yellow dots; Ore body workings noted by orange shading; underground road networks noted by blue shading
(locations of features identified using Archive plan BDB 21-5-5-123 [Plan of Workings of Moorbank and Hodbarrow Mines. Sheet 2 Hodbarrow Mine, Owned by the Millom Heamatite Ore and Iron Co., Ltd])*

3.1.1 Shallow and Deep Mining

Deep mining risk relates to mine workings present at depths greater than 30m below rockhead level. In general, the risk presented by these workings is very low because of either the depth at which historical workings lie resulting in any collapse self-arresting through bulking of overburden or, the cessation of modern mining in the UK (longwall) that tends to induce surface subsidence immediately or, at most around four years once support is removed from the cutting face.

The publicly available boreholes record the rockhead level to vary between depths of 0.00m bgl and 61.87m bgl across the wider site, local information is limited for Zone 1 however bedrock is anticipated between 10m and 20m bgl. Iron Ore has been noted within available borehole records at depths from 40.84m to 63.09m bgl across the wider site and has been targeted in the past, however the Iron Ore body is not laterally continuous across the whole site.

Contour maps showing the “probable depths to solid rocks beneath superficial deposits” which was based upon borehole records, indicates that bedrock beneath the investigation areas ranges between 25ft and 100ft below ground level (approximately 7.50m to 30.00m bgl).

Plans and Cross Sections of boreholes undertaken on Hodbarrow Iron Mine indicate that Iron Ore was found and extracted at depths ranging between 150 to 200ft below ground level (approximately 45.00m to 60.00m bgl) across the wider site but not on Zone 1.

Based on the available information from historic and archived mapping, deep mining occurring within Development Zone 1 (Visitors Centre) is considered unlikely, due to the ore body not being present beneath this part of the site. An underground road/tunnel passes beneath Development Zone 1 connecting the different ore bodies however; records suggest this is at a depth of around 55m bgl and therefore any collapse is unlikely to result in prorogation to the surface or founding depths. Furthermore, the roadway is shown to present outside of the proposed building footprint, circa 8m south.

The risk posed to Development Zone 1 by historic deep mining has therefore been assessed as **Low**.

Although shallow workings are not expected based on available records, there is a possibility that unrecorded shallow workings may exist. Or potential for the roadway to exist at shallower depths beneath the building footprint where records are inaccurate.

Considering the extensive mining history of the wider site and given that any unrecorded workings at shallow depths may result in propagation to the surface/building founding depths, the risk posed to Development Zone 1 by unrecorded shallow mining has therefore been assessed as **Moderate/ Low**.

3.1.2 Mine Entries

Mine entry risk relates to the potential for abandoned and untreated mine shafts to be present on-site that are prone to collapse due to various factors including the passage of time, changes in drainage and increased loading.

Given the age of the Hodbarrow Iron Mine, it is possible that spoil will have been placed over mine shafts in the area that were no longer being used at the time, along with flooding of certain mine shafts contained within the Hodbarrow Lagoon and the two large ponds on site. This could make it difficult to distinguish and identify the position of the mine shafts. A large portion of the Hodbarrow Iron Mine has subsequently been flooded to create the Hodbarrow Lagoon; several mine entries could be submerged within the lagoon.

The development plan in Appendix A shows a Visitors Centre building to be located within the north-eastern corner of the site. Based on mapping of the recorded mine shafts and pits, this development area contains an 'unspecified pit' in the south of site and a ventilation borehole in the east. The unspecified pit in the south of site is considered likely to relate to excavation shown in 1969 historical mapping, rather than a shaft. The size of the ventilation borehole is unknown but unlikely to present a risk of ground collapse given it is a borehole not a shaft. It is situated away from the proposed building footprint but close to an existing road. The possibility of unrecorded mine entries on this site cannot be fully discounted.

The risk posed to Development Zone 1 by mine entries has been assessed as **Moderate – Low**.

3.1.3 Mining Geology

Mining geology risk relates to geological disturbances or fractures in the bedrock disturbed by underground mining. In some circumstances faults, fissures, or break lines have been known to contribute to surface subsidence when activated by underground mining.

There are up to five geological fault lines recorded beneath the wider site, with several more off-site in the surrounding area. The downthrow of the faults are generally towards the site. Several fissures or break lines have been recorded within the site boundary or in the immediate surrounding area.

Notwithstanding no faults are recorded on the Zone 1 site. The risk posed to Development Zone 1 by mining geology has therefore been assessed as **Low**.

3.1.4 Mine Gases

Mine gases relate to the generation of gases due to the presence of mine workings.

There is a potential source of mine gases from deep workings, with potential migration pathways through the underground roadway at depth beneath the site followed by vertical migration through bedrock and superficial deposits. Or from any unrecorded shallow mine workings, with potential pathways through bedrock and superficial deposits.

The risk posed to Development Zone 1 by mine gases has been assessed as **Moderate – Low**.

3.1.5 Recorded Mining Surface Hazards

The site occupied by Development Zone 1 is noted to be a slag heap in historic mapping record. There is a potential for mine working arisings such as Slag to be present within the Made Ground deposits on site.

The risk posed to Development Zone 1 by expansive material and aggressive ground has been assessed as **Moderate – Low**.

3.1.6 Surface Mining (Open Cast Mining)

Archived mapping was accessed at the Cumbria Archives at the Cumbria Archive Centre, Barrow.

Off-site to the north was known to comprise the Redhill Quarry, in which Limestone and Hematite was extracted. The site occupied by Development Zone 1 is noted to be a slag heap. Backfill of the Opencast Mining locations may lead to large deposits of Made Ground of unknown composition.

There is limited record of opencast mining on Zone 1 with the exception of a relatively small excavation on the south of the site in 1969 mapping.

The risk posed to Development Zone 1 by historic opencast mining has been assessed as **Moderate/Low**.

3.1.7 Development Zone 1: Recommendations

It is recommended that the following is undertaken:

- An initial ground investigation for initial planning submissions and design purposes, complete rotary open boreholes to determine the presence of voids, broken ground which may be indicative of shallow workings within influencing depths of the proposed structure, boreholes to be advanced to circa 40m bgl. Ground gases should be monitored during borehole advancement due to potential for mine gases.
- The presence of any Made Ground should be determined, aggressive ground and expansivity to be considered.
- Dependent on the findings of the ground investigation, where required determine and produce a treatment specification from the ground investigation information.
- Dependent on the findings of the ground investigation, where required complete proof drilling and grouting of the proposed development area, relevant to the building footprints and a suitable distance surrounding any building footprints.
- Identify location of the ventilation borehole and decommission in accordance with EA guidance.
- Watching brief to be carried out during groundworks by geotechnical engineer to monitor for evidence of shafts. If any are recorded during construction works should be stopped and further risk assessment carried out. A remedial specification and capping measures may then need to be provided.

3.2 Development Zone 3 – Towsey Hole Windmill

The aim of the Mining Risk Assessment is to determine if mining related hazards are present and where present, the risk they present to the proposed development. Development Zone 3 has been assessed.

Hazards associated with mining can be broadly characterised by the following scenarios assessed in Table 8. For those mining issues identified as “yes” a more detailed discussion and assessment is made of the risks to the application site and the proposed development.

Table 8 – Development Zone 3 Potential Mining Risks

Mining Issue	Yes	No	Risk Assessment
Underground Mining (recorded or probable at shallow depths) <30m below rockhead		N	Plans and Cross Sections of boreholes undertaken on Hodbarrow Iron Mine indicate that Iron Ore was found and extracted at depths ranging between 150 to 200ft below ground level (approximately 45.00m to 60.00m bgl), not considered shallow depths. The proposed development plans are for the improvement of existing paths/roads and construction of new paths and hardstanding at Whiterock junction and improvements to the existing windmill. As such, no new proposed buildings are proposed reducing the potential risk from mining.

Mining Issue	Yes	No	Risk Assessment
Underground Mining (probable at deeper depths) >30m below rockhead		N	Iron Ore mining likely to have been carried out beneath part of this zone. The proposed development plans are for the improvement of existing paths/roads and construction of new paths and hardstanding at Whiterock junction and improvements to the existing windmill. As such, no new proposed buildings are proposed reducing the potential risk from mining.
Mine entries (shafts and adits)	Y		See further commentary below in section 3.2.1
Mining Geology		N	There are up to five geological fault lines recorded beneath the site, with several more off-site in the surrounding area. The downthrow of the faults are generally towards the site. Several fissures or break lines have been recorded within the site boundary or in the immediate surrounding area. The proposed development plans are for the improvement of existing paths/roads and construction of new paths. As such, no proposed buildings are proposed reducing the potential risk from mining.
Record of past mine gas emissions		N	There is a potential source of mine gases on site due to the shallow mine workings, with potential pathways including mine entries and shallow mine workings. The proposed development plans are for the improvement of existing paths/roads and construction of new paths. As such, no proposed buildings are proposed reducing the potential risk from mine gas emissions through removal of the pathway.
Recorded Mining Surface Hazard	Y		See further commentary below in section 3.2.2
Surface Mining (open cast workings)		N	The Hodbarrow Iron Mine covering the majority of site had several opencast pits in which Iron Ore was extracted from deposits contained within the Limestone Bedrock. Backfill of the Opencast Mining locations may lead to large deposits of Made Ground of unknown composition. A quarry is located immediately south of the proposed development area, however, quarry walls are still present noting no backfill of the quarry. The proposed development plans are for the improvement of existing paths/roads and construction of new paths. As such, no proposed buildings are proposed reducing the potential risk from mining.

The underground constraints noted for Development Zone 3 are shown on Figure 8.



Figure 8 – Underground Mining Constraints – Development Zone 3

Site outlined in Red, with Zone 3 extent in orange hatching; Shafts/boreholes noted with green and purple dots; Ore body workings noted by orange shading; underground road networks noted by blue shading (locations of features identified using Archive plan BDB 21-5-5-123 [Plan of Workings of Moorbank and Hodbarrow Mines. Sheet 2 Hodbarrow Mine, Owned by the Millom Heamatite Ore and Iron Co., Ltd])

3.2.1 Mine Entries

Mine entry risk relates to the potential for abandoned and untreated mine shafts to be present on-site that are prone to collapse due to various factors including the passage of time, changes in drainage and increased loading.

Archived mapping was accessed at the Cumbria Archives at the Cumbria Archive Centre, Barrow. There are numerous potential mine/shaft entries noted on historical mapping and mining records within Zone 3. As discussed in Section 2.6.2 there may be duplication between these features but the exact locations are not currently known and further unrecorded mine entries can also not be fully discounted.

Given the age of the Hodbarrow Iron Mine, it is possible that spoil will have been placed over mine shafts in the area that were no longer being used at the time, along with flooding of certain mine shafts contained within the Hodbarrow Lagoon and the two large ponds on site. This could make it difficult to distinguish and identify the position of the mine shafts.

The proposed development plans for Development Zones 3 are for the improvement of existing paths/roads and construction of new paths. As such, no proposed buildings are proposed reducing the potential risk from mining.

The risk posed to Development Zone 3 by unrecorded mine entries has been assessed as **Moderate – Low**.

3.2.2 Recorded Mining Surface Hazards

There is a potential for mine working arisings such as Slag to be present within the Made Ground deposits on site.

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The risk posed to Development Zone 3 by expansive material and aggressive ground has been assessed as **Moderate – Low**.

3.2.3 Development Zone 3: Recommendations

It is recommended that the following is undertaken:

- Complete the initial ground investigation to determine the presence of any Made Ground, aggressive ground and expansivity to be considered.
- Watching brief to be carried out during construction works by geotechnical engineer to monitor for evidence of shafts. If any are recorded during construction works should be stopped and further risk assessment carried out. A remedial specification and capping measures would then need to be provided.
- All new or upgraded roads, paths and structures to be underlain with geogrid to provide some mitigation against a shaft collapse.

3.3 Development Zone 4 – Haverigg Lighthouse & Tern Island Hide

The aim of the Mining Risk Assessment is to determine if mining related hazards are present and where present, the risk they present to the proposed development. Development Zone 4 has been assessed.

Hazards associated with mining can be broadly characterised by the following scenario summarised in Table 9. For those mining issues identified as “yes” a more detailed discussion and assessment is made of the risks to the application site and the proposed development.

Table 9 – Development Zone 4 Potential Mining Risks

Mining Issue	Yes	No	Risk Assessment
Underground Mining (recorded or probable at shallow depths) <30m below rockhead		N	Plans and Cross Sections of boreholes undertaken on Hodbarrow Iron Mine indicate that Iron Ore was found and extracted at depths ranging between 150 to 200ft below ground level (approximately 45.00m to 60.00m bgl), not considered ‘shallow’. The proposed development plans are for the improvement of existing paths/roads and construction of new paths, bird hides and improvements to Haverigg lighthouse. As such, no new heavily loaded or sensitive buildings are proposed reducing the potential risk from mining.
Underground Mining (probable at deeper depths) >30m below rockhead		N	Plans and Cross Sections of boreholes undertaken on Hodbarrow Iron Mine indicate that Iron Ore is unlikely to be present beneath this part of the site. The proposed development plans are for the improvement of existing paths/roads and construction of new paths, bird hides and improvements to Haverigg lighthouse. As such, no new heavily loaded or sensitive buildings are proposed reducing the potential risk from mining.
Mine entries (shafts and adits)		N	This development area is located on the Hodbarrow Sea Wall. Unrecorded mine entries in this area are considered unlikely. The proposed development plans are for the improvement of existing paths/roads and construction of new paths. As such, no proposed buildings are proposed reducing the potential risk from mining.
Mining Geology		N	There are up to five geological fault lines recorded beneath the site, with several more off-site in the surrounding area. The downthrow of the faults are generally towards the site. Several

Mining Issue	Yes	No	Risk Assessment
			fissures or break lines have been recorded within the site boundary or in the immediate surrounding area. The proposed development plans are for the improvement of existing paths/roads and construction of new paths. As such, no proposed buildings are proposed reducing the potential risk from mining.
Record of past mine gas emissions		N	There is a potential source of mine gases on site due to the shallow mine workings, with potential pathways including mine entries and shallow mine workings. The proposed development plans are for the improvement of existing paths/roads and construction of new paths. As such, no proposed buildings are proposed reducing the potential risk from mine gases as no indoor airspaces allow for gas accumulation.
Recorded Mining Surface Hazard	Y		See further commentary below in section 3.3.1
Surface Mining (open cast workings)		N	The Hodbarrow Iron Mine covering the majority of site had several pits in which Iron Ore was extracted from deposits contained within the Limestone Bedrock. Backfill of the Opencast Mining locations may lead to large deposits of Made Ground of unknown composition. The site is located on a man made sea wall, constructed to allow opencast mining to the north. The proposed development plans are for the improvement of existing paths/roads and construction of new paths. As such, no proposed buildings are proposed reducing the potential risk from mining.

The underground constraints noted for Development Zone 4 are shown on Figure 9.



Figure 9 – Underground Mining Constraints – Development Zone 4

Site outlined in Red with Zone 4 extent identified in orange hatching; Shafts/boreholes noted with green dots; Ore body workings noted by yellow shading; underground road networks noted by blue shading

(locations of features identified using Archive plan BDB 21-5-5-123 [Plan of Workings of Moorbank and Hodbarrow Mines. Sheet 2 Hodbarrow Mine, Owned by the Millom Heamatite Ore and Iron Co., Ltd])

3.3.1 Recorded Mining Surface Hazards

There is a potential for mine working arisings such as Slag to be present within the Made Ground deposits on site associated with the construction of the sea wall.

The risk posed to Development Zone 4 by expansive material and aggressive ground has been assessed as **Moderate – Low**.

3.3.2 Development Zone 4: Recommendations

It is recommended that the following is undertaken:

- Complete the initial ground investigation to determine the presence of any Made Ground, aggressive ground and expansivity potential to be considered.

3.4 Development Zone 5 – Annie Lowther Hide

The aim of the Mining Risk Assessment is to determine if mining related hazards are present and where present, the risk they present to the proposed development. Development Zone 5 has been assessed.

Hazards associated with mining can be broadly characterised by the following scenarios in Table 10. For those mining issues identified as “yes” a more detailed discussion and assessment is made of the risks to the application site and the proposed development.

Table 10 – Development Zone 5 Potential Mining Risks

Mining Issue	Yes	No	Risk Assessment
Underground Mining (recorded or probable at shallow depths) <30m below rockhead		N	Plans and Cross Sections of boreholes undertaken on Hodbarrow Iron Mine indicate that Iron Ore was found and extracted at depths ranging between 150 to 200ft below ground level (approximately 45.00m to 60.00m bgl) at depths not considered ‘shallow’. The proposed development plans are for the improvement of existing paths/roads and construction of new paths and a bird hide. As such, no heavily loaded or sensitive structures are proposed reducing the potential risk from mining.
Underground Mining (probable at deeper depths) >30m below rockhead	Y		See further commentary below in section 3.4.1
Mine entries (shafts and adits)	Y		See further commentary below in section 3.4.2
Mining Geology		N	There are up to five geological fault lines recorded beneath the site, with several more off-site in the surrounding area. The downthrow of the faults are generally towards the site. Several fissures or break lines have been recorded within the site boundary or in the immediate surrounding area. The proposed development plans are for the improvement of existing paths/roads and construction of new paths. As such, no proposed buildings are proposed reducing the potential risk from mining.

Mining Issue	Yes	No	Risk Assessment
Record of past mine gas emissions		N	There is a potential source of mine gases on site due to the shallow mine workings, with potential pathways including mine entries and shallow mine workings. The proposed development plans are for the improvement of existing paths/roads and construction of new paths/lightly loaded timber structure. As such, no proposed buildings are proposed reducing the potential risk from mine gases as no indoor airspaces allow for gas accumulation.
Recorded Mining Surface Hazard	Y		See further commentary below in section 3.4.3
Surface Mining (open cast workings)		N	The Hodbarrow Iron Mine covering the majority of site had several pits in which Iron Ore was extracted from deposits contained within the Limestone Bedrock. Backfill of the Opencast Mining locations may lead to large deposits of Made Ground of unknown composition. The site is located east of a man made sea wall, constructed to allow opencast mining to the west. The proposed development plans are for the improvement of existing paths/roads and construction of new paths. As such, no proposed buildings are proposed reducing the potential risk from mining.

The underground constraints noted for Development Zone 5 are shown on Figure 10.

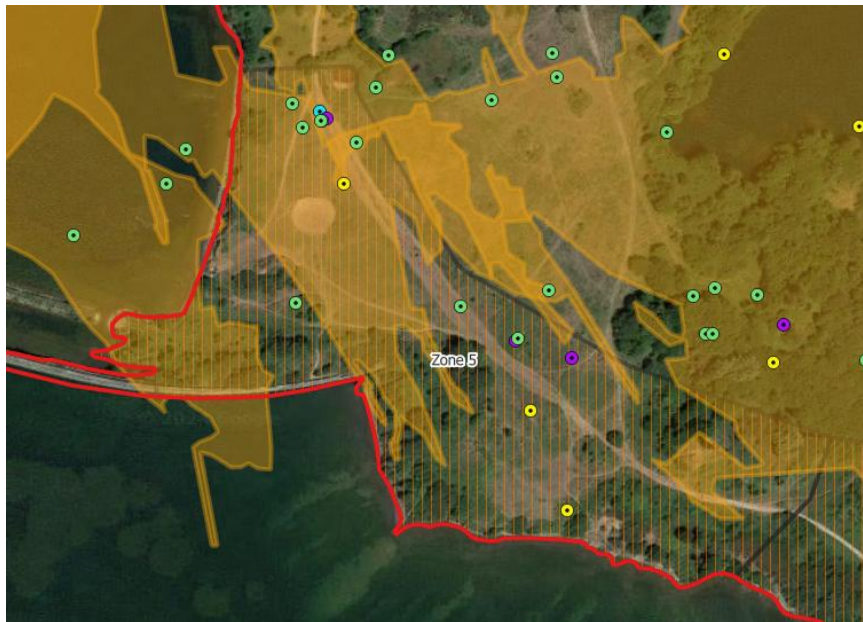


Figure 10 – Underground Mining Constraints – Development Zone 5
Site outlined in Red with Zone 5 extent identified in orange hatching; Shafts/boreholes noted with green, purple, blue and yellow dots; Ore body workings noted by yellow shading; underground road networks noted by blue shading (locations of features identified using Archive plan BDB 21-5-5-123 [Plan of Workings of Moorbank and Hodbarrow Mines. Sheet 2 Hodbarrow Mine, Owned by the Millom Heamatite Ore and Iron Co., Ltd])

3.4.1 Underground Mining (probable at deeper depths)

Deep mining risk relates to mine workings present at depths greater than 30m below rockhead level. In general, the risk presented by these workings is very low because of either the depth at which historical workings lie resulting in any collapse self-arresting through bulking of overburden or, the cessation of modern mining in the UK (longwall) that tends to induce surface subsidence immediately or, at most around four years once support is removed from the cutting face.

Contour maps showing the “probable depths to solid rocks beneath superficial deposits” which was based upon borehole records, indicates that bedrock ranges between 25ft and 100ft below ground level (Approximately 7.50m to 30.00m bgl) across the wider site, local information is limited for Zone 5 however is anticipated between ground level and 10m bgl..

Plans and Cross Sections of boreholes undertaken on Hodbarrow Iron Mine indicate that Iron Ore was found and extracted at depths ranging between 150 to 200ft below ground level (approximately 45.00m to 60.00m bgl).

Ore body appears to be being present beneath this development area, however at depths where any collapse is unlikely to results in effect to the surface. The proposed development are for the improvement of existing paths/roads and construction of new paths and lightly loaded timber structures. As such, no proposed buildings are proposed reducing the potential risk from mining.

The risk posed to the site by historic deep mining beneath the site has been assessed as **Low** for the development proposals in Zones 5.

3.4.2 Mine Entries

Mine entry risk relates to the potential for abandoned and untreated mine shafts to be present on-site that are prone to collapse due to various factors including the passage of time, changes in drainage and increased loading.

Archived mapping was accessed at the Cumbria Archives at the Cumbria Archive Centre, Barrow. There are numerous potential mine shafts/ entries noted on historical mapping and mining records within Zone 5. As discussed in Section 2.6.2 there may be duplication between these features but the exact locations are not currently known and further unrecorded mine entries can also not be fully discounted.

Given the age of the Hodbarrow Iron Mine, it is possible that spoil will have been placed over mine shafts in the area that were no longer being used at the time, along with flooding of certain mine shafts contained within the Hodbarrow Lagoon and the two large ponds on site. This could make it difficult to distinguish and identify the position of the mine shafts.

The proposed development plans for Development Zones 5 are for the improvement of existing paths/roads and construction of new paths and a lightly loaded timber structure. As such, no proposed buildings are proposed reducing the potential risk from mining.

The risk posed to Development Zone 5 by mine entries has been assessed as **Moderate – Low**.

3.4.3 Recorded Mining Surface Hazards

There is a potential for mine working arisings such as Slag to be present within the Made Ground deposits on site.

The risk posed to Development Zone 5 by expansive material and aggressive ground has been assessed as **Moderate – Low**.

3.4.4 Development Zone 5: Recommendations

It is recommended that the following is undertaken:

- Complete the initial ground investigation to determine the presence of any Made Ground, aggressive ground and expansivity to be considered.
- Watching brief to be carried out during construction works by geotechnical engineer to monitor for evidence of shafts. If any are recorded during construction works should be stopped and further risk assessment carried out. A remedial specification and capping measures may then need to be provided.

- All new or upgraded roads, paths and structures to be underlain with geogrid to provide some mitigation against a shaft collapse.

3.5 Development Zone 7 – Quarry Hides

The aim of the Mining Risk Assessment is to determine if mining related hazards are present and where present, the risk they present to the proposed development. Development Zone 7 has been assessed.

Hazards associated with mining can be broadly characterised by the following scenarios Table 11. For those mining issues identified as “yes” a more detailed discussion and assessment is made of the risks to the application site and the proposed development.

Table 11 – Development Zone 7 Potential Mining Risks

Mining Issue	Yes	No	Risk Assessment
Underground Mining (recorded or probable at shallow depths) <30m below rockhead		N	Plans and Cross Sections of boreholes undertaken on Hodbarrow Iron Mine indicate that Iron Ore was found and extracted at depths ranging between 150 to 200ft below ground level (approximately 45.00m to 60.00m bgl), not considered ‘shallow’ depths. The proposed development plans are for the improvement of existing paths/roads and construction of new paths and bird hides. As such, no heavily loaded or sensitive structures are proposed reducing the potential risk from mining.
Underground Mining (probable at deeper depths) >30m below rockhead	Y		See further commentary below in section 3.5.1
Mine entries (shafts and adits)	Y		See further commentary below in section 3.5.2
Mining Geology		N	There are up to five geological fault lines recorded beneath the site, with several more off-site in the surrounding area. The downthrow of the faults are generally towards the site. Several fissures or break lines have been recorded within the site boundary or in the immediate surrounding area The proposed development plans are for the improvement of existing paths/roads and construction of new paths and bird hides. As such, no heavily loaded or sensitive structures are proposed reducing the potential risk from mining.
Record of past mine gas emissions		N	There is a potential source of mine gases on site due to the shallow mine workings, with potential pathways including mine entries and shallow mine workings. The proposed development plans are for the improvement of existing paths/roads and construction of new paths and a lightly loaded timber structure. As such, no proposed buildings are proposed reducing the potential risk from mine gases as no indoor airspaces allow for gas accumulation.
Recorded Mining Surface Hazard	Y		See further commentary below in section 3.5.3
Surface Mining (open cast workings)		N	The Hodbarrow Iron Mine covering the majority of site had several pits in which Iron Ore was extracted from deposits contained within the Limestone Bedrock. Backfill of the

Mining Issue	Yes	No	Risk Assessment
			Opencast Mining locations may lead to large deposits of Made Ground of unknown composition. Quarries are located immediately north and south of the proposed development area, which are now filled with water to form a lagoon. This is also outside of the proposed development area, therefore no opencast backfill is expected within the development area. The proposed development plans are for the improvement of existing paths/roads and construction of new paths and a lightly loaded timber structure. As such, no proposed buildings are proposed reducing the potential risk from mining.

The underground constraints noted for Development Zone 7 are shown on Figure 11.

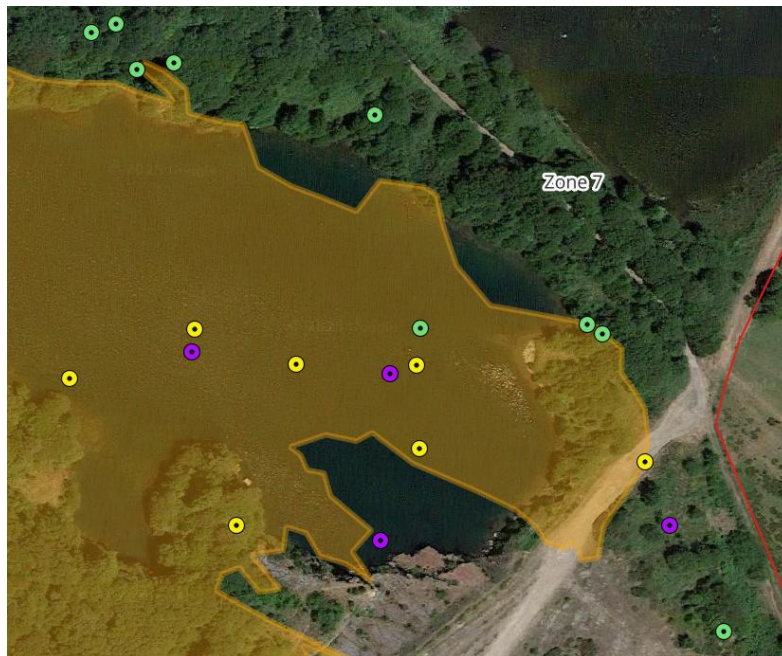


Figure 11 – Underground Mining Constraints – Development Zone 7

Site outlined in Red; Shafts/boreholes noted with green dots; Ore body workings noted by orange shading; underground road networks noted by blue shading

(Locations of features identified using Archive plan BDB 21-5-5-123 [Plan of Workings of Moorbank and Hodbarrow Mines. Sheet 2 Hodbarrow Mine, Owned by the Millom Heamatite Ore and Iron Co., Ltd])

3.5.1 Underground Mining (probable at deeper depths)

Deep mining risk relates to mine workings present at depths greater than 30m below rockhead level. In general, the risk presented by these workings is very low because of either the depth at which historical workings lie resulting in any collapse self-arresting through bulking of overburden or, the cessation of modern mining in the UK (longwall) that tends to induce surface subsidence immediately or, at most around four years once support is removed from the cutting face.

Contour maps showing the “probable depths to solid rocks beneath superficial deposits” which was based upon borehole records, indicates that ranges between 25ft and 100ft below ground level (Approximately 7.50m to 30.00m

bgl) across the wider site, local information is limited for Zone 7 however is anticipated between ground level and 15m bgl.

Plans and Cross Sections of boreholes undertaken on Hodbarrow Iron Mine indicate that Iron Ore was found and extracted at depths ranging between 150 to 200ft below ground level (approximately 45.00m to 60.00m bgl).

Ore body appears to be present close to this development area however at depths where any collapse is unlikely to results in significant effect to the surface. The proposed development are for the improvement of existing paths/roads and construction of new paths. As such, no proposed buildings are proposed reducing the potential risk from mining.

The risk posed to the site by historic deep mining beneath the site has been assessed as **Low** for the development proposals in Development Zone 7.

3.5.2 Mine Entries

Mine entry risk relates to the potential for abandoned and untreated mine shafts to be present on-site that are prone to collapse due to various factors including the passage of time, changes in drainage and increased loading.

Given the age of the Hodbarrow Iron Mine, it is possible that spoil will have been placed over mine shafts in the area that were no longer being used at the time, along with flooding of certain mine shafts contained within the Hodbarrow Lagoon and the two large ponds on site. This could make it difficult to distinguish and identify the position of the mine shafts.

Archived mapping was accessed at the Cumbria Archives at the Cumbria Archive Centre, Barrow. There are 3no. potential mine shafts/ entries noted on historical mapping and mining records within Zone 7. As discussed in Section 2.6.2 there may be duplication between these features but the exact locations are not currently known and further unrecorded mine entries can also not be fully discounted. One of the potential shaft locations identified from 'archive' records is in close proximity to the bird hide at the south of Zone 7.

The proposed development plans for Development Zone 7 are for the improvement of existing paths/roads and construction of new paths two lightly loaded timber structures. As such, this reduces the potential risk from mining. Notwithstanding, due to the proximity of the bird hide to a potential shaft, further assessment is recommended or else consideration should be made to relocating the bird hide away from this shaft, outside of it's departure zone and zone of influence.

The risk posed to Development Zone 7 by mining geology has been assessed as **Moderate – Low**.

3.5.3 Recorded Mining Surface Hazards

There is a potential for mine working arisings such as Slag to be present within the Made Ground deposits on site.

The risk posed to Development Zone 7 by expansive material and aggressive ground has been assessed as **Moderate – Low**.

3.5.4 Development Zone 7: Recommendations

It is recommended that the following is undertaken:

- Complete the initial ground investigation to determine the presence of any Made Ground, aggressive ground and expansivity to be considered.
- Watching brief to be carried out during construction works by geotechnical engineer to monitor for evidence of shafts. If any are recorded during construction works should be stopped and further risk assessment carried out. A remedial specification and capping measures would then need to be provided.
- All new or upgraded roads, paths and structures to be underlain with geogrid to provide some mitigation against a shaft collapse.

3.6 Development Zone 8 – Iron Line Railway

The aim of the Mining Risk Assessment is to determine if mining related hazards are present and where present, the risk they present to the proposed development. Development Zone 8 has been assessed.

Hazards associated with mining can be broadly characterised by the following scenarios Table 12. For those mining issues identified as “yes” a more detailed discussion and assessment is made of the risks to the application site and the proposed development.

Table 12 – Development Zone 8 Potential Mining Risks

Mining Issue	Yes	No	Risk Assessment
Underground Mining (recorded at shallow depths) <30m below rockhead		N	Plans and Cross Sections of boreholes undertaken on Hodbarrow Iron Mine indicate that Iron Ore was found and extracted at depths ranging between 150 to 200ft below ground level (approximately 45.00m to 60.00m bgl), not considered ‘shallow’. The proposed development plans are for the improvement of existing paths/roads and construction of new paths. As such, no proposed buildings are proposed reducing the potential risk from mining.
Underground Mining (probable at deeper depths) >30m below rockhead	Y		See further commentary below in section 3.6.1
Mine entries (shafts and adits)	Y		See further commentary below in section 3.6.2
Mining Geology		N	There are up to five geological fault lines recorded beneath the site, with several more off-site in the surrounding area. The downthrow of the faults are generally towards the site. Several fissures or break lines have been recorded within the site boundary or in the immediate surrounding area. The proposed development plans are for the improvement of existing paths/roads and construction of new paths. As such, no proposed buildings are proposed reducing the potential risk from mining.
Record of past mine gas emissions		N	There is a potential source of mine gases on site due to the shallow mine workings, with potential pathways including mine entries and shallow mine workings. The proposed development plans are for the improvement of existing paths/roads and construction of new paths. As such, no proposed buildings are proposed reducing the potential risk from mine gases as no indoor airspaces allow for gas accumulation.
Recorded Mining Surface Hazard	Y		See further commentary below in section 3.6.3
Surface Mining (open cast workings)		N	The Hodbarrow Iron Mine covering the majority of site had several pits in which Iron Ore was extracted from deposits contained within the Limestone Bedrock. Backfill of the Opencast Mining locations may lead to large deposits of Made Ground of unknown composition. Quarries are located immediately north and south of the proposed development area, which are now filled with water to form a lagoon. This is also outside of the proposed development

Mining Issue	Yes	No	Risk Assessment
			area, therefore no opencast backfill is expected within the development area. The proposed development plans are for the improvement of existing paths/roads and construction of new paths. As such, no proposed buildings are proposed reducing the potential risk from mining.

The underground constraints noted for Development Zone 8 are shown on Figure 12.



Figure 12 – Underground Mining Constraints – Development Zone 8

Site outlined in Red, Zone 8 identified in orange hatching; Possible shafts/boreholes noted with green and purple dots; Ore body workings noted by orange shading; underground road networks noted by blue shading (locations of features identified using Archive plan BDB 21-5-5-123 [Plan of Workings of Moorbank and Hodbarrow Mines. Sheet 2 Hodbarrow Mine, Owned by the Millom Heamatite Ore and Iron Co., Ltd])

3.6.1 Underground Mining (probable at deeper depths)

Deep mining risk relates to mine workings present at depths greater than 30m below rockhead level. In general, the risk presented by these workings is very low because of either the depth at which historical workings lie resulting in any collapse self-arresting through bulking of overburden or, the cessation of modern mining in the UK (longwall) that tends to induce surface subsidence immediately or, at most around four years once support is removed from the cutting face.

Contour maps showing the “probable depths to solid rocks beneath superficial deposits” which was based upon borehole records, indicates that bedrock ranges between 25ft and 100ft below ground level (Approximately 7.50m to 30.00m bgl) across the wider site, local information is limited for Zone 8 however is anticipated between 10 and 20m bgl.

Plans and Cross Sections of boreholes undertaken on Hodbarrow Iron Mine indicate that Iron Ore was found and extracted at depths ranging between 150 to 200ft below ground level (approximately 45.00m to 60.00m bgl).

Ore body appears to be present close to this development area however at depths where any collapse is unlikely to results in significant effect to the surface. The proposed development are for the improvement of existing paths/roads and construction of new paths. As such, no proposed buildings are proposed reducing the potential risk from mining.

The risk posed to the site by historic deep mining beneath the site has been assessed as **Low** for the development proposals in Development Zone 8.

3.6.2 Mine Entries

Mine entry risk relates to the potential for abandoned and untreated mine shafts to be present on-site that are prone to collapse due to various factors including the passage of time, changes in drainage and increased loading.

Given the age of the Hodbarrow Iron Mine, it is possible that spoil will have been placed over mine shafts in the area that were no longer being used at the time, along with flooding of certain mine shafts contained within the Hodbarrow Lagoon and the two large ponds on site. This could make it difficult to distinguish and identify the position of the mine shafts.

Archived mapping was accessed at the Cumbria Archives at the Cumbria Archive Centre, Barrow. There are numerous potential mine shafts/ entries noted on historical mapping and mining records within Zone 8. As discussed in Section 2.6.2 there is likely to be some duplication between these features but the exact locations are not currently known and further unrecorded mine entries can also not be fully discounted.

The proposed development plans for Development Zone 8 are for the improvement of existing paths/roads and construction of new paths. As such, no proposed buildings are proposed reducing the potential risk from mining.

The risk posed to Development Zone 8 by mine entries has been assessed as **Moderate – Low**.

3.6.3 Recorded Mining Surface Hazards

There is a potential for mine working arisings such as Slag to be present within the Made Ground deposits on site.

The risk posed to Development Zone 5 by expansive material and aggressive ground has been assessed as **Moderate – Low**.

3.6.4 Development Zone 8: Recommendations

It is recommended that the following is undertaken:

- Complete the initial ground investigation to determine the presence of any Made Ground, aggressive ground and expansivity to be considered.
- Watching brief to be carried out during construction works by geotechnical engineer to monitor for evidence of shafts. If any are recorded during construction works should be stopped and further risk assessment carried out. A remedial specification and capping measures would then need to be provided.
- All new or upgraded roads, paths and structures to be underlain with geogrid to provide some mitigation against a shaft collapse.

3.7 Development Zone 9 – Iron Line Entrance

The aim of the Mining Risk Assessment is to determine if mining related hazards are present and where present, the risk they present to the proposed development. Development Zone 9 has been assessed.

Hazards associated with mining can be broadly characterised by the following scenarios detailed in Table 13. For those mining issues identified as “yes” a more detailed discussion and assessment is made of the risks to the application site and the proposed development.

Table 13 – Development Zone 9 Potential Mining Risks

Mining Issue	Yes	No	Risk Assessment
Underground Mining (recorded or probable at shallow depths) <i><30m below rockhead</i>		N	Plans and Cross Sections of boreholes undertaken on Hodbarrow Iron Mine indicate that Iron Ore was found and extracted at depths ranging between 150 to 200ft below ground level (approximately 45.00m to 60.00m bgl), not considered 'shallow'. The proposed development plans are for the improvement of existing paths/roads and construction of new paths. As such, no proposed buildings are proposed reducing the potential risk from mining.
Underground Mining (probable at deeper depths) <i>>30m below rockhead</i>	Y		See further commentary below in section 3.7.1
Mine entries (shafts and adits)	Y		See further commentary below in section 3.7.1
Mining Geology		N	There are up to five geological fault lines recorded beneath the site, with several more off-site in the surrounding area. The downthrow of the faults are generally towards the site. Several fissures or break lines have been recorded within the site boundary or in the immediate surrounding area. The proposed development plans are for the improvement of existing paths/roads and construction of new paths. As such, no proposed buildings are proposed reducing the potential risk from mining.
Record of past mine gas emissions		N	There is a potential source of mine gases on site due to the shallow mine workings, with potential pathways including mine entries and shallow mine workings. The proposed development plans are for the improvement of existing paths/roads and construction of new paths. As such, no proposed buildings are proposed reducing the potential risk from mine gases as no indoor airspaces allow for gas accumulation.
Recorded Mining Surface Hazard	Y		See further commentary below in section 3.7.2
Surface Mining (open cast workings)		N	The Hodbarrow Iron Mine covering the majority of site had several pits in which Iron Ore was extracted from deposits contained within the Limestone Bedrock. Backfill of the Opencast Mining locations may lead to large deposits of Made Ground of unknown composition. The site is located east of an opencast mine which is now filled with water to form a lagoon. This is also outside of the proposed development area, therefore no opencast backfill is expected within the development area. The proposed development plans are for the improvement of existing paths/roads and construction of new paths. As such, no proposed buildings are proposed reducing the potential risk from mining.

The underground constraints noted for Development Zone 9 are shown on Figure 13.

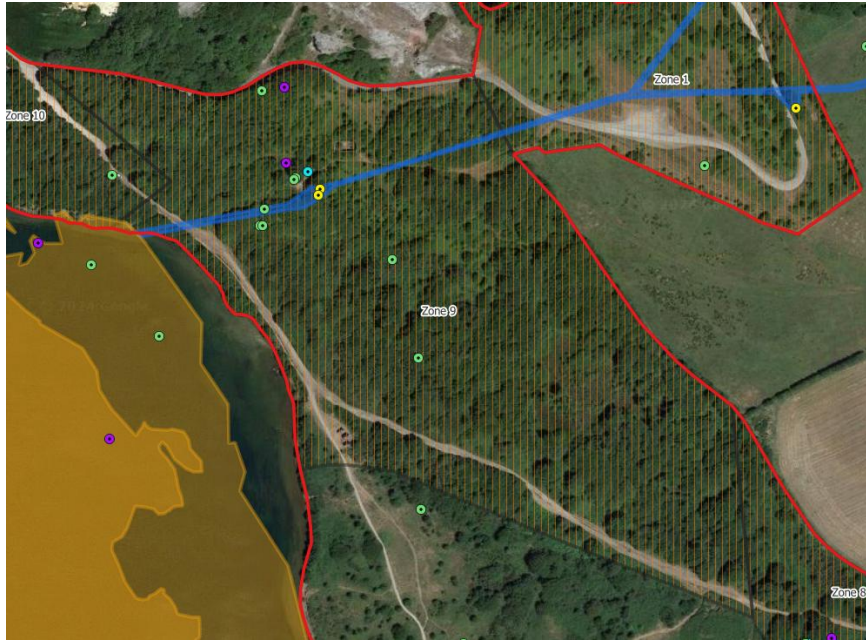


Figure 13 – Underground Mining Constraints – Development Zone 9

Site outlined in Red, Zone 9 identified by orange hatching; Possible shafts/boreholes noted with green, blue, yellow and purple dots; Ore body workings noted by orange shading; underground road networks noted by blue shading (locations of features identified using Archive plan BDB 21-5-5-123 Plan of Workings of Moorbank and Hodbarrow Mines. Sheet 2 Hodbarrow Mine, Owned by the Millom Heamatite Ore and Iron Co., Ltd)]

3.7.1 Underground Mining (probable at deeper depths)

Deep mining risk relates to mine workings present at depths greater than 30m below rockhead level. In general, the risk presented by these workings is very low because of either the depth at which historical workings lie resulting in any collapse self-arresting through bulking of overburden or, the cessation of modern mining in the UK (longwall) that tends to induce surface subsidence immediately or, at most around four years once support is removed from the cutting face.

Contour maps showing the “probable depths to solid rocks beneath superficial deposits” which was based upon borehole records, indicates that bedrock ranges between 25ft and 100ft below ground level (Approximately 7.50m to 30.00m bgl) across the wider site, local information is limited for Zone 9 however is anticipated between 30 and 40m bgl.

Plans and Cross Sections of boreholes undertaken on Hodbarrow Iron Mine indicate that Iron Ore was found and extracted at depths ranging between 150 to 200ft below ground level (approximately 45.00m to 60.00m bgl).

Ore body appears to be present close to this development area however at depths where any collapse is unlikely to result in significant effect to the site surface.

Underground roadways appear to be present at a depth of approximately 60m bgl. At this depth any collapse is also unlikely to result in significant effect to the site surface.

The proposed development are for the improvement of existing paths/roads and construction of new paths. As such, no proposed buildings are proposed reducing the potential risk from mining.

The risk posed to the site by historic deep mining beneath the site has been assessed as **Low** for the development proposals in Development Zone 9.

3.7.2 Mine Entries

Mine entry risk relates to the potential for abandoned and untreated mine shafts to be present on-site that are prone to collapse due to various factors including the passage of time, changes in drainage and increased loading.

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Given the age of the Hodbarrow Iron Mine, it is possible that spoil will have been placed over mine shafts in the area that were no longer being used at the time, along with flooding of certain mine shafts contained within the Hodbarrow Lagoon and the two large ponds on site. This could make it difficult to distinguish and identify the position of the mine shafts.

A large portion of the Hodbarrow Iron Mine has subsequently been flooded to create the Hodbarrow Lagoon; several mine entries could be submerged within the lagoon.

Archived mapping was accessed at the Cumbria Archives at the Cumbria Archive Centre, Barrow. There are numerous mine/shaft entries noted on historical mapping including No.6 and No.7 shafts to depths of approximately 70 and 100m bgl. As discussed in Section 2.6.2 there is likely to be some duplication between these features but the exact locations are not currently known and further unrecorded mine entries can also not be fully discounted.

The proposed development plans for Development Zones 9 are for the improvement of existing paths/roads and construction of new paths. As such, no proposed buildings are proposed reducing the potential risk from mining.

The risk posed to Development Zone 9 by mine shafts has been assessed as **Moderate-Low**.

3.7.3 Recorded Mining Surface Hazards

There is a potential for mine working arisings such as Slag to be present within the Made Ground deposits on site.

The risk posed to Development Zone 3 by expansive material and aggressive ground has been assessed as **Moderate – Low**.

3.7.4 Development Zone 9: Recommendations

It is recommended that the following is undertaken:

- Complete the initial ground investigation to determine the presence of any Made Ground, aggressive ground and expansivity to be considered.
- Watching brief to be carried out during construction works by geotechnical engineer to monitor for evidence of shafts. If any are recorded during construction works should be stopped and further risk assessment carried out. A remedial specification and capping measures may then need to be provided.
- All new or upgraded roads, paths and structures to be underlain with geogrid to provide some mitigation against a shaft collapse.

3.8 Zone 10 – Mainsgate Road Entrance & Hodbarrow Car Park

The aim of the Mining Risk Assessment is to determine if mining related hazards are present and where present, the risk they present to the proposed development. Development Zone 10 has been assessed.

Hazards associated with mining can be broadly characterised by the following scenarios detailed in Table 14. For those mining issues identified as “yes” a more detailed discussion and assessment is made of the risks to the application site and the proposed development.

Table 14 – Development Zone 10 Potential Mining Risks

Mining Issue	Yes	No	Risk Assessment
Underground Mining (recorded or probable at shallow depths) <30m below rockhead		N	Plans and Cross Sections of boreholes undertaken on Hodbarrow Iron Mine indicate that Iron Ore was found and extracted at depths ranging between 150 to 200ft below ground level (approximately 45.00m to 60.00m bgl), not considered 'shallow'. The proposed development plans are for the improvement of existing paths/roads and construction of new paths. As such, no

Mining Issue	Yes	No	Risk Assessment
			proposed buildings are proposed reducing the potential risk from mining.
Underground Mining (probable at deeper depths) <i>>30m below rockhead</i>		N	Plans and Cross Sections of boreholes undertaken on Hodbarrow Iron Mine indicate that Iron Ore is not present beneath this part of the site. The proposed development plans are for the improvement of existing paths/roads and construction of new paths. As such, no proposed buildings are proposed reducing the potential risk from mining.
Mine entries (shafts and adits)	Y		See further commentary below in section 3.8.1
Mining Geology		N	There are up to five geological fault lines recorded beneath the site, with several more off-site in the surrounding area. The downthrow of the faults are generally towards the site. Several fissures or break lines have been recorded within the site boundary or in the immediate surrounding area The proposed development plans are for the improvement of existing paths/roads and construction of new paths. As such, no proposed buildings are proposed reducing the potential risk from mining.
Record of past mine gas emissions		N	There is a potential source of mine gases on site due to the shallow mine workings, with potential pathways including mine entries and shallow mine workings. The proposed development plans are for the improvement of existing paths/roads and construction of new paths. As such, no proposed buildings are proposed reducing the potential risk from mine gases as no indoor airspaces allow for gas accumulation.
Recorded Mining Surface Hazard	Y		See further commentary below in section 3.8.2
Surface Mining (open cast workings)		N	The Hodbarrow Iron Mine covering the majority of site had several pits in which Iron Ore was extracted from deposits contained within the Limestone Bedrock. Backfill of the Opencast Mining locations may lead to large deposits of Made Ground of unknown composition. The site is located east of a man made sea wall, constructed to allow opencast mining to the west., which is now filled with water to form a lagoon. This is also outside of the proposed development area, therefore no opencast backfill is expected within the development area. The proposed development plans are for the improvement of existing paths/roads and construction of new paths. As such, no proposed buildings are proposed reducing the potential risk from mining.

The underground constraints noted for Development Zone 10 are shown on Figure 14.



Figure 14 – Underground Mining Constraints – Development Zone 10

Site outlined in Red with Zone 10 extent in orange hatching; Shafts/boreholes noted with green dots; Ore body workings noted by orange shading; underground road networks noted by blue shading (locations of features identified using Archive plan BDB 21-5-5-123 [Plan of Workings of Moorbank and Hodbarrow Mines. Sheet 2 Hodbarrow Mine, Owned by the Millom Heamatite Ore and Iron Co., Ltd])

3.8.1 Mine Entries

Mine entry risk relates to the potential for abandoned and untreated mine shafts to be present on-site that are prone to collapse due to various factors including the passage of time, changes in drainage and increased loading.

Given the age of the Hodbarrow Iron Mine, it is possible that spoil will have been placed over mine shafts in the area that were no longer being used at the time, along with flooding of certain mine shafts contained within the Hodbarrow Lagoon and the two large ponds on site. This could make it difficult to distinguish and identify the position of the mine shafts. A large portion of the Hodbarrow Iron Mine has subsequently been flooded to create the Hodbarrow Lagoon; several mine entries could be submerged within the lagoon.

Archived mapping was accessed at the Cumbria Archives at the Cumbria Archive Centre, Barrow. A potential mine/shaft entries is noted on Zone 10. Further unrecorded mine entries cannot be fully discounted.

