



RHONDDA
GEOTECHNICAL
SERVICES

PHASE 1 CONTAMINATED LAND REPORT

NEATH PORT TALBOT C.B.C.

PLANNING APPLICATION P/2024/0194

PROPOSED REDEVELOPMENT

AFAN UNITED F.C.

PORT TALBOT

SA12 6PE

24/10/2024

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INTRODUCTION-PURPOSES AND AIMS

Planning permission is being sought from Neath Port Talbot L.P.A. for the redevelopment of Afan United's ground. The application reference is P/2024/0194. The work includes the replacement of the artificial pitch (but not the pitch substructure) and the construction of a small changing room on land adjacent to the former Afan Lido in Port Talbot. N.P.T. have indicated that they require a Contaminated Land Risk Assessment. Rhondda Geotechnical Services have been engaged by the architect Go Concept Design to carry out this work. The exact wording initially requesting a Phase 1 is as follows:-

Contaminated Land

Historical maps show a tank present in the center of what is now the artificial pitch c.1956. We also have anecdotal evidence that steel work slag and other made ground material was used to develop the Sandfields area. Therefore it would be prudent that a desk study is carried out to investigate the human health risks associated with this development. The desk study should be written in accordance with [Land contamination risk management \(LCRM\)](https://www.gov.uk/guidance/land-contamination-risk-management-lcrm) - GOV.UK (www.gov.uk) and the WGLA Developers Guide (see attached pdf).

Contaminated Land – Recommend standard set of conditions:

1. **Desktop assessment.** *Pre-commencement. Required to identify potential contaminants and impact on land and controlled waters..*
2. **Remediation strategy.** *Pre-commencement. Requires the submission of a scheme to remediate any contamination identified by the assessment (above) to remove any unacceptable risks to human health, buildings, or other property.*
3. **Verification Report.** *Prior to use. Verification report which demonstrates the effectiveness of the agreed remediation work following its completion.*
4. **Unexpected land contamination.** *If necessary. Scheme to manage any unforeseen contamination, if found during construction.*

Note that initially a Phase 1 Desk Study is required. This will be reviewed by N.P.T. The necessity for a Phase 2 will be entirely dependent on the conclusions of the Phase 1 report which will include a qualitative risk assessment. Conditions 2 and 3 request detailed remediation and validation schemes. Again, these will

be entirely dependent on the recommendations of the Phase 1 and 2 reports *only if contamination is found at the site.*

The report will follow the guidelines set out in the document Development of Land Affected by Contamination: A Guide for Developers (Version 3). This was produced by the Welsh Land Contamination Working Group in 2017. The methodology set out in Appendix B with the check list for Phase 1 will be followed. The contaminated land exposure assessment (henceforth CLEA) produced by The Environment Agency will be used in the conceptual model, particularly regarding the source-pathway-receptor concept for pollutant linkages. The entire project will be guided by the 2021 C.L.R.M which has now superseded the withdrawn 2004 Defra/E.A. document CLR11 (Model Procedures for the Management of Land Contamination).

The current definition of contaminated land is “any land which appears to the local authority in whose area it is situated in to be in such a condition, by reason of substances in or under the ground that:-

- a. “Significant harm is being caused, or there is a significant possibility of such harm being caused OR
- b. Pollution of controlled waters is being, or is likely to be caused”.

(Section 78A Part 2A Environmental Protection Act)

This act also requires that a risk-based approach should be used for assessing the contamination status of a site. For a site to be designated as contaminated it must be shown that the site is not fit for its current or intended use. Statutory guidance states that a two-stage approach should be adopted for the assessment of contaminated land.

- 1. Identification of potential pollution linkages
- 2. Assessment of the risk to receptors

The first stage (The Phase 1 report) is a qualitative assessment of the plausible pollution linkages that exist or may exist on site. This involves the development of a site conceptual model. This may then be refined in Phase 2 after an intrusive investigation, followed by laboratory testing of samples obtained, but only if the Phase 1 deems it necessary.