The proposed development plans for Development Zone 10 are for the improvement of existing paths/roads and construction of new roads and car parking areas. As such, no proposed buildings are proposed reducing the potential risk from mining.

The risk posed to Development Zone 10 by mine entries has been assessed as **Moderate – Low**.

3.8.2 Recorded Mining Surface Hazards

There is a potential for mine working arisings such as Slag to be present within the Made Ground deposits on site.

The risk posed to Development Zone 10 by expansive material and aggressive ground has been assessed as **Moderate – Low**.

3.8.3 Development Zone 10: Recommendations

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It is recommended that the following is undertaken:

- Complete the initial ground investigation to determine the presence of any Made Ground, aggressive ground and expansivity to be considered.
- Watching brief to be carried out during construction works by geotechnical engineer to monitor for evidence of shafts. If any are recorded during construction works should be stopped and further risk assessment carried out. A remedial specification and capping measures may then need to be provided.
- All new or upgraded roads, paths and structures to be underlain with geogrid to provide some mitigation against a shaft collapse.

3.9 Mining Risk Assessment Conclusions

A Mining Risk Assessment has been prepared with reference to the proposed developments as illustrated on the proposed development plan presented within Appendix A.

Development Zone 1 has been assessed independently due to the development including new structures. A summary of the mining risks pertaining to the development site is summarised in the Table 15.

Development Zones 3 to 10 have been assessed separately but the conclusions summarised collectively due to the proposed developments including improvements to paths and roadways only. A summary of the mining risks pertaining to the development site is summarised in the Table 16.

Table 15 – Summary of Mining Risks and Proposed Actions associated with Development Zone 1

Scenario	Consequence	Likelihood	Risk in Development Zone 1 (Visitors Centre)	Comments	Proposed Action
Underground Mining (probable at deeper depths) >30m below rockhead	Medium	Unlikely	Low	- Most likely bedrock geology deposits that contained Iron Ore are the Red Hill Limestone and the Martin Limestone and the Dalton Formation, which underly the site based on BGS mapping. The Iron Ore body is not laterally continuous across the whole site and has been targeted in the past. - The Hodbarrow Iron Mine was operational on site; therefore, deep mining of iron ore deposits cannot be discounted. - Beneath the Visitors Centre, there is little evidence to show that iron ore was worked in Zone 1. An underground road/tunnel passes beneath Development Zone 1 connecting the different ore bodies however records suggest this is at a depth of around 10-20m bgl and therefore any collapse is unlikely to result in propagation to the surface or founding depths. Furthermore, the roadway is shown to present outside of the proposed building footprint, circa 10m south.	No action required.
Underground Mining (probable at shallow depths) <30m below rockhead	Medium	Low Likelihood	Moderate/Low	- Plans and Cross Sections of boreholes undertaken on Hodbarrow Iron Mine indicate that Iron Ore was found and extracted at depths ranging between 150 to 200ft below ground level (approximately 45.00m to 60.00m bgl). - The ore body is not shown to be present beneath this part of the site. However, an underground road/tunnel passes beneath Development Zone 1 connecting the different ore bodies. - Although shallow workings are not expected based on available records, there is a possibility that unrecorded shallow workings may exist. Or potential for the roadway to exist at shallower depths beneath the building footprint where records are inaccurate.	- An initial ground investigation for initial planning submissions and design purposes, complete rotary open boreholes to determine the presence of voids, broken ground which may be indicative of shallow workings within influencing depths of the proposed structure, boreholes to be advanced to circa 40m bgl. Ground gases should be monitored during borehole advancement due to potential for mine gases. - Dependent on the findings of the ground investigation determine and produce a treatment specification from the ground investigation information. - Dependent on the findings of the ground investigation complete proof drilling and grouting of the proposed development area, relevant to the building footprints and a suitable distance surrounding any building footprints.
Mine entries (shafts and adits)	Medium	Low Likelihood	Moderate - Low	- There are several known mine entries noted on geological mapping, historical mapping and from the Northern Mine Research Society. - The proposed development plan shows a Visitors Centre building situated in the north-eastern corner of the site, in close proximity to the noted coordinates of the Hodbarrow No. 6 Pit approximately 130m west. - At the south of the site an unspecified pit is recorded, but this thought to represent a historic excavation noted in 1969 mapping rather than a shaft. Notwithstanding, unrecorded mine entries cannot be fully discounted. Given the ages of the mine, it is possible that spoil will have been placed over mine shafts in the area that were no longer being used at the time. This could make it difficult to distinguish and identify the position of the mine shafts. - A ventilation borehole is identified in historic plans on the east of Zone 1. The size of the ventilation borehole is unknown but unlikely to present a risk of ground collapse given it is a borehole not a shaft. It is situated away from the proposed building footprint but close to an existing road.	- Identify location of the ventilation borehole and decommission in accordance with EA guidance. - A watching brief should be carried out by a geotechnical engineer during groundworks to monitor for evidence of any unrecorded mine entries. Where mine entries are recorded during construction works should be stopped and further risk assessment carried out. A remedial specification and capping measures may then need to be provided.
Mining Geology	Medium	Unlikely	Low	There are up to five geological fault lines recorded beneath the site, with several more off-site in the surrounding area. The downthrow of the faults are generally towards the site. Notwithstanding no faults are recorded on the Zone 1 site.	Complete the initial ground investigation to determine the thickness of any Made Ground or superficial deposits, and depth to bedrock across the site area.
Mine gas emissions	Medium	Low	Moderate / Low	Potential sources of mine gases due to shallow mine workings, with potential pathways with potential migration pathways through the underground roadway at depth beneath the site followed by vertical migration through bedrock and superficial deposits. Or from any unrecorded shallow mine workings, with potential pathways through bedrock and superficial deposits.	Complete the initial ground investigation and install ground gas monitoring wells in selected exploratory borehole locations to enable a monitoring programme and gas risk assessment for the site.
Recorded Mining Surface Hazard	Medium	Low Likelihood	Moderate – Low	Slag is likely to be present within the Made Ground, evidenced by slag heaps on historical mapping.	Complete the initial ground investigation to determine the thickness of any Made Ground or superficial deposits, and depth to bedrock across the site area.

Scenario	Consequence	Likelihood	Risk in Development Zone 1 (Visitors Centre)	Comments	Proposed Action
				Reservoir shown on archived mapping present in the Visitors Centre, which is assumed to have been infilled with an unknown composition of Made Ground fill	
Surface Mining (open cast workings)	Medium	Unlikely	Low	- Off-site to the north was known to comprise the Redhill Quarry, where limestone and hematite was extracted. - There is no record of significant opencast mining on Zone 1.	No action required.

Table 16 – Summary of Mining Risks and Proposed Actions associated with Development Zone 3 to 10

Scenario	Consequence	Likelihood	Risk in Development Zone 3-10	Comments	Proposed Action
Underground Mining (probable or recorded at deeper depths) <i>>30m below rockhead</i>	Medium	Unlikely	Zone 3,4 ,5, 7, 8, 9 & 10 Low	- Most likely bedrock geology deposits that contained Iron Ore are the Red Hill Limestone and the Martin Limestone and the Dalton Formation, which underly the site based on BGS mapping. The Iron Ore body is not laterally continuous across the whole site and has been targeted in the past. - The Hodbarrow Iron Mine was operational on site; therefore, deep mining of iron ore deposits cannot be discounted. However where mining was carried out records identify it was at depths where any collapse is unlikely to result in significant effect to the site surface. - The proposed development plans are for the improvement of existing paths/roads and construction of new paths and lightly loaded timber structures (bird hides). As such, no new proposed buildings are proposed reducing the potential risk from mining. - In development Zone 9, underground roadways appear to be present at a depth of approximately 60m bgl. At this depth any collapse is also unlikely to result in significant effect to the site surface.	No specific action required.
Underground Mining (probable or recorded at shallow depths) <i><30m below rockhead</i>	Medium	Unlikely	Zone 3, 4,4,5,8,9 & 10 Low	- Plans and Cross Sections of boreholes undertaken on Hodbarrow Iron Mine indicate that Iron Ore was found and extracted at depths ranging between 150 to 200ft below ground level (approximately 45.00m to 60.00m bgl). At depths not considered 'shallow'. - Plans and Cross Sections of boreholes undertaken on Hodbarrow Iron Mine indicate that Iron Ore is not present beneath this part of the site. - The proposed development plans are for the improvement of existing paths/roads and construction of new paths and lightly loaded timber structures (bird hides). As such, no new proposed buildings are proposed reducing the potential risk from mining.	No specific action required.
Mine entries (shafts and adits)	Medium	Low Likelihood	Zone 3,4 ,5, 7, 8, 9 & 10 Moderate – Low	- There are numerous mine entries noted through various data sources across much of the site. There is likely to be some duplication between these features but the exact locations and treatment status's are not currently known and further unrecorded mine entries can also not be fully discounted. - No record of mine entries on Zone 4 (Haverigg Lighthouse) on the sea wall. - Given the ages of the mine, it is possible that spoil will have been placed over mine shafts in the area that were no longer being used at the time. This could make it difficult to distinguish and identify the position of the mine shafts. - A large portion of the Hodbarrow Iron Mine has subsequently been flooded to create the Hodbarrow Lagoon; several mine entries could be submerged within the lagoon. - The proposed development plans are for the improvement of existing paths/roads and construction of new paths and lightly loaded timber structures. As such, no proposed buildings are proposed reducing the potential risk from mining. - The proposed development plans for Zone 7 are for the improvement of existing path/roads and construction of two lightly loaded timber structures. As such, this reduces the potential risk from mining. Notwithstanding, due to the proximity of the bird hide to a potential shaft, further assessment is recommended, or else consideration should be made to relocating the hide, outside of its departure zone and zone of influence. - The presence of unrecorded shafts on or within close proximity to development areas cannot be fully discounted.	- Watching brief to be carried out during all groundworks by geotechnical engineer to monitor for evidence of shafts. If any are recorded during construction works should be stopped and further risk assessment carried out. A remedial specification and capping measures may then need to be provided. - All new or upgraded roads, paths and features on Zones 3,4,5,7,8,9&10 to be underlain with geogrid to provide some mitigation against any shaft collapse.

Scenario	Consequence	Likelihood	Risk in Development Zone 3-10	Comments	Proposed Action
Mining Geology	Medium	Unlikely	Zone 3,4 ,5, 7, 8, 9 & 10 Low	- There are up to five geological fault lines recorded beneath the site, with several more off-site in the surrounding area. The downthrow of the faults are generally towards the site. - Several fissures or break lines are recorded within the site boundary or in the immediate surrounding area. - The proposed development plans are for the improvement of existing paths/roads and construction of new paths and lightly loaded wooded structures. As such, no proposed buildings are proposed reducing the potential risk from mining.	No specific action required.
Record of past mine gas emissions	Medium	Unlikely	Zone 3,4 ,5, 7, 8, 9 & 10 Low	- Potential sources of mine gases due to shallow mine workings, with pathways including mine entries and shallow mine workings. - The proposed development plans are for the improvement of existing paths/roads and construction of new paths and lightly loaded wooden structures (not enclosed). As such, no proposed buildings are proposed reducing the potential risk from mine gases as no indoor airspaces will exist to allow for gas accumulation.	No specific action required.
Recorded Mining Surface Hazard	Medium	Low Likelihood	Zone 3,4 ,5, 7, 8, 9 & 10 Moderate – Low	- There is a potential for mine working arisings such as Slag to be present within the Made Ground deposits on site. Such deposits could present a risk of expansivity or aggressive conditions causing degradation of concrete. - The proposed development plans are for the improvement of existing paths/roads and construction of new paths and lightly loaded timber structures. As such, no proposed buildings are proposed reducing the potential risk.	Complete the initial ground investigation to determine the presence of any Made Ground aggressive ground and expansivity to be considered.
Surface Mining (open cast workings)	Medium	Unlikely	Zone 3,4 ,5, 7, 8, 9 & 10 Low	- The Hodbarrow Iron Mine covering the majority of site had several pits in which Iron Ore was extracted from deposits contained within the Limestone Bedrock. Backfill of the Opencast Mining locations may lead to large deposits of Made Ground of unknown composition. - The proposed development plans are for the improvement of existing paths/roads and construction of new paths and lightly loaded timber structures. As such, no proposed buildings are proposed reducing the potential risk from mining. - A number of quarries are present on the wider site that have been worked historically, however, they are outside of the proposed development areas, therefore no opencast backfill is expected within the development area.	Complete the initial ground investigation to determine the type of Made Ground along with taking environmental samples.

4 RECOMMENDATIONS FOR FUTURE GROUND INVESTIGATION AND REMEDIATION WORKS

The following recommendations are made for ground investigation and remediation works. Where development plans change risk assessments should be updated accordingly. Risk assessments should also be updated following intrusive GI.

Zone 1

1. Initial ground investigation for planning submissions and designs should determine the thickness of Made Ground, superficial deposits, and depth to bedrock across the site. Rotary open hole boreholes must be incorporated to depths of around 40m bgl. This can also be used to determine the risk from unrecorded shallow mine workings to identify the presence of voids, broken ground or potential backfill materials of former iron ore deposits that have been extracted.
2. Ground gas monitoring should be undertaken during drilling to check for mine gases. Where mine gases are found above action level works should be stopped and risk reassessed. Monitoring installation wells should be installed over a 12 week period.
3. The ground investigation should confirm the thickness and type of made ground, expansivity potential and aggressive ground should be considered.
4. The ventilation borehole on site should be located as part of construction works and decommissioned in accordance with EA guidance.
5. Should any evidence of shallow workings be encountered, production of a remedial / treatment specification document to be issued to the appropriate sub-contractors for tendering. The contents of which will be dependent on the findings of each stage of ground investigation.
6. Watching brief to be carried out during groundworks by geotechnical engineer to monitor for evidence of shafts. If any are recorded construction works should be stopped and further risk assessment carried out. A remedial specification and capping measures may then need to be provided.

Zones 3,4,5,8,9 & 10

1. Initial ground investigation for planning submissions and designs should determine the thickness and type of Made Ground and type of made ground, expansivity potential and aggressive ground should be considered.
2. Watching brief to be carried out during construction/groundworks by geotechnical engineer to monitor for evidence of shafts. If any are recorded during construction works should be stopped and further risk assessment carried out. A remedial specification and capping measures may then need to be provided.
3. All new or upgraded roads, paths and structures on Zones 3,4,5,7,8,9&10 to be underlain with geogrid to provide some mitigation against any shaft collapse.
4. It is recommended that further assessment is undertaken to assess the risk associated with the proximity of a shaft to a bird hide in Zone 7. Alternatively, this bird hide should be relocated outside of the shaft's departure zone and zone of influence.

5 REFERENCES

1. Curtins (2025) Preliminary Risk Assessment, The Iron Line, Millom (Ref. 080874-CUR-00-XX-RP-GE-002)
2. British Geological Survey (BGS) Solid and Drift Editions (2010) 1:50,000 mapping, Sheet No. 048 (Ulverston)
[BGS maps portal | OpenGeoscience | Our data | British Geological Survey \(BGS\) | Map Series](#)
3. BGS Geoindex <https://mapapps2.bgs.ac.uk/geoindex/home.html> (accessed March 2024).
4. Landmark (2023) Envirocheck Report (report no. 307697430_1_1).
5. Northern Mine Research Society [online] Available at: [Home - Northern Mine Research Society \(nmrs.org.uk\)](https://nmrs.org.uk) (Accessed March 2024).
6. Radon Mapping [online] Available at: <https://www.ukradon.org/information/ukmaps> (accessed March 2024)
7. CIRIA C758 (2019) Abandoned Mine Workings Manual.
8. A. Harris (1970) Cumberland Iron: The Story of Hodbarrow Mine 1855-1968

6 APPENDICES

- **Appendix A – Drawings**
- **Appendix B – Historical Mapping**
- **Appendix C – Qualitative Risk Assessment Rationale**

Appendix A – Drawings

- Curtins Drawing Summary of Historical Iron Mining and Associated Features 080874-CUR-XX-XX-DR-GE-80013-P01.
- Third Party Development Plans



Legend

Site Boundary

Mining Constraints

Mine Entries

- Archive
- Envirocheck ECMGS
- Envirocheck Maps
- Northern Mine Research Society
-

Underground Working

- Ore Body Working
- Underground Road
-
- Development Areas

Development Zones

0 100 200 300 400 m

Curtins

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Structures - Civils - Environmental - Infrastructure - Transport Planning - Sustainability - Expert Advisory Services
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Status				
INFORMATION				
Project:				
Iron Line, Millom				
Drg Title:				
Summary of Historical Ion Mining and Associated Features				
Scale:	Size:	Issue Date:	Drawn:	Checked:
NTS	A3	17/05/2024	JL	NF
Drg No:				Rev:
080874-CUR-XX-XX-DR-GE-80013				P01
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FURNITURE / BOUNDARIES

- F1.0 - PICNIC TABLE**
Location: Site wide
Material: Corten Steel / Timber / Concrete
- F2.0 - BENCH**
Location: Site wide
Material: Corten Steel / Timber / Concrete
- F2.1 - BENCH (EXISTING)**
Location: Site wide
Material: Timber
- F3.0 - WAYFINDING - SITE NAVIGATION**
Location: Site wide
Material: Corten Steel w/ laser cuttings
- F4.0 - WAYFINDING - ARRIVAL**
Location: Site wide
Material: Corten Steel w/ laser cuttings
- F5.0 - INFO BOARD: ECOLOGY**
Location: Site wide
Material: Corten Steel w/ laser cuttings
- F5.1 - INFO BOARD: MAP LOCATION**
Location: Site wide
Material: Corten Steel w/ laser cuttings
- F5.2 - INFO BOARD: HERITAGE**
Location: Site wide
Material: Corten Steel w/ laser cuttings
- F6.0 - VIEWING SCREEN**
Location: To Hidden Lagoon
Material: Timber
- F7.0 - DOUBLE LEAF GATE**
Location: Road to Welcome Building / HWRC
Material: Subject to future detail
- F7.1 - SINGLE LEAF GATE**
Location: To RSPB BOAT boundary
Material: Subject to future detail
- F8.0 - FEATURE FENCE**
Location: Site wide
Material: Timber
- F8.1 - EXISTING FENCE**
Location: Site wide
Material: Timber

- F9.0 - FEATURE ARTWORK**
Location: Site wide
Refer to Design & Access Statement Chapter 7
- F10.0 - CAR PARK PAY MACHINE**
Location: To Visitor Centre car park
Material: -
- F11.0 - FEATURE CONC BENCH w/ TIMBER TOP**
Location: Site wide
Material: Concrete / Timber
- F12.0 - CYCLE PARKING**
Location: Site wide
Material: Steel
- F13.0 - TIMBER LOGS**
Location: To car parking spaces
Material: Timber
- F14.0 - EV CHARGING LOCATIONS**
Location: To welcome building car park
Material: -
- F15.0 - THRESHOLD DETAIL**
Location: To key thresholds
Material: Corten
- F16.0 - BIRD HIDE**
Location: To Hidden Lagoon / Lagoon
Material: Timber
- F17.0 - PV CANOPY**
Location: To welcome building car park
Material: Subject to future detail
- F18.0 - WASTE BIN**
Location: Site wide
Material: Subject to future detail
- F19.0 - HAND RAIL**
Location: To entrance steps
Material: Subject to future detail
- F20.0 - BOLLARD**
Location: To Byway Entrances
Material: Timber

- NOTES:
- DO NOT SCALE FROM THIS DRAWING. ALWAYS WORK TO NOTED DIMENSIONS.
 - ALL SETTING OUT, LEVELS AND DIMENSIONS TO BE CHECKED ON SITE PRIOR TO THE INSTALLATION OF MATERIALS AND ANY DISCREPANCIES ARE TO BE BROUGHT TO THE ATTENTION OF THE CONTRACT ADMINISTRATOR IMMEDIATELY.
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 - ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
 - NOTE DRAWING SUSTAINABILITY CODE SHOWN BELOW. DRAWING NOT TO BE USED FOR CONTRACTUAL AGREEMENT WITHOUT A1 STATUS.

THIS DRAWING WAS PLOTTED ON:

07/04/2025

REVISION HISTORY

DATE	REV	ZONE	DESCRIPTION	CHK
26/03/25	P01		Stage 03 draft issue - for coordination	MDM
07/04/25	P02		Issued for planning	MDM

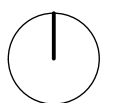
KEY

GENERAL INFORMATION

APPLICATION BOUNDARY

HARDWORKS

- S1.0 - SELF BINDING GRAVEL WITHOUT EDGINGS EXCEPT ON STEEP GRADIENTS (P)**
Location: To primary pedestrian routes
Dims: 15m wide
- S2.0 - STONE TO DUST SURFACE (V)**
Assumed: Existing surface planned - pot holes filled - Type 1 dressing with Grano Dust surface finish
Location: To Byway
Dims: As existing
- S3.0 - TIMBER BOARDWALK (P)**
Location: To sand dune raised walkway
Dims: 18m wide w/ low upstand
- S4.0 - VEHICULAR MACADAM (V)**
Location: Visitor Centre car park / Access Road Trench
Dims: 15m wide trench cover w/ passing places
- S5.0 - VEHICULAR ROUTE (MACADAM) (V)**
Assumed: Some resurfacing as per S4.0 specification
Location: To access road from Mainsgate Road to visitor centre - existing surface made good
Dims: 48m wide
- S6.0 - NATURAL STONE PAVING (P)**
Location: To Towsey Hole Windmill
- S7.0 - INSITU CONCRETE w/ SMOOTH FINISH (P)**
Location: To in ground railway details / Visitor Centre / Hoadbarrow Lighthouse
- S7.1 - INSITU CONCRETE w/ EXPOSED AGGREGATE FINISH (P / V)**
Location: To Visitor Centre / Whiterock Junction
- S8.0 - REINFORCED GRAVEL (P)**
Location: To Visitor Centre car park / Annie Lowther Hide
- S9.0 - RAISED STEEL WALKWAY w TIMBER EDGE (P)**
Location: To Visitor Centre
- SE - SURFACE EXISTING**
Location: As noted



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Client

Cumberland Council

Project

The Iron Line
Millom, Cumbria

Drawing Title

GA | Site Masterplan

Created By	Checked By	Scale	Sheet Size
MDM	CL	1:3000	A1
Project Number	Originator	Volume	Level
289	LYR	XX-ZZ-DWG-L-1000	
Work Stage	Status	Revision	
Stage 3	Planning	P02	

Appendix B – Envirocheck

Envirocheck[®] Report:

Mining and Ground Stability Datasheet

Order Details:

Order Number:

307697430_1_1

Customer Reference:

No. 4229

National Grid Reference:

316920, 478320

Slice:

A

Site Area (Ha):

57.66

Search Buffer (m):

1000

Site Details:

The Gin Mill, Steel Green

MILLOM

LA18 4LG

Client Details:

Mr R Taylor

Curtins Consulting Ltd

Merchant Exchange

17-19 Whitworth Street West

Manchester

M1 5WG

Report Section and Details	Page Number
Summary	-
The Summary section provides an overview of the data contained within the report, detailing the number of data set features or the existence of a data set in relation to the buffer selected. For ease of reference, the report is broken down into 4 sections of data; Mining and Natural Cavities Data, Historical Land Use Information (1:2,500), Historical Land Use Information (1:10,000) and Ground Stability Data (1:50,000).	
Mining and Natural Cavities Data	1
The Mining and Natural Cavities Data section features data sets related to the existence of mining areas and their potential hazards; and details of naturally formed cavities. Data sets within this section are not plotted, with the exception of BGS Recorded Mineral Sites and Potential Mining Areas which feature on the Historical Land Use Information (1:10,000) map.	
Historical Land Use Information (1:2,500)	4
The Historical Land Use Information (1:2,500) section contains data captured from analysis carried out by Landmark of 1:1,250 and 1:2,500 scale historical Ordnance Survey mapping, identifying areas where, historically, the land uses were potentially contaminative. For the purpose of this Envirocheck module, only historical data relating to mining and ground stability has been included and plotted on the corresponding Historical Land Use Information (1:2,500) map. This section also includes the Subterranean Features data set, which details various man-made and man-used underground spaces obtained from the Subterranea Britannica society.	
Historical Land Use Information (1:10,000)	18
The Historical Land Use (1:10,000) section covers data captured from the systematic analysis carried out by Landmark of 1:10, 560 and 1:10,000 scale historical Ordnance Survey mapping dating back to the mid-19th century, identifying potentially contaminative past industrial land uses. For the purpose of this Envirocheck module, only data relating to mining and ground stability has been included and plotted on the accompanying Historical Land Use Information (1:10,000) map.	
Ground Stability Data (1:50,000)	19
The Ground Stability (1:50,000) section includes the BGS Geosure data suite, reporting features to 250m and plotted onto 3 separate maps. Also reported is brine subsidence, brine mining and salt mining data sets, of which Brine Pumping and Salt Mining Related Features are plotted, and subsidence insurance claims and insurance investigations data, which is not plotted.	
Historical Map List	23
The Historical Map List section details the historical mapping that has been analysed for your site, in relation to the Historical Land Use Information sections.	
Data Currency	26
Data Suppliers	27
Useful Contacts	28

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The brine subsidence data relating to the Droitwich area as provided in this report is derived from JPB studies and physical monitoring undertaken annually over more than 35 years. For more detailed interpretation contact enquiries@jpb.co.uk. JPB retain the copyright and intellectual rights to this data and accept no liability for any loss or damage, including in direct or consequential loss, arising from the use of this data.

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Report Version v53.0

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m
Mining and Natural Cavities Data					
BGS Recorded Mineral Sites	pg 1	2	3	2	
Coal Mining Affected Areas			n/a	n/a	n/a
Man Made Mining Cavities	pg 2	8	2		
Mining Instability	pg 3	Yes	n/a	n/a	n/a
Natural Cavities					
Non Coal Mining Areas of Great Britain	pg 3	Yes	Yes	n/a	n/a
Potential Mining Areas	pg 3	2			
Historical Land Use Information (1:2,500)					
Extractive Industries or Potential Excavations from 1855-1909 (100m)	pg 4	5		n/a	n/a
Extractive Industries or Potential Excavations from 1893-1915 (100m)	pg 4	42	6	n/a	n/a
Extractive Industries or Potential Excavations from 1906-1937 (100m)	pg 8	38	6	n/a	n/a
Extractive Industries or Potential Excavations from 1924-1949 (100m)				n/a	n/a
Extractive Industries or Potential Excavations from 1950-1980 (100m)	pg 12	37	16	n/a	n/a
Subterranean Features (100m)				n/a	n/a
Historical Land Use Information (1:10,000)					
Air Shafts					
Disturbed Ground					
General Quarrying	pg 18	2			
Heap, unknown constituents					
Mineral Railway	pg 18		1	1	
Mining & quarrying general	pg 18	2			
Mining of coal & lignite					
Quarrying of sand & clay, operation of sand & gravel pits	pg 18			2	
Former Marshes					
Potentially Infilled Land (Non-Water)	pg 18	5	1	1	
Potentially Infilled Land (Water)					
Ground Stability Data (1:50,000)					
CBSCB Compensation District			n/a	n/a	n/a
Brine Pumping Related Features					
Brine Subsidence Solution Area					
Potential for Collapsible Ground Stability Hazards	pg 19	Yes		n/a	n/a
Potential for Compressible Ground Stability Hazards	pg 19	Yes	Yes	n/a	n/a
Potential for Ground Dissolution Stability Hazards	pg 19	Yes	Yes	n/a	n/a
Potential for Landslide Ground Stability Hazards	pg 20	Yes	Yes	n/a	n/a
Potential for Running Sand Ground Stability Hazards	pg 21	Yes	Yes	n/a	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards	pg 21	Yes	Yes	n/a	n/a
Salt Mining Related Features					

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
1	BGS Recorded Mineral Sites Site Name: Hodbarrow Iron Ore Mines Location: Haverigg, Millom, Cumbria Source: British Geological Survey, National Geoscience Information Service Reference: 143778 Type: Underground Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Not Available Geology: ! Commodity: Iron ore Positional Accuracy: Located by supplier to within 10m	A12NE (E)	0	1	317785 478594
2	BGS Recorded Mineral Sites Site Name: Hodbarrow Iron Ore Mines Location: Haverigg, Millom, Cumbria Source: British Geological Survey, National Geoscience Information Service Reference: 143779 Type: Underground Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Not Available Geology: ! Commodity: Iron ore Positional Accuracy: Located by supplier to within 10m	A16SW (NE)	0	1	317716 478906
3	BGS Recorded Mineral Sites Site Name: Red Hills Quarry Location: Haverigg, Millom, Cumbria Source: British Geological Survey, National Geoscience Information Service Reference: 143774 Type: Opencast Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Red Hill Limestone Formation Commodity: Limestone Positional Accuracy: Located by supplier to within 10m	A16SE (NE)	18	1	317790 478999
4	BGS Recorded Mineral Sites Site Name: Red Hills Slag Bank Location: Millom, Cumbria Source: British Geological Survey, National Geoscience Information Service Reference: 5962 Type: Tip Status: Ceased Operator: Millom Aggregates Operator Location: Not Supplied Periodic Type: Not Available Geology: Blast Furnace Slag Commodity: Slag (Including Basic Oxygen Slag and Electric Arc Furnace Slags) Positional Accuracy: Located by supplier to within 10m	A16NW (NE)	119	1	317500 479190
5	BGS Recorded Mineral Sites Site Name: Red Hills Quarry Location: Millom, Cumbria Source: British Geological Survey, National Geoscience Information Service Reference: 1148 Type: Opencast Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Red Hill Limestone Formation Commodity: Limestone Positional Accuracy: Located by supplier to within 10m	A16NE (NE)	188	1	317900 479250
6	BGS Recorded Mineral Sites Site Name: Whitriggs Close Clay Pits Location: Haverigg, Millom, Cumbria Source: British Geological Survey, National Geoscience Information Service Reference: 143781 Type: Opencast Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Quaternary, Devensian Geology: Till, Devensian Commodity: Common Clay and Shale Positional Accuracy: Located by supplier to within 10m	A14SE (NW)	300	1	316540 479069

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
7	BGS Recorded Mineral Sites Site Name: Whitriggs Close Clay Pits Location: Haverigg, Millom, Cumbria Source: British Geological Survey, National Geoscience Information Service Reference: 143782 Type: Opencast Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Quaternary, Devensian Geology: Till, Devensian Commodity: Common Clay and Shale Positional Accuracy: Located by supplier to within 10m	A14NW (NW)	411	1	316399 479168
	Coal Mining Affected Areas In an area which may not be affected by coal mining				
	Man Made Mining Cavities Cavity Type: Not supplied Commodity: Hematite Solid Geology Detail: No Details Superficial Geology No Details Detail:	A16SW (NE)	0	2	317700 478900
	Man Made Mining Cavities Cavity Type: Iron Mine Entry Shaft Commodity: Iron Solid Geology Detail: No Details Superficial Geology No Details Detail:	A16SW (NE)	0	2	317700 478900
	Man Made Mining Cavities Cavity Type: Iron Mine Entry Shaft Commodity: Iron Solid Geology Detail: No Details Superficial Geology No Details Detail:	A12SE (E)	0	2	317800 478400
	Man Made Mining Cavities Cavity Type: Iron Mine Entry Shaft Commodity: Iron Solid Geology Detail: No Details Superficial Geology No Details Detail:	A12NE (E)	0	2	317800 478500
	Man Made Mining Cavities Cavity Type: Iron Mine Entry Shaft Commodity: Iron Solid Geology Detail: No Details Superficial Geology No Details Detail:	A12NE (NE)	0	2	317800 478700
	Man Made Mining Cavities Cavity Type: Iron Mine Entry Shaft Commodity: Iron Solid Geology Detail: No Details Superficial Geology No Details Detail:	A12NE (NE)	0	2	317800 478800
	Man Made Mining Cavities Cavity Type: Iron Mine Entry Shaft Commodity: Iron Solid Geology Detail: No Details Superficial Geology No Details Detail:	A12NE (E)	0	2	317900 478500
	Man Made Mining Cavities Cavity Type: Iron Mine Entry Shaft Commodity: Iron Solid Geology Detail: No Details Superficial Geology No Details Detail:	A12SE (E)	0	2	318000 478400
	Man Made Mining Cavities Cavity Type: Iron Mine Entry Shaft Commodity: Iron Solid Geology Detail: No Details Superficial Geology No Details Detail:	A15SE (NE)	137	2	317300 479000

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Man Made Mining Cavities Cavity Type: Iron Mine Entry Shaft Commodity: Iron Solid Geology Detail: No Details Superficial Geology Detail: No Details	A10NE (NW)	184	2	316700 478800
	Mining Instability Mining Evidence: Conclusive Iron Ore Mining Source: Ove Arup & Partners Boundary Quality: As Supplied	A11SW (NE)	0	3	316918 478320
	Non Coal Mining Areas of Great Britain Risk: Likely Source: British Geological Survey, National Geoscience Information Service	A12NE (E)	0	1	317953 478736
	Non Coal Mining Areas of Great Britain Risk: Likely Source: British Geological Survey, National Geoscience Information Service	A16SW (NE)	0	1	317755 478827
	Non Coal Mining Areas of Great Britain Risk: Likely Source: British Geological Survey, National Geoscience Information Service	A16SE (NE)	0	1	318017 478905
	Non Coal Mining Areas of Great Britain Risk: Likely Source: British Geological Survey, National Geoscience Information Service	A11SW (NE)	0	1	316918 478320
	Non Coal Mining Areas of Great Britain Risk: Highly Likely Source: British Geological Survey, National Geoscience Information Service	A12NE (E)	0	1	317894 478612
	Non Coal Mining Areas of Great Britain Risk: Highly Likely Source: British Geological Survey, National Geoscience Information Service	A11SW (N)	0	1	316912 478347
	Non Coal Mining Areas of Great Britain Risk: Highly Likely Source: British Geological Survey, National Geoscience Information Service	A16SE (NE)	0	1	317954 479116
	Non Coal Mining Areas of Great Britain Risk: Highly Unlikely Source: British Geological Survey, National Geoscience Information Service	A11SW (S)	0	1	316934 478250
	Non Coal Mining Areas of Great Britain Risk: Highly Likely Source: British Geological Survey, National Geoscience Information Service	A11SW (NW)	8	1	316840 478405
	Non Coal Mining Areas of Great Britain Risk: Likely Source: British Geological Survey, National Geoscience Information Service	A15SW (N)	15	1	316898 479103
	Non Coal Mining Areas of Great Britain Risk: Likely Source: British Geological Survey, National Geoscience Information Service	A11SE (E)	82	1	317162 478374
8	Potential Mining Areas Name: Millom Rural Ceased Operation: Not Supplied Commodity: Not Supplied Reference: Not Supplied Alternate: Not Supplied Name/Mine: Not Supplied Custodian: Not Supplied	A12SE (E)	0	4	317849 478306
9	Potential Mining Areas Name: Hodbarrow and Moorbank Ceased Operation: 1968 Commodity: Iron Ore; Haematite Reference: 15241 Alternate: Not Supplied Name/Mine: Not Supplied Custodian: Not Supplied	A11SW (N)	0	4	316919 478410

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
10	Extractive Industries or Potential Excavations from 1855-1909 Use: Redhill Limekilns First Map Published 1862 Date: Last Map Published Not Applicable Date:	A16SW (NE)	0	-	317748 478978
11	Extractive Industries or Potential Excavations from 1855-1909 Use: Quarry First Map Published 1862 Date: Last Map Published Not Applicable Date:	A16SE (NE)	0	-	317763 478934
12	Extractive Industries or Potential Excavations from 1855-1909 Use: Redhill Limekilns First Map Published 1862 Date: Last Map Published Not Applicable Date:	A16SE (NE)	0	-	317768 478942
13	Extractive Industries or Potential Excavations from 1855-1909 Use: Shaft First Map Published 1862 Date: Last Map Published Not Applicable Date:	A12SE (E)	0	-	318086 478366
14	Extractive Industries or Potential Excavations from 1855-1909 Use: Hodbarrow Limekilns First Map Published 1862 Date: Last Map Published Not Applicable Date:	A12SE (E)	0	-	317998 478324
15	Extractive Industries or Potential Excavations from 1893-1915 Use: Reservoir First Map Published 1899 Date: Last Map Published Not Applicable Date:	A16SE (NE)	0	-	317867 478985
16	Extractive Industries or Potential Excavations from 1893-1915 Use: Railway Cutting First Map Published 1899 Date: Last Map Published Not Applicable Date:	A16SE (NE)	0	-	317860 478936
17	Extractive Industries or Potential Excavations from 1893-1915 Use: Hodbarrow Iron Ore Mines First Map Published 1898 Date: Last Map Published 1899 Date:	A11NE (NE)	0	-	317202 478644
18	Extractive Industries or Potential Excavations from 1893-1915 Use: Redhill Quarry First Map Published 1899 Date: Last Map Published Not Applicable Date:	A16SW (NE)	0	-	317695 478934
19	Extractive Industries or Potential Excavations from 1893-1915 Use: Unspecified Deposited Material First Map Published 1898 Date: Last Map Published Not Applicable Date:	A12SE (E)	0	-	318058 478460
20	Extractive Industries or Potential Excavations from 1893-1915 Use: Unspecified Pit First Map Published 1898 Date: Last Map Published Not Applicable Date:	A12SE (E)	0	-	317988 478482

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
21	Extractive Industries or Potential Excavations from 1893-1915 Use: Unspecified Pit First Map Published 1898 Date: Last Map Published Not Applicable Date:	A12NE (E)	0	-	318092 478597
22	Extractive Industries or Potential Excavations from 1893-1915 Use: Unspecified Deposited Material First Map Published 1898 Date: Last Map Published Not Applicable Date:	A12NE (E)	0	-	318003 478522
23	Extractive Industries or Potential Excavations from 1893-1915 Use: Unspecified Pit First Map Published 1898 Date: Last Map Published Not Applicable Date:	A12SE (E)	0	-	318011 478404
24	Extractive Industries or Potential Excavations from 1893-1915 Use: Unspecified Deposited Material First Map Published 1899 Date: Last Map Published Not Applicable Date:	A16SW (NE)	0	-	317474 478927
25	Extractive Industries or Potential Excavations from 1893-1915 Use: Unspecified Pit First Map Published 1898 Date: Last Map Published Not Applicable Date:	A12SE (E)	0	-	317832 478480
26	Extractive Industries or Potential Excavations from 1893-1915 Use: Unspecified Deposited Material First Map Published 1898 Date: Last Map Published Not Applicable Date:	A12SE (E)	0	-	317888 478426
27	Extractive Industries or Potential Excavations from 1893-1915 Use: Unspecified Deposited Material First Map Published 1898 Date: Last Map Published Not Applicable Date:	A12NE (E)	0	-	317960 478529
28	Extractive Industries or Potential Excavations from 1893-1915 Use: Unspecified Pit First Map Published 1898 Date: Last Map Published Not Applicable Date:	A12NE (E)	0	-	317972 478587
29	Extractive Industries or Potential Excavations from 1893-1915 Use: Unspecified Pit First Map Published 1898 Date: Last Map Published Not Applicable Date:	A12NE (E)	0	-	317933 478511
30	Extractive Industries or Potential Excavations from 1893-1915 Use: Unspecified Pit First Map Published 1898 Date: Last Map Published Not Applicable Date:	A12NE (E)	0	-	317931 478523
31	Extractive Industries or Potential Excavations from 1893-1915 Use: Railway Embankment First Map Published 1898 Date: Last Map Published Not Applicable Date:	A12NE (E)	0	-	317876 478680

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
32	Extractive Industries or Potential Excavations from 1893-1915 Use: Unspecified Pits First Map Published 1898 Date: Last Map Published 1899 Date:	A12NW (NE)	0	-	317629 478817
33	Extractive Industries or Potential Excavations from 1893-1915 Use: Jackson Pit First Map Published 1899 Date: Last Map Published Not Applicable Date:	A16SW (NE)	0	-	317697 478889
34	Extractive Industries or Potential Excavations from 1893-1915 Use: Unspecified Deposited Material First Map Published 1898 Date: Last Map Published Not Applicable Date:	A12NW (NE)	0	-	317721 478704
35	Extractive Industries or Potential Excavations from 1893-1915 Use: Reservoir First Map Published 1899 Date: Last Map Published Not Applicable Date:	A16SE (NE)	0	-	317795 478921
36	Extractive Industries or Potential Excavations from 1893-1915 Use: Unspecified Deposited Material First Map Published 1899 Date: Last Map Published Not Applicable Date:	A16SW (NE)	0	-	317693 478952
37	Extractive Industries or Potential Excavations from 1893-1915 Use: Railway Embankment First Map Published 1899 Date: Last Map Published Not Applicable Date:	A16SW (NE)	0	-	317681 478979
38	Extractive Industries or Potential Excavations from 1893-1915 Use: Unspecified Deposited Material First Map Published 1898 Date: Last Map Published Not Applicable Date:	A12NW (E)	0	-	317649 478523
39	Extractive Industries or Potential Excavations from 1893-1915 Use: Unspecified Deposited Material First Map Published 1898 Date: Last Map Published Not Applicable Date:	A12NW (E)	0	-	317700 478636
40	Extractive Industries or Potential Excavations from 1893-1915 Use: Unspecified Pit First Map Published 1898 Date: Last Map Published Not Applicable Date:	A12NE (E)	0	-	317877 478583
41	Extractive Industries or Potential Excavations from 1893-1915 Use: Rock Pit First Map Published 1899 Date: Last Map Published Not Applicable Date:	A16SE (NE)	0	-	317784 478865
42	Extractive Industries or Potential Excavations from 1893-1915 Use: Arnold Pit First Map Published 1898 Date: Last Map Published Not Applicable Date:	A12NE (E)	0	-	317763 478595

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
43	Extractive Industries or Potential Excavations from 1893-1915 Use: Annie Lowther Pit First Map Published 1898 Date: Last Map Published Not Applicable Date:	A12SW (E)	0	-	317746 478478
44	Extractive Industries or Potential Excavations from 1893-1915 Use: Office Pit First Map Published 1898 Date: Last Map Published Not Applicable Date:	A12SE (E)	0	-	318032 478400
45	Extractive Industries or Potential Excavations from 1893-1915 Use: Clay Pit First Map Published 1899 Date: Last Map Published Not Applicable Date:	A16SW (NE)	0	-	317700 478978
46	Extractive Industries or Potential Excavations from 1893-1915 Use: Shaft First Map Published 1898 Date: Last Map Published Not Applicable Date:	A12NE (E)	0	-	317815 478491
47	Extractive Industries or Potential Excavations from 1893-1915 Use: Unspecified Pit First Map Published 1898 Date: Last Map Published Not Applicable Date:	A12NE (E)	0	-	317901 478560
48	Extractive Industries or Potential Excavations from 1893-1915 Use: Unspecified Pit First Map Published 1898 Date: Last Map Published Not Applicable Date:	A12NE (E)	0	-	317965 478568
49	Extractive Industries or Potential Excavations from 1893-1915 Use: Railway Embankment First Map Published 1898 Date: Last Map Published Not Applicable Date:	A12NE (E)	0	-	317990 478525
50	Extractive Industries or Potential Excavations from 1893-1915 Use: Old Shaft First Map Published 1898 Date: Last Map Published Not Applicable Date:	A12NE (E)	0	-	318053 478607
51	Extractive Industries or Potential Excavations from 1893-1915 Use: Reservoir First Map Published 1898 Date: Last Map Published Not Applicable Date:	A12SE (E)	0	-	317796 478439
52	Extractive Industries or Potential Excavations from 1893-1915 Use: New Annie Lowther Pit First Map Published 1898 Date: Last Map Published Not Applicable Date:	A12SE (E)	0	-	317911 478380
53	Extractive Industries or Potential Excavations from 1893-1915 Use: Shaft First Map Published 1898 Date: Last Map Published Not Applicable Date:	A12NE (E)	0	-	317784 478599

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
54	Extractive Industries or Potential Excavations from 1893-1915 Use: Shaft First Map Published 1899 Date: Last Map Published Not Applicable Date:	A16SW (NE)	0	-	317721 478920
55	Extractive Industries or Potential Excavations from 1893-1915 Use: Brick Works First Map Published 1899 Date: Last Map Published Not Applicable Date:	A16SW (NE)	0	-	317591 478954
56	Extractive Industries or Potential Excavations from 1893-1915 Use: Unspecified Deposited Material First Map Published 1898 Date: Last Map Published Not Applicable Date:	A12SE (E)	0	-	317832 478480
57	Extractive Industries or Potential Excavations from 1893-1915 Use: Unspecified Pit First Map Published 1899 Date: Last Map Published Not Applicable Date:	A16SW (NE)	10	-	317585 478865
58	Extractive Industries or Potential Excavations from 1893-1915 Use: Shaft First Map Published 1899 Date: Last Map Published Not Applicable Date:	A16SW (NE)	24	-	317508 478893
59	Extractive Industries or Potential Excavations from 1893-1915 Use: Unspecified Pit First Map Published 1899 Date: Last Map Published Not Applicable Date:	A16SW (NE)	36	-	317480 478826
60	Extractive Industries or Potential Excavations from 1893-1915 Use: Railway Embankment First Map Published 1899 Date: Last Map Published Not Applicable Date:	A12NW (NE)	42	-	317614 478819
61	Extractive Industries or Potential Excavations from 1893-1915 Use: Railway Embankment First Map Published 1898 Date: Last Map Published 1899 Date:	A12NW (NE)	43	-	317577 478741
62	Extractive Industries or Potential Excavations from 1893-1915 Use: Railway Embankment First Map Published 1899 Date: Last Map Published 1899 Date:	A15SE (NE)	83	-	317420 478841
63	Extractive Industries or Potential Excavations from 1906-1937 Use: Unspecified Deposited Material First Map Published 1924 Date: Last Map Published Not Applicable Date:	A16SW (NE)	0	-	317471 478926
64	Extractive Industries or Potential Excavations from 1906-1937 Use: Unspecified Deposited Material First Map Published 1924 Date: Last Map Published Not Applicable Date:	A12SE (E)	0	-	318012 478375

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
65	Extractive Industries or Potential Excavations from 1906-1937 Use: Office Pit First Map Published 1924 Date: Last Map Published Not Applicable Date:	A12SE (E)	0	-	318006 478381
66	Extractive Industries or Potential Excavations from 1906-1937 Use: Unspecified Deposited Material First Map Published 1924 Date: Last Map Published Not Applicable Date:	A12SE (E)	0	-	318054 478454
67	Extractive Industries or Potential Excavations from 1906-1937 Use: Annie Lowther Pit First Map Published 1924 Date: Last Map Published Not Applicable Date:	A12SW (E)	0	-	317736 478461
68	Extractive Industries or Potential Excavations from 1906-1937 Use: Rock Pit First Map Published 1924 Date: Last Map Published Not Applicable Date:	A16SW (NE)	0	-	317600 478924
69	Extractive Industries or Potential Excavations from 1906-1937 Use: Jackson Pit First Map Published 1924 Date: Last Map Published 1924 Date:	A16SW (NE)	0	-	317454 478896
70	Extractive Industries or Potential Excavations from 1906-1937 Use: Unspecified Pit First Map Published 1924 Date: Last Map Published Not Applicable Date:	A12SW (E)	0	-	317552 478417
71	Extractive Industries or Potential Excavations from 1906-1937 Use: Railway Embankment First Map Published 1924 Date: Last Map Published Not Applicable Date:	A12SE (E)	0	-	317871 478367
72	Extractive Industries or Potential Excavations from 1906-1937 Use: Unspecified Deposited Material First Map Published 1924 Date: Last Map Published Not Applicable Date:	A12NW (NE)	0	-	317722 478700
73	Extractive Industries or Potential Excavations from 1906-1937 Use: Railway Embankment First Map Published 1924 Date: Last Map Published Not Applicable Date:	A12NW (NE)	0	-	317676 478704
74	Extractive Industries or Potential Excavations from 1906-1937 Use: Unspecified Deposited Material First Map Published 1924 Date: Last Map Published Not Applicable Date:	A12NW (E)	0	-	317647 478528
75	Extractive Industries or Potential Excavations from 1906-1937 Use: Unspecified Pit First Map Published 1924 Date: Last Map Published Not Applicable Date:	A12SE (E)	0	-	317927 478404

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
76	Extractive Industries or Potential Excavations from 1906-1937 Use: Unspecified Deposited Material First Map Published 1924 Date: Last Map Published Not Applicable Date:	A12NE (E)	0	-	317959 478525
77	Extractive Industries or Potential Excavations from 1906-1937 Use: Unspecified Deposited Material First Map Published 1924 Date: Last Map Published Not Applicable Date:	A12SE (E)	0	-	317826 478477
78	Extractive Industries or Potential Excavations from 1906-1937 Use: Unspecified Pit First Map Published 1924 Date: Last Map Published Not Applicable Date:	A12NE (E)	0	-	317842 478507
79	Extractive Industries or Potential Excavations from 1906-1937 Use: Railway Embankment First Map Published 1924 Date: Last Map Published Not Applicable Date:	A12NE (E)	0	-	317985 478525
80	Extractive Industries or Potential Excavations from 1906-1937 Use: Railway Embankment First Map Published 1924 Date: Last Map Published Not Applicable Date:	A12SE (E)	0	-	317760 478479
81	Extractive Industries or Potential Excavations from 1906-1937 Use: Unspecified Deposited Material First Map Published 1924 Date: Last Map Published Not Applicable Date:	A12SE (E)	0	-	317833 478368
82	Extractive Industries or Potential Excavations from 1906-1937 Use: Railway Embankment First Map Published 1924 Date: Last Map Published Not Applicable Date:	A12NE (E)	0	-	317873 478679
83	Extractive Industries or Potential Excavations from 1906-1937 Use: New Annie Lowther Pit First Map Published 1924 Date: Last Map Published Not Applicable Date:	A12SE (E)	0	-	317883 478397
84	Extractive Industries or Potential Excavations from 1906-1937 Use: Arnold Pit First Map Published 1924 Date: Last Map Published Not Applicable Date:	A12NE (E)	0	-	317762 478595
85	Extractive Industries or Potential Excavations from 1906-1937 Use: Reservoir First Map Published 1924 Date: Last Map Published Not Applicable Date:	A16SE (NE)	0	-	317795 478920
86	Extractive Industries or Potential Excavations from 1906-1937 Use: S First Map Published 1924 Date: Last Map Published Not Applicable Date:	A12NE (E)	0	-	317814 478491

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
87	Extractive Industries or Potential Excavations from 1906-1937 Use: Shaft First Map Published 1924 Date: Last Map Published Not Applicable Date:	A16SW (NE)	0	-	317720 478919
88	Extractive Industries or Potential Excavations from 1906-1937 Use: Reservoir First Map Published 1924 Date: Last Map Published Not Applicable Date:	A16SE (NE)	0	-	317859 478992
89	Extractive Industries or Potential Excavations from 1906-1937 Use: Reservoir First Map Published 1924 Date: Last Map Published 1924 Date:	A7NE (SE)	0	-	317377 477972
90	Extractive Industries or Potential Excavations from 1906-1937 Use: Unspecified Deposited Material First Map Published 1924 Date: Last Map Published Not Applicable Date:	A16SW (NE)	0	-	317694 478934
91	Extractive Industries or Potential Excavations from 1906-1937 Use: Quarries (Ironstone) First Map Published 1924 Date: Last Map Published Not Applicable Date:	A12SE (E)	0	-	317978 478480
92	Extractive Industries or Potential Excavations from 1906-1937 Use: Red Hills Quarry First Map Published 1924 Date: Last Map Published Not Applicable Date:	A16SW (NE)	0	-	317694 478934
93	Extractive Industries or Potential Excavations from 1906-1937 Use: Hodbarrow Iron Ore Mines First Map Published 1924 Date: Last Map Published 1924 Date:	A11NE (NE)	0	-	317199 478614
94	Extractive Industries or Potential Excavations from 1906-1937 Use: Railway Cutting First Map Published 1924 Date: Last Map Published Not Applicable Date:	A16SE (NE)	0	-	317859 478935
95	Extractive Industries or Potential Excavations from 1906-1937 Use: Unspecified Deposited Material First Map Published 1924 Date: Last Map Published Not Applicable Date:	A16SE (NE)	0	-	317839 478981
96	Extractive Industries or Potential Excavations from 1906-1937 Use: Aqueduct First Map Published 1924 Date: Last Map Published Not Applicable Date:	A12SE (E)	0	-	317924 478388
97	Extractive Industries or Potential Excavations from 1906-1937 Use: Aqueduct First Map Published 1924 Date: Last Map Published Not Applicable Date:	A12SE (E)	0	-	317917 478324

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
98	Extractive Industries or Potential Excavations from 1906-1937 Use: Aqueduct First Map Published 1924 Date: Last Map Published Not Applicable Date:	A12NE (E)	0	-	317785 478589
99	Extractive Industries or Potential Excavations from 1906-1937 Use: Aqueduct First Map Published 1924 Date: Last Map Published Not Applicable Date:	A12SE (E)	0	-	317953 478351
100	Extractive Industries or Potential Excavations from 1906-1937 Use: Old Shaft First Map Published 1924 Date: Last Map Published Not Applicable Date:	A12NE (E)	0	-	318052 478606
101	Extractive Industries or Potential Excavations from 1906-1937 Use: Unspecified Deposited Material First Map Published 1924 Date: Last Map Published Not Applicable Date:	A12SW (E)	22	-	317711 478442
102	Extractive Industries or Potential Excavations from 1906-1937 Use: Unspecified Shaft First Map Published 1924 Date: Last Map Published Not Applicable Date:	A16SW (NE)	27	-	317506 478890
103	Extractive Industries or Potential Excavations from 1906-1937 Use: Unspecified Deposited Material First Map Published 1924 Date: Last Map Published Not Applicable Date:	A16SW (NE)	29	-	317500 478874
104	Extractive Industries or Potential Excavations from 1906-1937 Use: Unspecified Deposited Material First Map Published 1924 Date: Last Map Published Not Applicable Date:	A16SW (NE)	35	-	317480 478831
105	Extractive Industries or Potential Excavations from 1906-1937 Use: Railway Embankment First Map Published 1924 Date: Last Map Published 1924 Date:	A12NW (NE)	42	-	317463 478690
106	Extractive Industries or Potential Excavations from 1906-1937 Use: Railway Embankment First Map Published 1924 Date: Last Map Published 1924 Date:	A16SW (NE)	46	-	317454 478896
107	Extractive Industries or Potential Excavations from 1950-1980 Use: General Extraction First Map Published 1969 Date: Last Map Published Not Applicable Date:	A11SW (NE)	0	-	316918 478320
108	Extractive Industries or Potential Excavations from 1950-1980 Use: Slag Heap First Map Published 1969 Date: Last Map Published Not Applicable Date:	A11SW (SE)	0	-	317046 478154

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
109	Extractive Industries or Potential Excavations from 1950-1980 Use: Railway Cutting First Map Published 1969 Date: Last Map Published Not Applicable Date:	A16SE (NE)	0	-	318015 478970
110	Extractive Industries or Potential Excavations from 1950-1980 Use: Railway Cutting First Map Published 1969 Date: Last Map Published Not Applicable Date:	A16SE (NE)	0	-	317863 478938
111	Extractive Industries or Potential Excavations from 1950-1980 Use: Red Hills Quarry (Disused) First Map Published 1969 Date: Last Map Published Not Applicable Date:	A16SE (NE)	0	-	317850 479031
112	Extractive Industries or Potential Excavations from 1950-1980 Use: Aqueduct First Map Published 1969 Date: Last Map Published N/A Date:	A12SE (E)	0	-	317917 478326
113	Extractive Industries or Potential Excavations from 1950-1980 Use: Pipe Line First Map Published 1969 Date: Last Map Published N/A Date:	A12SE (E)	0	-	317937 478343
114	Extractive Industries or Potential Excavations from 1950-1980 Use: Unspecified Deposited Material First Map Published 1969 Date: Last Map Published Not Applicable Date:	A16SW (NE)	0	-	317563 479109
115	Extractive Industries or Potential Excavations from 1950-1980 Use: Arnold Pit (Disused) First Map Published 1969 Date: Last Map Published N/A Date:	A12NE (E)	0	-	317827 478611
116	Extractive Industries or Potential Excavations from 1950-1980 Use: Annie Lowther Pit (Disused) First Map Published 1969 Date: Last Map Published N/A Date:	A12SE (E)	0	-	317821 478431
117	Extractive Industries or Potential Excavations from 1950-1980 Use: New Annie Lowther Pit (Disused) First Map Published 1969 Date: Last Map Published N/A Date:	A12SE (E)	0	-	317901 478390
118	Extractive Industries or Potential Excavations from 1950-1980 Use: Shaft (Disused) First Map Published 1969 Date: Last Map Published N/A Date:	A12NE (E)	0	-	318055 478605
119	Extractive Industries or Potential Excavations from 1950-1980 Use: Slag Heap First Map Published 1969 Date: Last Map Published Not Applicable Date:	A16SE (NE)	0	-	317888 478961

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
120	Extractive Industries or Potential Excavations from 1950-1980 Use: Pipe First Map Published 1969 Date: Last Map Published Not Applicable Date:	A8NW (E)	0	-	317723 478028
121	Extractive Industries or Potential Excavations from 1950-1980 Use: Jackson Pit (Disused) First Map Published 1969 Date: Last Map Published N/A Date:	A16SW (NE)	0	-	317460 478890
122	Extractive Industries or Potential Excavations from 1950-1980 Use: Rock Pit (Disused) First Map Published 1969 Date: Last Map Published N/A Date:	A16SW (NE)	0	-	317699 478889
123	Extractive Industries or Potential Excavations from 1950-1980 Use: Hodbarrow Iron Ore Mines (Disused) First Map Published 1969 Date: Last Map Published N/A Date:	A11NE (NE)	0	-	317323 478530
124	Extractive Industries or Potential Excavations from 1950-1980 Use: Pond First Map Published 1969 Date: Last Map Published N/A Date:	A16SE (NE)	0	-	318025 479030
125	Extractive Industries or Potential Excavations from 1950-1980 Use: Unspecified Pit First Map Published 1969 Date: Last Map Published N/A Date:	A12SE (E)	0	-	318092 478284
126	Extractive Industries or Potential Excavations from 1950-1980 Use: Railway Embankment First Map Published 1969 Date: Last Map Published N/A Date:	A12NE (E)	0	-	318069 478590
127	Extractive Industries or Potential Excavations from 1950-1980 Use: Unspecified Pit First Map Published 1969 Date: Last Map Published N/A Date:	A16SE (NE)	0	-	317992 478923
128	Extractive Industries or Potential Excavations from 1950-1980 Use: Hodbarrow Iron Ore Mines First Map Published 1969 Date: Last Map Published N/A Date:	A12SE (E)	0	-	318000 478379
129	Extractive Industries or Potential Excavations from 1950-1980 Use: Office Pit (Disused) First Map Published 1969 Date: Last Map Published N/A Date:	A12SE (E)	0	-	318009 478381
130	Extractive Industries or Potential Excavations from 1950-1980 Use: Slag Heap First Map Published 1969 Date: Last Map Published N/A Date:	A12SE (E)	0	-	318057 478456

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
131	Extractive Industries or Potential Excavations from 1950-1980 Use: Reservoir First Map Published 1969 Date: Last Map Published N/A Date:	A16SE (NE)	0	-	317862 479003
132	Extractive Industries or Potential Excavations from 1950-1980 Use: Unspecified Deposited Material First Map Published 1969 Date: Last Map Published N/A Date:	A12NW (E)	0	-	317690 478635
133	Extractive Industries or Potential Excavations from 1950-1980 Use: Unspecified Pit First Map Published 1969 Date: Last Map Published N/A Date:	A12NE (E)	0	-	317874 478588
134	Extractive Industries or Potential Excavations from 1950-1980 Use: Unspecified Pit First Map Published 1969 Date: Last Map Published N/A Date:	A12NE (E)	0	-	317849 478523
135	Extractive Industries or Potential Excavations from 1950-1980 Use: Unspecified Pit First Map Published 1969 Date: Last Map Published N/A Date:	A12NE (E)	0	-	317972 478585
136	Extractive Industries or Potential Excavations from 1950-1980 Use: Unspecified Deposited Material First Map Published 1969 Date: Last Map Published N/A Date:	A12NE (E)	0	-	317962 478524
137	Extractive Industries or Potential Excavations from 1950-1980 Use: Railway Embankment First Map Published 1969 Date: Last Map Published N/A Date:	A12NW (NE)	0	-	317679 478705
138	Extractive Industries or Potential Excavations from 1950-1980 Use: Unspecified Deposited Material First Map Published 1969 Date: Last Map Published N/A Date:	A12SE (E)	0	-	317843 478444
139	Extractive Industries or Potential Excavations from 1950-1980 Use: Unspecified Deposited Material First Map Published 1969 Date: Last Map Published N/A Date:	A16SW (NE)	0	-	317476 478929
140	Extractive Industries or Potential Excavations from 1950-1980 Use: Unspecified Deposited Material First Map Published 1969 Date: Last Map Published N/A Date:	A12NE (E)	0	-	317806 478585
141	Extractive Industries or Potential Excavations from 1950-1980 Use: Unspecified Deposited Material First Map Published 1969 Date: Last Map Published N/A Date:	A12NW (E)	0	-	317688 478561

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
142	Extractive Industries or Potential Excavations from 1950-1980 Use: Unspecified Deposited Material First Map Published 1969 Date: Last Map Published N/A Date:	A12NE (E)	0	-	317783 478574
143	Extractive Industries or Potential Excavations from 1950-1980 Use: Unspecified Pit First Map Published 1969 Date: Last Map Published N/A Date:	A12NE (E)	0	-	317805 478488
144	Extractive Industries or Potential Excavations from 1950-1980 Use: Unspecified Pit First Map Published 1969 Date: Last Map Published N/A Date:	A12SW (E)	1	-	317689 478436
145	Extractive Industries or Potential Excavations from 1950-1980 Use: Reservoir First Map Published 1969 Date: Last Map Published Not Applicable Date:	A8NW (SE)	2	-	317573 478000
146	Extractive Industries or Potential Excavations from 1950-1980 Use: Refuse Tip First Map Published 1969 Date: Last Map Published N/A Date:	A7NW (SE)	6	-	317013 478094
147	Extractive Industries or Potential Excavations from 1950-1980 Use: Sand Pit First Map Published 1969 Date: Last Map Published Not Applicable Date:	A11SW (NE)	9	-	316953 478347
148	Extractive Industries or Potential Excavations from 1950-1980 Use: Pond First Map Published 1969 Date: Last Map Published N/A Date:	A16SE (NE)	11	-	317871 479095
149	Extractive Industries or Potential Excavations from 1950-1980 Use: Railway Embankment First Map Published 1969 Date: Last Map Published N/A Date:	A15SE (N)	18	-	317176 479110
150	Extractive Industries or Potential Excavations from 1950-1980 Use: Pond First Map Published 1969 Date: Last Map Published N/A Date:	A11SE (E)	22	-	317274 478379
151	Extractive Industries or Potential Excavations from 1950-1980 Use: Unspecified Deposited Material First Map Published 1969 Date: Last Map Published N/A Date:	A16SW (NE)	27	-	317519 478868
152	Extractive Industries or Potential Excavations from 1950-1980 Use: Pond First Map Published 1969 Date: Last Map Published N/A Date:	A12SW (E)	41	-	317704 478470

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
153	Extractive Industries or Potential Excavations from 1950-1980 Use: Unspecified Deposited Material First Map Published 1969 Date: Last Map Published N/A Date:	A16SW (NE)	41	-	317463 478895
154	Extractive Industries or Potential Excavations from 1950-1980 Use: Spoil Heap First Map Published 1969 Date: Last Map Published N/A Date:	A11SW (NW)	55	-	316748 478474
155	Extractive Industries or Potential Excavations from 1950-1980 Use: Sand Pit (Disused) First Map Published 1969 Date: Last Map Published N/A Date:	A12SW (E)	67	-	317468 478229
156	Extractive Industries or Potential Excavations from 1950-1980 Use: Spoil Heap First Map Published 1969 Date: Last Map Published N/A Date:	A11SW (NW)	67	-	316813 478410
157	Extractive Industries or Potential Excavations from 1950-1980 Use: Pipe Line First Map Published 1969 Date: Last Map Published N/A Date:	A11NW (NW)	73	-	316750 478497
158	Extractive Industries or Potential Excavations from 1950-1980 Use: Pipe Line First Map Published 1969 Date: Last Map Published N/A Date:	A11SW (NW)	76	-	316804 478426
159	Extractive Industries or Potential Excavations from 1950-1980 Use: Pond First Map Published 1969 Date: Last Map Published N/A Date:	A16SW (NE)	76	-	317424 478941

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
160	General Quarrying Use: Not Supplied Date of Mapping: 1867 - 1993	A16SE (NE)	0	-	317761 478923
161	General Quarrying Use: Not Supplied Date of Mapping: 1927 - 1956	A12NE (E)	0	-	318014 478518
162	Mineral Railway Use: Not Supplied Date of Mapping: 1900 - 1956	A16SE (NE)	5	-	317902 478897
163	Mineral Railway Use: Not Supplied Date of Mapping: 1956	A15SW (N)	312	-	316887 478834
164	Mining & quarrying general Use: Not Supplied Date of Mapping: 1900 - 1956	A11NE (NE)	0	-	317219 478627
165	Mining & quarrying general Use: Not Supplied Date of Mapping: 1867 - 1956	A12SE (E)	0	-	317986 478333
166	Quarrying of sand & clay, operation of sand & gravel pits Use: Not Supplied Date of Mapping: 1900 - 1916	A14SE (NW)	252	-	316624 479002
167	Quarrying of sand & clay, operation of sand & gravel pits Use: Not Supplied Date of Mapping: 1900	A14NE (NW)	403	-	316411 479163
168	Potentially Infilled Land (Non-Water) Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1993	A16SE (NE)	0	-	318049 478873
169	Potentially Infilled Land (Non-Water) Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1993	A12SW (E)	0	-	317736 478399
170	Potentially Infilled Land (Non-Water) Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1993	A12SE (E)	0	-	318040 478367
171	Potentially Infilled Land (Non-Water) Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1993	A11SW (SE)	0	-	317053 478151
172	Potentially Infilled Land (Non-Water) Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1993	A11NE (NE)	0	-	317172 478626
173	Potentially Infilled Land (Non-Water) Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1993	A16SW (NE)	8	-	317650 478987
174	Potentially Infilled Land (Non-Water) Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1993	A14SE (NW)	252	-	316624 479002

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	CBSCB Compensation District The site does not fall within the brine compensation area.				
	Brine Subsidence Solution Area The site does not fall within the brine subsidence solution area.				
175	Potential for Collapsible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A11SW (NE)	0	1	316918 478320
	Potential for Collapsible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A11SW (SW)	0	1	316764 478226
176	Potential for Compressible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A11SW (NE)	0	1	316918 478320
177	Potential for Compressible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A12SE (E)	0	1	318029 478460
178	Potential for Compressible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A12SW (E)	0	1	317438 478472
179	Potential for Compressible Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A11SW (SW)	0	1	316764 478226
180	Potential for Compressible Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A11SW (W)	0	1	316782 478336
181	Potential for Compressible Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A12SW (E)	0	1	317651 478420
182	Potential for Compressible Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A11SE (SE)	0	1	317212 478151
183	Potential for Compressible Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A16SW (NE)	0	1	317510 478920
184	Potential for Compressible Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A11SE (E)	0	1	317411 478481
185	Potential for Compressible Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A12NE (E)	0	1	317968 478538
186	Potential for Compressible Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A11NW (N)	1	1	316849 478780
187	Potential for Compressible Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A12SW (E)	9	1	317702 478405
188	Potential for Compressible Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A11NE (NE)	190	1	317277 478786
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A11SW (NE)	0	1	316926 478325
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A11NE (N)	0	1	317088 478816
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A10NE (NW)	0	1	316468 478760
189	Potential for Ground Dissolution Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A11SW (NE)	0	1	316918 478320

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
190	Potential for Ground Dissolution Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A16SE (NE)	0	1	318043 478983
191	Potential for Ground Dissolution Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	(E)	0	1	318211 478242
192	Potential for Ground Dissolution Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	(E)	0	1	318320 478375
193	Potential for Ground Dissolution Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A16SE (NE)	26	1	317995 479131
194	Potential for Ground Dissolution Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	(E)	43	1	318459 478759
195	Potential for Ground Dissolution Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	(E)	82	1	318498 478757
196	Potential for Ground Dissolution Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	(E)	90	1	318467 478836
197	Potential for Ground Dissolution Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A16NE (NE)	175	1	317774 479199
198	Potential for Ground Dissolution Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	(NE)	199	1	318240 479073
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A16SW (NE)	0	1	317679 478825
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A11SW (SW)	0	1	316764 478226
199	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A11SW (NE)	0	1	316918 478320
200	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A16NW (NE)	0	1	317573 479297
201	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	(E)	0	1	318299 478345
202	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	(E)	0	1	318270 478058
203	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	(E)	0	1	318212 478191
204	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A8NE (E)	9	1	317868 477978
205	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A10NE (NW)	11	1	316458 478699
206	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A8NE (E)	14	1	317953 478026
207	Potential for Landslide Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	(E)	15	1	318343 478176
208	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	(E)	54	1	318451 478300

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
209	Potential for Landslide Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A16SE (NE)	63	1	317981 479129
210	Potential for Landslide Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A16NE (NE)	116	1	317982 479174
211	Potential for Landslide Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A16NE (NE)	175	1	317774 479199
212	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A16NE (NE)	225	1	317770 479257
213	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	(E)	234	1	318579 478429
	Potential for Landslide Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	(E)	0	1	318223 478562
	Potential for Landslide Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A15SE (NE)	33	1	317320 479048
214	Potential for Running Sand Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A11SW (SW)	0	1	316764 478226
215	Potential for Running Sand Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	(E)	0	1	318380 478258
216	Potential for Running Sand Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A11SW (NE)	0	1	316918 478320
217	Potential for Running Sand Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	(E)	0	1	318211 478242
218	Potential for Running Sand Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A11NW (N)	1	1	316926 478817
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A12SE (E)	0	1	317980 478480
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A10NE (NW)	0	1	316468 478760
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A11SW (NE)	0	1	316926 478325
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A16SE (NE)	0	1	317827 479045
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	(E)	160	1	318538 478626
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	(NE)	199	1	318238 479072
219	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A16NW (NE)	0	1	317573 479297
220	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	(E)	0	1	318211 478242
221	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A12NE (E)	0	1	318014 478752

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
222	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A11SW (SW)	0	1	316764 478226
223	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A11NW (N)	1	1	316926 478817
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A11SW (NE)	0	1	316918 478320

The following mapping has been analysed for Historical Land Use Information (1:2,500):

1:2,500	Mapsheet	Published Date
Cumberland	090_02	1862
Cumberland	090_02	1862
Cumberland	090_02	1862
Cumberland	090_02	1862
Cumberland	090_02	1862
Cumberland	090_02	1862
Cumberland	090_03	1862
Cumberland	090_03	1862
Cumberland	090_06	1862
Cumberland	090_06	1862
Cumberland	090_06	1862
Cumberland	090_06	1862
Cumberland	090_06	1862
Cumberland	090_06	1862
Cumberland	090_06	1862
Cumberland	090_06	1862
Cumberland	090_07	1862
Cumberland	090_07	1862
Lancashire And Furness	010_15	1891
Lancashire And Furness	015_03	1891
Lancashire And Furness	015_03	1891
Lancashire And Furness	015_03	1891
Cumberland	090_06	1898
Cumberland	090_06	1898
Cumberland	090_06	1898
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Cumberland	090_07	1898
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Cumberland	090_02	1899
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Cumberland	090_02	1899
Cumberland	090_02	1899
Cumberland	090_02	1899
Cumberland	090_02	1899
Cumberland	090_03	1899
Cumberland	090_03	1899

1:2,500	Mapsheet	Published Date
Lancashire And Furness	010_15	1913
Cumberland	090_02	1924
Cumberland	090_02	1924
Cumberland	090_02	1924
Cumberland	090_02	1924
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Cumberland	090_02	1924
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Cumberland	090_06	1924
Cumberland	090_06	1924
Cumberland	090_07	1924
Cumberland	090_07	1924
Ordnance Survey Plan	SD1678	1969
Ordnance Survey Plan	SD1678	1969
Ordnance Survey Plan	SD1678	1969
Ordnance Survey Plan	SD1678	1969
Ordnance Survey Plan	SD1678	1969
Ordnance Survey Plan	SD1678	1969
Ordnance Survey Plan	SD1679	1969
Ordnance Survey Plan	SD1679	1969
Ordnance Survey Plan	SD1777	1969
Ordnance Survey Plan	SD1777	1969
Ordnance Survey Plan	SD1778	1969
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Ordnance Survey Plan	SD1778	1969
Ordnance Survey Plan	SD1778	1969
Ordnance Survey Plan	SD1779	1969
Ordnance Survey Plan	SD1779	1969
Ordnance Survey Plan	SD1878	1969
Ordnance Survey Plan	SD1878	1969
Ordnance Survey Plan	SD1878	1969
Ordnance Survey Plan	SD1879	1969

The following mapping has been analysed for Historical Land Use Information (1:10,000):

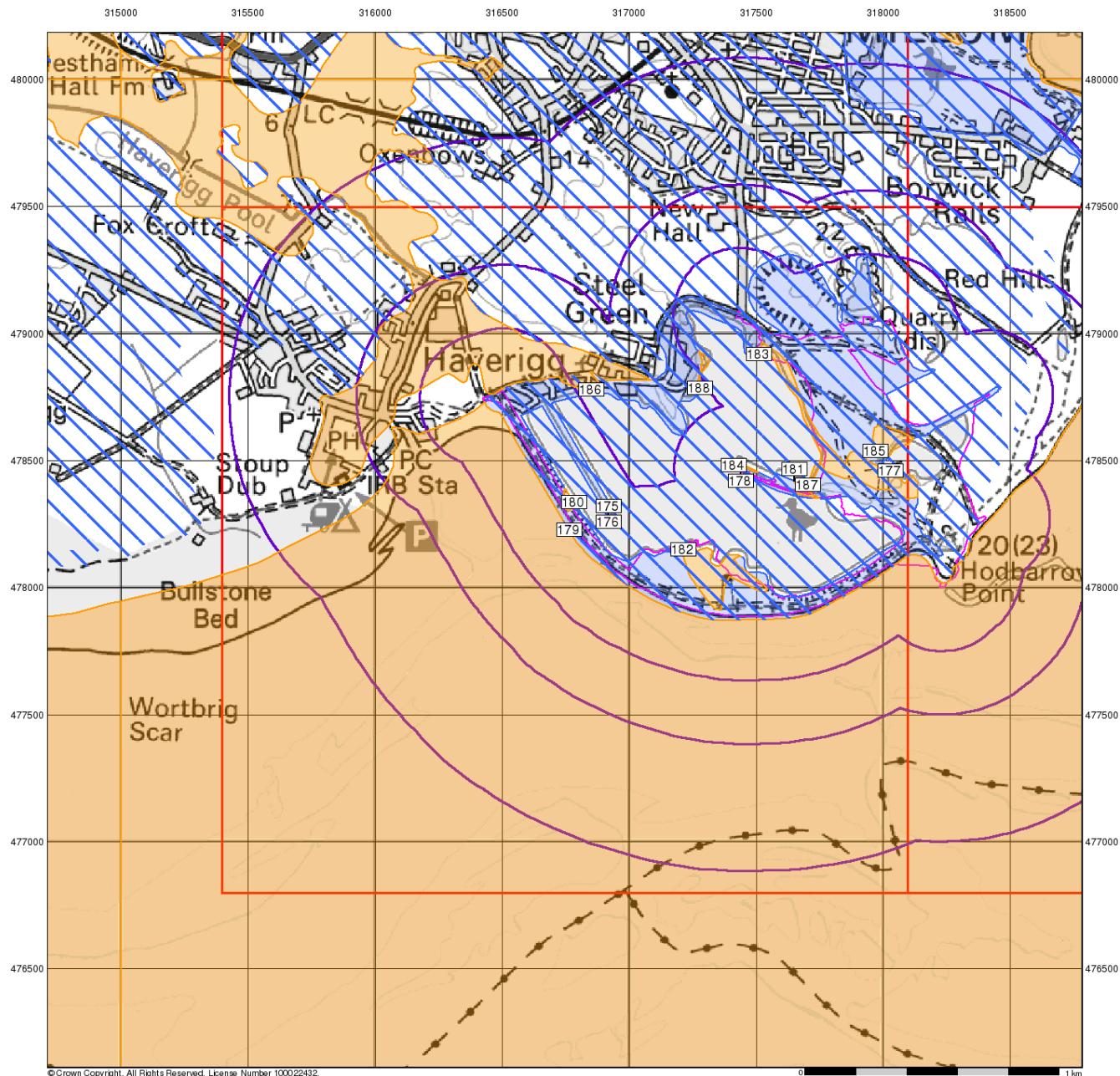
1:10,560	Mapsheet	Published Date
Lancashire And Furness	010_00	1850
Lancashire And Furness	015_00	1850
Cumberland	090_00	1867
Lancashire And Furness	010_00	1892
Lancashire And Furness	015_00	1892
Cumberland	090_NE	1900
Cumberland	090_NW	1900
Cumberland	090_SW	1900
Lancashire And Furness	015_NW	1916
Lancashire And Furness	010_SE	1919
Lancashire And Furness	015_NE	1919
Cumberland	090_SW	1926
Cumberland	090_NE	1927
Cumberland	090_NW	1927
Cumberland	090_SE	1927
Lancashire And Furness	015_NE	1938
Ordnance Survey Plan	SD17NE	1956
1:10,000	Mapsheet	Published Date
Ordnance Survey Plan	SD17NE	1993

Mining and Cavities Data	Version	Update Cycle
BGS Recorded Mineral Sites British Geological Survey - National Geoscience Information Service	November 2022	Bi-Annually
Coal Mining Affected Areas The Coal Authority - Property Searches	February 2023	Annual Rolling Update
Man Made Mining Cavities Stantec UK Ltd	December 2022	Bi-Annually
Mining Instability Ove Arup & Partners	June 1998	Not Applicable
Natural Cavities Stantec UK Ltd	December 2022	Bi-Annually
Non Coal Mining Areas of Great Britain British Geological Survey - National Geoscience Information Service	May 2015	Not Applicable
Historical Land Use Information (1:2,500)	Version	Update Cycle
Subterranean Features Landmark Information Group Limited	June 2022	Bi-Annually
Ground Stability Data (1:50,000)	Version	Update Cycle
CBSCB Compensation District Cheshire Brine Subsidence Compensation Board (CBSCB) Cheshire Brine Subsidence Compensation Board (CBSCB)	August 2011 November 2020	As notified
Potential for Collapsible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	April 2020	As notified
Potential for Compressible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	As notified
Potential for Ground Dissolution Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	As notified
Potential for Landslide Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	As notified
Potential for Running Sand Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	As notified
Potential for Shrinking or Swelling Clay Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	As notified
Brine Subsidence Solution Area Johnson Poole & Bloomer	December 2020	Annual Rolling Update

A selection of organisations who provide data within this report

Data Supplier	Data Supplier Logo
Ordnance Survey	
British Geological Survey	 British Geological Survey NATURAL ENVIRONMENT RESEARCH COUNCIL
The Coal Authority	
Ove Arup	
Stantec UK Ltd	
Wardell Armstrong	
Johnson Poole & Bloomer	

Contact	Name and Address	Contact Details
1	British Geological Survey - Enquiry Service British Geological Survey, Environmental Science Centre, Keyworth, Nottingham, Nottinghamshire, NG12 5GG	Telephone: 0115 936 3143 Fax: 0115 936 3276 Email: enquiries@bgs.ac.uk Website: www.bgs.ac.uk
2	Stantec UK Ltd Caversham Bridge House, Waterman Place, Reading, RG1 8DN	Telephone: 0118 950 0761 Email: pba.reading@stantec.com Website: www.stantec.com
3	Ove Arup & Partners Central Square, Forth Street, Newcastle upon Tyne, Tyne and Wear, NE1 3PL	Telephone: 0191 261 6080 Fax: 0191 261 7879
4	Landmark Information Group Limited Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	Telephone: 0844 844 9960 Fax: 0844 844 9951 Email: customerservice@promap.co.uk Website: www.landmarkinfo.co.uk
-	Landmark Information Group Limited Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	Telephone: 0844 844 9952 Fax: 0844 844 9951 Email: customerservices@landmarkinfo.co.uk Website: www.landmarkinfo.co.uk



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0 1 km



Ground Stability Data (1:50,000)

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice
- Map ID

Potential for Compressible Ground Stability Hazards

- High
- Low
- Moderate
- Very Low

Potential for Collapsible Ground Stability Hazards

- High
- Low
- Moderate
- Very Low

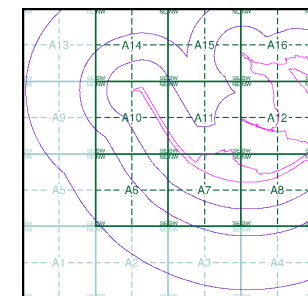
Brine Pumping and Salt Mining

Brine Pumping Related Feature

Salt Mining Related Feature

- | Point | Polygon |
|-------|---------|
| | |
| | |

Mining and Ground Stability - Slice A



Order Details

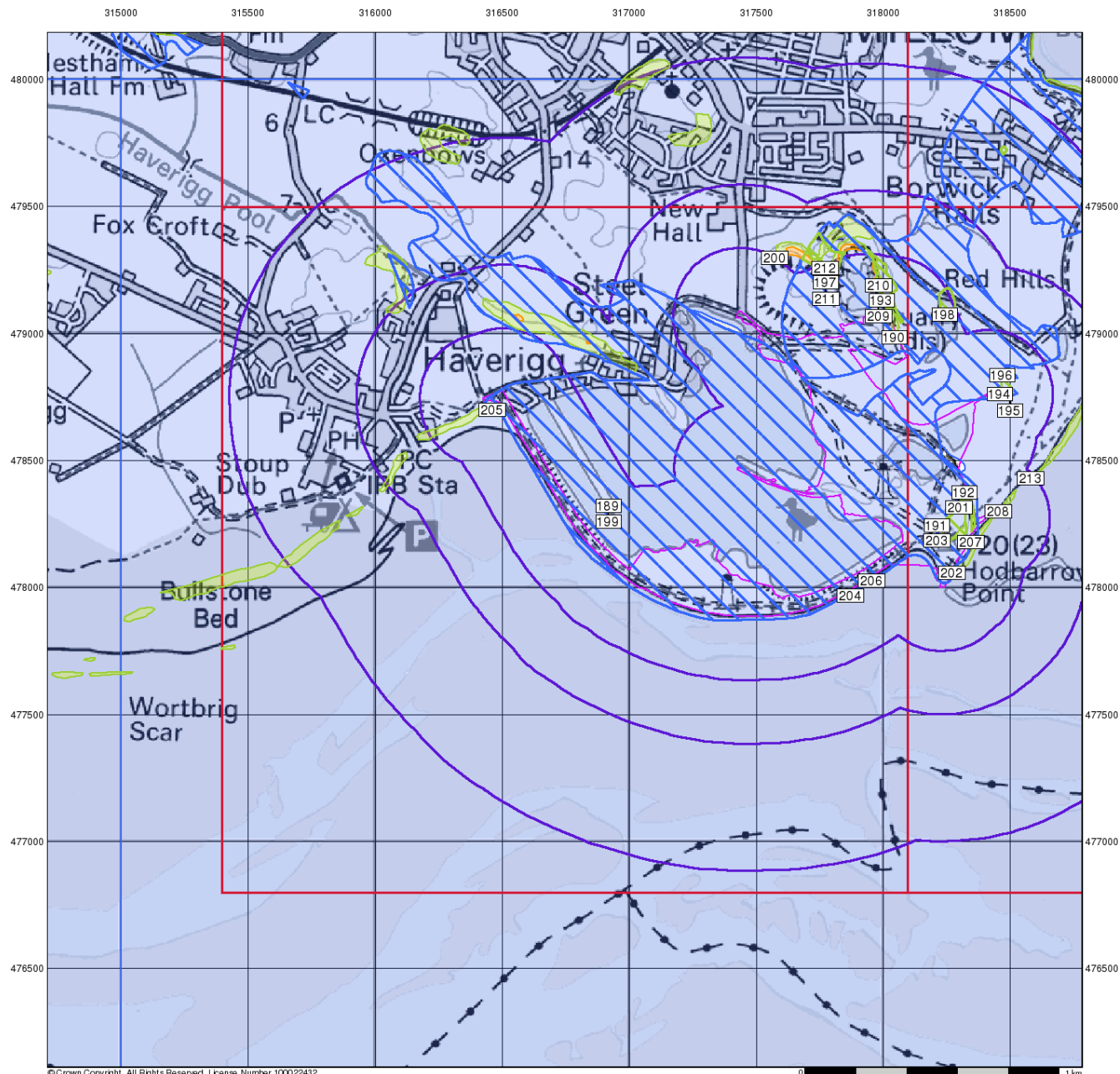
Order Number: 307697430_1_1
 Customer Ref: No. 4229
 National Grid Reference: 316920, 478320
 Slice: A
 Site Area (Ha): 57.66
 Search Buffer (m): 1000

Site Details

The Gin Mill, Steel Green, MILLOM, LA18 4LG

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0 1 km



Ground Stability Data (1:50,000)

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice
- Map ID

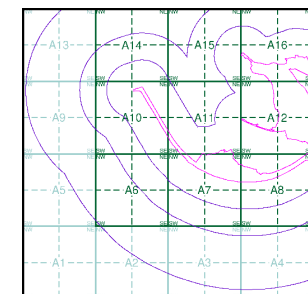
Potential for Landslide Ground Stability Hazards

- High
- Low
- Moderate
- Very Low

Potential for Ground Dissolution Stability Hazards

- High
- Low
- Moderate
- Very Low

Mining and Ground Stability - Slice A



Order Details

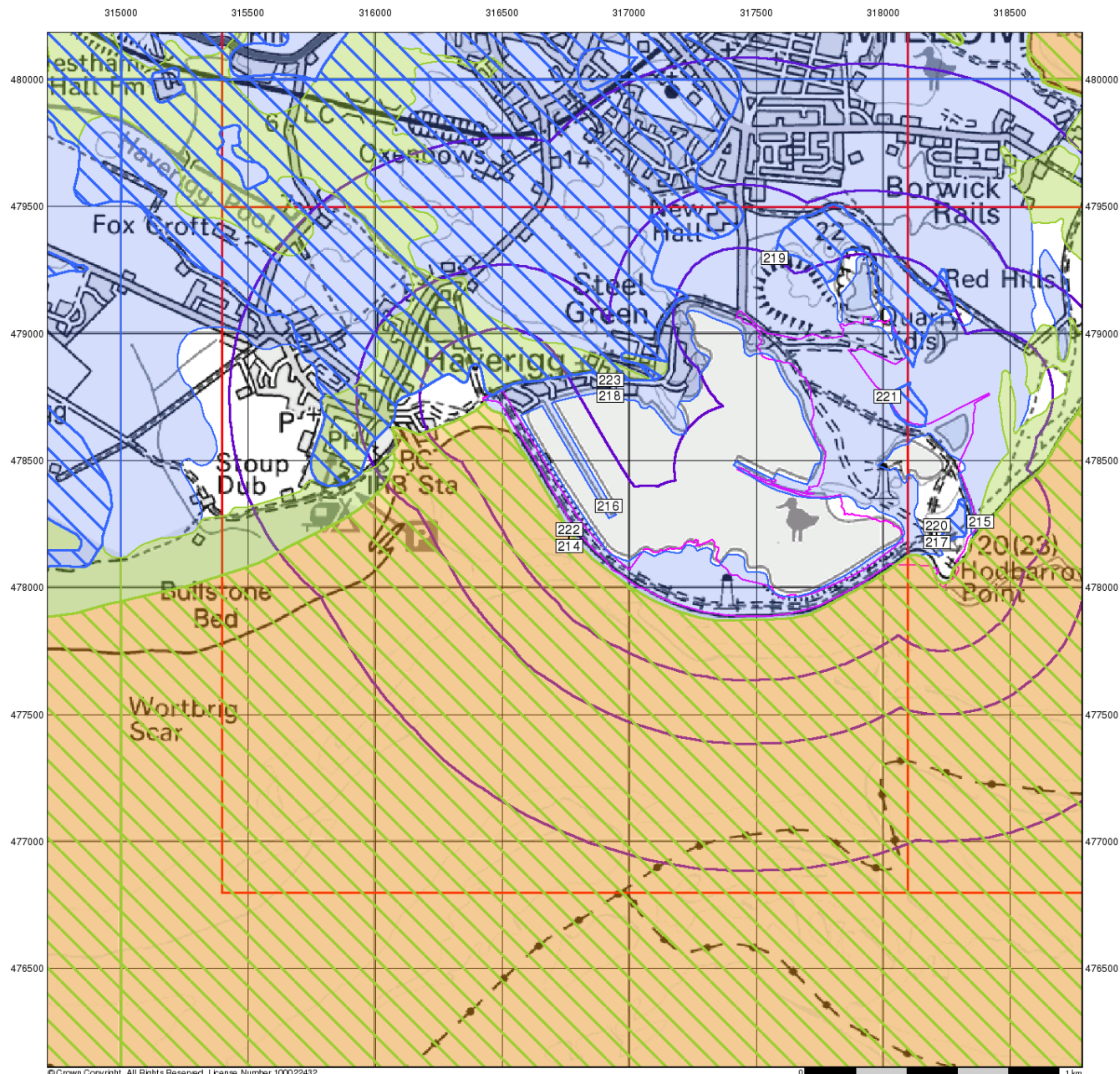
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 Customer Ref: No. 4229
 National Grid Reference: 316920, 478320
 Slice: A
 Site Area (Ha): 57.66
 Search Buffer (m): 1000

Site Details

The Gin Mill, Steel Green, MILLOM, LA18 4LG

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0 1 km



Ground Stability Data (1:50,000)

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice
- Map ID

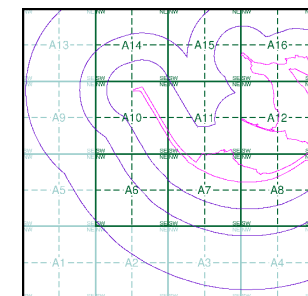
Potential for Running Sand Ground Stability Hazards

- High
- Low
- Moderate
- Very Low

Potential for Shrinking or Swelling Clay Ground Stability Hazards

- High
- Low
- Moderate
- Very Low

Mining and Ground Stability - Slice A



Order Details

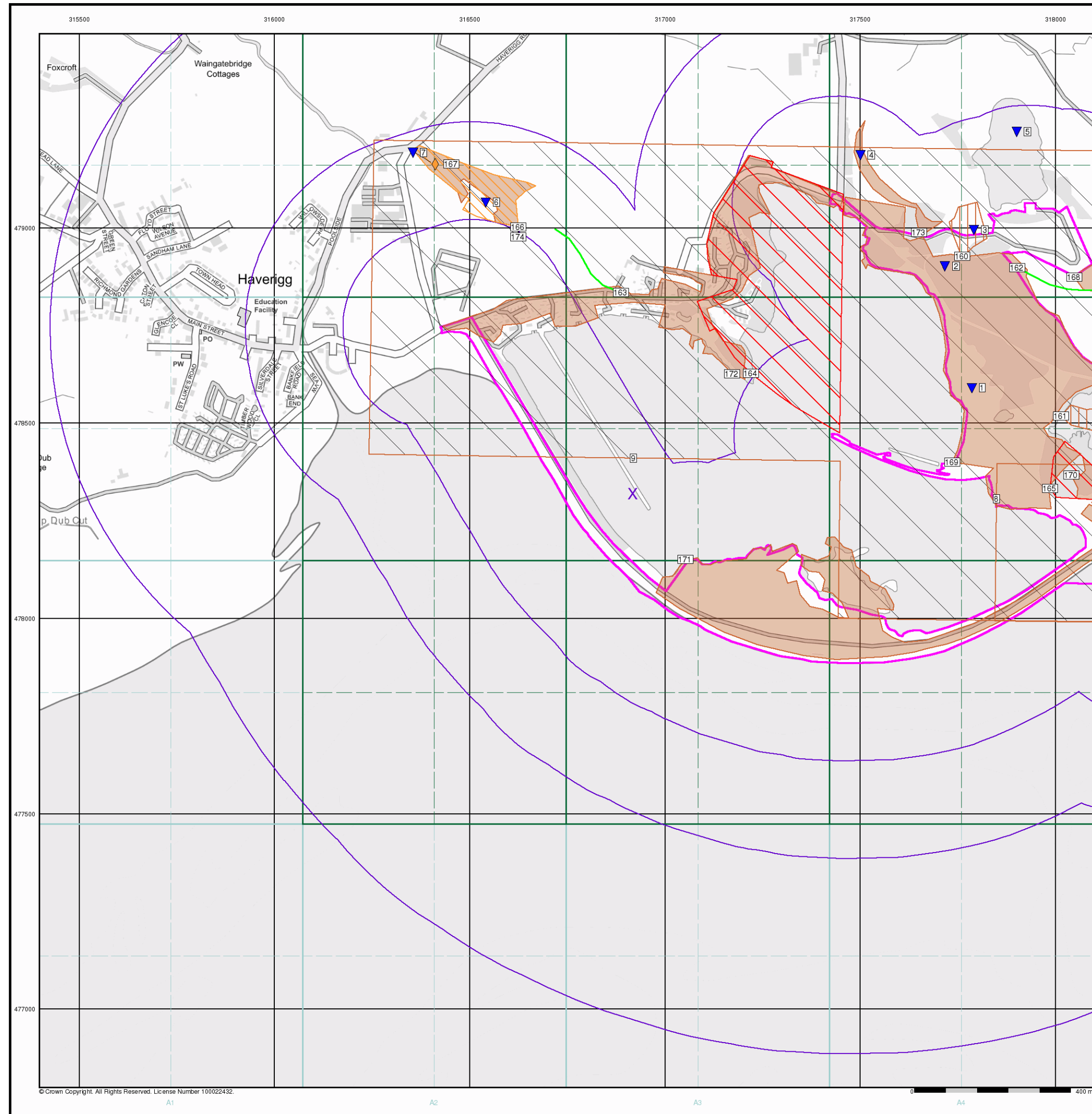
Order Number: 307697430_1_1
 Customer Ref: No. 4229
 National Grid Reference: 316920, 478320
 Slice: A
 Site Area (Ha): 57.66
 Search Buffer (m): 1000

Site Details

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Historical Land Use Information (1:10,000)

General

- Specified Site Specified Buffer(s) X Bearing Reference Point Map ID
Several of Type at Location

Potentially Contaminative Industrial Uses (Past Land Uses - Mining)

	Point	Line	Polygon
Air Shafts			
Disturbed Ground			
General Quarrying			
Heap, unknown constituents			
Mineral Railway			
Mining and Quarrying General			
Mining of Coal & Lignite			
Quarrying of Sand and Clay, Operation of Sand and Gravel Pits			

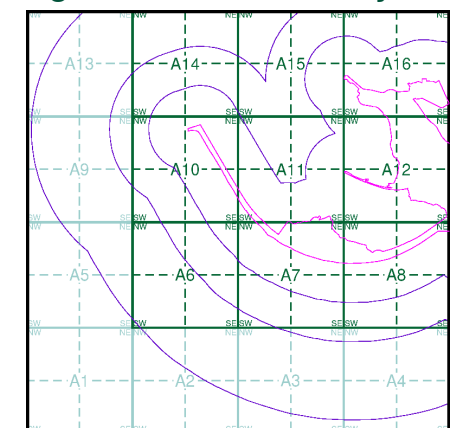
Historical Land Use

	Point	Line	Polygon
Potentially Infilled Land (Non-Water)			
Potentially Infilled Land (Water)			
Former Marsh			

Mining Data

- Potential Mining Area
 BGS Recorded Mineral Site

Mining and Ground Stability - Slice A



Order Details

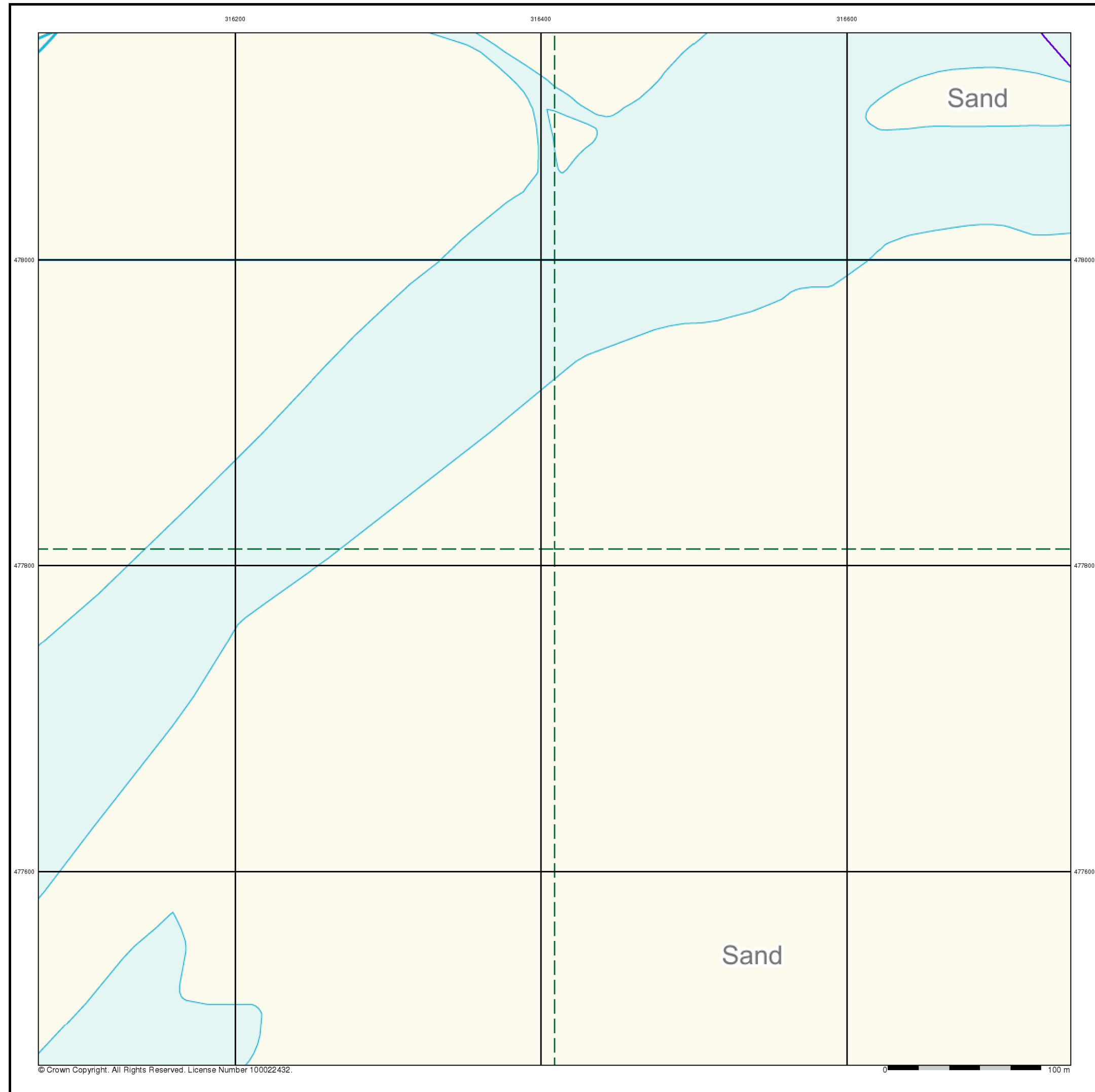
Order Number: 307697430_1_1
Customer Ref: No. 4229
National Grid Reference: 316920, 478320
Slice: A
Site Area (Ha): 57.66
Search Buffer (m): 1000