1. AUTHOR CREDENTIALS

The author of this report is Richard Davies. He graduated with a Bachelor of Science honours degree in Geology from Liverpool University in 1979. After starting his career as an engineer in the coal industry, he moved into site investigation in the 1980's and has many years experience working on contaminated land. He is a Fellow of The Geological Society and holds a Master's Degree in Applied Environmental Geology from Cardiff University. He is also a Supporter Member of CL: AIRE (Contaminated Land: Applications in Real Environments)

2. SITE DESCRIPTION

The site is centred on grid reference 274700,189715, and is at an elevation of approximately 8m A.O.D. The site planning boundary includes the pitch, a narrow strip of land alongside the pitch and an existing car park. The site covers an area of 0.93 Ha. The site location is shown in Figure 1 overleaf. Figure 2 shows the site boundary. Figure 3 is a recent aerial photograph of the site.

3. SITE WALKOVER

A walkover survey is part of the Phase 1 Template. This is really intended for larger sites with an industrial history where specific areas of potential contamination can be identified. The site was visited by the author following initial conversations with the architect. The site can be divided into three parts.

1) The current artificial pitch. This is underlain by a permeable tarmac subbase which will remain with only the astroturf being replaced.

2) The pitch surrounds. These are intended for spectators and are currently tarmac over a concrete subbase. Some minor building work is proposed. According to the Structural Engineers Report only minimal groundworks are required.

3) The tarmac car park. This is to remain unaltered.