Site Details

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Historical Land Use Information (1:2,500)

General

 Specified Site  Specified Buffer(s)  Bearing Reference Point  Map ID

 Several of Type at Location

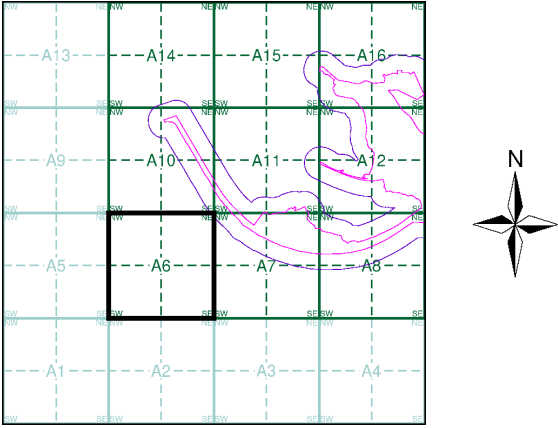
Potentially Contaminative Industrial Uses (Extractive Industries Activity)

	Point	Line	Polygon
Extractive Industries Activity from 1855 - 1909			
Extractive Industries Activity from 1893 - 1915			
Extractive Industries Activity from 1906 - 1937			
Extractive Industries Activity from 1924 - 1949			
Extractive Industries Activity from 1950 - 1980			

Subterranean Features

	Point	Line	Polygon
Subterranean Features			

Mining and Ground Stability - Segment A6



Order Details

Order Number: 307697430_1_1
Customer Ref: No. 4229
National Grid Reference: 316920, 478320
Slice: A
Site Area (Ha): 57.66
Plot Buffer (m): 100

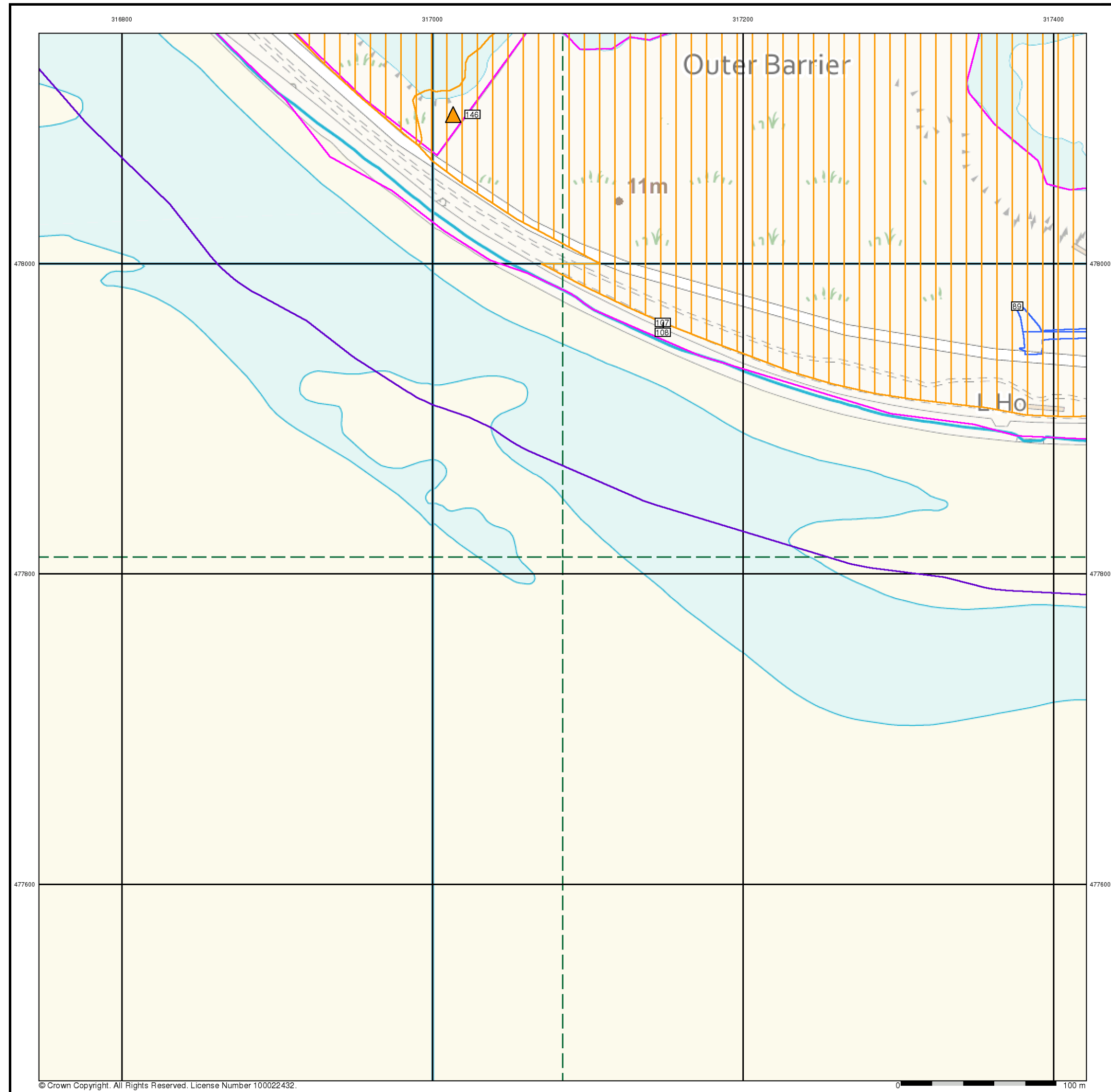
Site Details

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A Landmark Information Group Service v50.0 24-Feb-2023 Page 1 of 9



General

□ Specified Site
 □ Specified Buffer(s)
 X Bearing Reference Point
 8 Map ID
□ Several of Type at Location

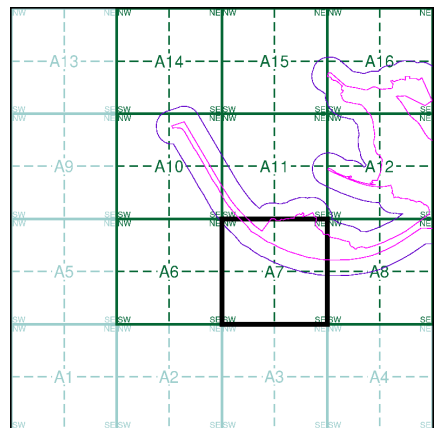
Potentially Contaminative Industrial Uses (Extractive Industries Activity)

	Point	Line	Polygon
Extractive Industries Activity from 1855 - 1909	▲	—	■
Extractive Industries Activity from 1893 - 1915	▲	—	■
Extractive Industries Activity from 1906 - 1937	▲	—	■
Extractive Industries Activity from 1924 - 1949	▲	—	■
Extractive Industries Activity from 1950 - 1980	▲	—	■

Subterranean Features

	Point	Line	Polygon
Subterranean Features	▼	- - -	■

Mining and Ground Stability - Segment A7



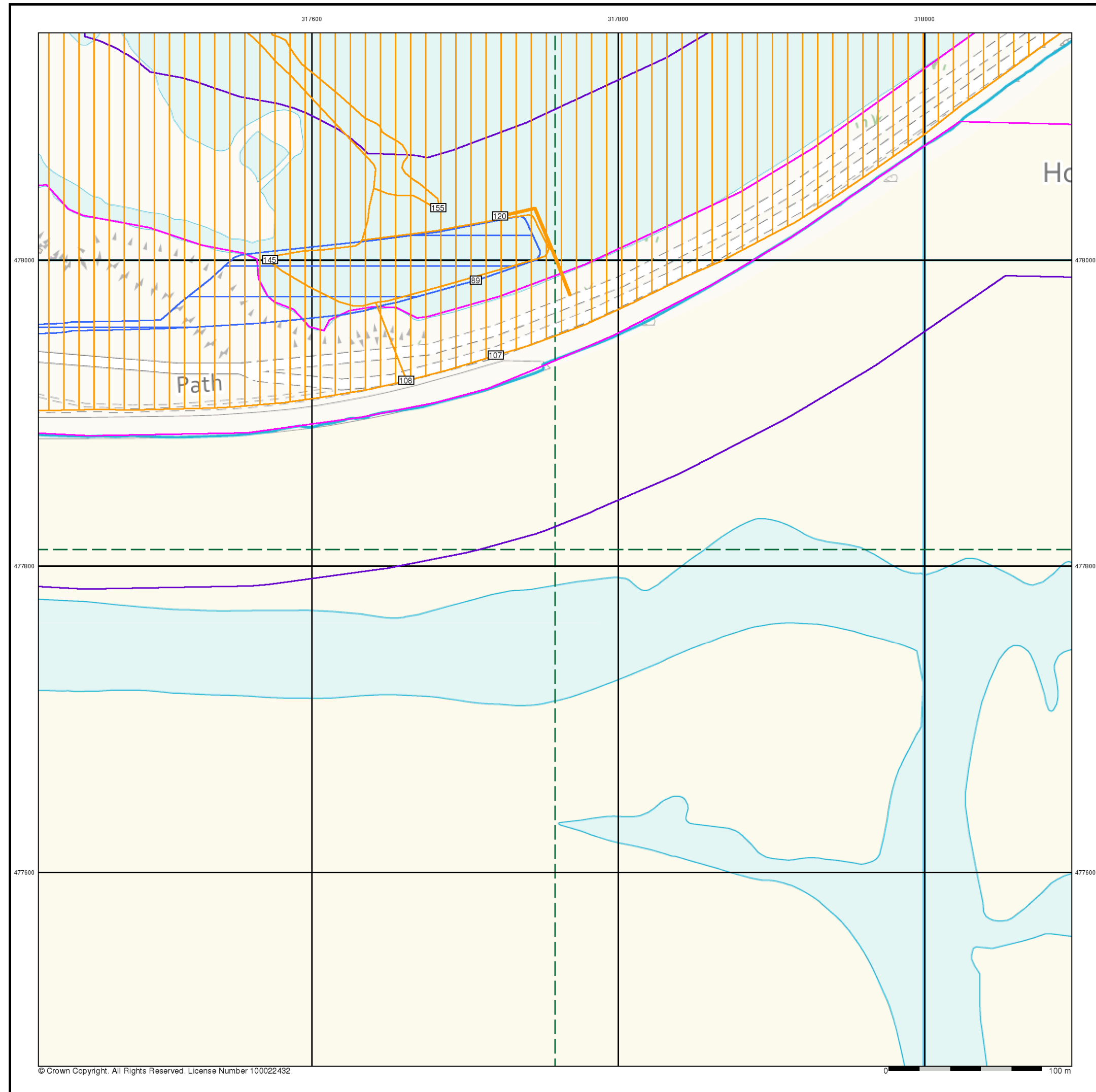
The inset map shows a grid of segments labeled A1 through A16. A central area, including segments A7, A8, A9, A10, and A11, is highlighted with a thick black border. A north arrow is located to the right of the grid.

Order Details

Order Number: 307697430_1_1
 Customer Ref: No. 4229
 National Grid Reference: 316920, 478320
 Slice: A
 Site Area (Ha): 57.66
 Plot Buffer (m): 100

Site Details

The Gin Mill, Steel Green, MILLOM, LA18 4LG





Historical Land Use Information (1:2,500)

General

Specified Site Specified Buffer(s) Bearing Reference Point Map ID

Several of Type at Location

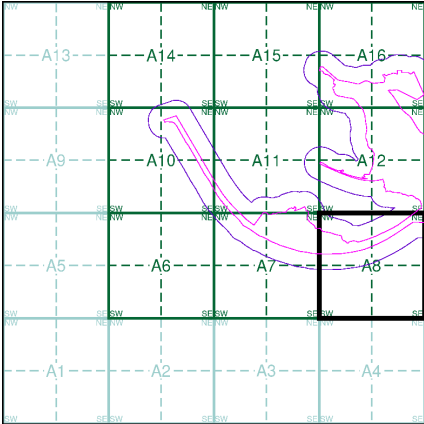
Potentially Contaminative Industrial Uses (Extractive Industries Activity)

	Point	Line	Polygon
Extractive Industries Activity from 1855 - 1909	▲	—	■
Extractive Industries Activity from 1893 - 1915	▲	—	■
Extractive Industries Activity from 1906 - 1937	▲	—	■
Extractive Industries Activity from 1924 - 1949	▲	—	■
Extractive Industries Activity from 1950 - 1980	▲	—	■

Subterranean Features

	Point	Line	Polygon
Subterranean Features	▼	- - -	■

Mining and Ground Stability - Segment A8



Order Details

Order Number: 307697430_1_1
Customer Ref: No. 4229
National Grid Reference: 316920, 478320
Slice: A
Site Area (Ha): 57.66
Plot Buffer (m): 100

Site Details

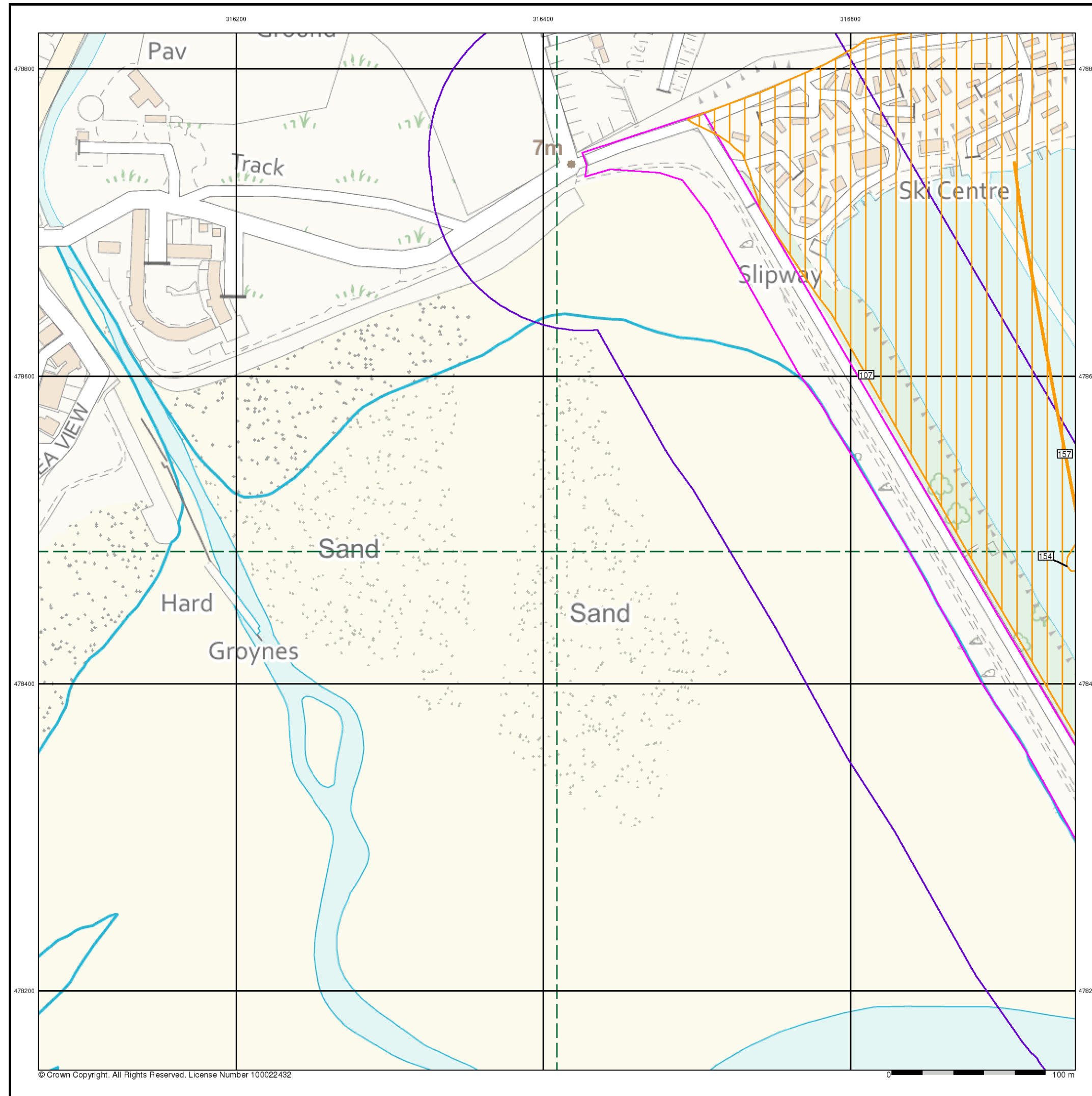
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A Landmark Information Group Service v50.0 24-Feb-2023 Page 3 of 9



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Historical Land Use Information (1:2,500)

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Map ID
- Several of Type at Location

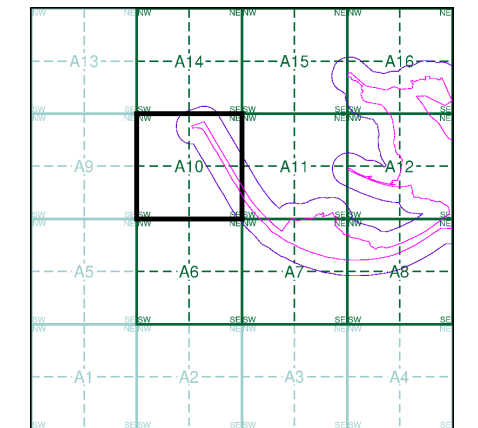
Potentially Contaminative Industrial Uses (Extractive Industries Activity)

	Point	Line	Polygon
Extractive Industries Activity from 1855 - 1909	▲	—	■
Extractive Industries Activity from 1893 - 1915	▲	—	■
Extractive Industries Activity from 1906 - 1937	▲	—	■
Extractive Industries Activity from 1924 - 1949	▲	—	■
Extractive Industries Activity from 1950 - 1980	▲	—	■

Subterranean Features

	Point	Line	Polygon
Subterranean Features	▼	---	■

Mining and Ground Stability - Segment A10



Order Details

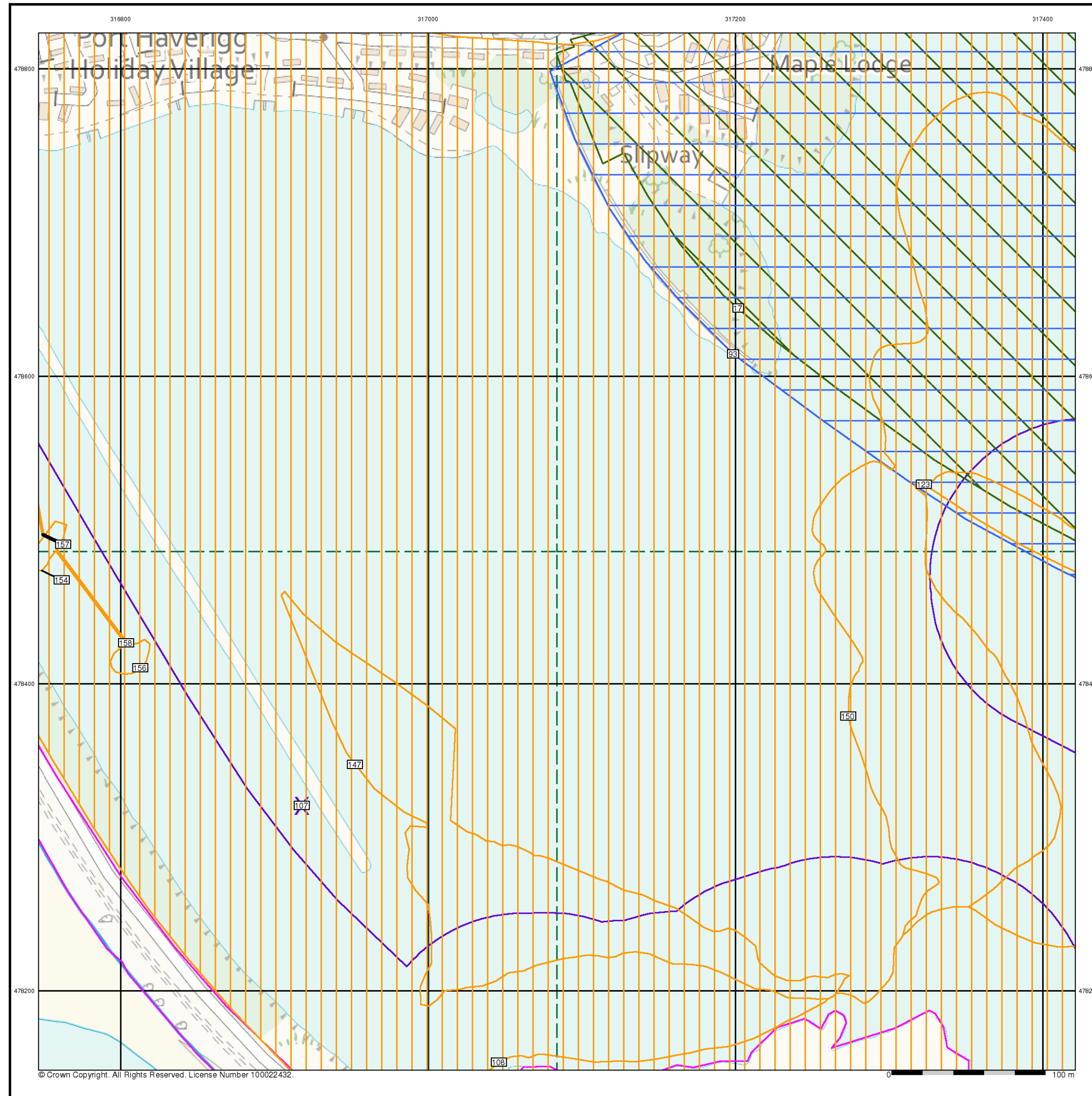
Order Number: 307697430_1_1
Customer Ref: No. 4229
National Grid Reference: 316920, 478320
Slice: A
Site Area (Ha): 57.66
Plot Buffer (m): 100

Site Details

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General

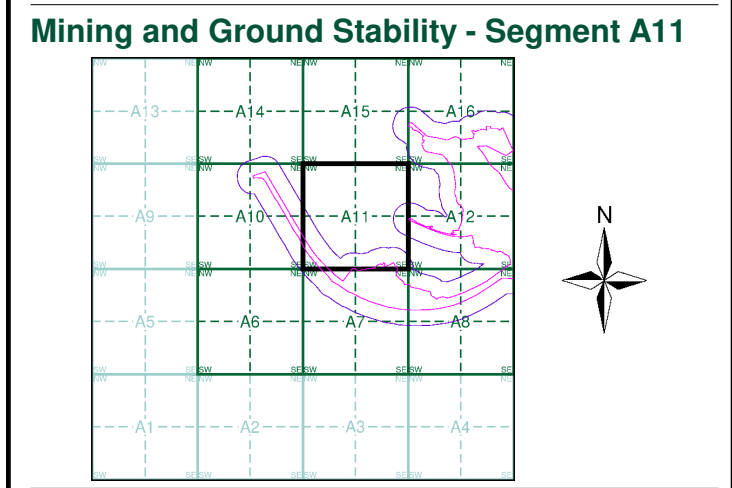
Specified Site Specified Buffer(s) Bearing Reference Point Map ID
Several of Type at Location

Potentially Contaminative Industrial Uses (Extractive Industries Activity)

	Point	Line	Polygon
Extractive Industries Activity from 1855 - 1909	▲	—	■
Extractive Industries Activity from 1893 - 1915	▲	—	■
Extractive Industries Activity from 1906 - 1937	▲	—	■
Extractive Industries Activity from 1924 - 1949	▲	—	■
Extractive Industries Activity from 1950 - 1980	▲	—	■

Subterranean Features

	Point	Line	Polygon
Subterranean Features	▼	- - -	■



Order Details

Order Number: 307697430_1_1
Customer Ref: No. 4229
National Grid Reference: 316920, 478320
Slice: A
Site Area (Ha): 57.66
Plot Buffer (m): 100

Site Details

The Gin Mill, Steel Green, MILLOM, LA18 4LG



Historical Land Use Information (1:2,500)

General

- Specified Site Specified Buffer(s) Bearing Reference Point Map ID
Several of Type at Location

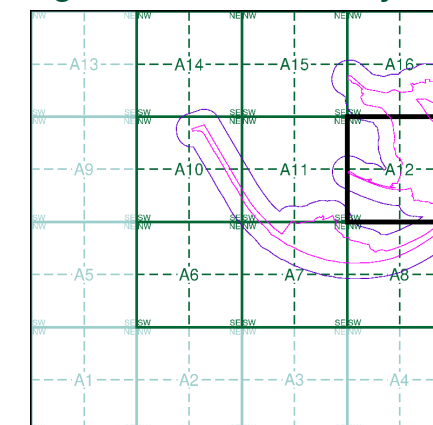
Potentially Contaminative Industrial Uses (Extractive Industries Activity)

	Point	Line	Polygon
Extractive Industries Activity from 1855 - 1909	▲	—	■
Extractive Industries Activity from 1893 - 1915	▲	—	■
Extractive Industries Activity from 1906 - 1937	▲	—	■
Extractive Industries Activity from 1924 - 1949	▲	—	■
Extractive Industries Activity from 1950 - 1980	▲	—	■

Subterranean Features

	Point	Line	Polygon
Subterranean Features	▼	---	■

Mining and Ground Stability - Segment A12



Order Details

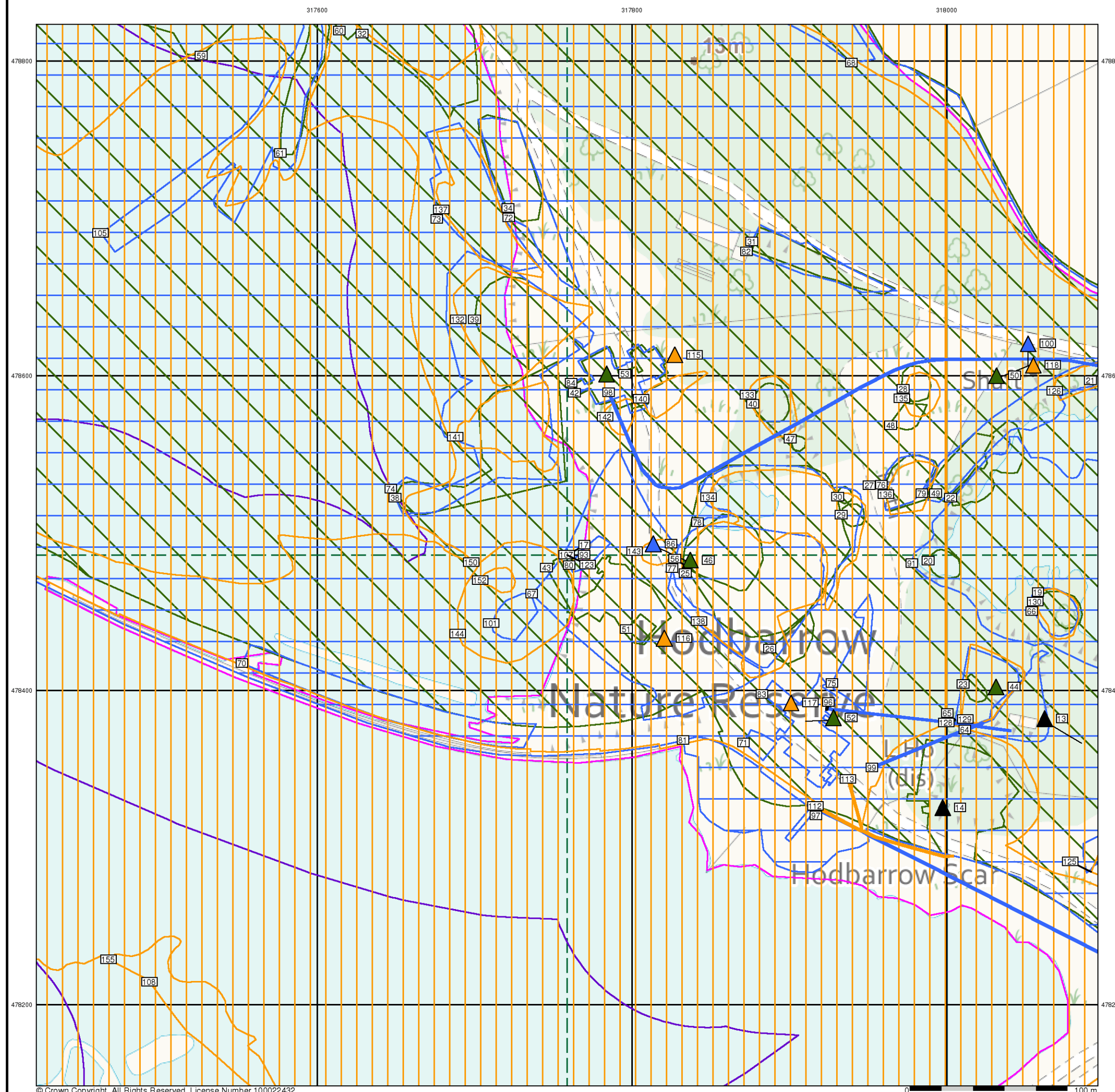
Order Number: 307697430_1_1
Customer Ref: No. 4229
National Grid Reference: 316920, 478320
Slice: A
Site Area (Ha): 57.66
Plot Buffer (m): 100

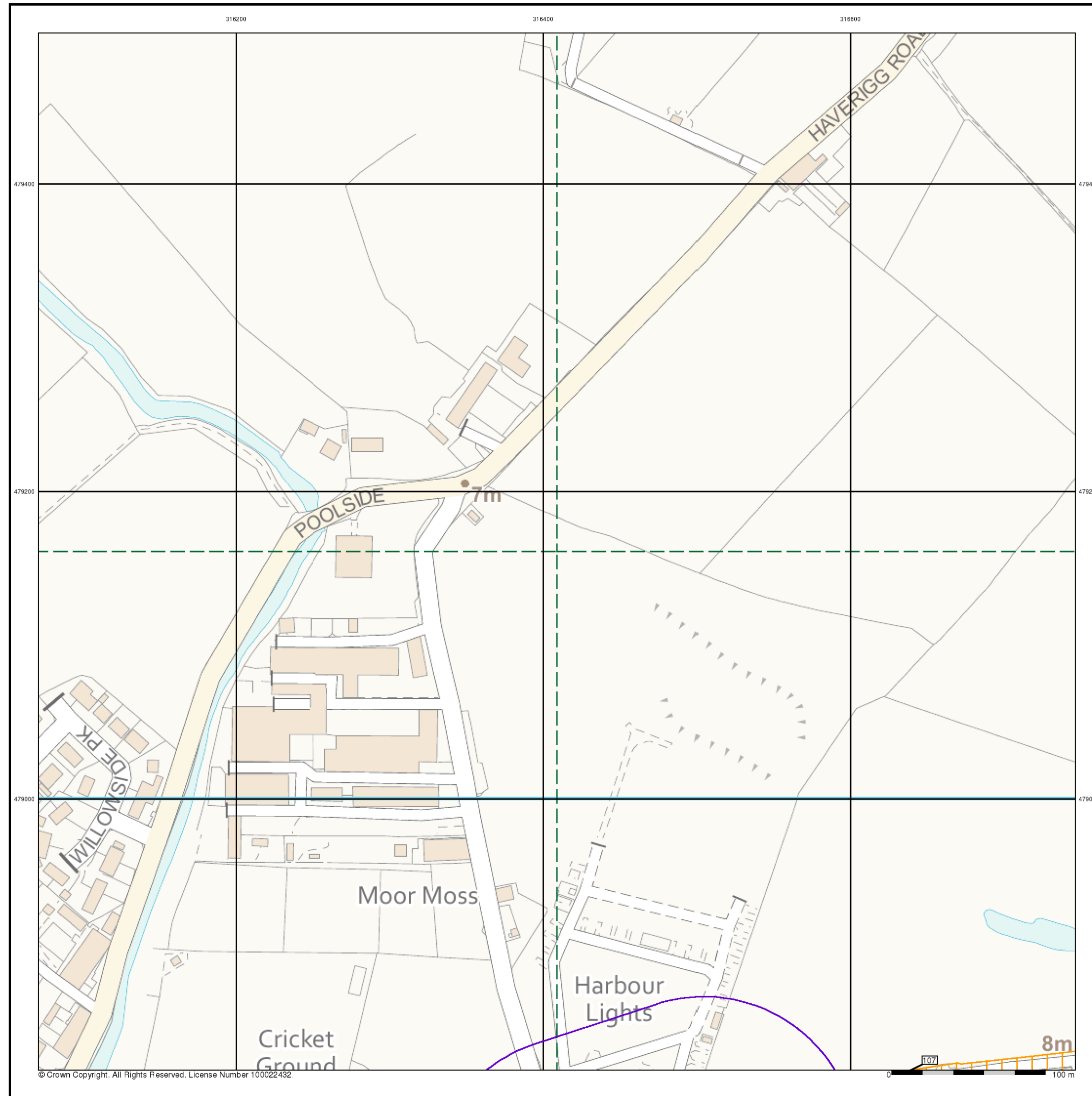
Site Details

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General

- Specified Site Specified Buffer(s) Bearing Reference Point Map ID
Several of Type at Location

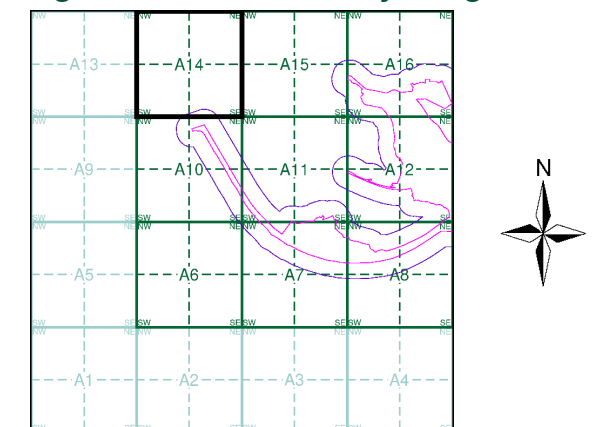
**Potentially Contaminative Industrial Uses
(Extractive Industries Activity)**

	Point	Line	Polygon
Extractive Industries Activity from 1855 - 1909	▲	—	■
Extractive Industries Activity from 1893 - 1915	▲	—	■
Extractive Industries Activity from 1906 - 1937	▲	—	■
Extractive Industries Activity from 1924 - 1949	▲	—	■
Extractive Industries Activity from 1950 - 1980	▲	—	■

Subterranean Features

	Point	Line	Polygon
Subterranean Features	▼	- - -	■

Mining and Ground Stability - Segment A14

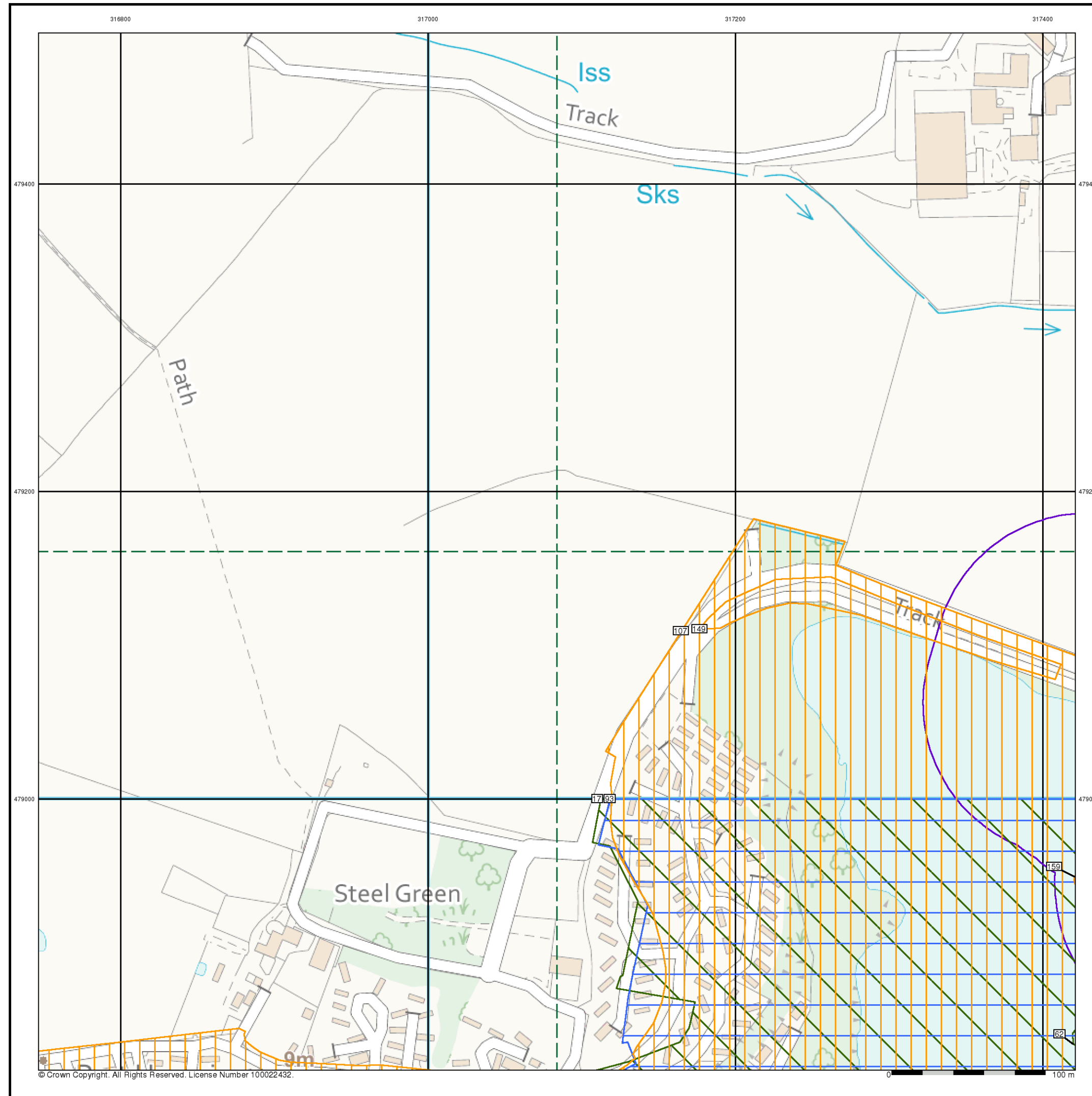


Order Details

Order Number: 307697430_1_1
Customer Ref: No. 4229
National Grid Reference: 316920, 478320
Slice: A
Site Area (Ha): 57.66
Plot Buffer (m): 100

Site Details

The Gin Mill, Steel Green, MILLOM, LA18 4LG



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Historical Land Use Information (1:2,500)

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Map ID
- Several of Type at Location

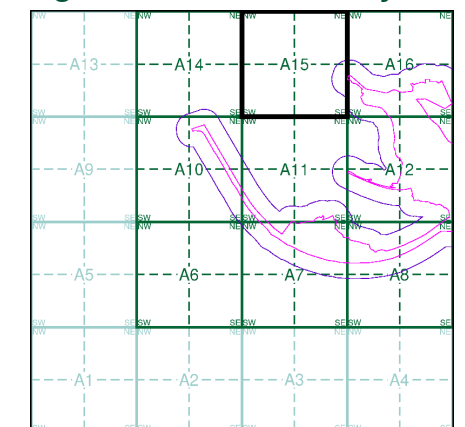
Potentially Contaminative Industrial Uses (Extractive Industries Activity)

	Point	Line	Polygon
Extractive Industries Activity from 1855 - 1909	▲	—	■
Extractive Industries Activity from 1893 - 1915	▲	—	■
Extractive Industries Activity from 1906 - 1937	▲	—	■
Extractive Industries Activity from 1924 - 1949	▲	—	■
Extractive Industries Activity from 1950 - 1980	▲	—	■

Subterranean Features

	Point	Line	Polygon
Subterranean Features	▼	---	■

Mining and Ground Stability - Segment A15



Order Details

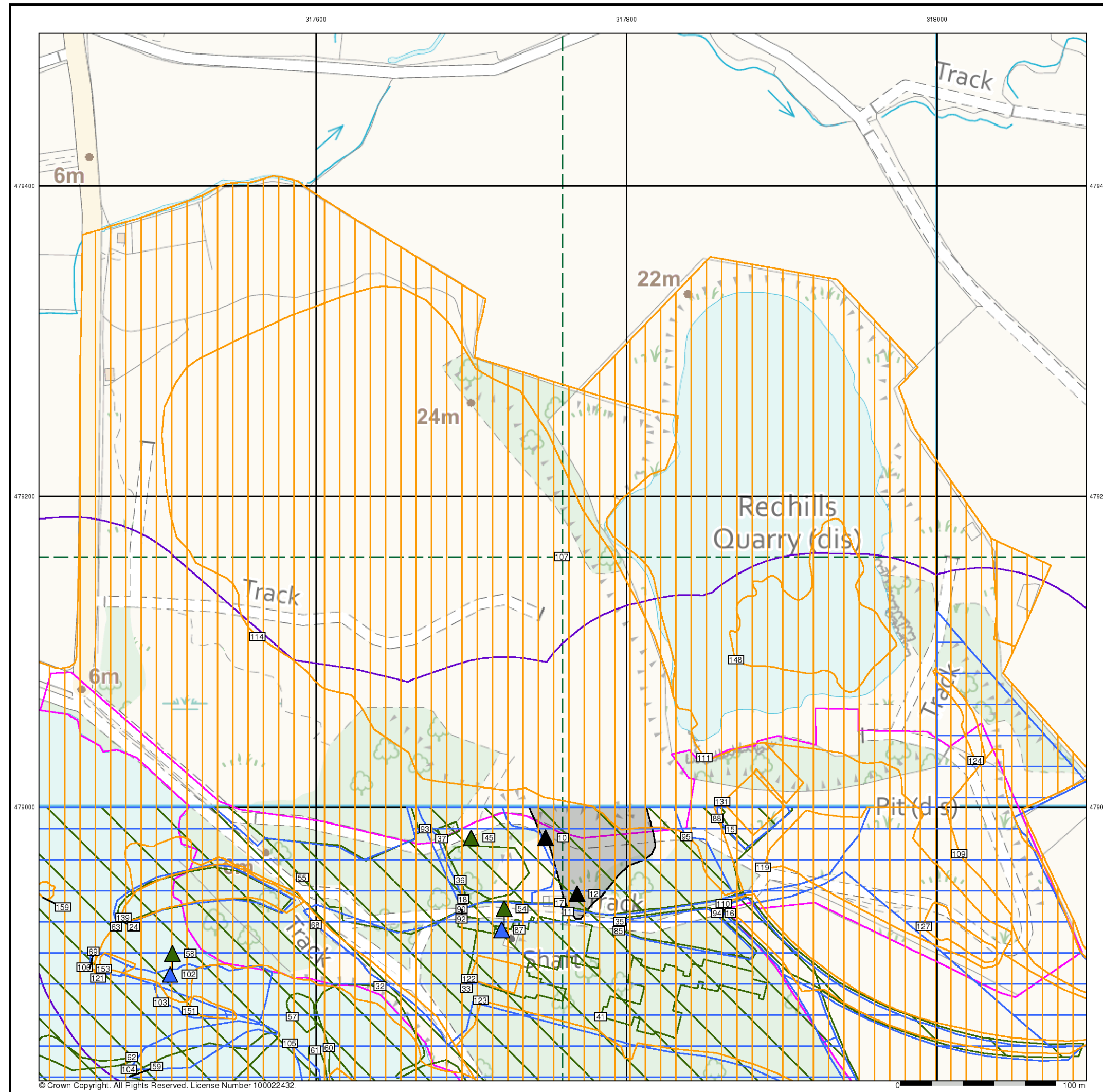
Order Number: 307697430_1_1
Customer Ref: No. 4229
National Grid Reference: 316920, 478320
Slice: A
Site Area (Ha): 57.66
Plot Buffer (m): 100

Site Details

The Gin Mill, Steel Green, MILLOM, LA18 4LG

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Historical Land Use Information (1:2,500)

General

Specified Site Specified Buffer(s) Bearing Reference Point Map ID

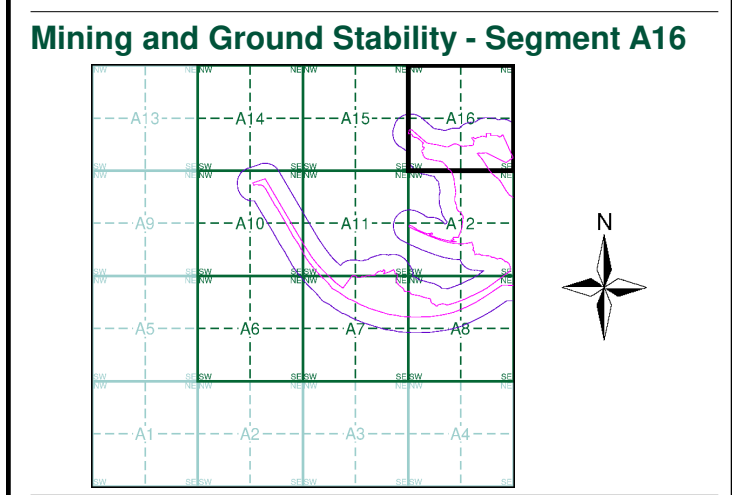
Several of Type at Location

Potentially Contaminative Industrial Uses (Extractive Industries Activity)

	Point	Line	Polygon
Extractive Industries Activity from 1855 - 1909	▲	—	■
Extractive Industries Activity from 1893 - 1915	▲	—	■
Extractive Industries Activity from 1906 - 1937	▲	—	■
Extractive Industries Activity from 1924 - 1949	▲	—	■
Extractive Industries Activity from 1950 - 1980	▲	—	■

Subterranean Features

	Point	Line	Polygon
Subterranean Features	▼	---	■



Order Details

Order Number: 307697430_1_1
Customer Ref: No. 4229
National Grid Reference: 316920, 478320
Slice: A
Site Area (Ha): 57.66
Plot Buffer (m): 100

Site Details

The Gin Mill, Steel Green, MILLOM, LA18 4LG

Envirocheck[®] Report:

Mining and Ground Stability Datasheet

Order Details:

Order Number:

307697430_1_1

Customer Reference:

No. 4229

National Grid Reference:

318690, 478340

Slice:

B

Site Area (Ha):

57.66

Search Buffer (m):

1000

Site Details:

The Gin Mill, Steel Green

MILLOM

LA18 4LG

Client Details:

Mr R Taylor

Curtins Consulting Ltd

Merchant Exchange

17-19 Whitworth Street West

Manchester

M1 5WG

Report Section and Details	Page Number
Summary	-
The Summary section provides an overview of the data contained within the report, detailing the number of data set features or the existence of a data set in relation to the buffer selected. For ease of reference, the report is broken down into 4 sections of data; Mining and Natural Cavities Data, Historical Land Use Information (1:2,500), Historical Land Use Information (1:10,000) and Ground Stability Data (1:50,000).	
Mining and Natural Cavities Data	1
The Mining and Natural Cavities Data section features data sets related to the existence of mining areas and their potential hazards; and details of naturally formed cavities. Data sets within this section are not plotted, with the exception of BGS Recorded Mineral Sites and Potential Mining Areas which feature on the Historical Land Use Information (1:10,000) map.	
Historical Land Use Information (1:2,500)	4
The Historical Land Use Information (1:2,500) section contains data captured from analysis carried out by Landmark of 1:1,250 and 1:2,500 scale historical Ordnance Survey mapping, identifying areas where, historically, the land uses were potentially contaminative. For the purpose of this Envirocheck module, only historical data relating to mining and ground stability has been included and plotted on the corresponding Historical Land Use Information (1:2,500) map. This section also includes the Subterranean Features data set, which details various man-made and man-used underground spaces obtained from the Subterranea Britannica society.	
Historical Land Use Information (1:10,000)	9
The Historical Land Use (1:10,000) section covers data captured from the systematic analysis carried out by Landmark of 1:10, 560 and 1:10,000 scale historical Ordnance Survey mapping dating back to the mid-19th century, identifying potentially contaminative past industrial land uses. For the purpose of this Envirocheck module, only data relating to mining and ground stability has been included and plotted on the accompanying Historical Land Use Information (1:10,000) map.	
Ground Stability Data (1:50,000)	10
The Ground Stability (1:50,000) section includes the BGS Geosure data suite, reporting features to 250m and plotted onto 3 separate maps. Also reported is brine subsidence, brine mining and salt mining data sets, of which Brine Pumping and Salt Mining Related Features are plotted, and subsidence insurance claims and insurance investigations data, which is not plotted.	
Historical Map List	13
The Historical Map List section details the historical mapping that has been analysed for your site, in relation to the Historical Land Use Information sections.	
Data Currency	15
Data Suppliers	16
Useful Contacts	17

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The Mining Instability data was obtained on licence from Ove Arup & Partners Limited (for further information, contact mining.review@arup.com). No reproduction or further use of such Data is to be made without the prior written consent of Ove Arup & Partners Limited. The supplied Mining Instability data is derived from publicly available records and other third party sources and neither Ove Arup & Partners nor Landmark warrant the accuracy or completeness of such information or data.

Report Version v53.0

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m
Mining and Natural Cavities Data					
BGS Recorded Mineral Sites	pg 1	3			
Coal Mining Affected Areas			n/a	n/a	n/a
Man Made Mining Cavities	pg 1	3	6		
Mining Instability	pg 2	Yes	n/a	n/a	n/a
Natural Cavities					
Non Coal Mining Areas of Great Britain	pg 2	Yes	Yes	n/a	n/a
Potential Mining Areas	pg 2	2			
Historical Land Use Information (1:2,500)					
Extractive Industries or Potential Excavations from 1855-1909 (100m)	pg 4	3	2	n/a	n/a
Extractive Industries or Potential Excavations from 1893-1915 (100m)	pg 4	9		n/a	n/a
Extractive Industries or Potential Excavations from 1906-1937 (100m)	pg 5	13		n/a	n/a
Extractive Industries or Potential Excavations from 1924-1949 (100m)				n/a	n/a
Extractive Industries or Potential Excavations from 1950-1980 (100m)	pg 6	18		n/a	n/a
Subterranean Features (100m)				n/a	n/a
Historical Land Use Information (1:10,000)					
Air Shafts					
Disturbed Ground					
General Quarrying	pg 9	3			
Heap, unknown constituents					
Mineral Railway	pg 9	2	1		4
Mining & quarrying general	pg 9	1			
Mining of coal & lignite					
Quarrying of sand & clay, operation of sand & gravel pits					
Former Marshes	pg 9				2
Potentially Infilled Land (Non-Water)	pg 9	4			
Potentially Infilled Land (Water)	pg 9		1		
Ground Stability Data (1:50,000)					
CBSCB Compensation District			n/a	n/a	n/a
Brine Pumping Related Features					
Brine Subsidence Solution Area					
Potential for Collapsible Ground Stability Hazards	pg 10	Yes		n/a	n/a
Potential for Compressible Ground Stability Hazards	pg 10	Yes	Yes	n/a	n/a
Potential for Ground Dissolution Stability Hazards	pg 10	Yes	Yes	n/a	n/a
Potential for Landslide Ground Stability Hazards	pg 11	Yes	Yes	n/a	n/a
Potential for Running Sand Ground Stability Hazards	pg 12	Yes	Yes	n/a	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards	pg 12	Yes	Yes	n/a	n/a
Salt Mining Related Features					

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
1	BGS Recorded Mineral Sites Site Name: Hodbarrow Quarries Location: Haverigg, Millom, Cumbria Source: British Geological Survey, National Geoscience Information Service Reference: 143775 Type: Opencast Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Red Hill Limestone Formation Commodity: Limestone Positional Accuracy: Located by supplier to within 10m	B9SW (SW)	0	1	318279 478156
2	BGS Recorded Mineral Sites Site Name: Hodbarrow Iron Ore Mines Location: Haverigg, Millom, Cumbria Source: British Geological Survey, National Geoscience Information Service Reference: 143776 Type: Opencast Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Martin Limestone Formation Commodity: Iron Ore - Ironstone Positional Accuracy: Located by supplier to within 10m	B9SW (W)	0	1	318191 478442
3	BGS Recorded Mineral Sites Site Name: Hodbarrow Iron Ore Mines Location: Haverigg, Millom, Cumbria Source: British Geological Survey, National Geoscience Information Service Reference: 143777 Type: Opencast Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Martin Limestone Formation Commodity: Iron Ore - Ironstone Positional Accuracy: Located by supplier to within 10m	B9SW (W)	0	1	318275 478400
	Coal Mining Affected Areas In an area which may not be affected by coal mining				
	Man Made Mining Cavities Cavity Type: Iron Mine Entry Shaft Commodity: Iron Solid Geology Detail: No Details Superficial Geology No Details Detail:	B9NW (NW)	0	2	318100 478600
	Man Made Mining Cavities Cavity Type: Iron Mine Entry Shaft Commodity: Iron Solid Geology Detail: No Details Superficial Geology No Details Detail:	B9NW (W)	0	2	318200 478500
	Man Made Mining Cavities Cavity Type: Iron Mine Entry Shaft Commodity: Iron Solid Geology Detail: No Details Superficial Geology No Details Detail:	B9SW (W)	0	2	318300 478400
	Man Made Mining Cavities Cavity Type: Iron Mine Entry Shaft Commodity: Iron Solid Geology Detail: No Details Superficial Geology No Details Detail:	B13SW (NW)	44	2	318100 479000
	Man Made Mining Cavities Cavity Type: Multiple Iron Trials Commodity: Iron Solid Geology Detail: No Details Superficial Geology No Details Detail:	B9SW (SW)	48	2	318400 478200

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Man Made Mining Cavities Cavity Type: Iron Mine Entry Shaft Commodity: Iron Solid Geology Detail: No Details Superficial Geology Detail: No Details	B9SW (SW)	48	2	318400 478200
	Man Made Mining Cavities Cavity Type: Iron Mine Entry Shaft Commodity: Iron Solid Geology Detail: No Details Superficial Geology Detail: No Details	B9SW (W)	72	2	318400 478400
	Man Made Mining Cavities Cavity Type: Adit Entry Iron Mines Commodity: Iron Solid Geology Detail: No Details Superficial Geology Detail: No Details	B9SE (SW)	121	2	318500 478200
	Man Made Mining Cavities Cavity Type: Iron Mine Entry Shaft Commodity: Iron Solid Geology Detail: No Details Superficial Geology Detail: No Details	B9NE (NW)	177	2	318500 478500
	Mining Instability Mining Evidence: Conclusive Iron Ore Mining Source: Ove Arup & Partners Boundary Quality: As Supplied	B9SE (E)	0	3	318689 478340
	Non Coal Mining Areas of Great Britain Risk: Likely Source: British Geological Survey, National Geoscience Information Service	B9NE (NW)	0	1	318450 478769
	Non Coal Mining Areas of Great Britain Risk: Likely Source: British Geological Survey, National Geoscience Information Service	B13SW (NW)	0	1	318140 478852
	Non Coal Mining Areas of Great Britain Risk: Likely Source: British Geological Survey, National Geoscience Information Service	B9SW (W)	0	1	318420 478446
	Non Coal Mining Areas of Great Britain Risk: Highly Likely Source: British Geological Survey, National Geoscience Information Service	B9SW (W)	0	1	318326 478480
	Non Coal Mining Areas of Great Britain Risk: Highly Likely Source: British Geological Survey, National Geoscience Information Service	B9SW (W)	0	1	318202 478198
	Non Coal Mining Areas of Great Britain Risk: Highly Likely Source: British Geological Survey, National Geoscience Information Service	B13SW (NW)	0	1	318401 478856
	Non Coal Mining Areas of Great Britain Risk: Highly Unlikely Source: British Geological Survey, National Geoscience Information Service	B9SE (E)	0	1	318689 478340
	Non Coal Mining Areas of Great Britain Risk: Likely Source: British Geological Survey, National Geoscience Information Service	B9NE (NW)	81	1	318491 478799
	Non Coal Mining Areas of Great Britain Risk: Likely Source: British Geological Survey, National Geoscience Information Service	B13SE (N)	127	1	318520 478835
4	Potential Mining Areas Name: Millom Rural Ceased Operation: Not Supplied Commodity: Not Supplied Reference: Not Supplied Alternate Name/Mine: Not Supplied Custodian: Not Supplied	B9SE (W)	0	4	318654 478341

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
5	Potential Mining Areas Name: Hodbarrow and Moorbank Ceased Operation: 1968 Commodity: Iron Ore; Haematite Reference: 15241 Alternate Name/Mine: Not Supplied Custodian: Not Supplied	B9SE (W)	0	4	318655 478341

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
6	Extractive Industries or Potential Excavations from 1855-1909 Use: Hodbarrow Quarries First Map Published 1862 Date: Last Map Published Not Applicable Date:	B9SW (SW)	0	-	318320 478164
7	Extractive Industries or Potential Excavations from 1855-1909 Use: Hodbarrow Quarries First Map Published 1862 Date: Last Map Published Not Applicable Date:	B9SW (W)	0	-	318311 478202
8	Extractive Industries or Potential Excavations from 1855-1909 Use: Shaft First Map Published 1862 Date: Last Map Published Not Applicable Date:	B9SW (W)	0	-	318236 478261
9	Extractive Industries or Potential Excavations from 1855-1909 Use: Shafts First Map Published 1862 Date: Last Map Published Not Applicable Date:	B9SW (W)	2	-	318345 478343
10	Extractive Industries or Potential Excavations from 1855-1909 Use: Shafts First Map Published 1862 Date: Last Map Published Not Applicable Date:	B9SW (W)	34	-	318368 478373
11	Extractive Industries or Potential Excavations from 1893-1915 Use: Hodbarrow Iron Ore Mines First Map Published 1898 Date: Last Map Published 1899 Date:	B9SW (W)	0	-	318319 478333
12	Extractive Industries or Potential Excavations from 1893-1915 Use: Unspecified Deposited Material First Map Published 1898 Date: Last Map Published Not Applicable Date:	B5NW (SW)	0	-	318272 478092
13	Extractive Industries or Potential Excavations from 1893-1915 Use: Unspecified Pit First Map Published 1898 Date: Last Map Published Not Applicable Date:	B9SW (W)	0	-	318240 478225
14	Extractive Industries or Potential Excavations from 1893-1915 Use: Unspecified Deposited Material First Map Published 1898 Date: Last Map Published Not Applicable Date:	B9SW (W)	0	-	318319 478333
15	Extractive Industries or Potential Excavations from 1893-1915 Use: Unspecified Deposited Material First Map Published 1898 Date: Last Map Published Not Applicable Date:	B9SW (W)	0	-	318233 478169
16	Extractive Industries or Potential Excavations from 1893-1915 Use: Unspecified Pit First Map Published 1898 Date: Last Map Published Not Applicable Date:	B9NW (NW)	0	-	318119 478587

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
17	Extractive Industries or Potential Excavations from 1893-1915 Use: Unspecified Deposited Material First Map Published 1898 Date: Last Map Published Not Applicable Date:	B9SW (W)	0	-	318229 478466
18	Extractive Industries or Potential Excavations from 1893-1915 Use: Reservoir First Map Published 1898 Date: Last Map Published Not Applicable Date:	B9SW (W)	0	-	318178 478352
19	Extractive Industries or Potential Excavations from 1893-1915 Use: Hodbarrow Quarries First Map Published 1898 Date: Last Map Published Not Applicable Date:	B9SW (SW)	0	-	318307 478176
20	Extractive Industries or Potential Excavations from 1906-1937 Use: Unspecified Quarry First Map Published 1924 Date: Last Map Published Not Applicable Date:	B9SW (W)	0	-	318306 478196
21	Extractive Industries or Potential Excavations from 1906-1937 Use: Hodbarrow Quarries First Map Published 1924 Date: Last Map Published Not Applicable Date:	B9SW (SW)	0	-	318318 478181
22	Extractive Industries or Potential Excavations from 1906-1937 Use: Unspecified Pit First Map Published 1924 Date: Last Map Published Not Applicable Date:	B9SW (W)	0	-	318244 478229
23	Extractive Industries or Potential Excavations from 1906-1937 Use: Unspecified Pit First Map Published 1924 Date: Last Map Published Not Applicable Date:	B9NW (W)	0	-	318255 478501
24	Extractive Industries or Potential Excavations from 1906-1937 Use: Unspecified Deposited Material First Map Published 1924 Date: Last Map Published Not Applicable Date:	B9SW (W)	0	-	318145 478445
25	Extractive Industries or Potential Excavations from 1906-1937 Use: Railway Cutting First Map Published 1924 Date: Last Map Published Not Applicable Date:	B9NW (NW)	0	-	318166 478607
26	Extractive Industries or Potential Excavations from 1906-1937 Use: Unspecified Deposited Material First Map Published 1924 Date: Last Map Published Not Applicable Date:	B5NW (SW)	0	-	318225 478115
27	Extractive Industries or Potential Excavations from 1906-1937 Use: Railway Embankment First Map Published 1924 Date: Last Map Published Not Applicable Date:	B9NW (NW)	0	-	318139 478605

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
28	Extractive Industries or Potential Excavations from 1906-1937 Use: Quarries (Ironstone) First Map Published 1924 Date: Last Map Published Not Applicable Date:	B9SW (W)	0	-	318311 478376
29	Extractive Industries or Potential Excavations from 1906-1937 Use: Red Hills Quarry First Map Published 1924 Date: Last Map Published Not Applicable Date:	B13SW (NW)	0	-	318180 478865
30	Extractive Industries or Potential Excavations from 1906-1937 Use: Hodbarrow Iron Ore Mines First Map Published 1924 Date: Last Map Published 1924 Date:	B9SW (W)	0	-	318378 478247
31	Extractive Industries or Potential Excavations from 1906-1937 Use: Aqueduct First Map Published 1924 Date: Last Map Published Not Applicable Date:	B9SW (W)	0	-	318110 478227
32	Extractive Industries or Potential Excavations from 1906-1937 Use: Aqueduct First Map Published 1924 Date: Last Map Published Not Applicable Date:	B9SW (W)	0	-	318407 478397
33	Extractive Industries or Potential Excavations from 1950-1980 Use: General Extraction First Map Published 1969 Date: Last Map Published Not Applicable Date:	B9SW (W)	0	-	318364 478289
34	Extractive Industries or Potential Excavations from 1950-1980 Use: Railway Cutting First Map Published 1969 Date: Last Map Published Not Applicable Date:	B13SW (NW)	0	-	318119 478873
35	Extractive Industries or Potential Excavations from 1950-1980 Use: Railway Cutting First Map Published 1969 Date: Last Map Published Not Applicable Date:	B13SW (NW)	0	-	318098 478847
36	Extractive Industries or Potential Excavations from 1950-1980 Use: Red Hills Quarry (Disused) First Map Published 1969 Date: Last Map Published Not Applicable Date:	B13SW (NW)	0	-	318146 478866
37	Extractive Industries or Potential Excavations from 1950-1980 Use: Aqueduct First Map Published 1969 Date: Last Map Published N/A Date:	B9NW (W)	0	-	318278 478505
38	Extractive Industries or Potential Excavations from 1950-1980 Use: Pond First Map Published 1969 Date: Last Map Published N/A Date:	B9NW (NW)	0	-	318177 478572

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
39	Extractive Industries or Potential Excavations from 1950-1980 Use: Unspecified Pit First Map Published 1969 Date: Last Map Published N/A Date:	B9NW (NW)	0	-	318107 478585
40	Extractive Industries or Potential Excavations from 1950-1980 Use: Unspecified Pit First Map Published 1969 Date: Last Map Published N/A Date:	B9SW (W)	0	-	318240 478256
41	Extractive Industries or Potential Excavations from 1950-1980 Use: Refuse Tip First Map Published 1969 Date: Last Map Published N/A Date:	B9SW (W)	0	-	318217 478469
42	Extractive Industries or Potential Excavations from 1950-1980 Use: Unspecified Deposited Material First Map Published 1969 Date: Last Map Published N/A Date:	B9SW (W)	0	-	318144 478434
43	Extractive Industries or Potential Excavations from 1950-1980 Use: Unspecified Pit First Map Published 1969 Date: Last Map Published N/A Date:	B9NW (W)	0	-	318260 478498
44	Extractive Industries or Potential Excavations from 1950-1980 Use: Unspecified Pit First Map Published 1969 Date: Last Map Published N/A Date:	B9SW (W)	0	-	318123 478309
45	Extractive Industries or Potential Excavations from 1950-1980 Use: Railway Embankment First Map Published 1969 Date: Last Map Published N/A Date:	B9NW (NW)	0	-	318133 478605
46	Extractive Industries or Potential Excavations from 1950-1980 Use: Hodbarrow Quarries (Disused) First Map Published 1969 Date: Last Map Published N/A Date:	B9SW (W)	0	-	318368 478253
47	Extractive Industries or Potential Excavations from 1950-1980 Use: Refuse Tip First Map Published 1969 Date: Last Map Published N/A Date:	B9SW (W)	0	-	318178 478446
48	Extractive Industries or Potential Excavations from 1950-1980 Use: Hodbarrow Iron Ore Mines First Map Published 1969 Date: Last Map Published N/A Date:	B9NW (W)	0	-	318297 478498
49	Extractive Industries or Potential Excavations from 1950-1980 Use: Unspecified Pit First Map Published 1969 Date: Last Map Published N/A Date:	B9NW (NW)	0	-	318185 478570

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
50	Extractive Industries or Potential Excavations from 1950-1980 Use: Spoil Heap First Map Published 1969 Date: Last Map Published N/A Date:	B9SW (W)	0	-	318192 478252

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
51	General Quarrying Use: Not Supplied Date of Mapping: 1927 - 1993	B13SW (NW)	0	-	318233 478885
52	General Quarrying Use: Not Supplied Date of Mapping: 1867 - 1956	B9SW (SW)	0	-	318261 478154
53	General Quarrying Use: Not Supplied Date of Mapping: 1927 - 1956	B9SW (W)	0	-	318313 478397
54	Mineral Railway Use: Not Supplied Date of Mapping: 1900 - 1956	B9NW (NW)	0	-	318412 478760
55	Mineral Railway Use: Not Supplied Date of Mapping: 1956	B9NW (NW)	0	-	318320 478528
56	Mineral Railway Use: Not Supplied Date of Mapping: 1900 - 1956	B13SW (NW)	5	-	318228 478887
57	Mineral Railway Use: Not Supplied Date of Mapping: 1900 - 1956	B13NE (N)	531	-	318485 479325
58	Mineral Railway Use: Not Supplied Date of Mapping: 1900 - 1956	B14NW (N)	654	-	318872 479230
59	Mineral Railway Use: Not Supplied Date of Mapping: 1900 - 1956	B14NW (N)	750	-	318923 479314
60	Mineral Railway Use: Not Supplied Date of Mapping: 1900 - 1956	B14NW (N)	796	-	318986 479317
61	Mining & quarrying general Use: Not Supplied Date of Mapping: 1867 - 1956	B9SW (W)	0	-	318413 478387
62	Former Marshes Use: Former Marsh Date of Mapping: 1900	B14NW (N)	734	-	318874 479335
63	Former Marshes Use: Former Marsh Date of Mapping: 1900	B14NE (N)	978	-	319122 479438
64	Potentially Infilled Land (Non-Water) Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1993	B13SW (NW)	0	-	318233 478885
65	Potentially Infilled Land (Non-Water) Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1993	B9NW (NW)	0	-	318172 478614
66	Potentially Infilled Land (Non-Water) Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1993	B9SW (W)	0	-	318412 478388
67	Potentially Infilled Land (Non-Water) Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1993	B5NW (SW)	0	-	318264 478093
68	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1956	B13SW (NW)	153	-	318353 478904

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	CBSCB Compensation District The site does not fall within the brine compensation area.				
	Brine Subsidence Solution Area The site does not fall within the brine subsidence solution area.				
69	Potential for Collapsible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	B9NE (NW)	0	1	318491 478527
	Potential for Collapsible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	B9SE (E)	0	1	318689 478340
70	Potential for Compressible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	B9NW (NW)	0	1	318414 478744
71	Potential for Compressible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	(W)	0	1	318063 478446
72	Potential for Compressible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	(W)	0	1	317727 478351
73	Potential for Compressible Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	B9SE (E)	0	1	318689 478340
74	Potential for Compressible Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	(W)	0	1	317750 478350
75	Potential for Compressible Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	(W)	0	1	317545 477994
76	Potential for Compressible Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	B9SW (W)	0	1	318137 478355
77	Potential for Compressible Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	(W)	0	1	317508 478454
78	Potential for Compressible Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	B9NW (NW)	0	1	318122 478587
79	Potential for Compressible Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	(W)	9	1	317752 478489
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	(W)	0	1	318085 478213
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	B9SE (NW)	0	1	318601 478448
80	Potential for Ground Dissolution Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	B9SW (W)	0	1	318367 478329
81	Potential for Ground Dissolution Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	(NW)	0	1	318053 478985
82	Potential for Ground Dissolution Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	B9SW (W)	0	1	318320 478316
83	Potential for Ground Dissolution Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	B9SW (W)	0	1	318354 478300
84	Potential for Ground Dissolution Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	(NW)	26	1	318077 479046

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
85	Potential for Ground Dissolution Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	B9NE (NW)	43	1	318498 478757
86	Potential for Ground Dissolution Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	B9NE (N)	82	1	318526 478763
87	Potential for Ground Dissolution Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	B13SE (N)	90	1	318500 478831
88	Potential for Ground Dissolution Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	(NW)	175	1	317804 479213
89	Potential for Ground Dissolution Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	B13SW (NW)	199	1	318271 479088
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	B9NW (NW)	0	1	318234 478787
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	B9SE (E)	0	1	318689 478340
90	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	B9SE (E)	0	1	318689 478340
91	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	(NW)	0	1	318057 479010
92	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	B9SW (W)	0	1	318318 478337
93	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	B9SE (W)	0	1	318451 478300
94	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	B9SW (W)	0	1	318323 478270
95	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	(SW)	9	1	317935 478016
96	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	(W)	14	1	318021 478071
97	Potential for Landslide Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	B9SW (W)	15	1	318372 478212
98	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	B9SE (W)	54	1	318523 478384
99	Potential for Landslide Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	(NW)	63	1	317999 479111
100	Potential for Landslide Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	(NW)	116	1	317982 479174
101	Potential for Landslide Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	(NW)	175	1	317804 479213
102	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	(NW)	225	1	317789 479255
103	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	B9SE (NW)	234	1	318619 478455

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Potential for Landslide Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	B9SW (W)	0	1	318321 478463
	Potential for Landslide Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	(NW)	33	1	317447 478993
104	Potential for Running Sand Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	B9SE (E)	0	1	318689 478340
105	Potential for Running Sand Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	B9SE (NW)	0	1	318601 478448
106	Potential for Running Sand Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	B9NE (NW)	0	1	318491 478527
107	Potential for Running Sand Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	B9SW (W)	0	1	318320 478316
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	B9SW (W)	0	1	318348 478305
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	(W)	0	1	318085 478213
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	(NW)	0	1	318033 478970
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	B9NE (NW)	160	1	318538 478626
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	B13SW (NW)	199	1	318342 479036
108	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	B13SW (NW)	0	1	318118 478870
109	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	B9SW (W)	0	1	318320 478316
110	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	B9NW (NW)	0	1	318165 478637
111	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	B9SE (E)	0	1	318689 478340
112	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	(W)	1	1	317149 478891
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	B9SE (NW)	0	1	318601 478448

The following mapping has been analysed for Historical Land Use Information (1:2,500):

1:2,500	Mapsheet	Published Date
Cumberland	090_03	1862
Cumberland	090_03	1862
Cumberland	090_07	1862
Cumberland	090_07	1862
Lancashire And Furness	010_15	1891
Lancashire And Furness	015_03	1891
Lancashire And Furness	015_03	1891
Lancashire And Furness	015_03	1891
Cumberland	090_07	1898
Cumberland	090_07	1898
Cumberland	090_03	1899
Cumberland	090_03	1899
Lancashire And Furness	010_15	1913
Cumberland	090_03	1924
Cumberland	090_03	1924
Cumberland	090_07	1924
Cumberland	090_07	1924
Ordnance Survey Plan	SD1878	1969
Ordnance Survey Plan	SD1878	1969
Ordnance Survey Plan	SD1878	1969
Ordnance Survey Plan	SD1879	1969

The following mapping has been analysed for Historical Land Use Information (1:10,000):

1:10,560	Mapsheet	Published Date
Lancashire And Furness	010_00	1850
Lancashire And Furness	015_00	1850
Cumberland	090_00	1867
Lancashire And Furness	010_00	1892
Lancashire And Furness	015_00	1892
Cumberland	090_NE	1900
Lancashire And Furness	010_SE	1919
Lancashire And Furness	015_NE	1919
Cumberland	090_NE	1927
Cumberland	090_SE	1927
Lancashire And Furness	015_NE	1938
Ordnance Survey Plan	SD17NE	1956
Ordnance Survey Plan	SD27NW	1956
1:10,000	Mapsheet	Published Date
Ordnance Survey Plan	SD17NE	1993
Ordnance Survey Plan	SD27NW	1993

Mining and Cavities Data	Version	Update Cycle
BGS Recorded Mineral Sites British Geological Survey - National Geoscience Information Service	November 2022	Bi-Annually
Coal Mining Affected Areas The Coal Authority - Property Searches	February 2023	Annual Rolling Update
Man Made Mining Cavities Stantec UK Ltd	December 2022	Bi-Annually
Mining Instability Ove Arup & Partners	June 1998	Not Applicable
Natural Cavities Stantec UK Ltd	December 2022	Bi-Annually
Non Coal Mining Areas of Great Britain British Geological Survey - National Geoscience Information Service	May 2015	Not Applicable
Historical Land Use Information (1:2,500)	Version	Update Cycle
Subterranean Features Landmark Information Group Limited	June 2022	Bi-Annually
Ground Stability Data (1:50,000)	Version	Update Cycle
CBSCB Compensation District Cheshire Brine Subsidence Compensation Board (CBSCB) Cheshire Brine Subsidence Compensation Board (CBSCB)	August 2011 November 2020	As notified
Potential for Collapsible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	April 2020	As notified
Potential for Compressible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	As notified
Potential for Ground Dissolution Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	As notified
Potential for Landslide Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	As notified
Potential for Running Sand Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	As notified
Potential for Shrinking or Swelling Clay Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	As notified
Brine Subsidence Solution Area Johnson Poole & Bloomer	December 2020	Annual Rolling Update

A selection of organisations who provide data within this report

Data Supplier	Data Supplier Logo
Ordnance Survey	
British Geological Survey	 British Geological Survey NATURAL ENVIRONMENT RESEARCH COUNCIL
The Coal Authority	 The Coal Authority
Ove Arup	
Stantec UK Ltd	
Wardell Armstrong	 wardell armstrong your earth our world
Johnson Poole & Bloomer	

Contact	Name and Address	Contact Details
1	British Geological Survey - Enquiry Service British Geological Survey, Environmental Science Centre, Keyworth, Nottingham, Nottinghamshire, NG12 5GG	Telephone: 0115 936 3143 Fax: 0115 936 3276 Email: enquiries@bgs.ac.uk Website: www.bgs.ac.uk
2	Stantec UK Ltd Caversham Bridge House, Waterman Place, Reading, RG1 8DN	Telephone: 0118 950 0761 Email: pba.reading@stantec.com Website: www.stantec.com
3	Ove Arup & Partners Central Square, Forth Street, Newcastle upon Tyne, Tyne and Wear, NE1 3PL	Telephone: 0191 261 6080 Fax: 0191 261 7879
4	Landmark Information Group Limited Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	Telephone: 0844 844 9960 Fax: 0844 844 9951 Email: customerservice@promap.co.uk Website: www.landmarkinfo.co.uk
-	Landmark Information Group Limited Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	Telephone: 0844 844 9952 Fax: 0844 844 9951 Email: customerservices@landmarkinfo.co.uk Website: www.landmarkinfo.co.uk



Historical Land Use Information (1:10,000)

General

- Specified Site Specified Buffer(s) Bearing Reference Point Map ID
 Several of Type at Location

Potentially Contaminative Industrial Uses (Past Land Uses - Mining)

	Point	Line	Polygon
Air Shafts			
Disturbed Ground			
General Quarrying			
Heap, unknown constituents			
Mineral Railway			
Mining and Quarrying General			
Mining of Coal & Lignite			
Quarrying of Sand and Clay, Operation of Sand and Gravel Pits			

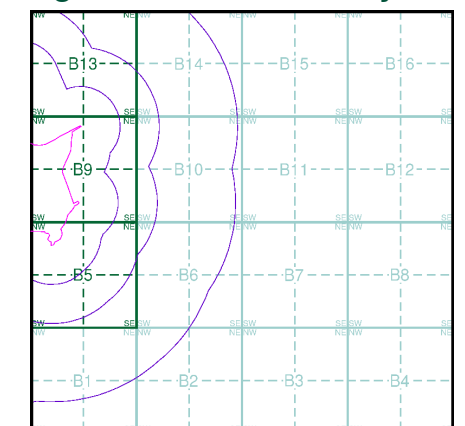
Historical Land Use

	Point	Line	Polygon
Potentially Infilled Land (Non-Water)			
Potentially Infilled Land (Water)			
Former Marsh			

Mining Data

- Potential Mining Area
 BGS Recorded Mineral Site

Mining and Ground Stability - Slice B



Order Details

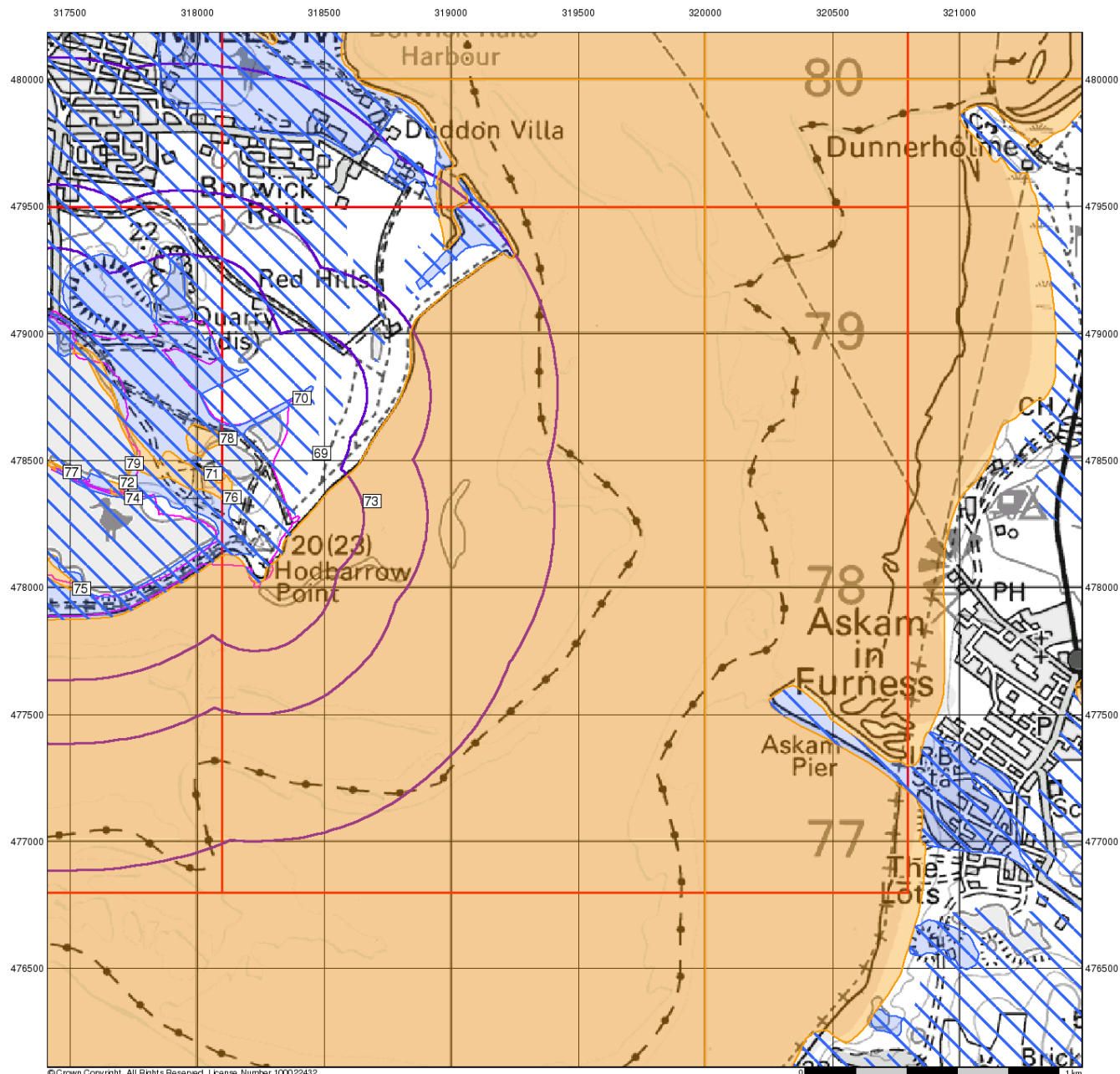
Order Number: 307697430_1_1
Customer Ref: No. 4229
National Grid Reference: 318690, 478340
Slice: B
Site Area (Ha): 57.66
Search Buffer (m): 1000

Site Details

The Gin Mill, Steel Green, MILLOM, LA18 4LG

Landmark
INFORMATION GROUP

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



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Ground Stability Data (1:50,000)

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice
- Map ID

Potential for Compressible Ground Stability Hazards

- High
- Low
- Moderate
- Very Low

Potential for Collapsible Ground Stability Hazards

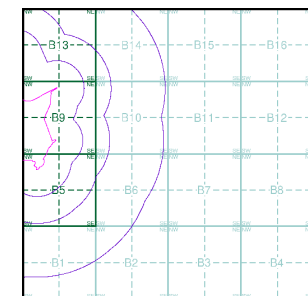
- High
- Low
- Moderate
- Very Low

Brine Pumping and Salt Mining

- Brine Pumping Related Feature
- Salt Mining Related Feature

- | Point | Polygon |
|-------|---------|
| | |
| | |

Mining and Ground Stability - Slice B



Order Details

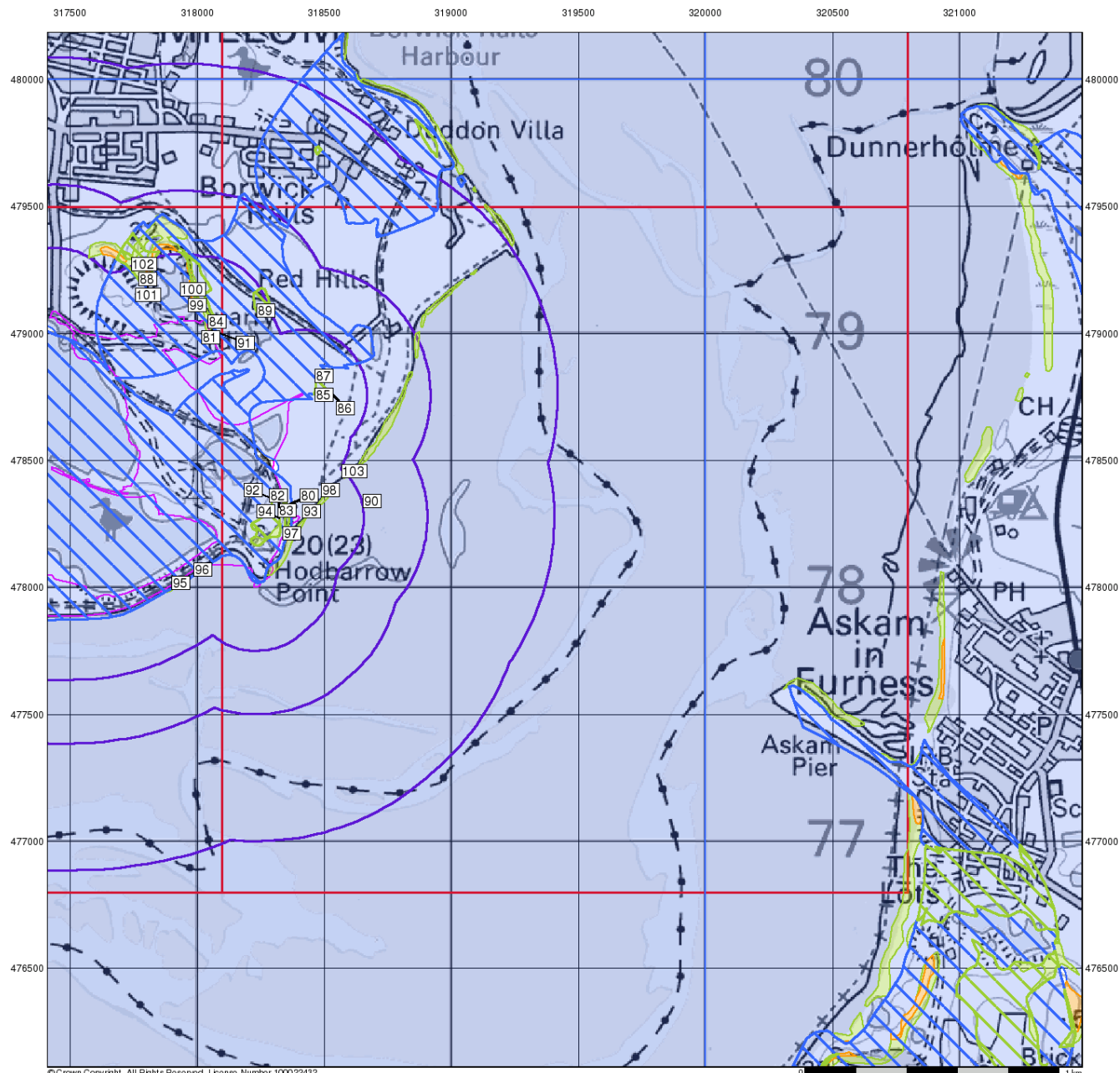
Order Number: 307697430_1_1
 Customer Ref: No. 4229
 National Grid Reference: 318690, 478340
 Slice: B
 Site Area (Ha): 57.66
 Search Buffer (m): 1000

Site Details

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Ground Stability Data (1:50,000)

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice
- Map ID

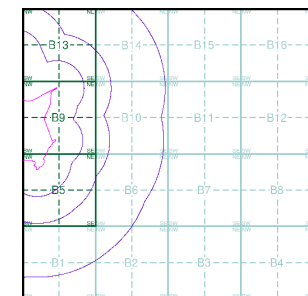
Potential for Landslide Ground Stability Hazards

- High
- Moderate
- Low
- Very Low

Potential for Ground Dissolution Stability Hazards

- High
- Moderate
- Low
- Very Low

Mining and Ground Stability - Slice B



Order Details

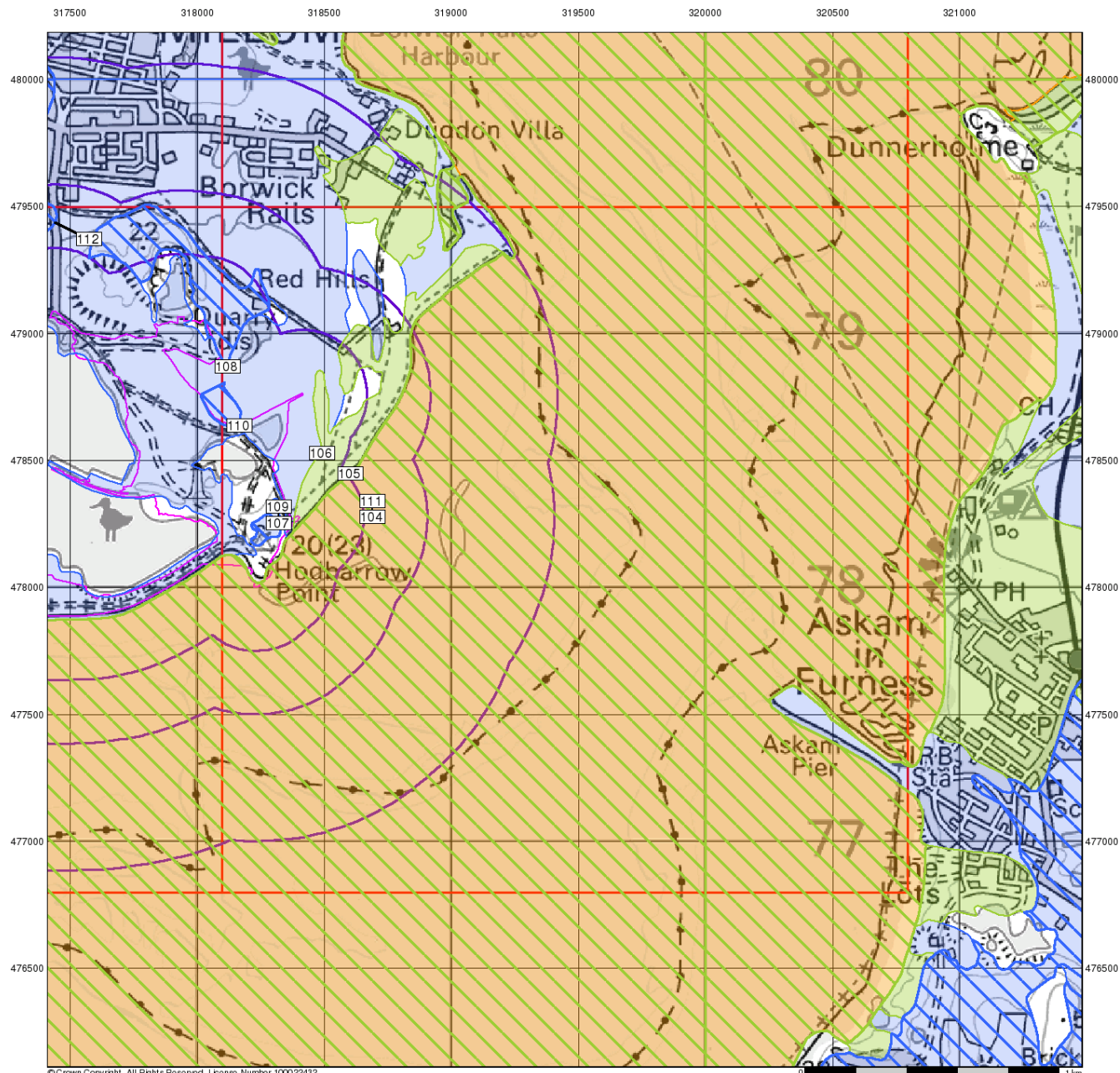
Order Number: 307697430_1_1
 Customer Ref: No. 4229
 National Grid Reference: 318690, 478340
 Slice: B
 Site Area (Ha): 57.66
 Search Buffer (m): 1000

Site Details

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Ground Stability Data (1:50,000)

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice
- Map ID

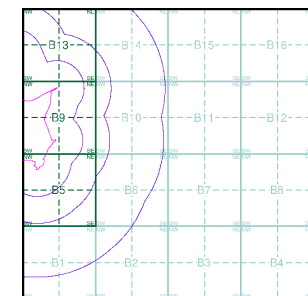
Potential for Running Sand Ground Stability Hazards

- High
- Moderate
- Low
- Very Low

Potential for Shrinking or Swelling Clay Ground Stability Hazards

- High
- Moderate
- Low
- Very Low

Mining and Ground Stability - Slice B



Order Details

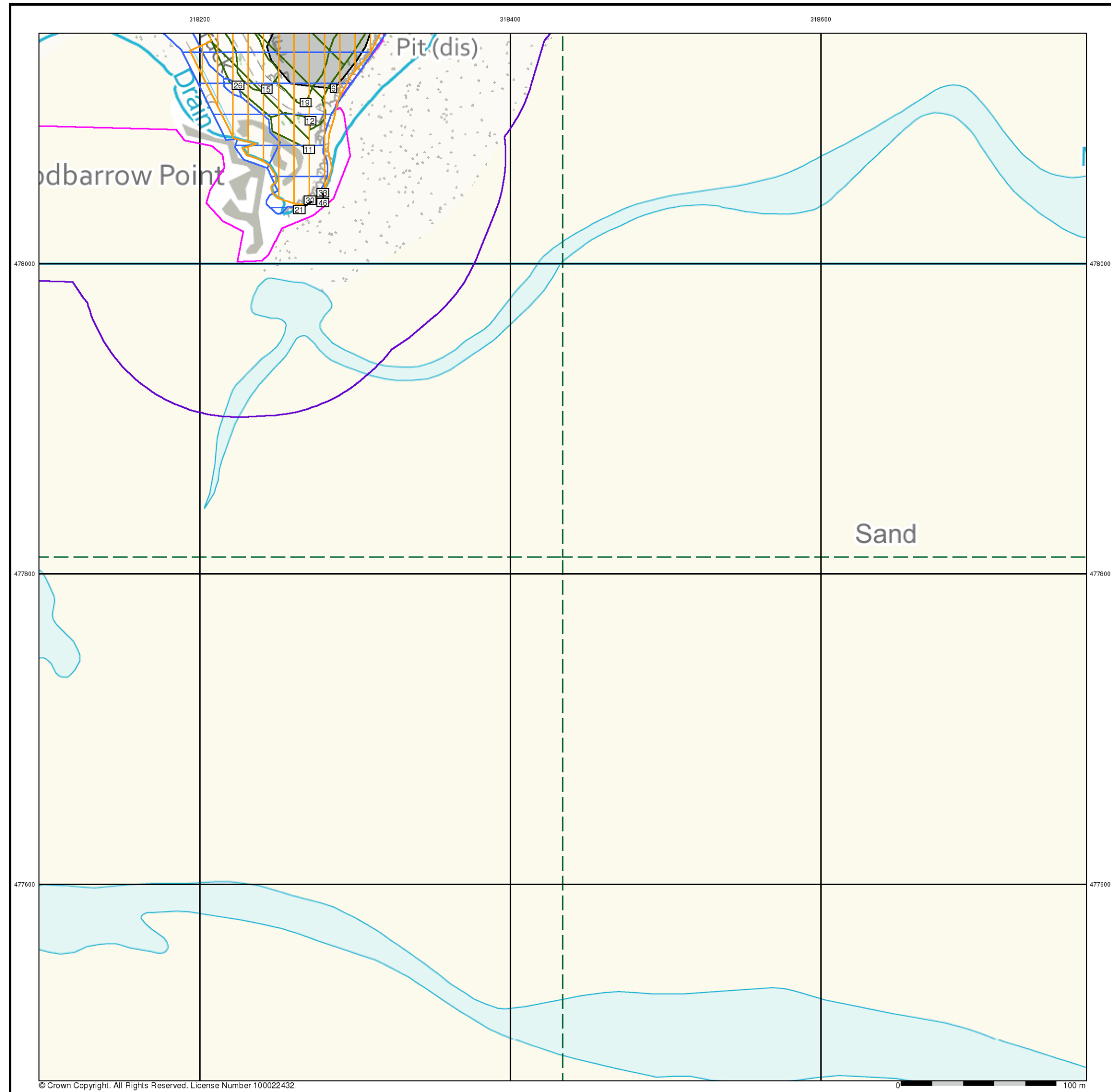
Order Number: 307697430_1_1
 Customer Ref: No. 4229
 National Grid Reference: 318690, 478340
 Slice: B
 Site Area (Ha): 57.66
 Search Buffer (m): 1000

Site Details

The Gin Mill, Steel Green, MILLOM, LA18 4LG

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General

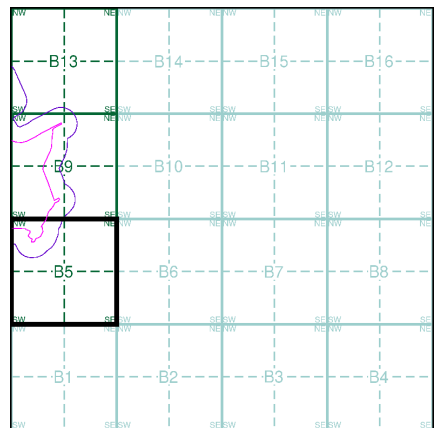
- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Map ID
- Several of Type at Location

Potentially Contaminative Industrial Uses (Extractive Industries Activity)

	Point	Line	Polygon
Extractive Industries Activity from 1855 - 1909			
Extractive Industries Activity from 1893 - 1915			
Extractive Industries Activity from 1906 - 1937			
Extractive Industries Activity from 1924 - 1949			
Extractive Industries Activity from 1950 - 1960			

Subterranean Features

	Point	Line	Polygon
Subterranean Features			

Mining and Ground Stability - Segment B5

Order Details

Order Number:	307697430_1_1
Customer Ref:	No. 4229
National Grid Reference:	318690, 478340
Slice:	B
Site Area (Ha):	57.66
Plot Buffer (m):	100

Site Details

The Gin Mill, Steel Green, MILLOM, LA18 4LG



Historical Land Use Information (1:2,500)

General

- Specified Site Specified Buffer(s) Bearing Reference Point Map ID
Several of Type at Location

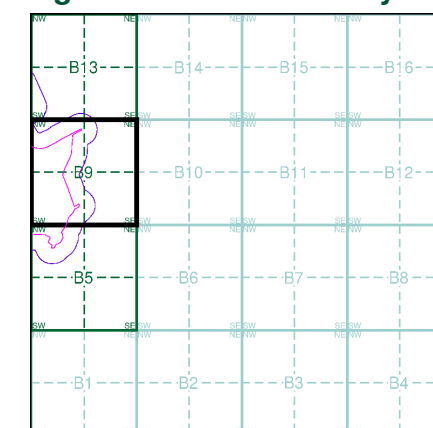
Potentially Contaminative Industrial Uses (Extractive Industries Activity)

	Point	Line	Polygon
Extractive Industries Activity from 1855 - 1909	▲	—	■
Extractive Industries Activity from 1893 - 1915	▲	—	■
Extractive Industries Activity from 1906 - 1937	▲	—	■
Extractive Industries Activity from 1924 - 1949	▲	—	■
Extractive Industries Activity from 1950 - 1980	▲	—	■