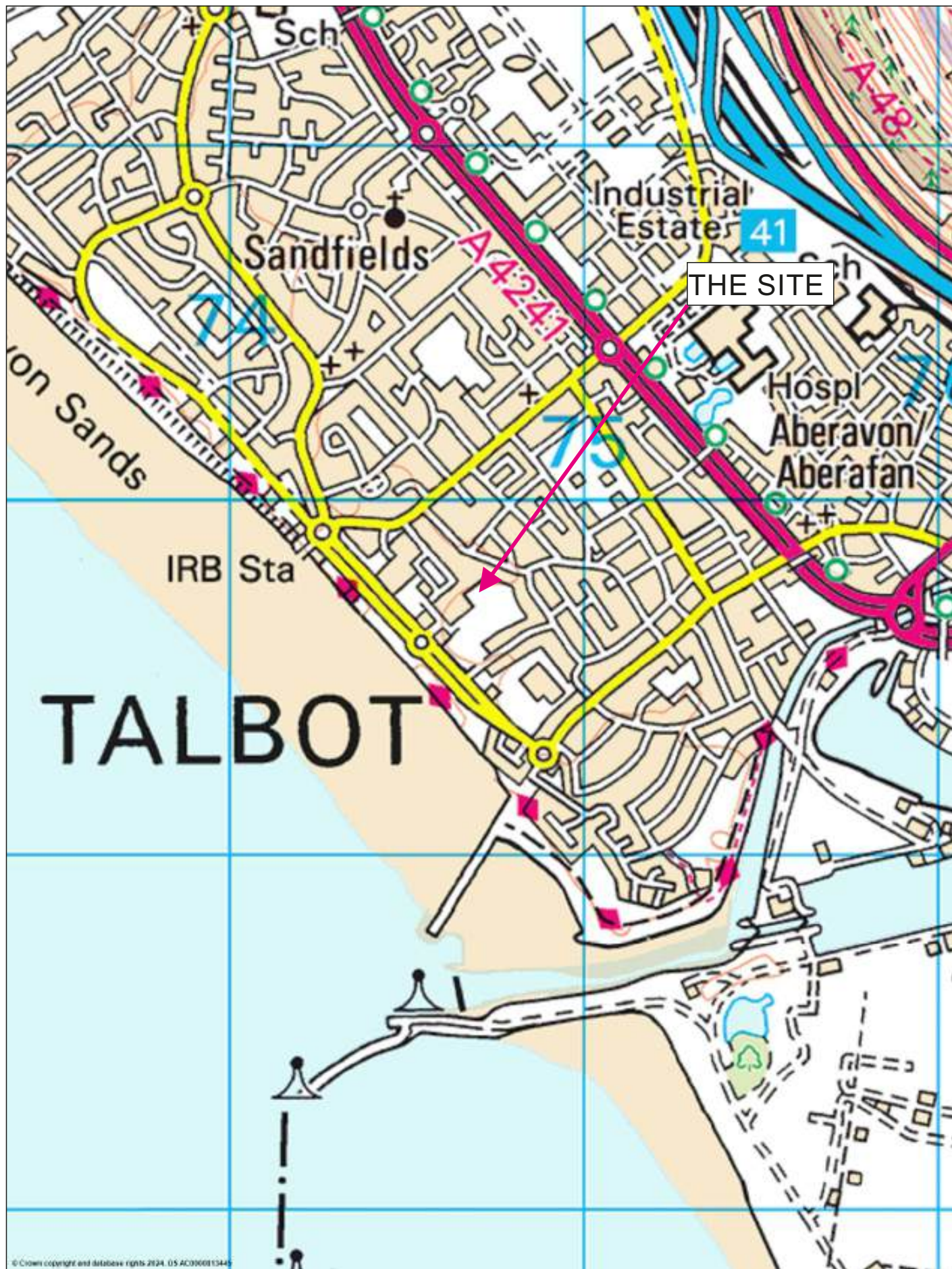


FIGURE 1
SITE LOCATION.





Aerial photography supplied by Getmapping PLC. © Copyright Getmapping PLC 2

FIGURE 3
2020 AERIAL PHOTOGRAPH OF THE SITE.

4. SITE HISTORY

To gain a thorough understanding of the history of the site a comprehensive collection of historical Ordnance Survey maps was purchased from Groundsure. These were at 1:1250, 1:2500 and 1:10560 scales (later maps are at 1:10,000). Obviously, the larger scale maps are preferable for a desk study. The smaller scale maps can provide a broader contextual setting for the site, but in this case, it was not considered necessary to reproduce any of the small scale maps. In terms of both the site and the immediate surrounding area, there have been substantial changes from the earliest (1881) map to the present day.

Extracts from the original large-scale maps are presented overleaf as Figures 4 - 9. These have been slightly truncated from the originals for reasons of page fit and file size. The maps have either the eastern or western margin truncated. This has been done alternately so nothing of significance to the desk study is missing from the map extracts.

1881 (Figure 4) SITE- The site is undeveloped and sits among sand dunes.

SURROUNDING AREA- The entire surrounding area is featureless and is labelled Aberavan Burrows which runs from Aberavan Moors to the coastline just visible in the southwest corner of Figure 4.

1899 SITE- The map shows no change and is not reproduced here for that reason.

SURROUNDING AREA-see above

1919 (Figure 5) SITE- The site is completely unchanged.

SURROUNDING AREA- A brickworks has been built 150m north of the site. This is connected to the main railway by a single-track line.

1939 (Figure 6) SITE- The site is completely unchanged.

SURROUNDING AREA- The brickworks has now gone, and residential housing is encroaching toward the site on the small-scale map.

1955 (Figure 7) SITE- There is a tank marked on the site sitting in the centre of what is now the pitch. There is also an unmarked rectangular structure shown under what is now the car park.

SURROUNDING AREA- There are up to six tanks marked in the surrounding area southeast of the site boundary. There has been extensive residential development surrounding the site. This is the Sandfields Estate.

1966 (Figure 8) SITE- The site has been totally cleared of tanks and is a flat open area sitting within the residential area.

SURROUNDING AREA- The residential areas appear unchanged. A large indoor sports centre has been built together with the Afan Lido swimming pool.

2003 (Figure 9) SITE- This is at 1:1250 and is the last large-scale O.S. revision to date. The site not labelled as a football pitch but the aerial photos from 2000 onward clearly show the pitch markings.

SURROUNDING AREA- the larger scale does not cover such an extensive area as the 1:2500 maps. The indoor bowls centre has been constructed but there is nothing of relevance to a contaminated land assessment.

More recent small-scale maps (2001, 2010 and 2021) have been checked but add little of relevance to the desk study. For this reason, they have not been reproduced here. The Enviroinsight Report (attached as Appendix 1) has a good set of aerial photos from 2000-2020 on pages 9-13. These show the sports centre and Afan Lido have both been demolished.

In summary the site was undeveloped until the tanks were constructed sometime after the 1940s. The purpose of the tanks and what they contained is unknown. Their presence on the site was short lived as they have already been removed from the site on the 1966 map. There is no infrastructure linking them to anything, not even a rough track, and they are spread over a considerable area. The fact that they appear at the same time as the Sandfields Estate's construction may be coincidental or it may indicate they were used for water supply during the construction phase.