Subterranean Features

	Point	Line	Polygon
Subterranean Features	▼	---	■

Mining and Ground Stability - Segment B9



Order Details

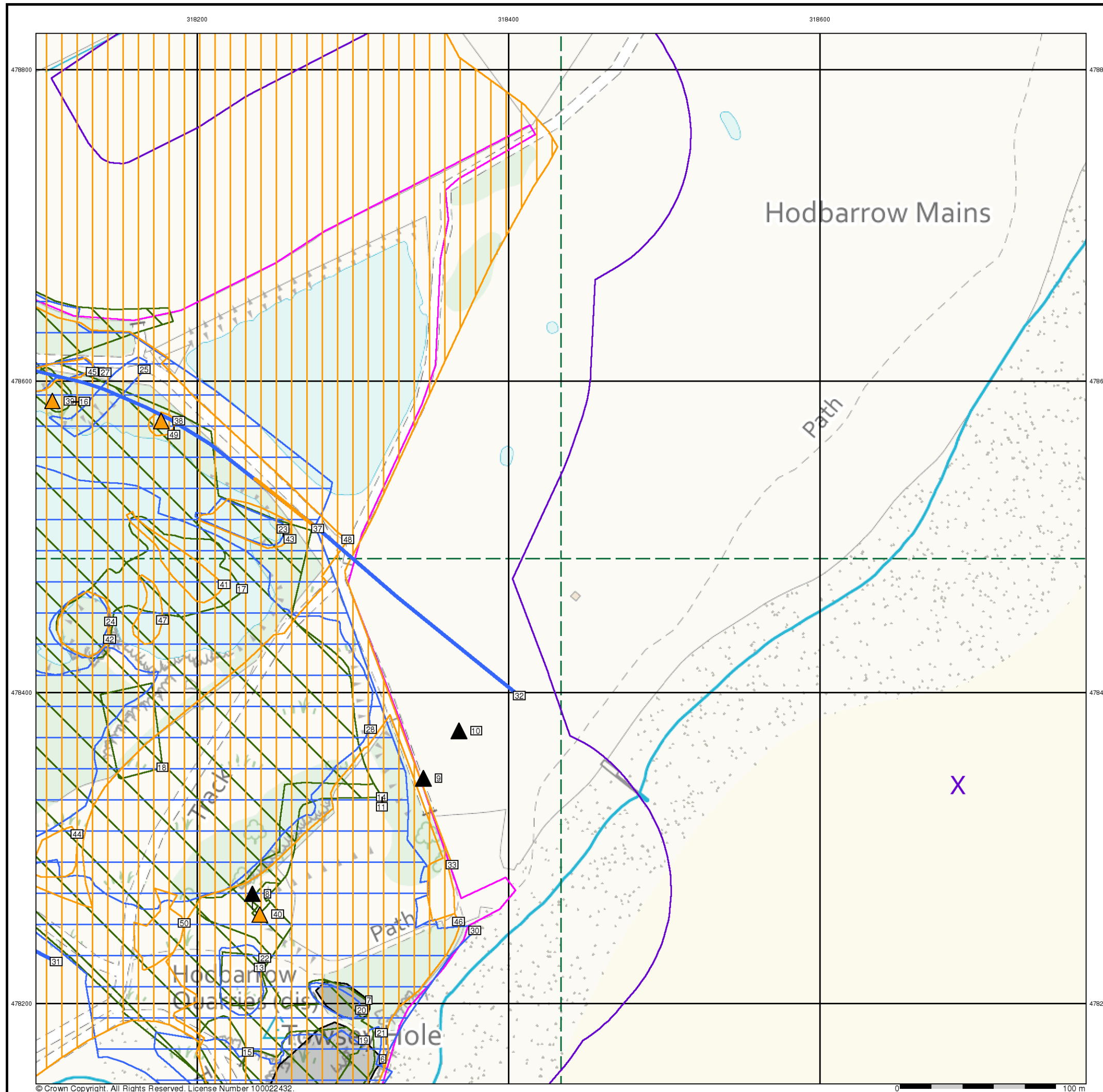
Order Number: 307697430_1_1
Customer Ref: No. 4229
National Grid Reference: 318690, 478340
Slice: B
Site Area (Ha): 57.66
Plot Buffer (m): 100

Site Details

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ecurtins

Historical Land Use Information (1:2,500)

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Map ID
- Several of Type at Location

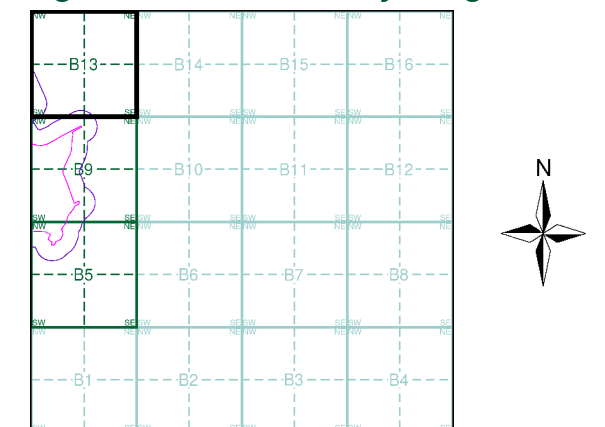
Potentially Contaminative Industrial Uses (Extractive Industries Activity)

	Point	Line	Polygon
Extractive Industries Activity from 1855 - 1909	▲	—	■
Extractive Industries Activity from 1893 - 1915	▲	—	■
Extractive Industries Activity from 1906 - 1937	▲	—	■
Extractive Industries Activity from 1924 - 1949	▲	—	■
Extractive Industries Activity from 1950 - 1980	▲	—	■

Subterranean Features

	Point	Line	Polygon
Subterranean Features	▼	---	■

Mining and Ground Stability - Segment B13



Order Details

Order Number: 307697430_1_1
Customer Ref: No. 4229
National Grid Reference: 318690, 478340
Slice: B
Site Area (Ha): 57.66
Plot Buffer (m): 100

Site Details

The Gin Mill, Steel Green, MILLOM, LA18 4LG

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Historical Mapping Legends

Ordnance Survey County Series 1:10,560

	Gravel Pit		Sand Pit		Other Pits
	Quarry		Shingle		Orchard
	Osiers		Reeds		Marsh
	Mixed Wood		Deciduous		Brushwood
	Fir		Furze		Rough Pasture
	Arrow denotes flow of water		Trigonometrical Station		
	Site of Antiquities		Bench Mark		
	Pump, Guide Post, Signal Post		Well, Spring, Boundary Post		
	Surface Level				
	Sketched Contour		Instrumental Contour		
	Main Roads		Minor Roads		
	Sunken Road		Raised Road		
	Road over Railway		Railway over River		
	Railway over Road		Level Crossing		
	Road over River or Canal		Road over Stream		
	Road over Stream				
	County Boundary (Geographical)				
	County & Civil Parish Boundary				
	Administrative County & Civil Parish Boundary				
	County Borough Boundary (England)				
	County Burgh Boundary (Scotland)				
	Rural District Boundary				
	Civil Parish Boundary				

Ordnance Survey Plan 1:10,000

	Chalk Pit, Clay Pit or Quarry		Gravel Pit
	Sand Pit		Disused Pit or Quarry
	Refuse or Slag Heap		Lake, Loch or Pond
	Dunes		Boulders
	Coniferous Trees		Non-Coniferous Trees
	Orchard		Scrub
	Bracken		Heath
	Marsh		Reeds
	Building		Glasshouse
	Sloping Masonry		Pylon
	Cutting		Embankment
	Road Under		Road Over
	Level Crossing		Foot Bridge
	Standard Gauge Multiple Track		Standard Gauge Single Track
	Siding, Tramway or Mineral Line		Narrow Gauge
	Geographical County		Administrative County, County Borough or County of City
	Municipal Borough, Urban or Rural District, Burgh or District Council		Borough, Burgh or County Constituency
	Civil Parish		
	Boundary Post or Stone		Police Station
	Church		Post Office
	Club House		Public Convenience
	Fire Engine Station		Public House
	Foot Bridge		Signal Box
	Fountain		Spring
	Guide Post		Telephone Call Box
	Mile Post		Telephone Call Post
	Mile Stone		Well

1:10,000 Raster Mapping

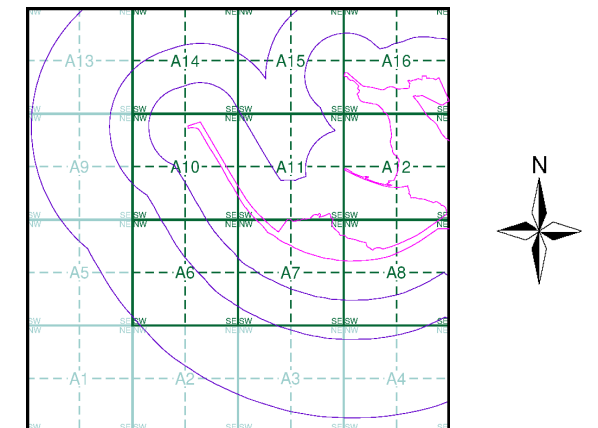
	Gravel Pit		Refuse tip or slag heap
	Rock		Rock (scattered)
	Boulders		Boulders (scattered)
	Shingle		Mud
	Sand		Sand Pit
	Slopes		Top of cliff
	General detail		Underground detail
	Overhead detail		Narrow gauge railway
	Multi-track railway		Single track railway
	County boundary (England only)		Civil, parish or community boundary
	District, Unitary, Metropolitan, London Borough boundary		Constituency boundary
	Area of wooded vegetation		Non-coniferous trees
	Non-coniferous trees (scattered)		Coniferous trees
	Coniferous trees (scattered)		Positioned tree
	Orchard		Coppice or Osiers
	Rough Grassland		Heath
	Scrub		Marsh, Salt Marsh or Reeds
	Water feature		Flow arrows
	Mean high water (springs)		Mean low water (springs)
	Telephone line (where shown)		Electricity transmission line (with poles)
	Bench mark (where shown)		Triangulation station
	Point feature (e.g. Guide Post or Mile Stone)		Pylon, flare stack or lighting tower
	Site of (antiquity)		Glasshouse
	General Building		Important Building



Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Lancashire And Furness	1:10,560	1850	2
Cumberland	1:10,560	1867	3
Lancashire And Furness	1:10,560	1892	4
Cumberland	1:10,560	1900	5
Lancashire And Furness	1:10,560	1916	6
Lancashire And Furness	1:10,560	1919	7
Lancashire And Furness	1:10,560	1919	8
Cumberland	1:10,560	1926 - 1927	9
Lancashire And Furness	1:10,560	1938	10
Ordnance Survey Plan	1:10,000	1956	11
Ordnance Survey Plan	1:10,000	1973	12
Ordnance Survey Plan	1:10,000	1993	13
10K Raster Mapping	1:10,000	2001	14
10K Raster Mapping	1:10,000	2006	15
VectorMap Local	1:10,000	2022	16

Historical Map - Slice A



Order Details

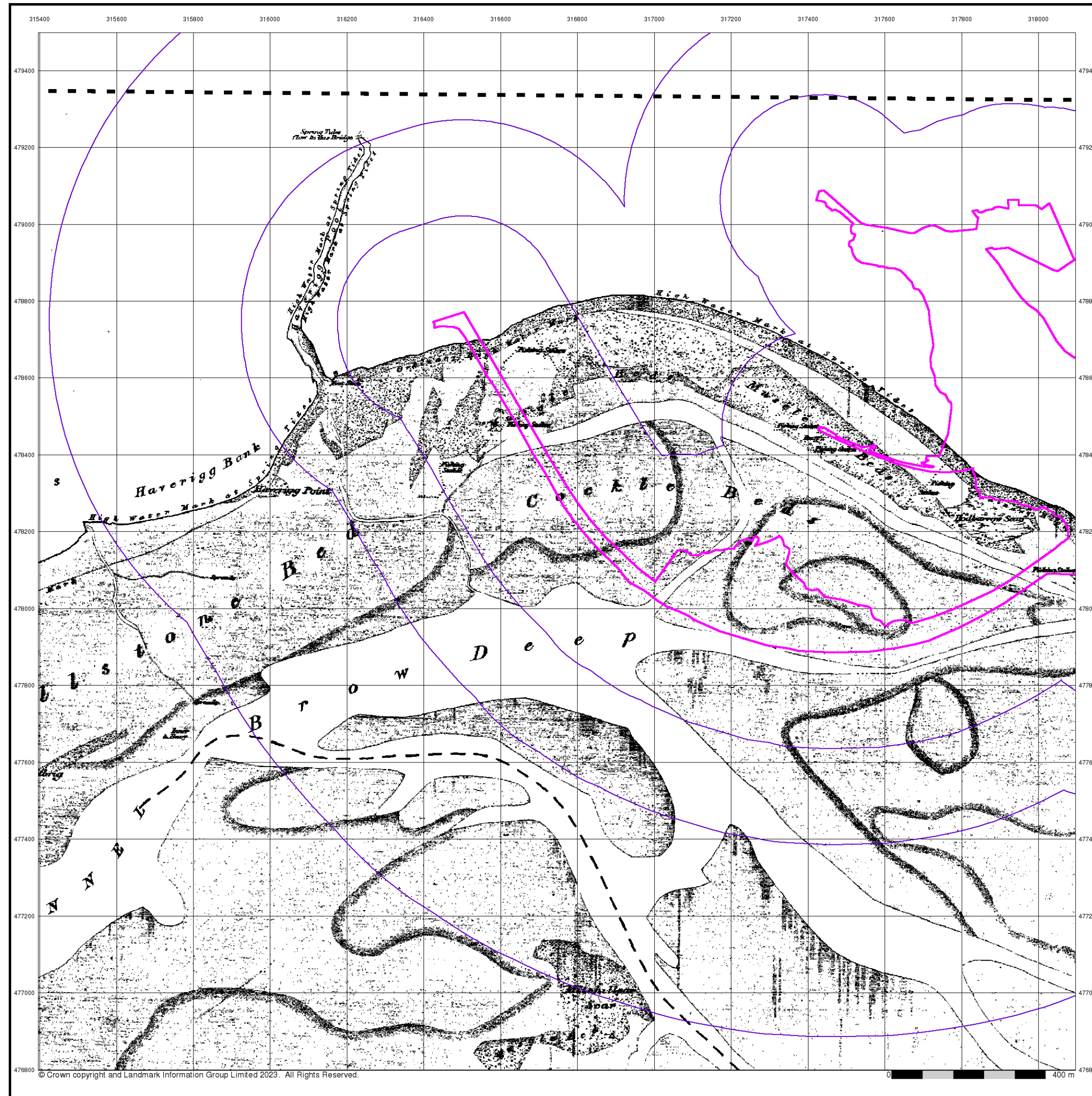
Order Number: 307697430_1_1
Customer Ref: No. 4229
National Grid Reference: 316920, 478320
Slice: A
Site Area (Ha): 57.66
Search Buffer (m): 1000

Site Details

The Gin Mill, Steel Green, MILLOM, LA18 4LG

Landmark
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Lancashire And Furness

Published 1850

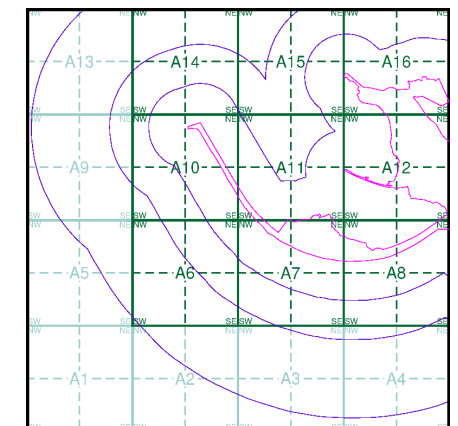
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

01000
1850
1:10,560
01500
1850
1:10,560

Historical Map - Slice A



Order Details

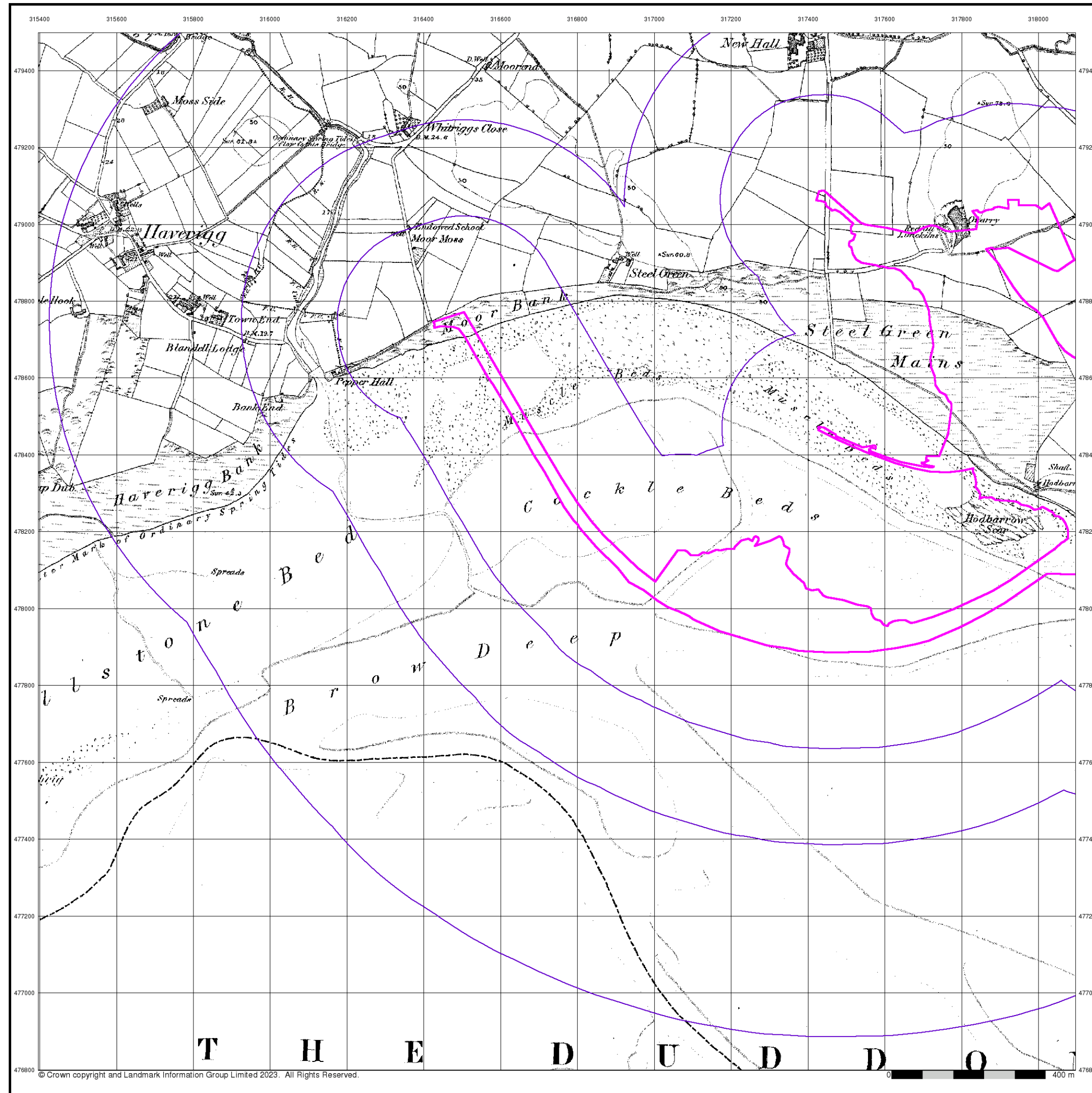
Order Number: 307697430_1_1
Customer Ref: No. 4229
National Grid Reference: 316920, 478320
Slice: A
Site Area (Ha): 57.66
Search Buffer (m): 1000

Site Details

The Gin Mill, Steel Green, MILLOM, LA18 4LG

Landmark
INFORMATION GROUP

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Fax: 0844 844 9951
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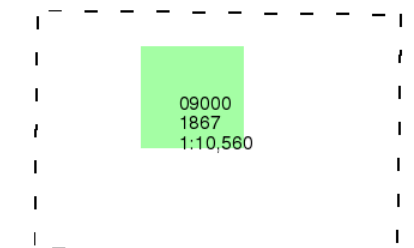
Cumberland

Published 1867

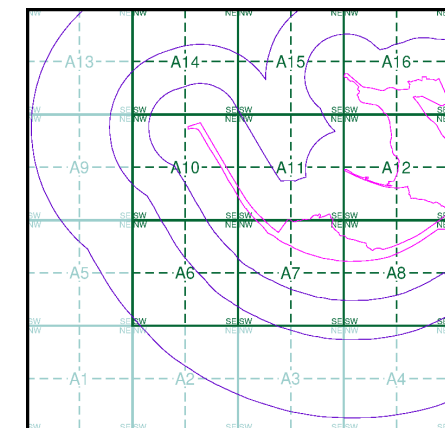
Source map scale - 1:10,560

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Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

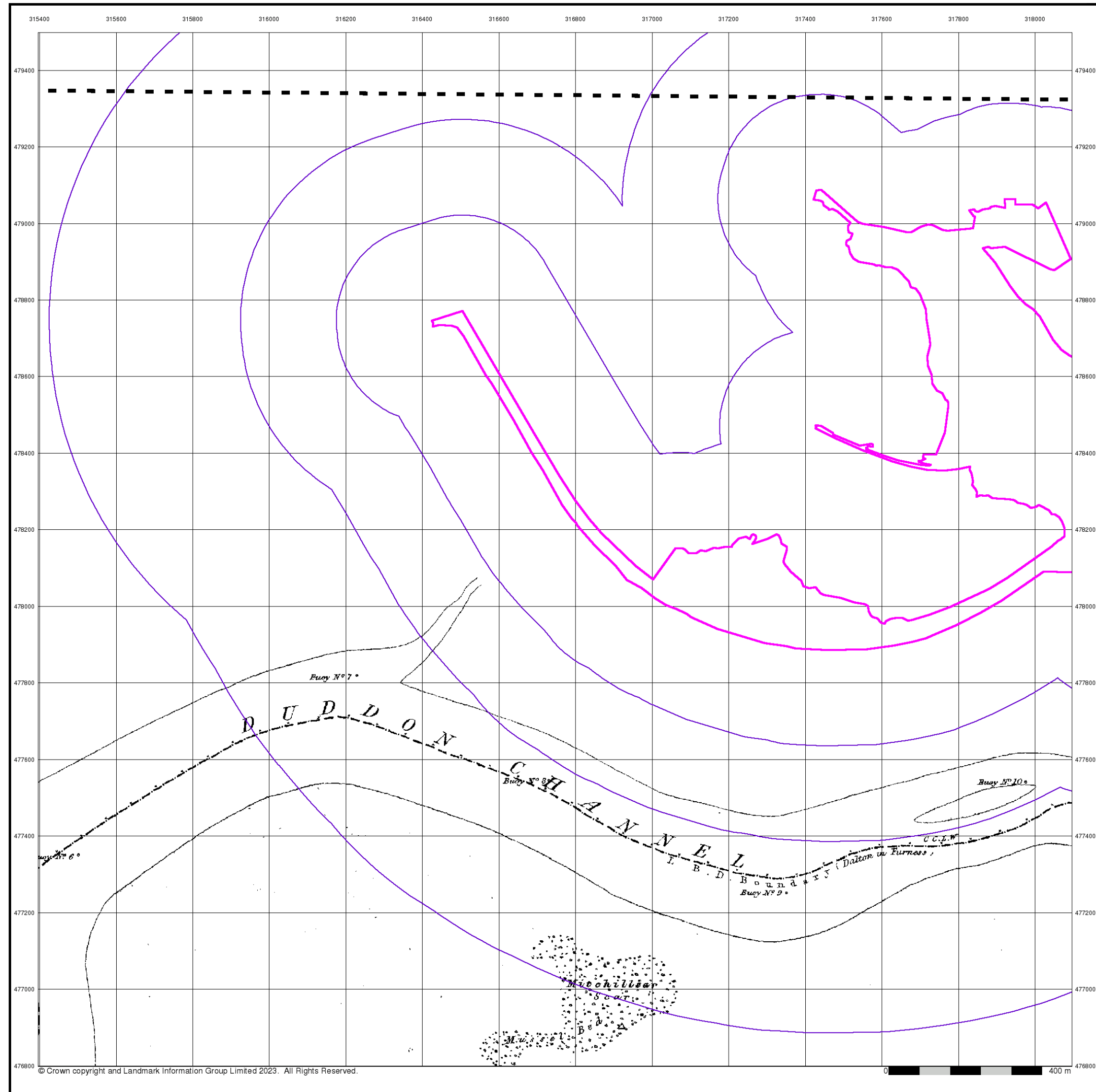
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Customer Ref: No. 4229
National Grid Reference: 316920, 478320
Slice: A
Site Area (Ha): 57.66
Search Buffer (m): 1000

Site Details

The Gin Mill, Steel Green, MILLOM, LA18 4LG



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Web: www.envirocheck.co.uk



Lancashire And Furness

Published 1892

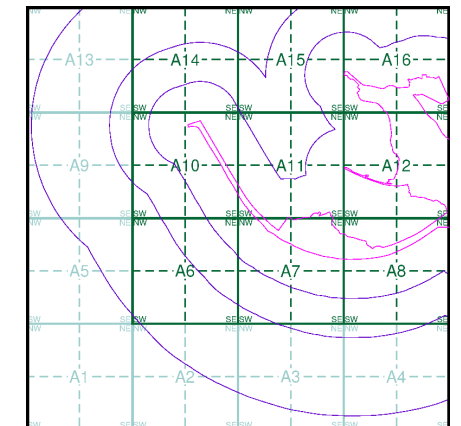
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

01000
1892
1:10,560
01500
1892
1:10,560

Historical Map - Slice A



Order Details

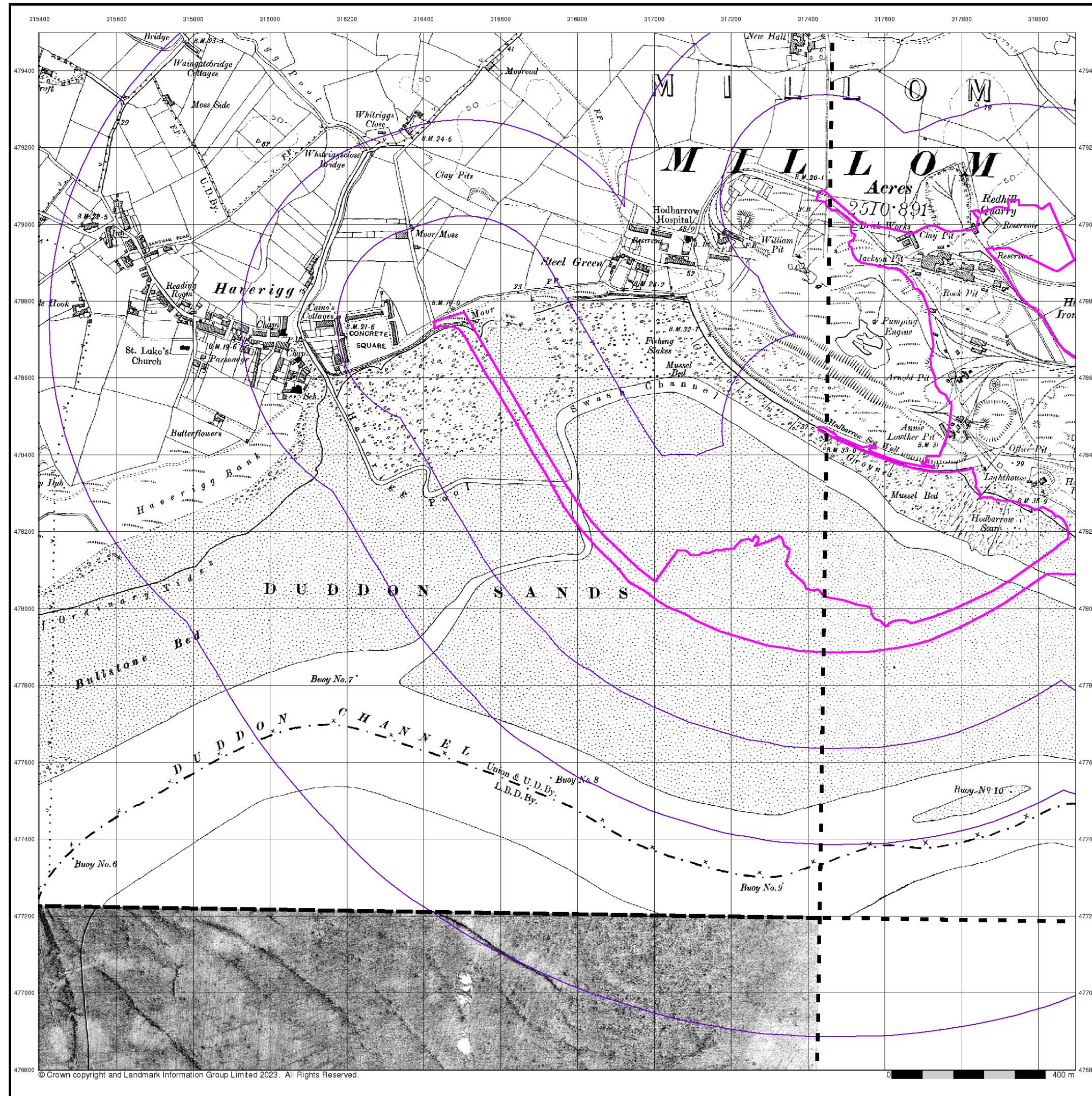
Order Number: 307697430_1_1
Customer Ref: No. 4229
National Grid Reference: 316920, 478320
Slice: A
Site Area (Ha): 57.66
Search Buffer (m): 1000

Site Details

The Gin Mill, Steel Green, MILLOM, LA18 4LG



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Cumberland

Published 1900

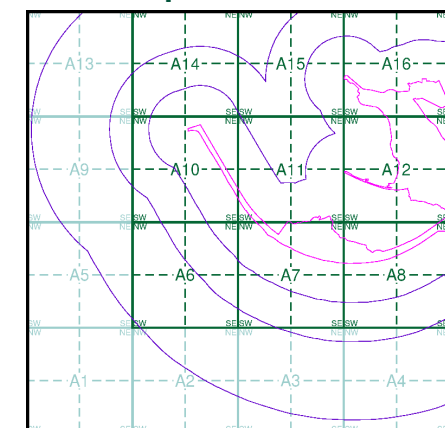
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

090NW 1900 1:10,560	090NE 1900 1:10,560
090SW 1900 1:10,560	

Historical Map - Slice A



Order Details

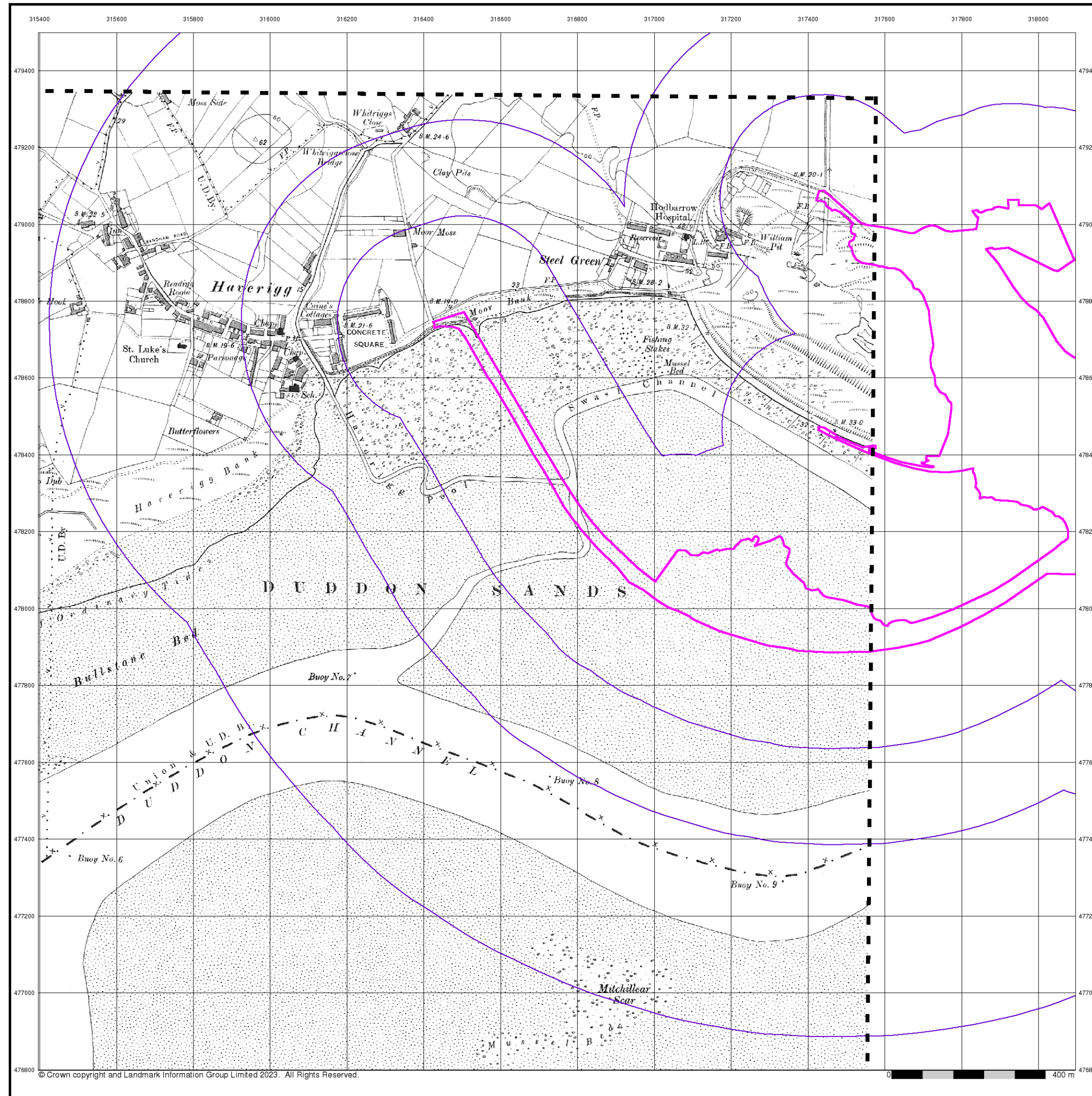
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Customer Ref: No. 4229
National Grid Reference: 316920, 478320
Slice: A
Site Area (Ha): 57.66
Search Buffer (m): 1000

Site Details

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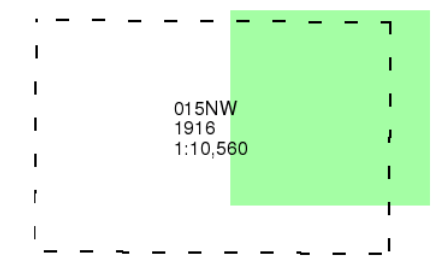
Lancashire And Furness

Published 1916

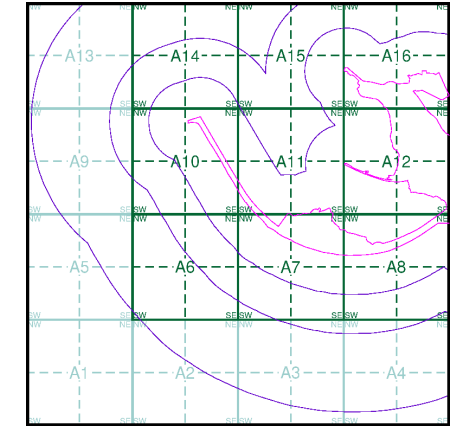
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

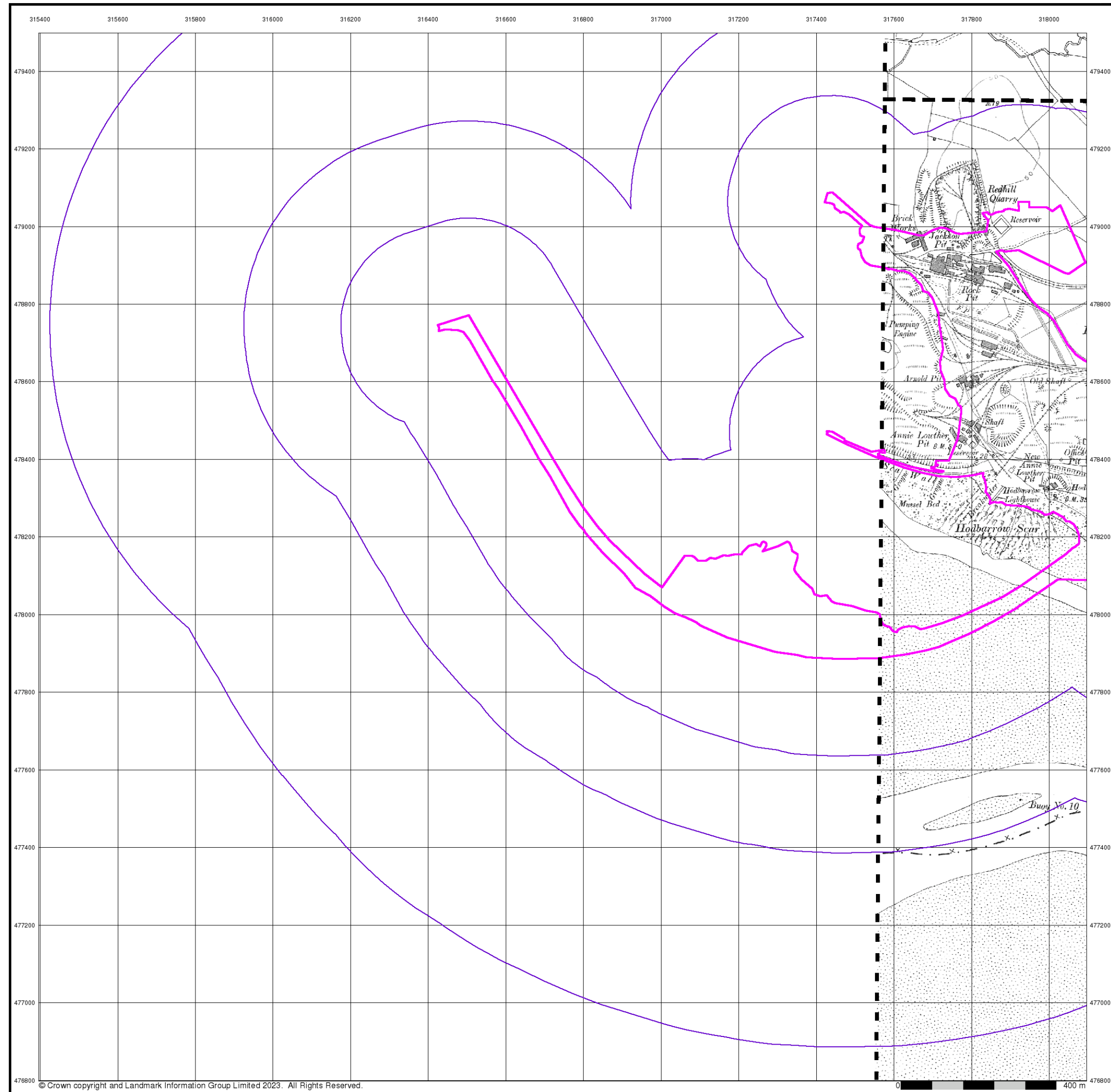
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Slice: A
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Lancashire And Furness

Published 1919

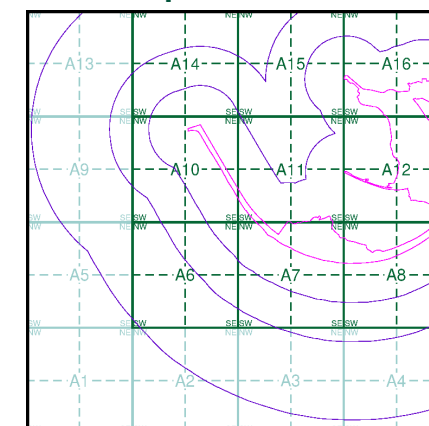
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The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

010SE 1919 1:10,560
015NE 1919 1:10,560

Historical Map - Slice A



Order Details

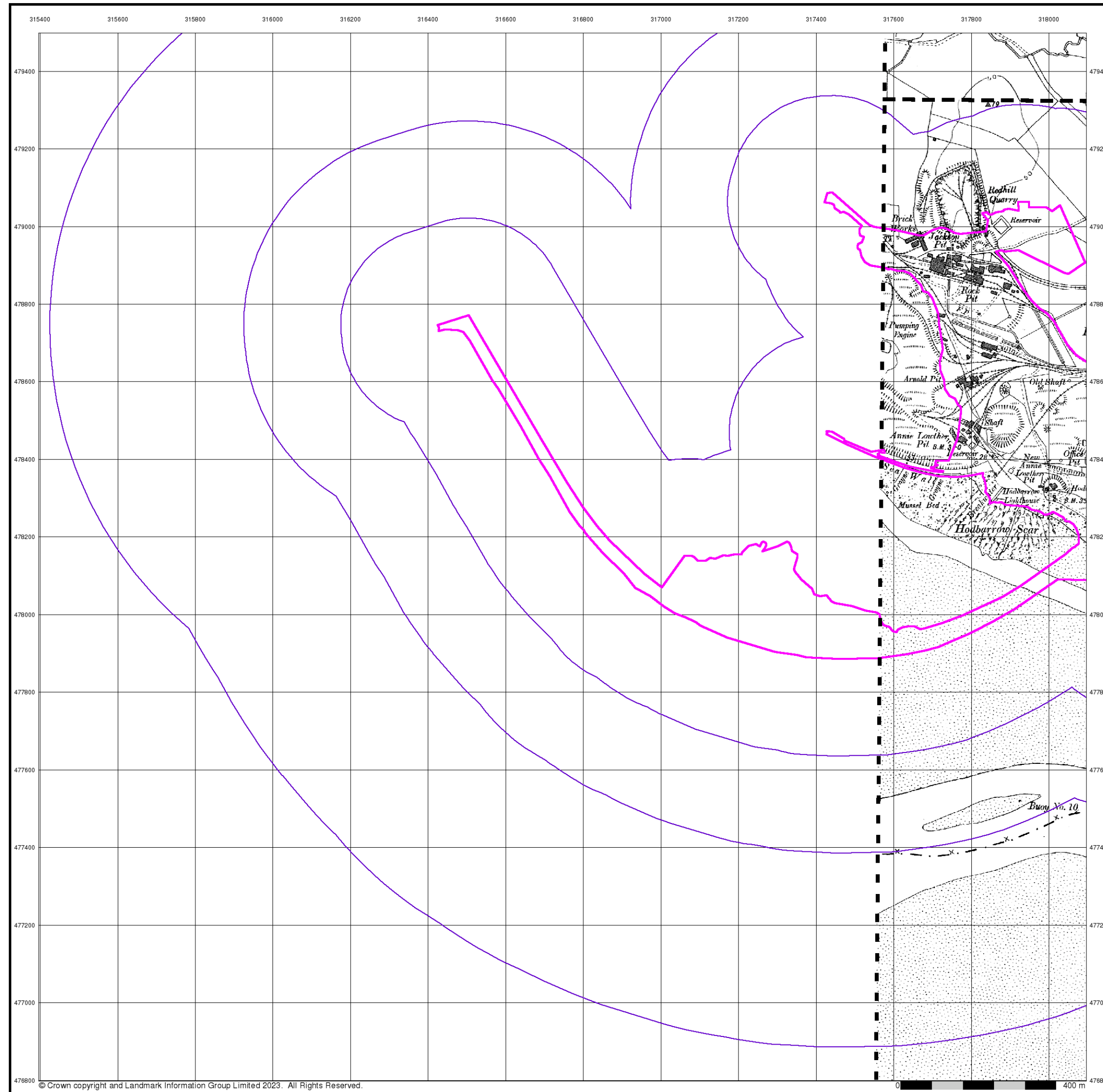
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Lancashire And Furness

Published 1919

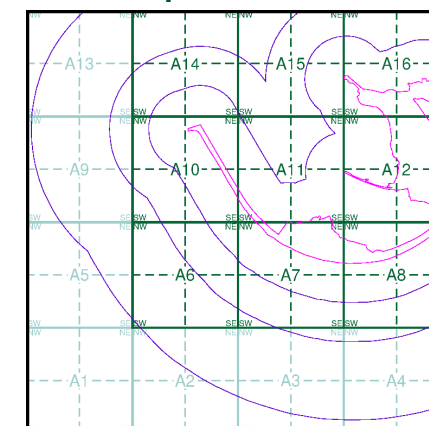
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The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

010SE
1919
1:10,560
015NE
1919
1:10,560

Historical Map - Slice A



Order Details

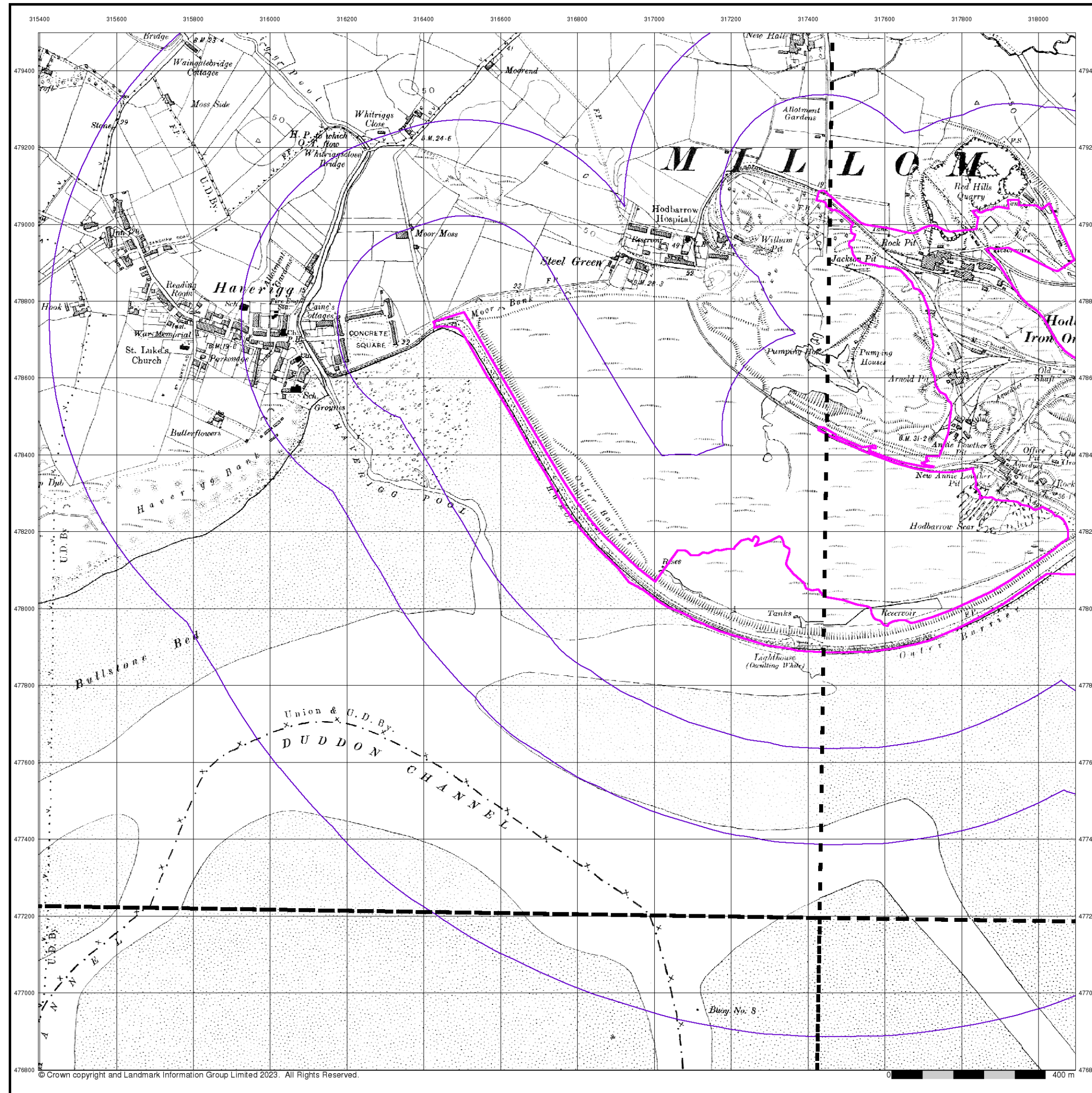
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Cumberland

Published 1926 - 1927

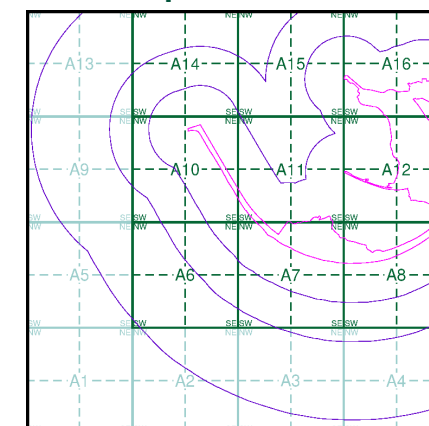
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

090NW 1927 1:10,560	090NE 1927 1:10,560
090SW 1926 1:10,560	090SE 1927 1:10,560

Historical Map - Slice A



Order Details

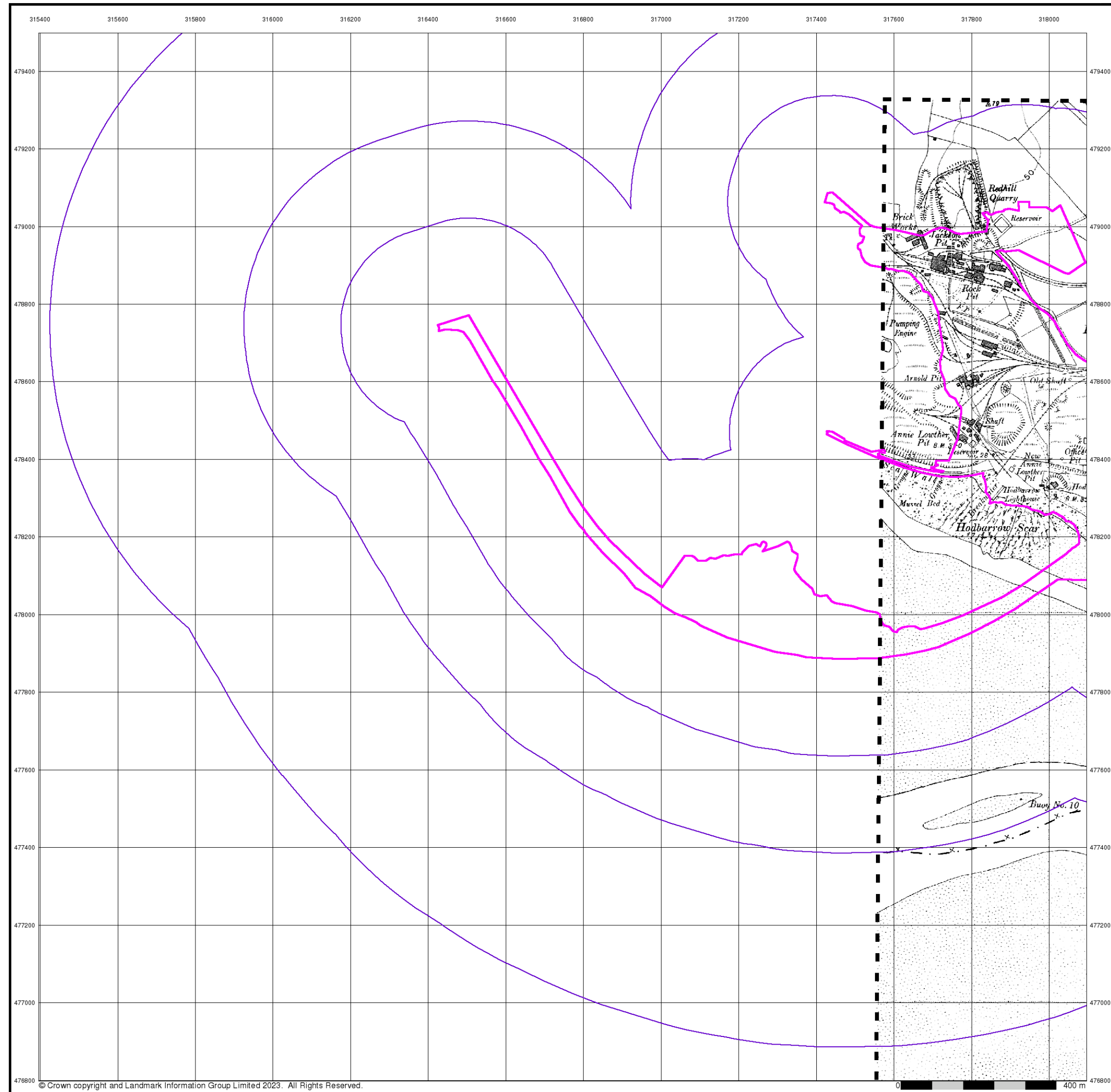
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National Grid Reference: 316920, 478320
Slice: A
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Search Buffer (m): 1000

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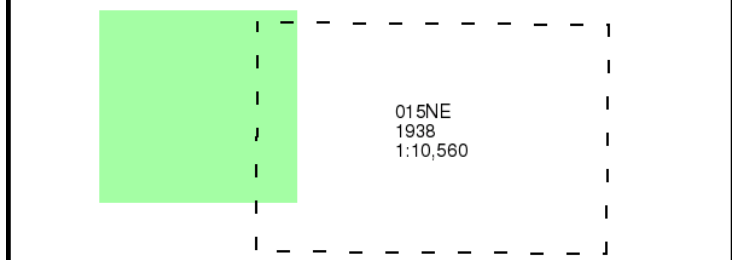
Lancashire And Furness

Published 1938

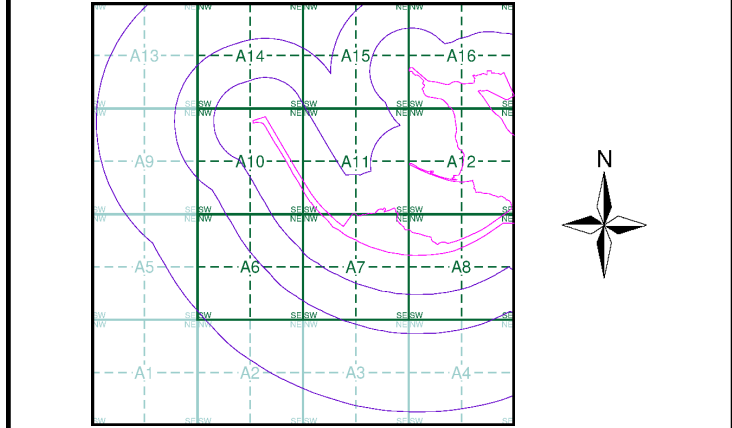
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details	
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Customer Ref:	No. 4229
National Grid Reference:	316920, 478320
Slice:	A
Site Area (Ha):	57.66
Search Buffer (m):	1000

Site Details
The Gin Mill, Steel Green, MILLOM, LA18 4LG



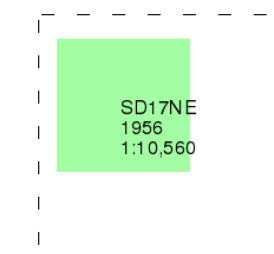
Ordnance Survey Plan

Published 1956

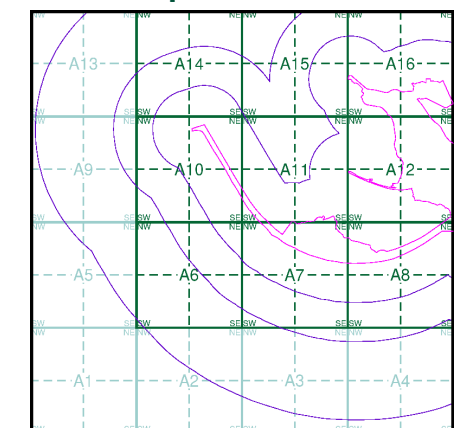
Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

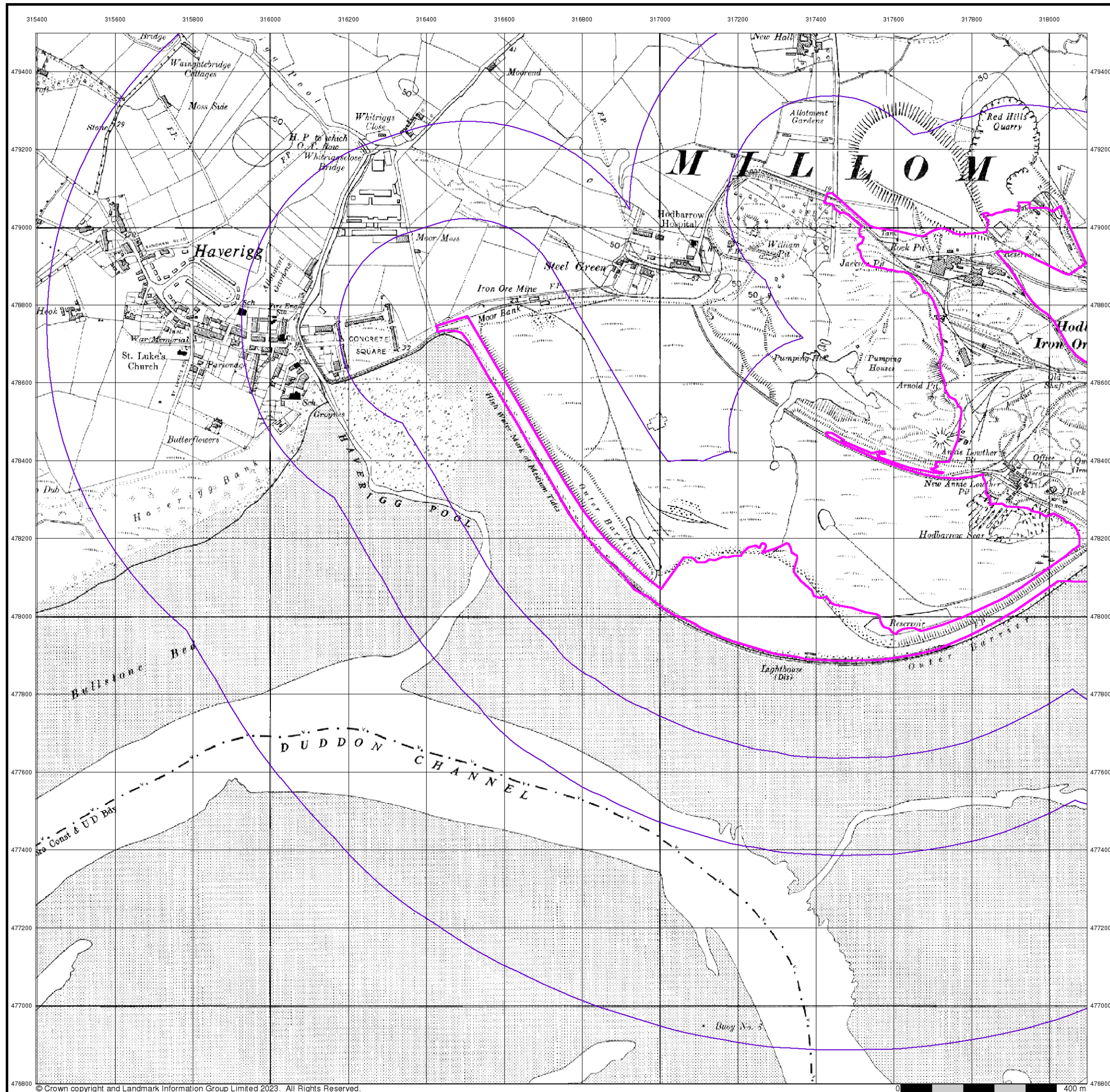
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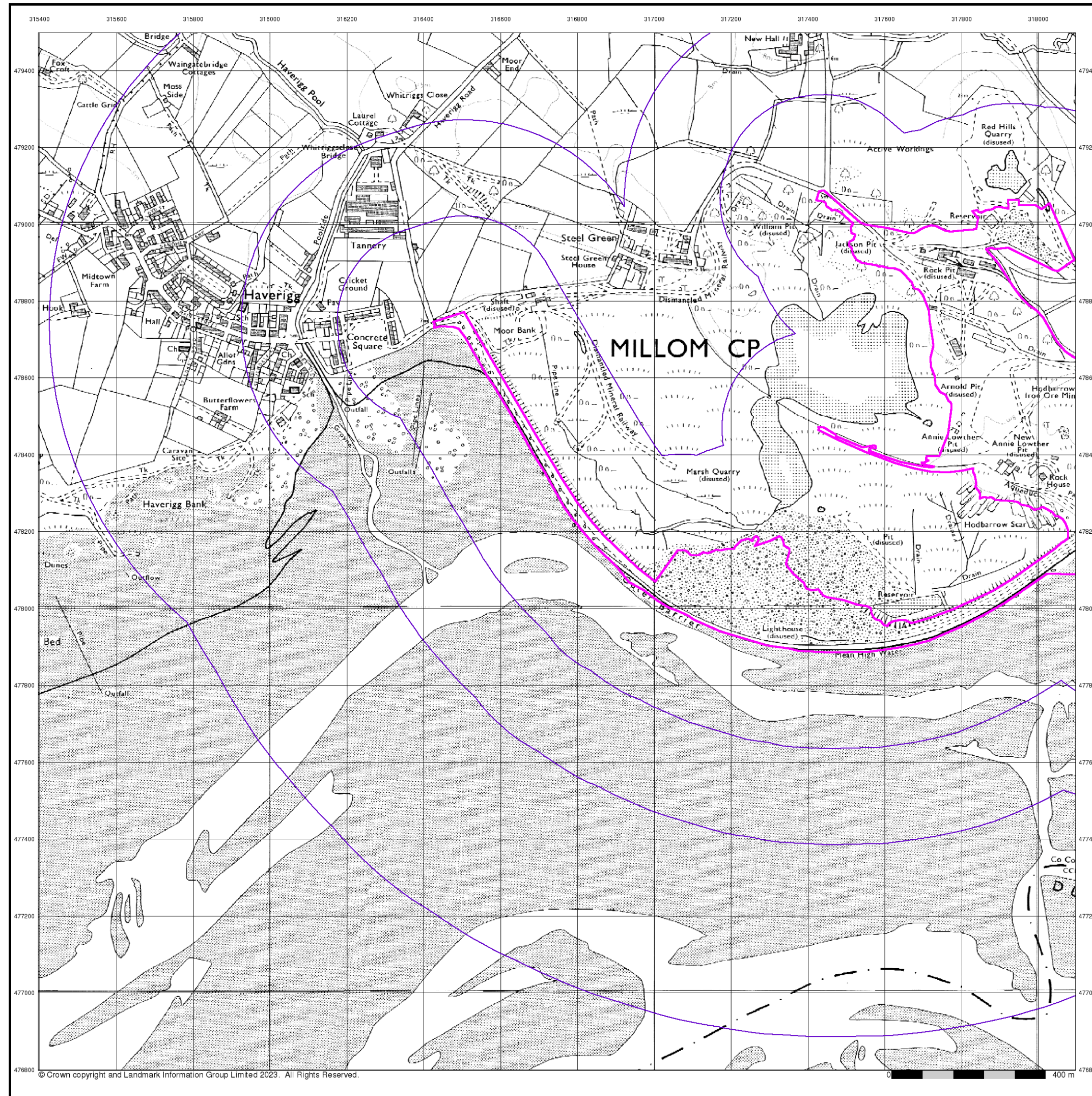
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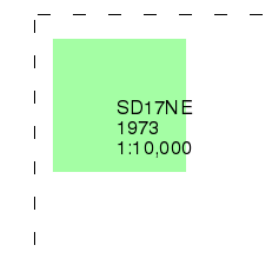
Ordnance Survey Plan

Published 1973

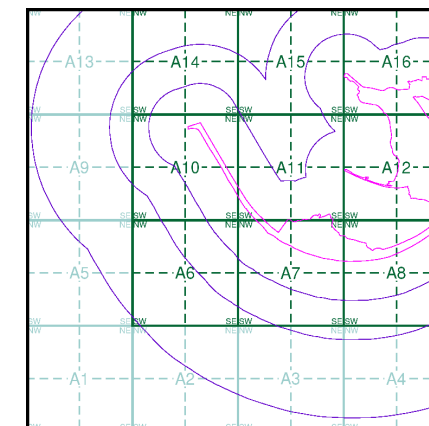
Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

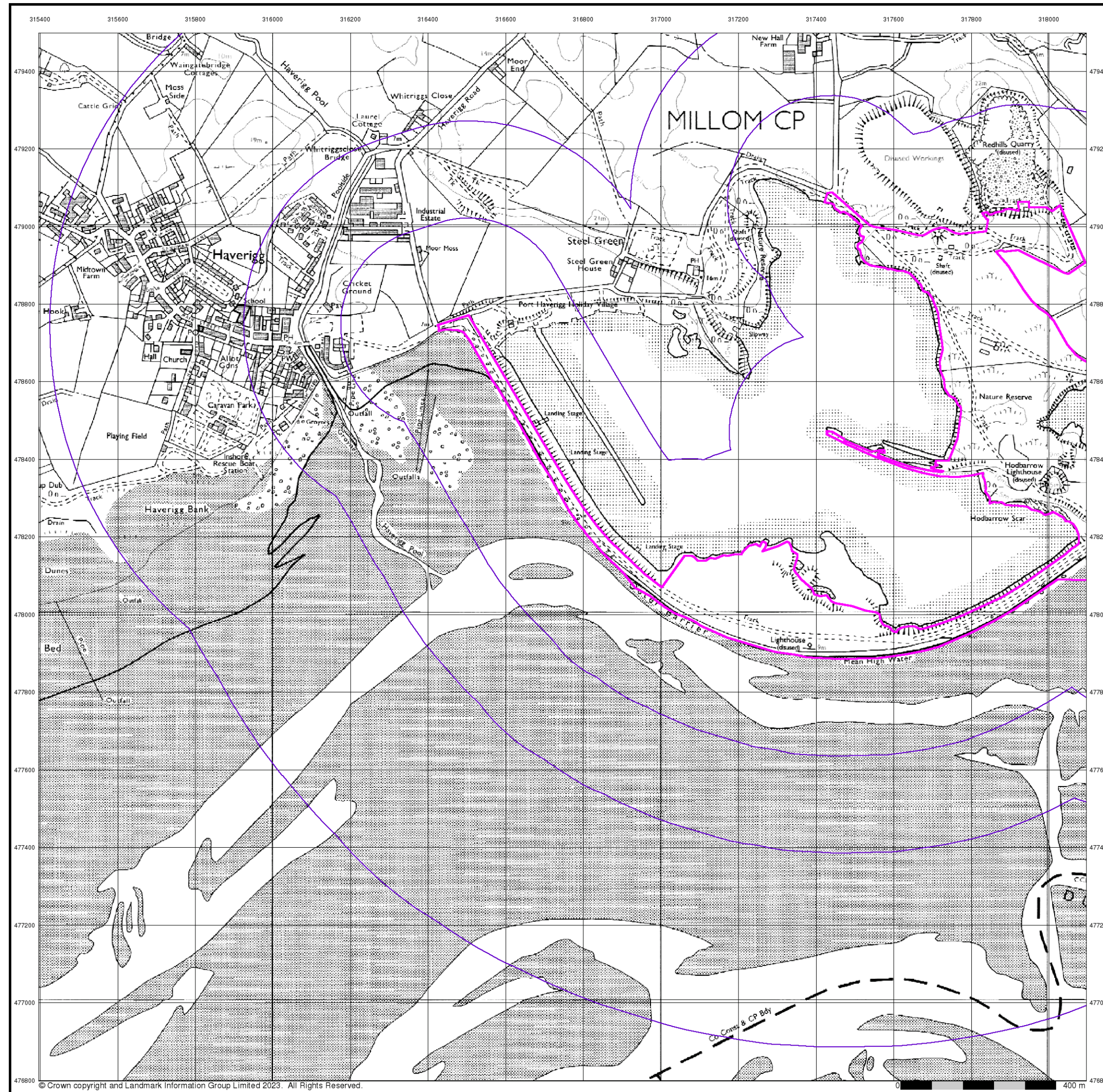
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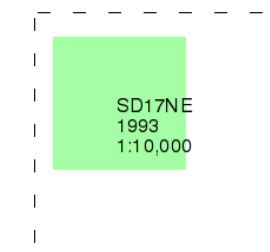
Ordnance Survey Plan

Published 1993

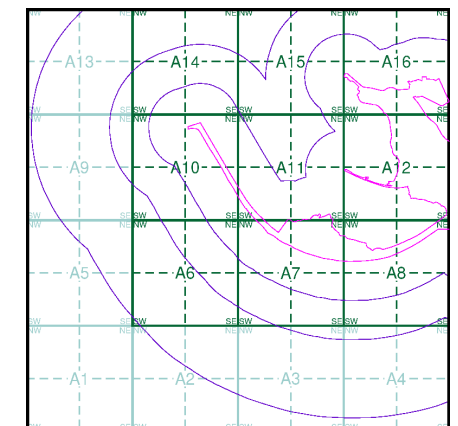
Source map scale - 1:10,000

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Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

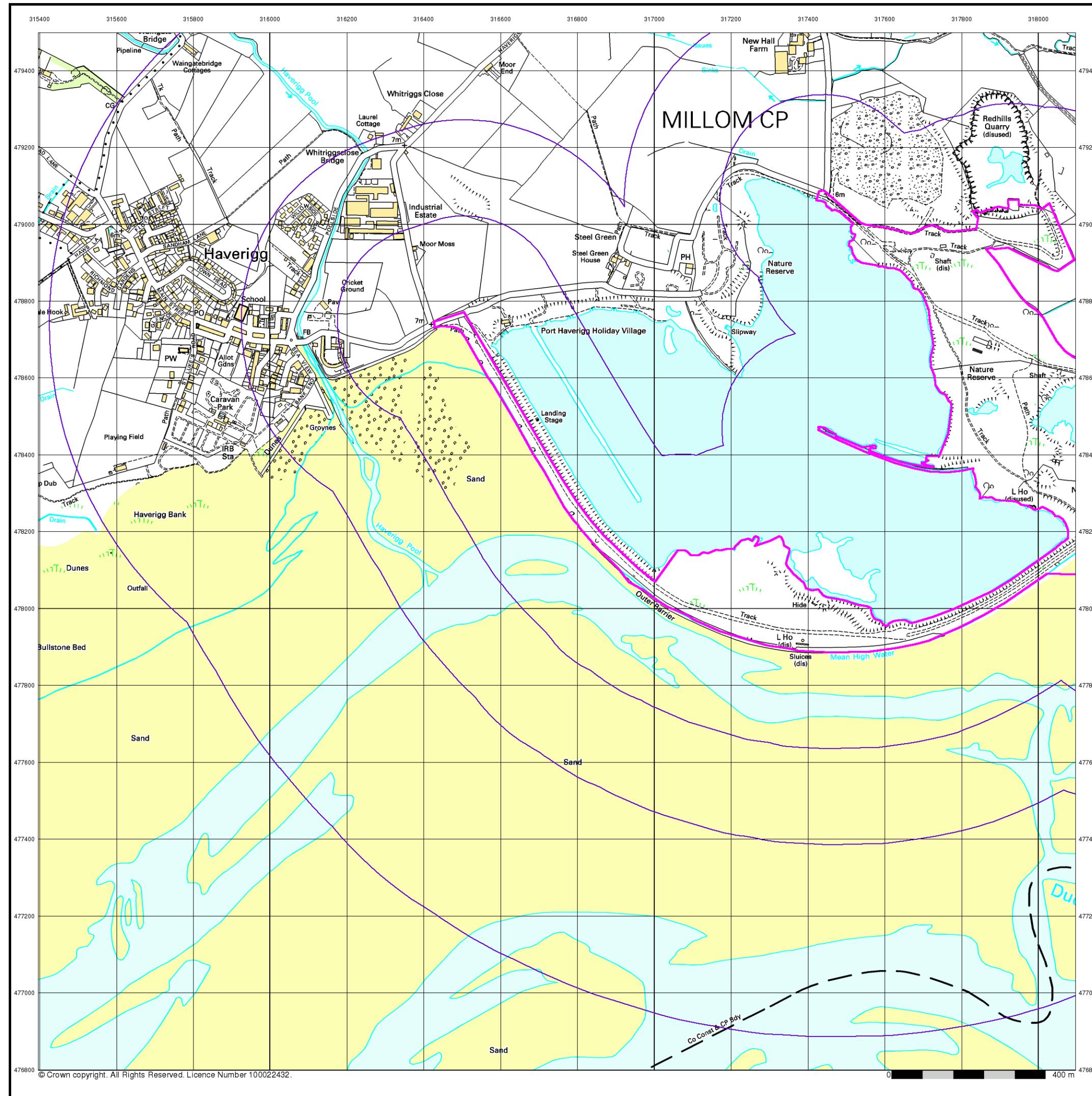
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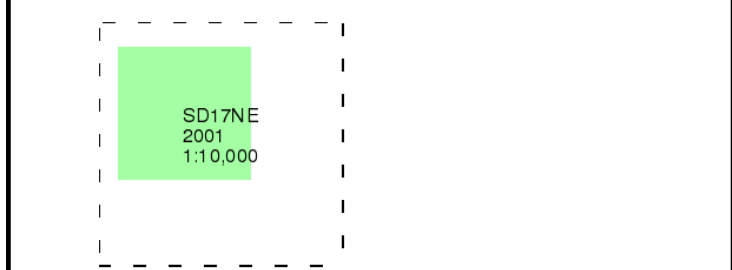
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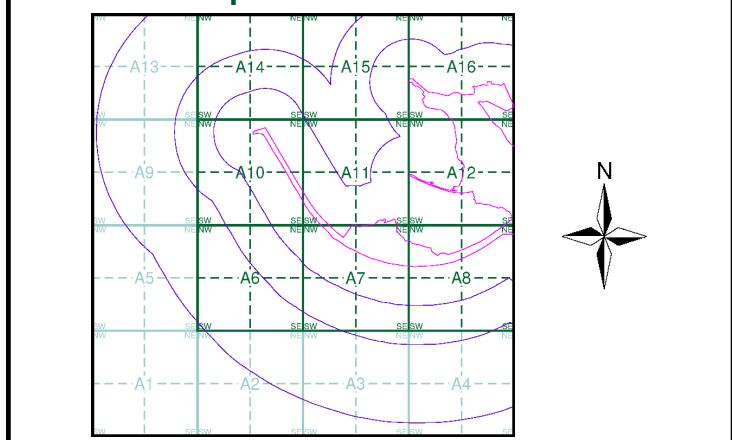
10k Raster Mapping
Published 2001
Source map scale - 1:10,000

The historical maps shown were produced from the Ordnance Survey's 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks and paths. Road names are also included together with the relevant road number and classification. Boundary information depiction includes county, unitary authority, district, civil parish and constituency.

Map Name(s) and Date(s)



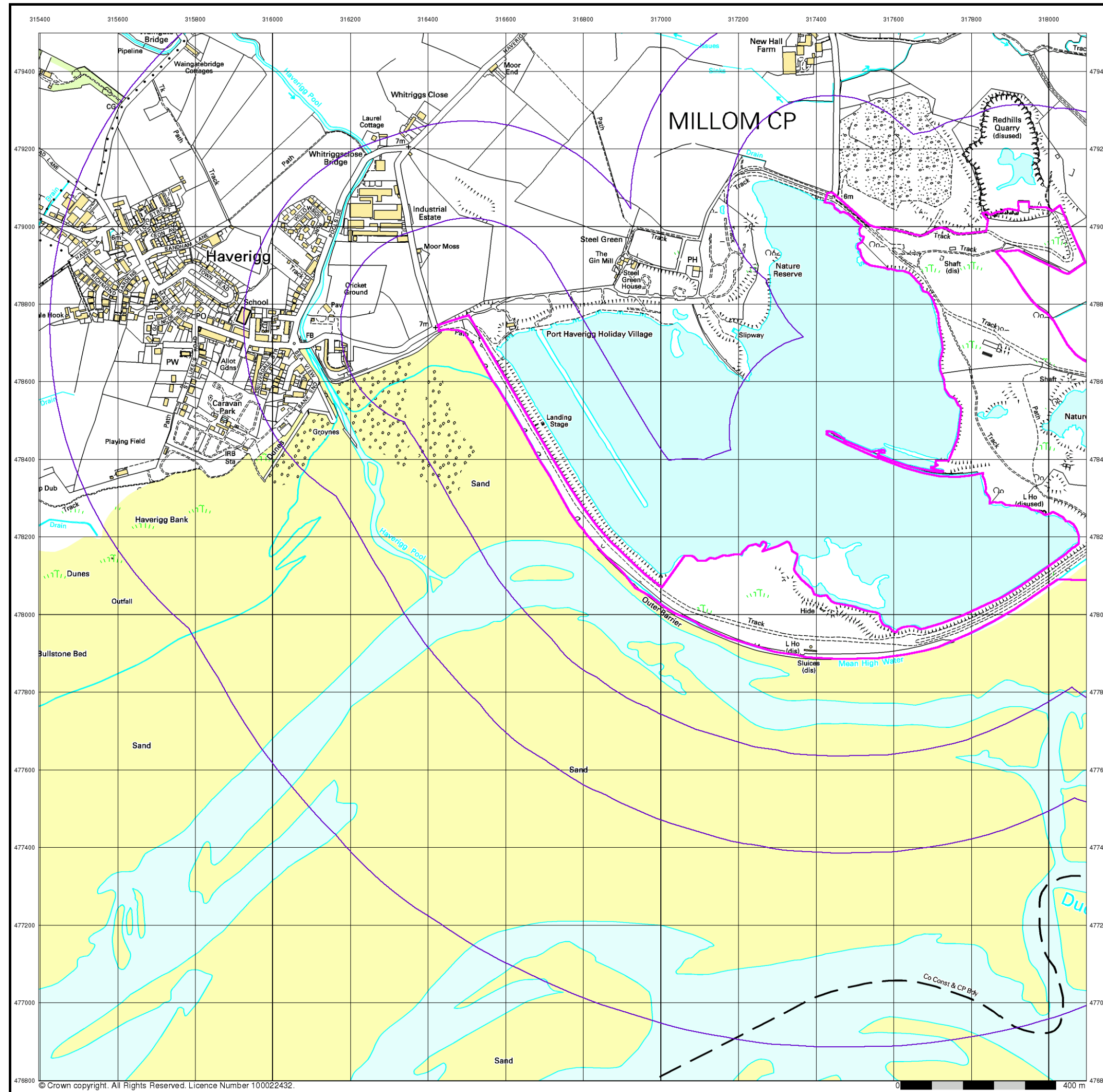
Historical Map - Slice A



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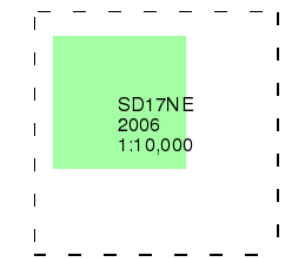
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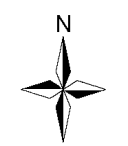
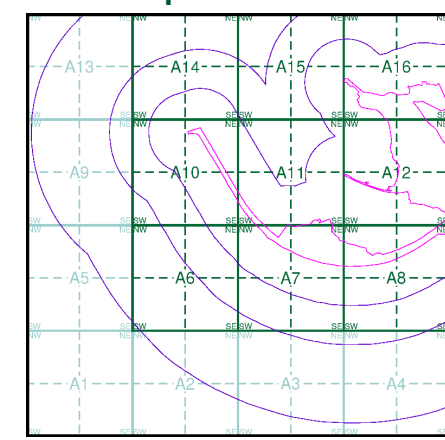
10k Raster Mapping
Published 2006
Source map scale - 1:10,000

The historical maps shown were produced from the Ordnance Survey's 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks and paths. Road names are also included together with the relevant road number and classification. Boundary information depiction includes county, unitary authority, district, civil parish and constituency.

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

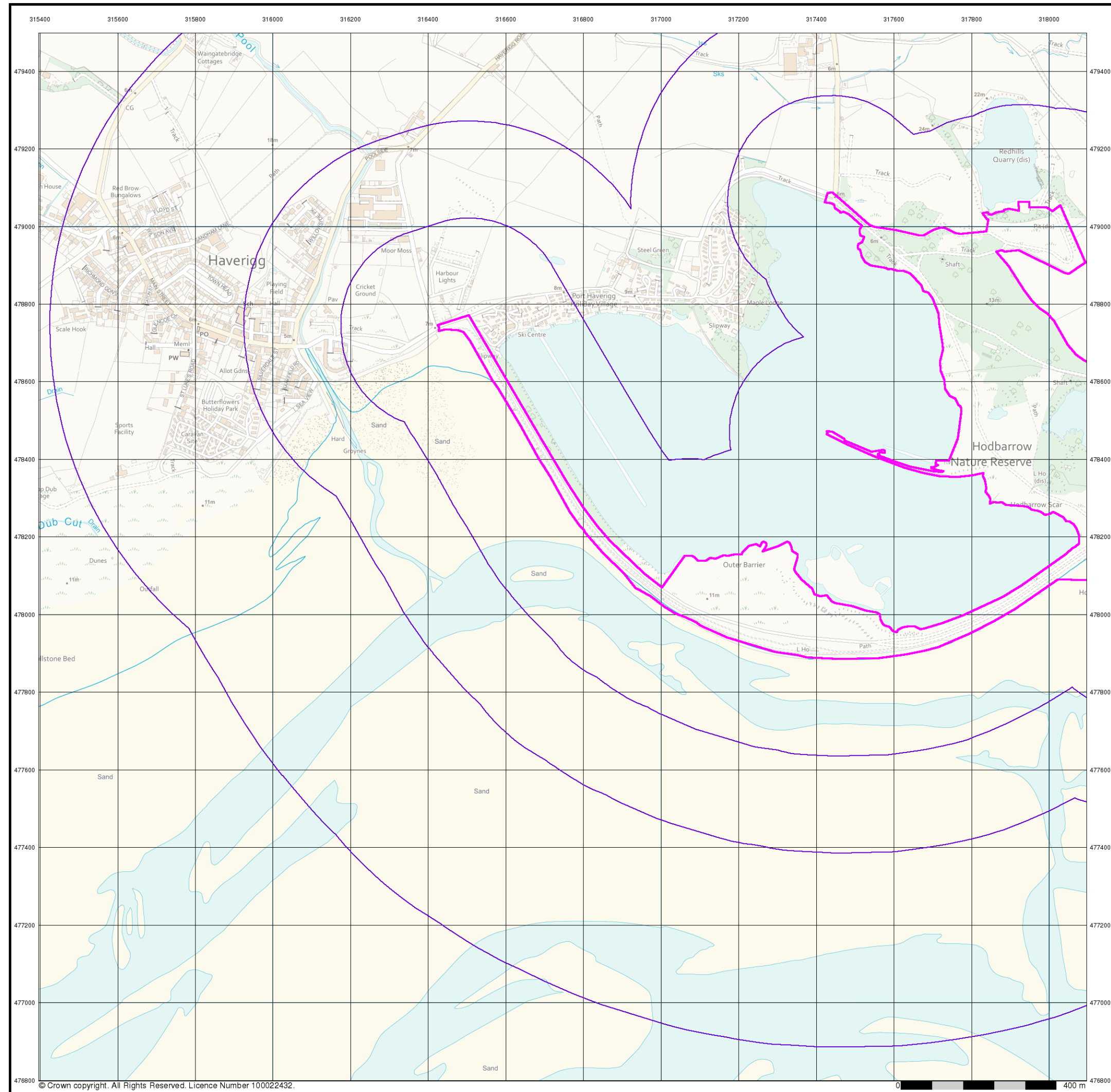
Order Number: 307697430_1_1
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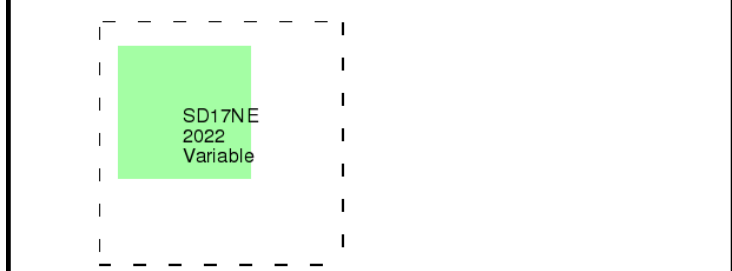
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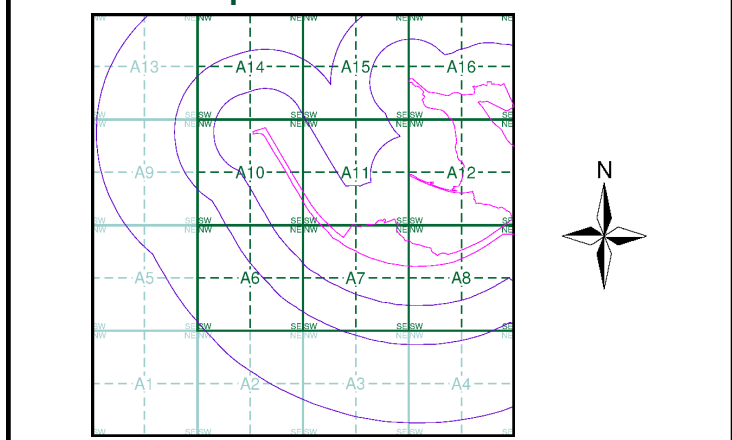
VectorMap Local
Published 2022
Source map scale - 1:10,000

VectorMap Local (Raster) is Ordnance Survey's highest detailed 'backdrop' mapping product. These maps are produced from OS's VectorMap Local, a simple vector dataset at a nominal scale of 1:10,000, covering the whole of Great Britain, that has been designed for creating graphical mapping. OS VectorMap Local is derived from large-scale information surveyed at 1:1250 scale (covering major towns and cities), 1:2500 scale (smaller towns, villages and developed rural areas), and 1:10 000 scale (mountain, moorland and river estuary areas).

Map Name(s) and Date(s)



Historical Map - Slice A



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Historical Mapping Legends

Ordnance Survey County Series 1:10,560

	Gravel Pit		Sand Pit		Other Pits
	Quarry		Shingle		Orchard
	Osiers		Reeds		Marsh
	Mixed Wood		Deciduous		Brushwood
	Fir		Furze		Rough Pasture
	Arrow denotes flow of water		Trigonometrical Station		
	Site of Antiquities		Bench Mark		
	Pump, Guide Post, Signal Post		Well, Spring, Boundary Post		
	285 Surface Level				
	Sketched Contour		Instrumental Contour		
	Main Roads		Minor Roads		
	Sunken Road		Raised Road		
	Road over Railway		Railway over River		
	Railway over Road		Level Crossing		
	Road over River or Canal		Road over Stream		
	Road over Stream				
	County Boundary (Geographical)				
	County & Civil Parish Boundary				
	Administrative County & Civil Parish Boundary				
	County Borough Boundary (England)				
	County Burgh Boundary (Scotland)				
	Rural District Boundary				
	Civil Parish Boundary				

Ordnance Survey Plan 1:10,000

	Chalk Pit, Clay Pit or Quarry		Gravel Pit
	Sand Pit		Disused Pit or Quarry
	Refuse or Slag Heap		Lake, Loch or Pond
	Dunes		Boulders
	Coniferous Trees		Non-Coniferous Trees
	Orchard		Scrub
	Bracken		Heath
	Marsh		Reeds
	Building		Glasshouse
	Sloping Masonry		Pylon
	Cutting		Embankment
	Road Under		Road Over
	Level Crossing		Foot Bridge
	Standard Gauge Multiple Track		Standard Gauge Single Track
	Siding, Tramway or Mineral Line		Narrow Gauge
	Geographical County		Administrative County, County Borough or County of City
	Municipal Borough, Urban or Rural District, Burgh or District Council		Borough, Burgh or County Constituency
	Civil Parish		
	BP, BS Boundary Post or Stone		Police Station
	Church		Post Office
	Club House		Public Convenience
	Fire Engine Station		Public House
	Foot Bridge		Signal Box
	Fountain		Spring
	Guide Post		Telephone Call Box
	Mile Post		Telephone Call Post
	Mile Stone		Well

1:10,000 Raster Mapping

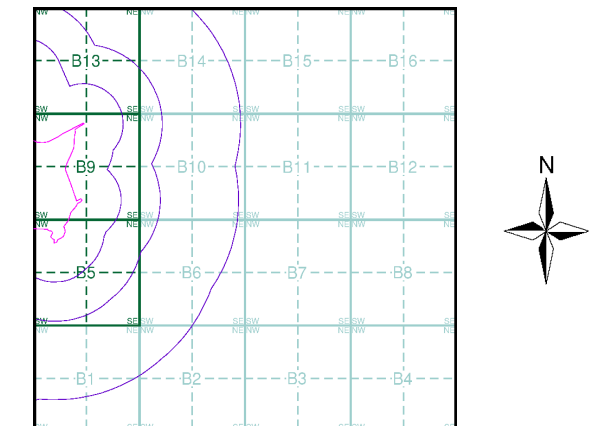
	Gravel Pit		Refuse tip or slag heap
	Rock		Rock (scattered)
	Boulders		Boulders (scattered)
	Shingle		Mud
	Sand		Sand Pit
	Slopes		Top of cliff
	General detail		Underground detail
	Overhead detail		Narrow gauge railway
	Multi-track railway		Single track railway
	County boundary (England only)		Civil, parish or community boundary
	District, Unitary, Metropolitan, London Borough boundary		Constituency boundary
	Area of wooded vegetation		Non-coniferous trees
	Non-coniferous trees (scattered)		Coniferous trees
	Coniferous trees (scattered)		Positioned tree
	Orchard		Coppice or Osiers
	Rough Grassland		Heath
	Scrub		Marsh, Salt Marsh or Reeds
	Water feature		Flow arrows
	Mean high water (springs)		Mean low water (springs)
	Telephone line (where shown)		Electricity transmission line (with poles)
	Bench mark (where shown)		Triangulation station
	Point feature (e.g. Guide Post or Mile Stone)		Pylon, flare stack or lighting tower
	Site of (antiquity)		Glasshouse
	General Building		Important Building



Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Lancashire And Furness	1:10,560	1850	2
Cumberland	1:10,560	1867	3
Lancashire And Furness	1:10,560	1892	4
Cumberland	1:10,560	1900	5
Lancashire And Furness	1:10,560	1919	6
Cumberland	1:10,560	1927	8
Lancashire And Furness	1:10,560	1938	9
Ordnance Survey Plan	1:10,000	1956	10
Ordnance Survey Plan	1:10,000	1973 - 1974	11
Ordnance Survey Plan	1:10,000	1993	12
10K Raster Mapping	1:10,000	2001	13
10K Raster Mapping	1:10,000	2006	14
VectorMap Local	1:10,000	2022	15

Historical Map - Slice B



Order Details

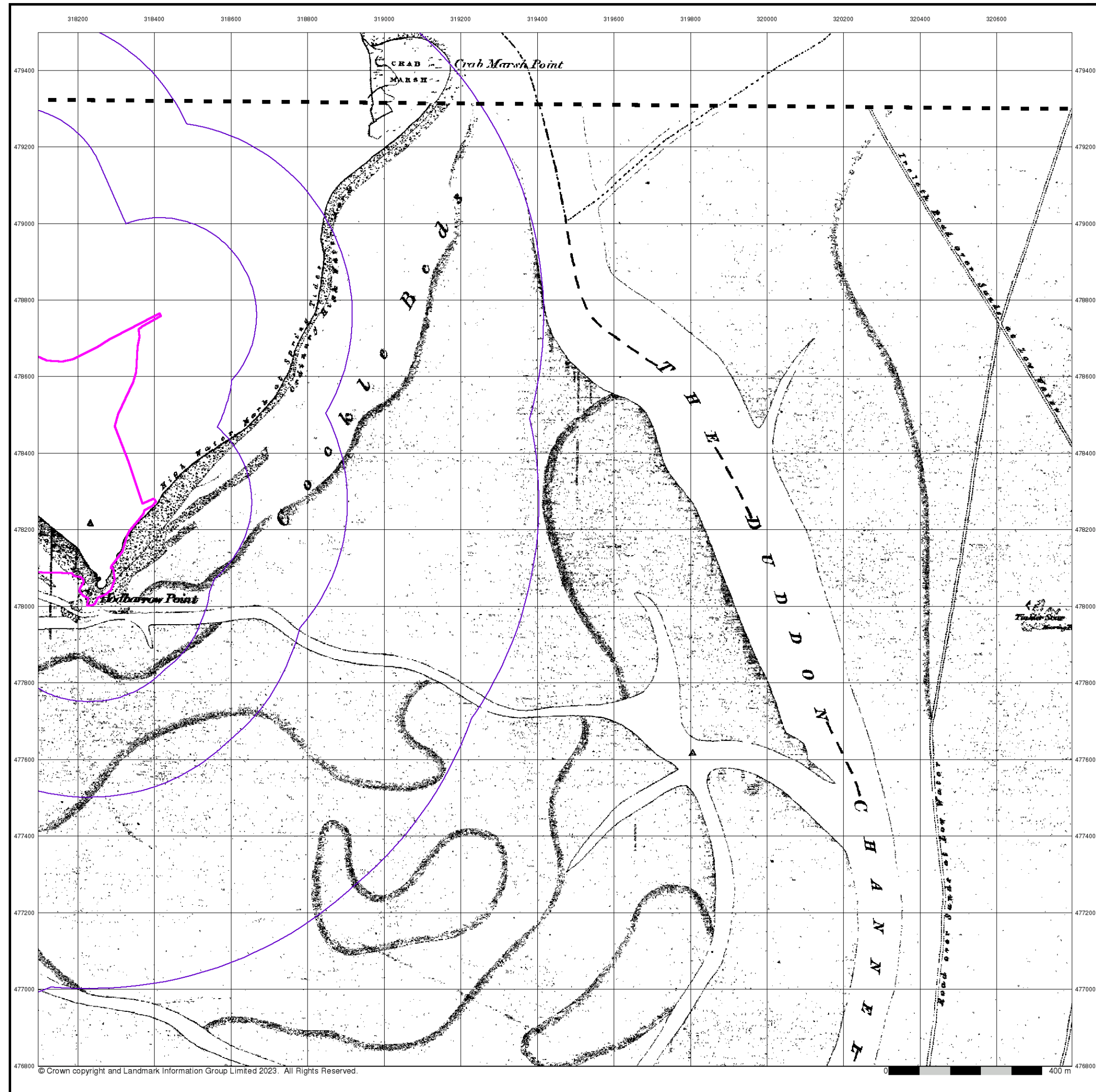
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National Grid Reference: 318690, 478340
Slice: B
Site Area (Ha): 57.66
Search Buffer (m): 1000

Site Details

The Gin Mill, Steel Green, MILLOM, LA18 4LG

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Lancashire And Furness

Published 1850

Source map scale - 1:10,560

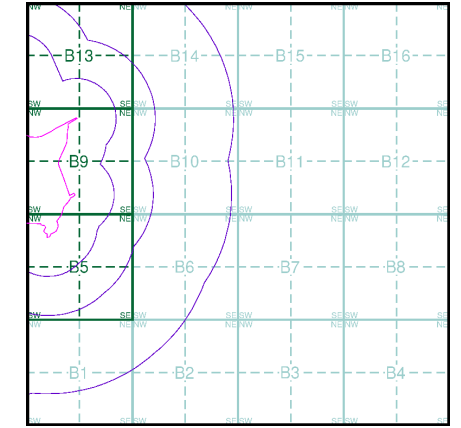
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

01000
1850
1:10,560

01500
1850
1:10,560

Historical Map - Slice B



Order Details

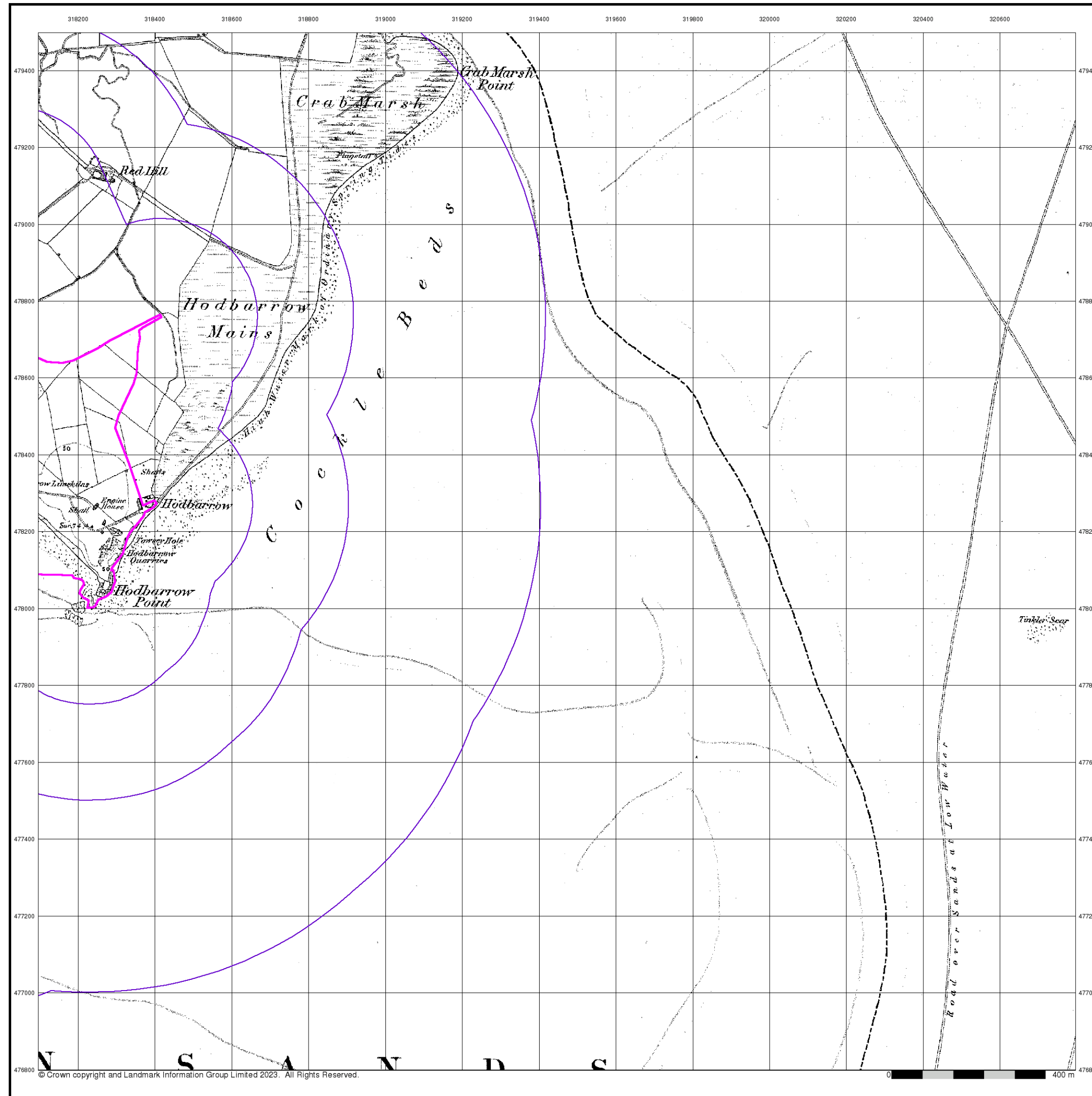
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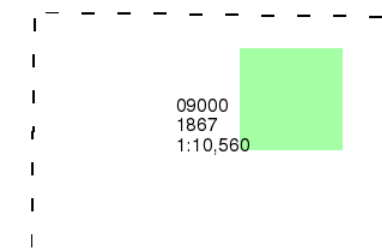
Cumberland

Published 1867

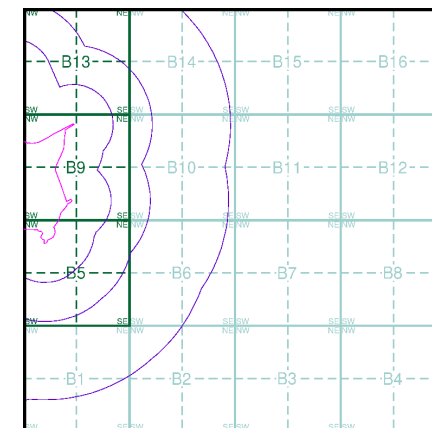
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Map Name(s) and Date(s)



Historical Map - Slice B



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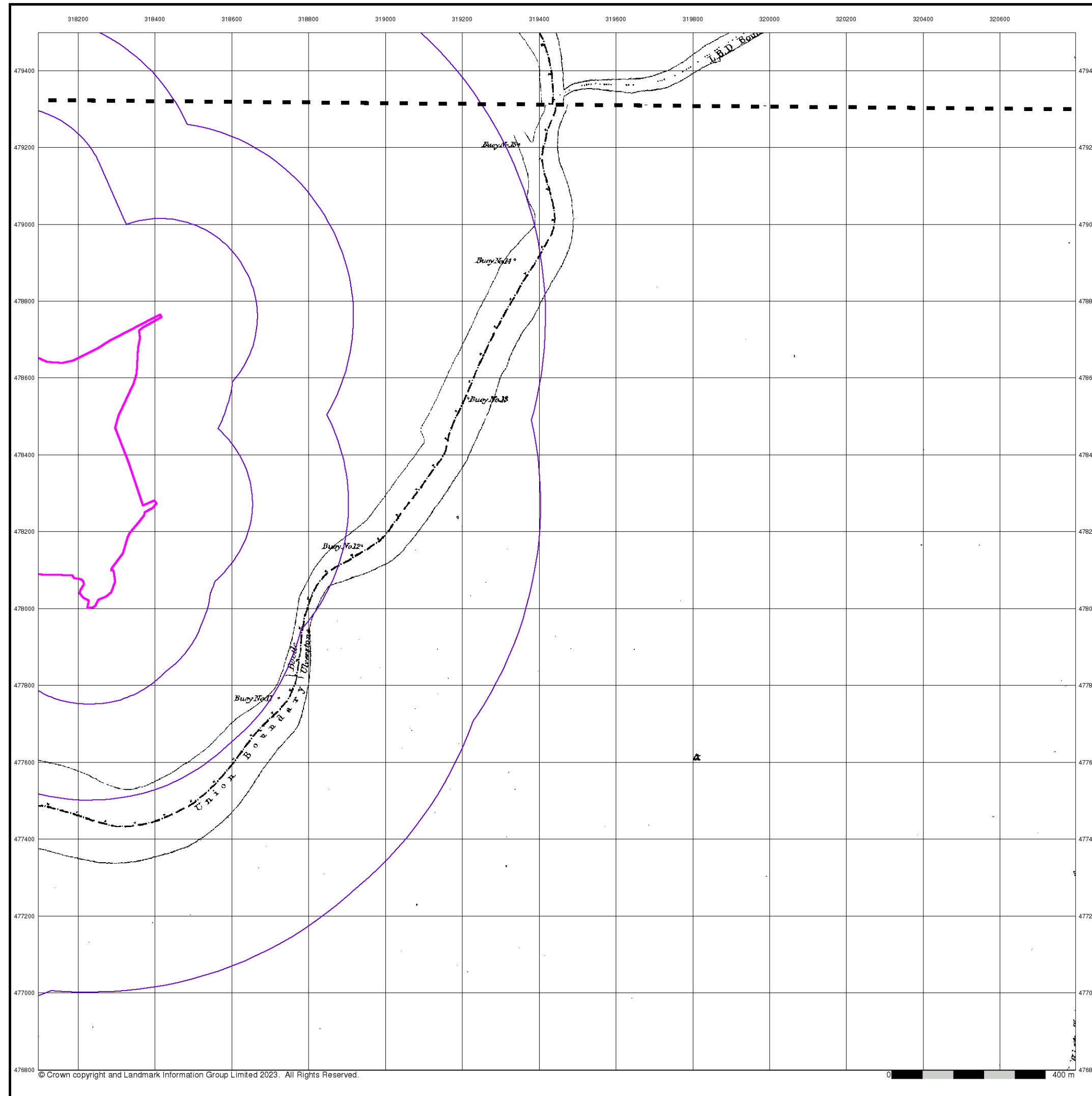
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Site Area (Ha): 57.66
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Lancashire And Furness

Published 1892

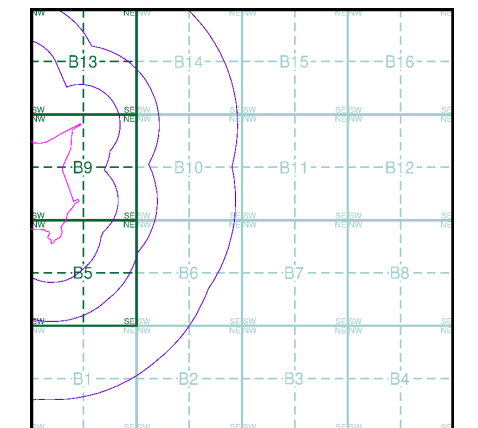
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Map Name(s) and Date(s)

01000
1892
1:10,560

Historical Map - Slice B



Order Details

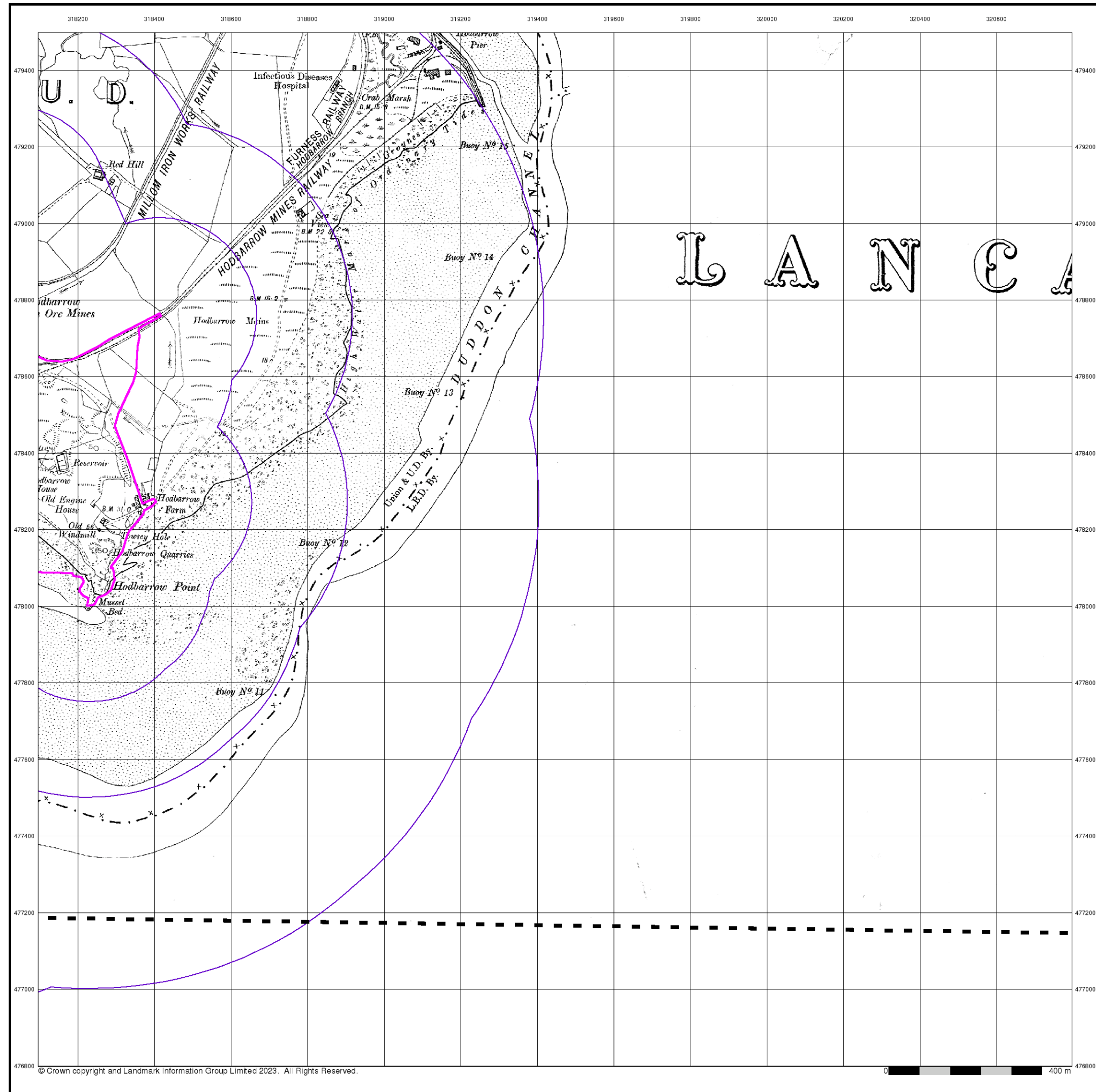
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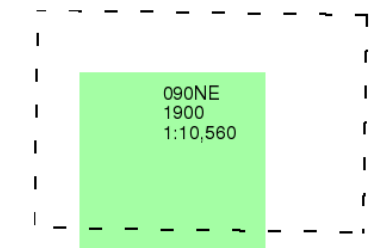
Cumberland

Published 1900

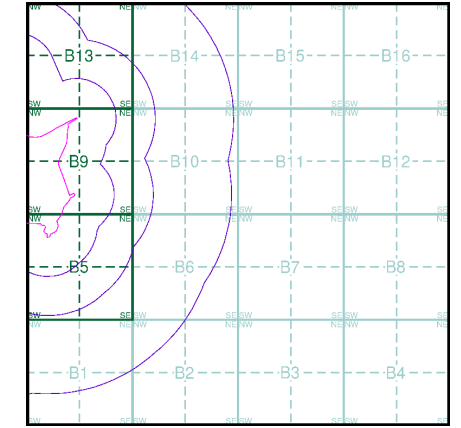
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Map Name(s) and Date(s)



Historical Map - Slice B



Order Details

Order Number: 307697430_1_1
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Lancashire And Furness

Published 1919

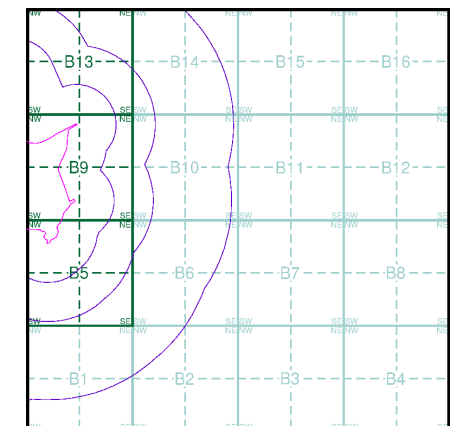
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Map Name(s) and Date(s)

010SE 1919 1:10,560
015NE 1919 1:10,560

Historical Map - Slice B



Order Details

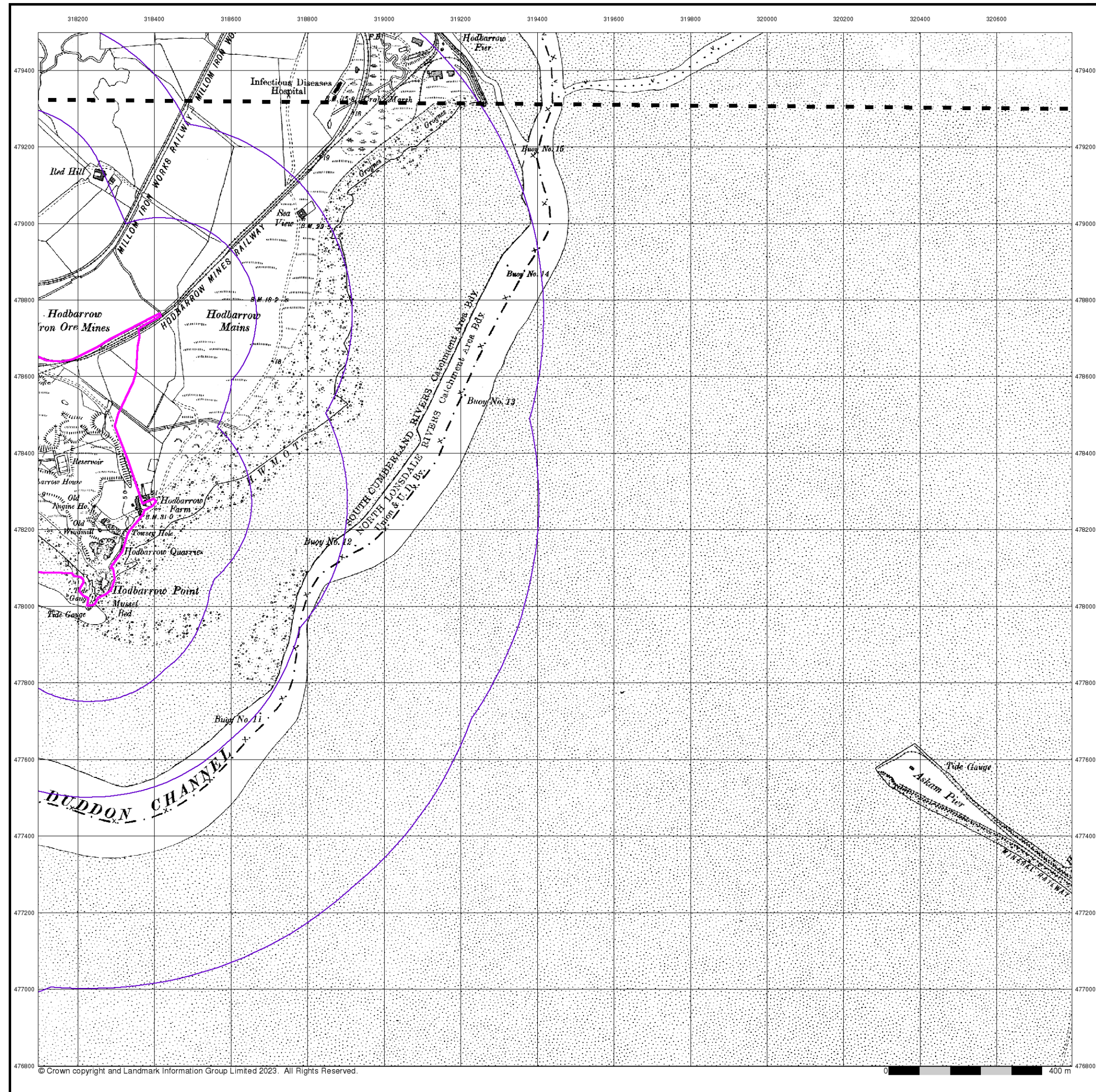
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National Grid Reference: 318690, 478340
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Site Area (Ha): 57.66
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Lancashire And Furness

Published 1919

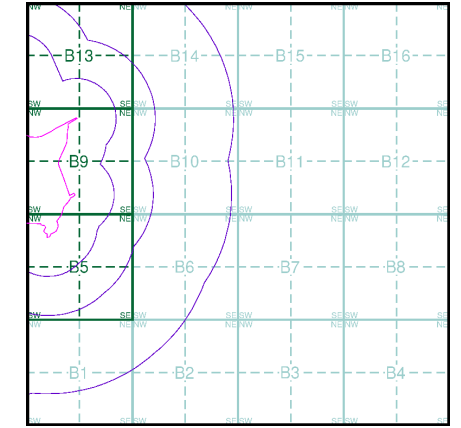
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Map Name(s) and Date(s)

010SE
1919
1:10,560
015NE
1919
1:10,560

Historical Map - Slice B



Order Details

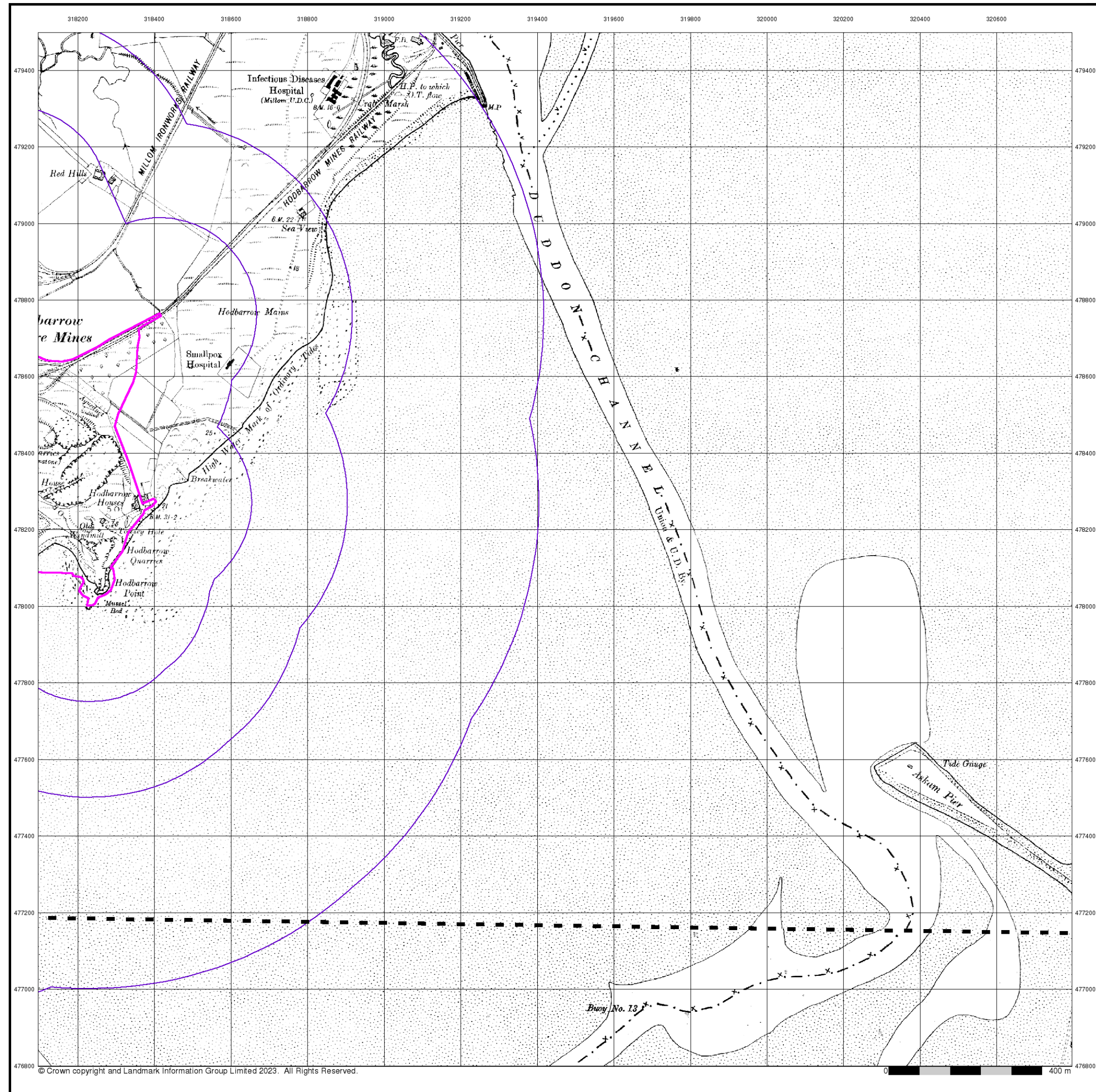
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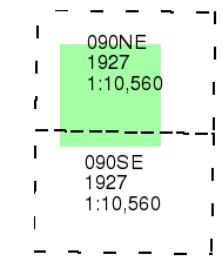
Cumberland

Published 1927

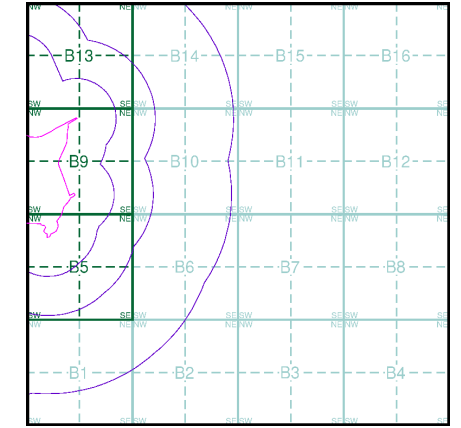
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Map Name(s) and Date(s)



Historical Map - Slice B



Order Details

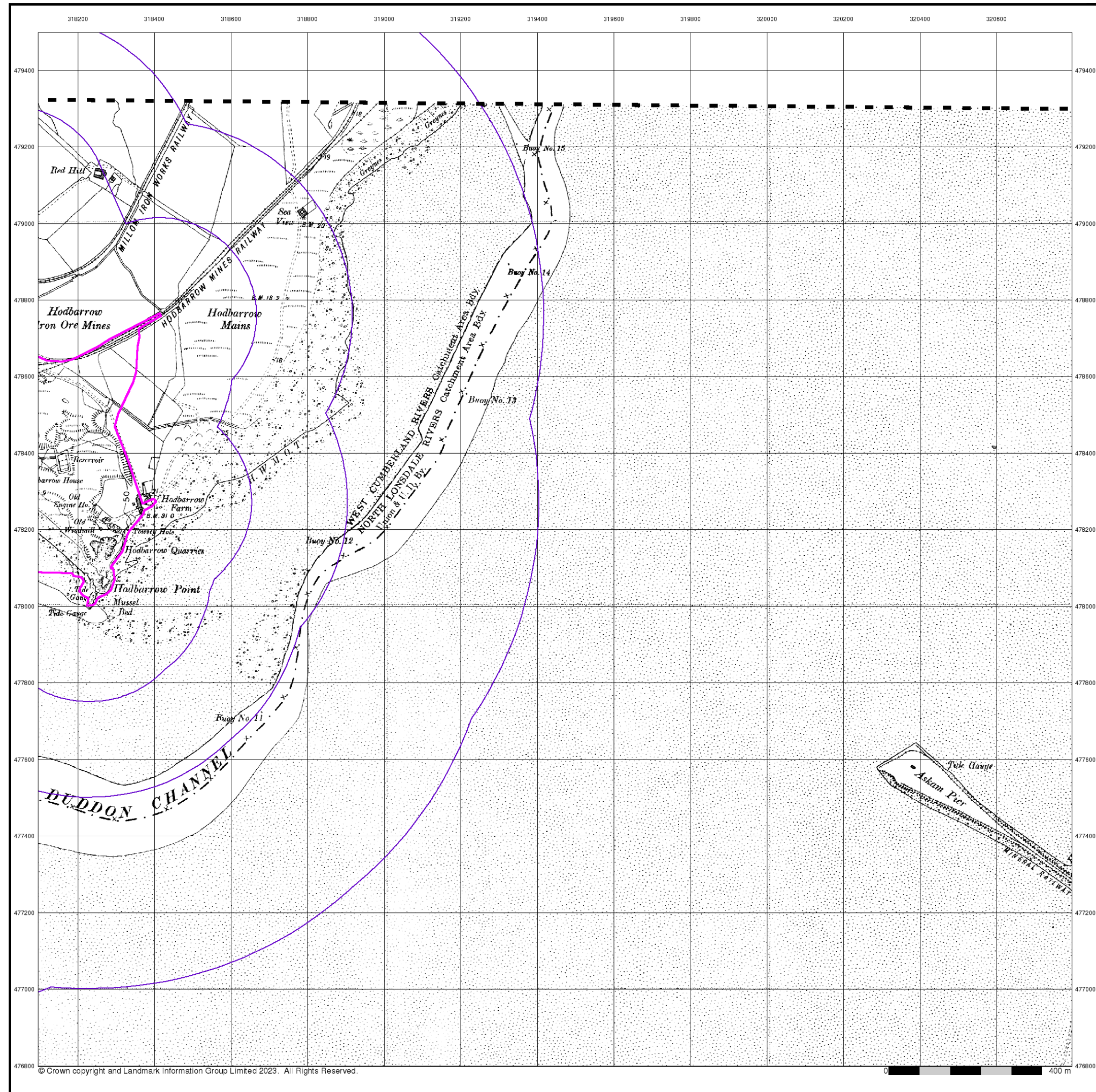
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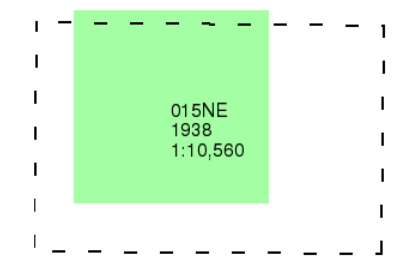
Lancashire And Furness

Published 1938

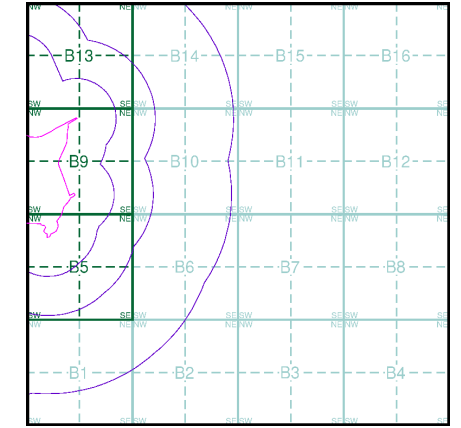
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Map Name(s) and Date(s)



Historical Map - Slice B



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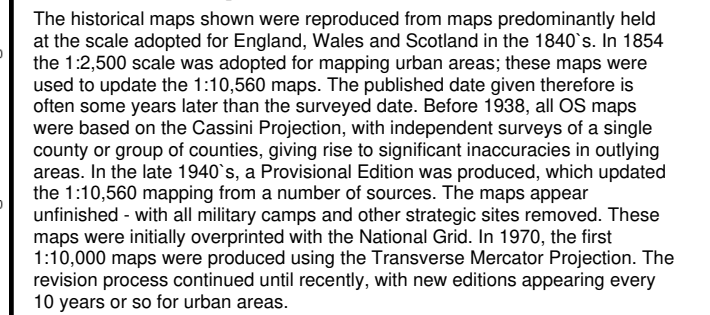
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Search Buffer (m): 1000

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SD17NE
1956
1:10,560

SD27NW
1956
1:10,560



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Customer Ref: No. 4229
National Grid Reference: 318690, 478340
Slice: B
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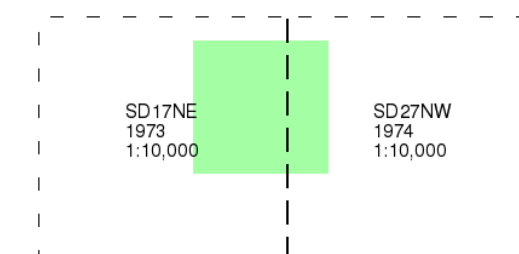
Ordnance Survey Plan

Published 1973 - 1974

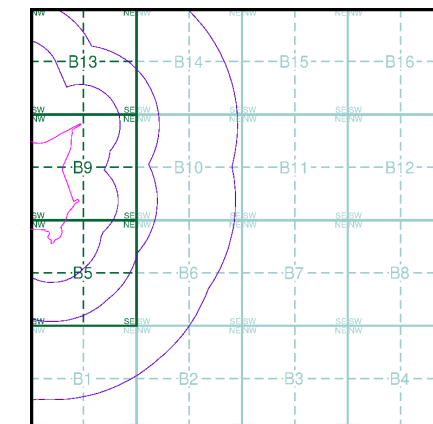
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Historical Map - Slice B



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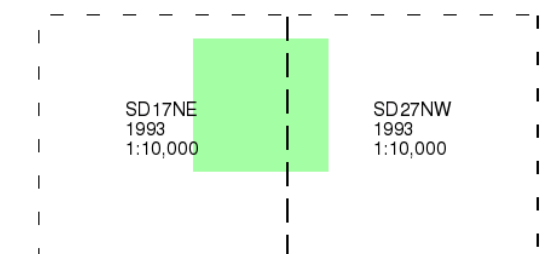
Ordnance Survey Plan

Published 1993

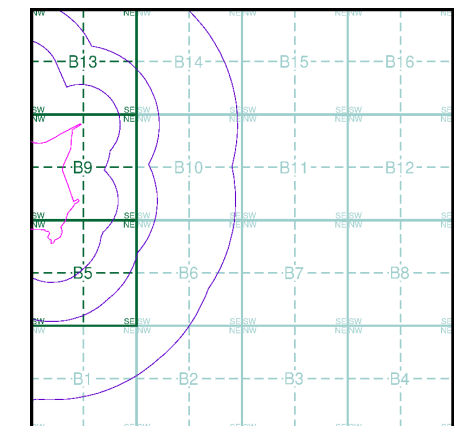
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Map Name(s) and Date(s)



Historical Map - Slice B



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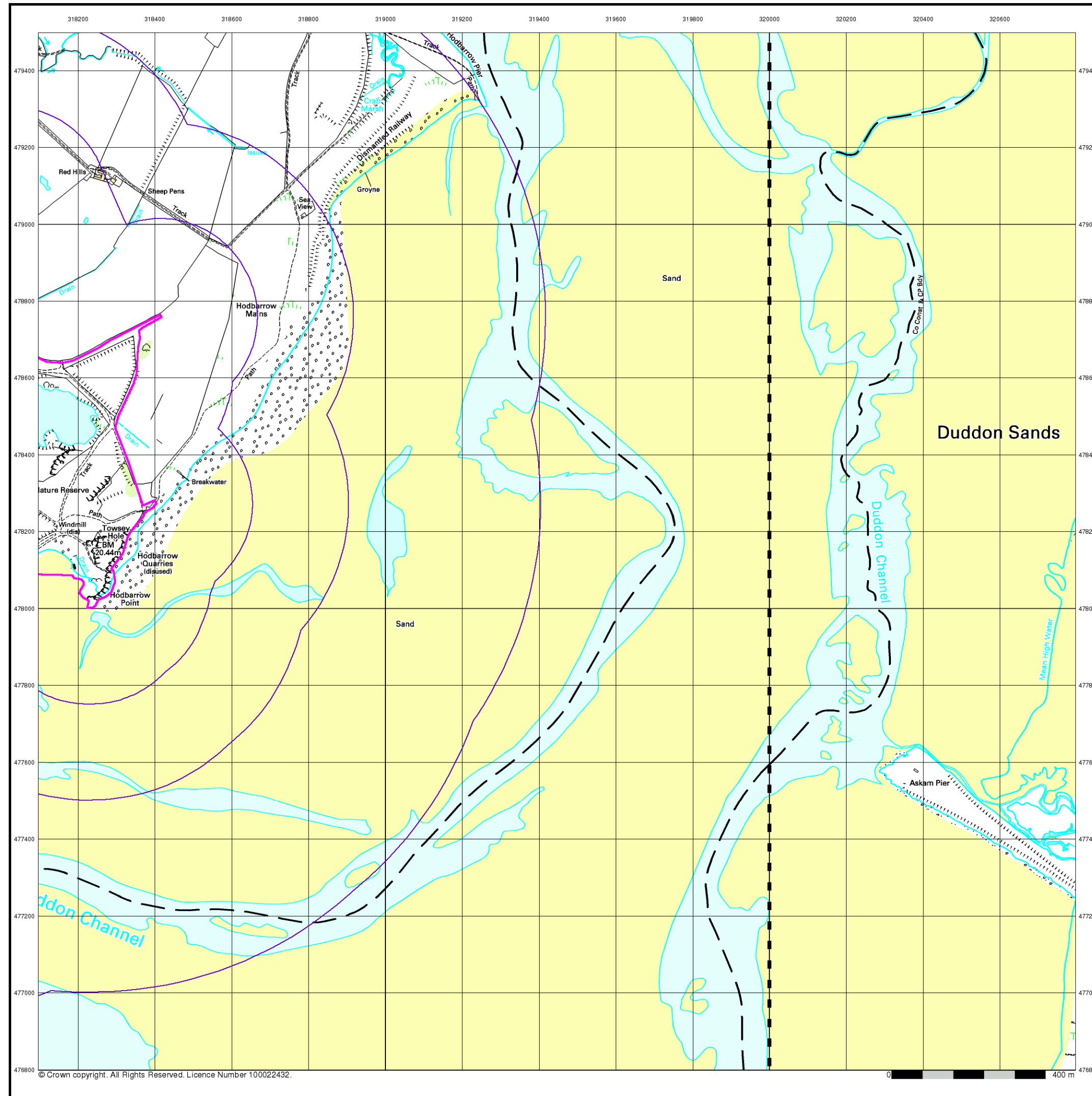
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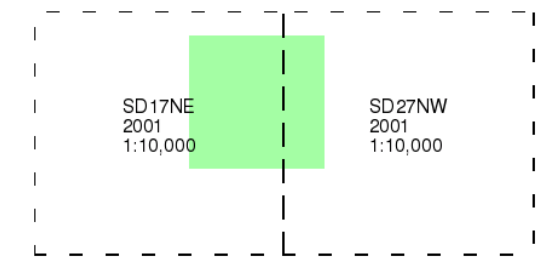
10k Raster Mapping

Published 2001

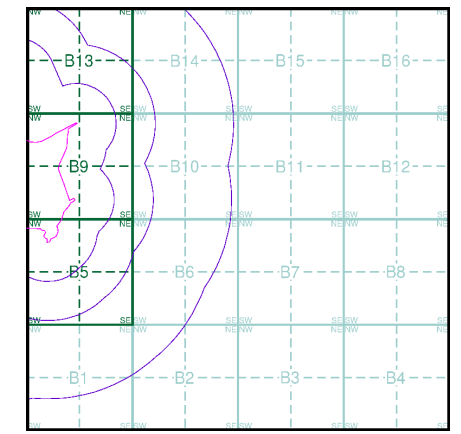
Source map scale - 1:10,000

The historical maps shown were produced from the Ordnance Survey's 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks and paths. Road names are also included together with the relevant road number and classification. Boundary information depiction includes county, unitary authority, district, civil parish and constituency.

Map Name(s) and Date(s)



Historical Map - Slice B



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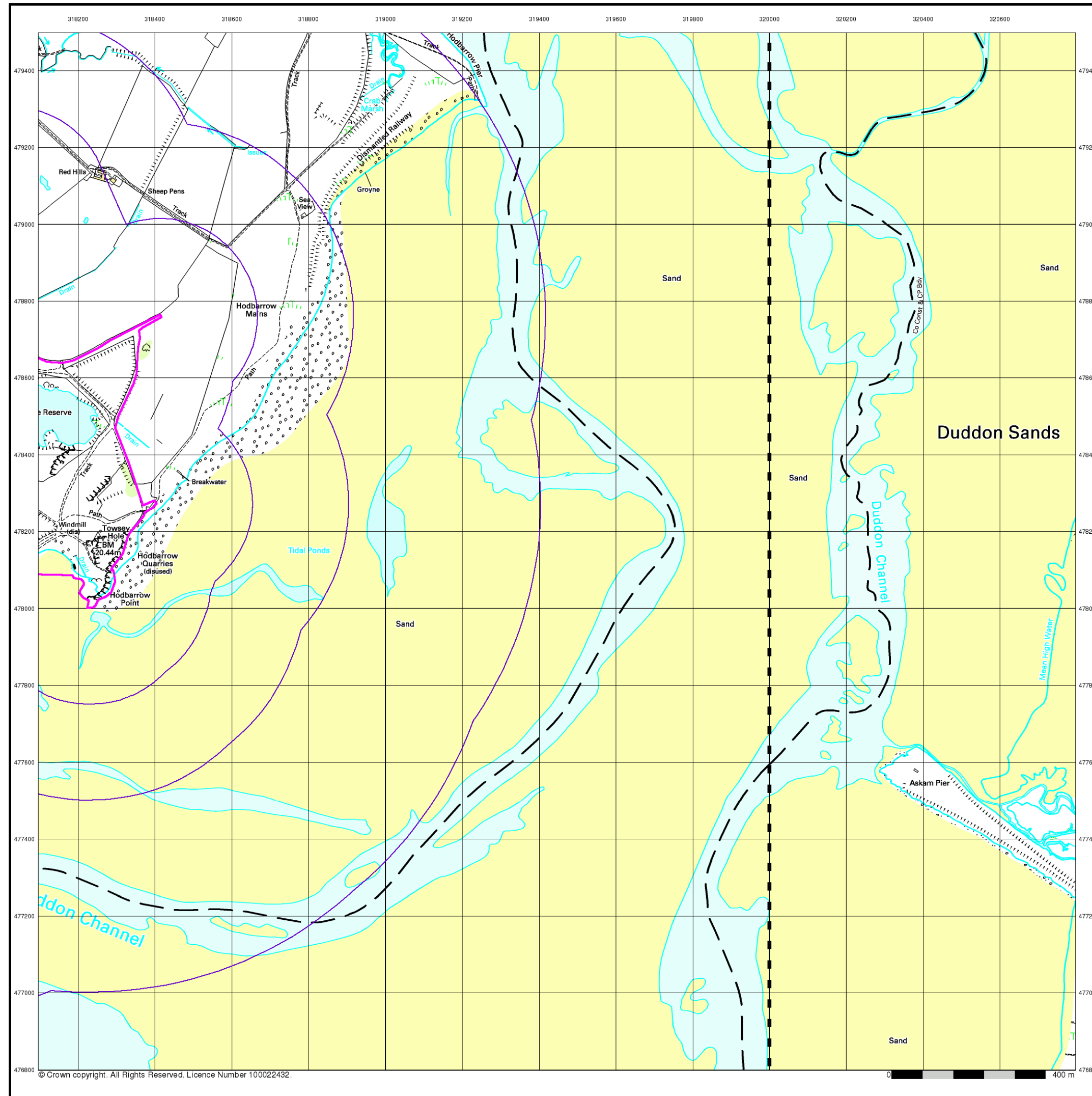
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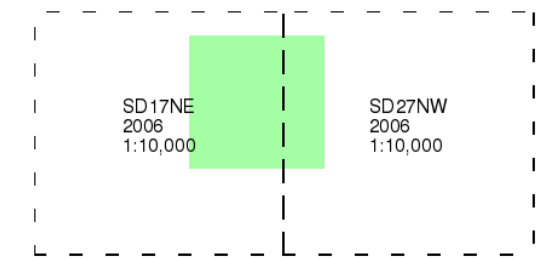
10k Raster Mapping

Published 2006

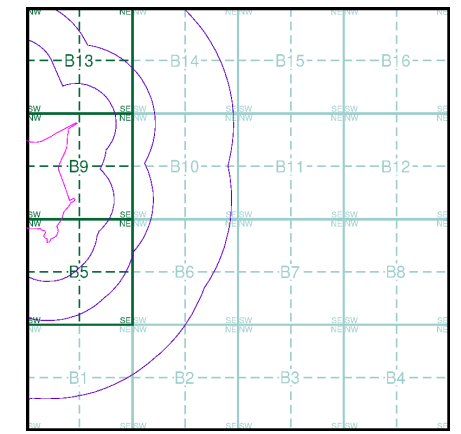
Source map scale - 1:10,000

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Map Name(s) and Date(s)



Historical Map - Slice B



Order Details

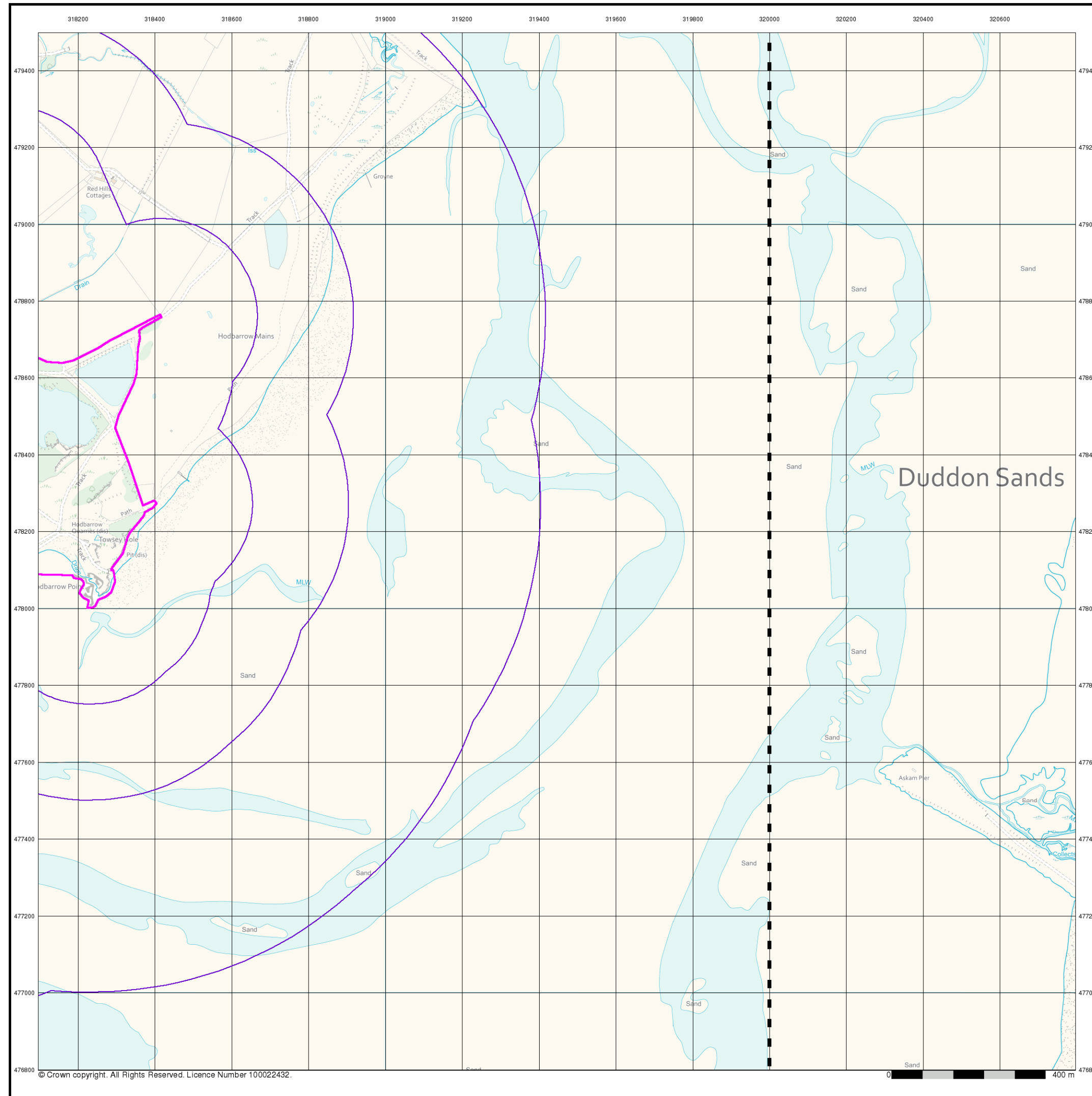
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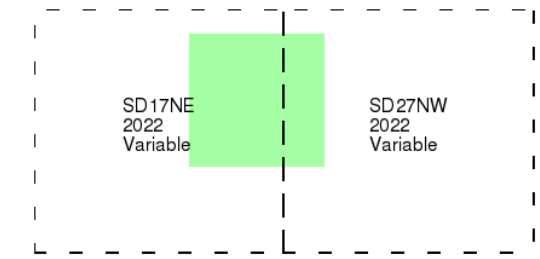
VectorMap Local

Published 2022

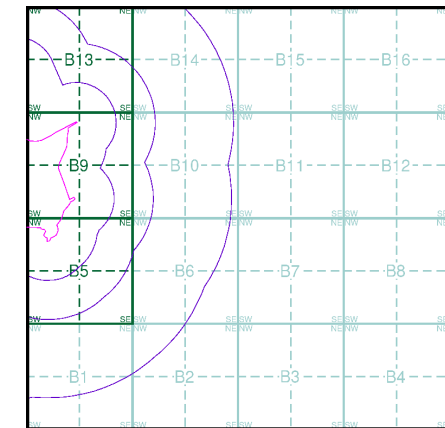
Source map scale - 1:10,000

VectorMap Local (Raster) is Ordnance Survey's highest detailed 'backdrop' mapping product. These maps are produced from OS's VectorMap Local, a simple vector dataset at a nominal scale of 1:10,000, covering the whole of Great Britain, that has been designed for creating graphical mapping. OS VectorMap Local is derived from large-scale information surveyed at 1:1250 scale (covering major towns and cities), 1:2500 scale (smaller towns, villages and developed rural areas), and 1:10 000 scale (mountain, moorland and river estuary areas).

Map Name(s) and Date(s)



Historical Map - Slice B



Order Details

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Appendix C – Qualitative Risk Assessment Rationale

The site-specific risk assessment, presented in this report, follows the principle of establishing whether there is a viable linkage between a contaminant source to a potential receptor, via an exposure pathway.

The risk assessment corresponds with the total site area and incorporates both descriptive (qualitative) and, where available, numerical (quantitative) lines of evidence.

Risk assessment is the process of collating known information on a hazard or set of hazards to estimate actual or potential risk to receptors. The receptor may be humans, a water resource, a sensitive local ecosystem, or future construction materials. Receptors can be connected to the source by one or several exposure pathways such as direct contact for example. Risks are managed by isolating the receptor or intercepting the exposure pathway or by isolating or removing the hazard.

Without the three essential components of a source, pathway, and receptor there can be no risk. Therefore, the presence of contaminant source on a site does not necessarily mean there is a risk.

The risk assessment considers the likelihood of a particular event taking place (accounting for the presence of the source and receptor and the viability of the exposure pathway) in conjunction with the severity of the potential consequence (accounting for the potential severity of the hazard and the sensitivity of the receptor).

In the risk assessment the consequence of the hazard has been classified as severe, medium, mild, or minor and the probability (likelihood) of the circumstances occurring classified as high likelihood or low likelihood or unlikely.

The consequences and probabilities are subsequently cross correlated to give a qualitative estimation of the risk using Department of the Environment risk classifications as detailed in the table below and as referenced in CIRIA C552.

		Consequence			
		Severe	Medium	Mild	Minor
Probability (Likelihood)	High Likelihood	Very High Risk	High Risk	Moderate Risk	Moderate/Low Risk
	Likely	High Risk	Moderate Risk	Moderate/Low Risk	Low Risk
	Low Likelihood	Moderate Risk	Moderate/Low Risk	Low Risk	Very Low Risk
	Unlikely	Moderate/Low Risk	Low Risk	Very Low Risk	Very Low Risk

In accordance with DoE guidance, the following categorisation of **consequence** has been developed.

Classification	Definition	Examples
Severe	Short-term (acute) risk to human health likely to result in “significant harm” as defined by the Environment Protection Act 1990, Part IIA. Short-term risk of pollution of sensitive water resource. Catastrophic damage to buildings/property. A short-term risk to an ecosystem or organisation forming part of such ecosystem.	High concentrations of cyanide on the surface of an informal recreation area. Major spillage of contaminants from site into controlled water. Explosion, causing building collapse (can also equate to a short-term human health risk if buildings are occupied).
Medium	Chronic damage to Human Health. Pollution of sensitive water resources. A significant change in an ecosystem or organism forming part of such ecosystem.	Concentration of a contaminant from site exceeds the generic or site-specific assessment criteria. Leaching of contaminants from a site to a Principal or Secondary A aquifer. Death of a species within a designated nature reserve. Lesser toxic and asphyxiate effects
Mild	Pollution of non-sensitive water resources. Significant damage to crops, buildings, structures, and services. Damage to sensitive buildings/structures/services or the environment.	Pollution of non-classified groundwater (Inc. Secondary B aquifers). Damage to building rendering it unsafe to occupy (e.g. foundation damage resulting in instability).
Minor	Harm, although not necessarily significant harm, which may result in a financial loss or expenditure to resolve. Non-permanent health effects to human health (easily prevented by means such as personal protective clothing, etc). Easily repairable effects of damage to buildings, structures, and services.	The presence of contaminants at such concentrations that protective equipment is required during site works. The loss of plants in a landscaping scheme. Discoloration of concrete.

In accordance with DoE guidance, the following categorisation of **probability** has been developed.

Classification	Definition
High Likelihood	There is a pollution linkage and an event that either appears very likely in the short term and almost inevitable over the long term or there is evidence at the receptor of harm or pollution.
Likely	There is a pollution linkage and all the elements are present and in the right place, which means that it is probable that an event will occur. Circumstances are such that an event is not inevitable, but possible in the short term and over the long term.
Low Likelihood	There is a pollution linkage and circumstances are possible under which an event could occur. However, it is by no means certain that even over a longer period such event would take place and is less likely in the shorter term.
Unlikely	There is a pollution linkage, but circumstances are such that it is improbable that an event would occur even in the very long term.

In accordance with DoE guidance, the following categorisation of **risk** has been developed.

Classification	Definition
Very High Risk	There is a <i>high probability</i> that <i>severe harm</i> could arise to a designated receptor from an identified hazard at the site without appropriate further action.
High Risk	<i>Harm is likely to arise</i> to a designated receptor from an identified hazard at the site without appropriate further action.
Moderate Risk	<i>It is possible</i> that without appropriate further action <i>harm could arise</i> to a designated receptor. It is relatively <i>unlikely</i> that any such harm would be <i>severe</i> , and if any harm were to occur it is <i>more likely</i> that such harm would be <i>relatively mild</i> .
Low Risk	<i>It is possible</i> that <i>harm could arise</i> to a designated receptor from an identified hazard. It is <i>likely</i> that, at worst, if any harm was realised any effects would be <i>mild</i> .
Negligible Risk	The presence of an identified hazard does not give rise to the potential to cause harm to a designated receptor.

The term 'risk' in this instance refers to the risk that the source, pathway, receptor linkage for a given source of contamination is complete. It does not refer to immediate risk to individuals or features present on the site from potential contaminants and is intended to be used as a tool to assess the necessity of further investigation.