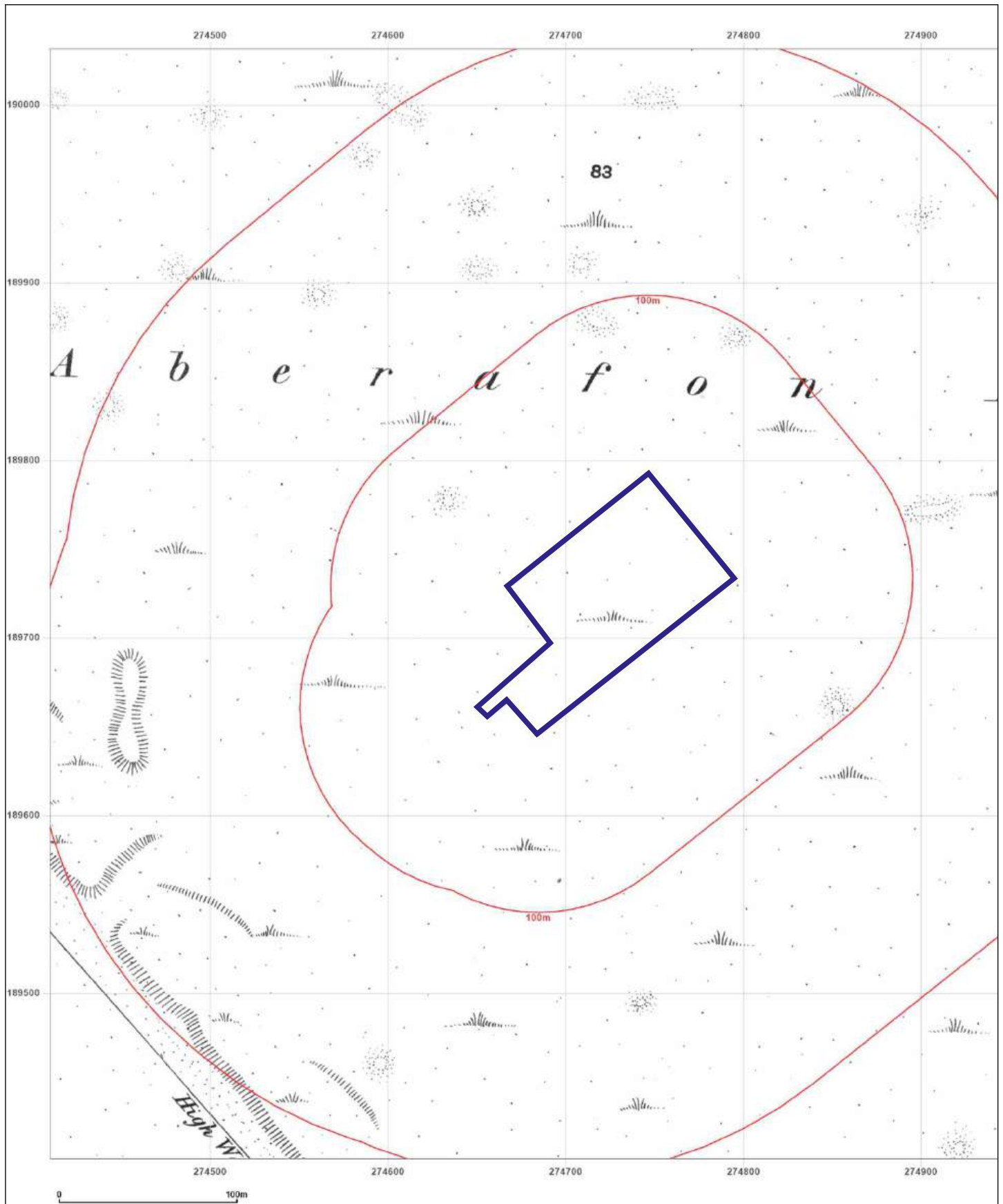


FIGURE 4
THE SITE (OUTLINED IN BLUE) IN 1881.

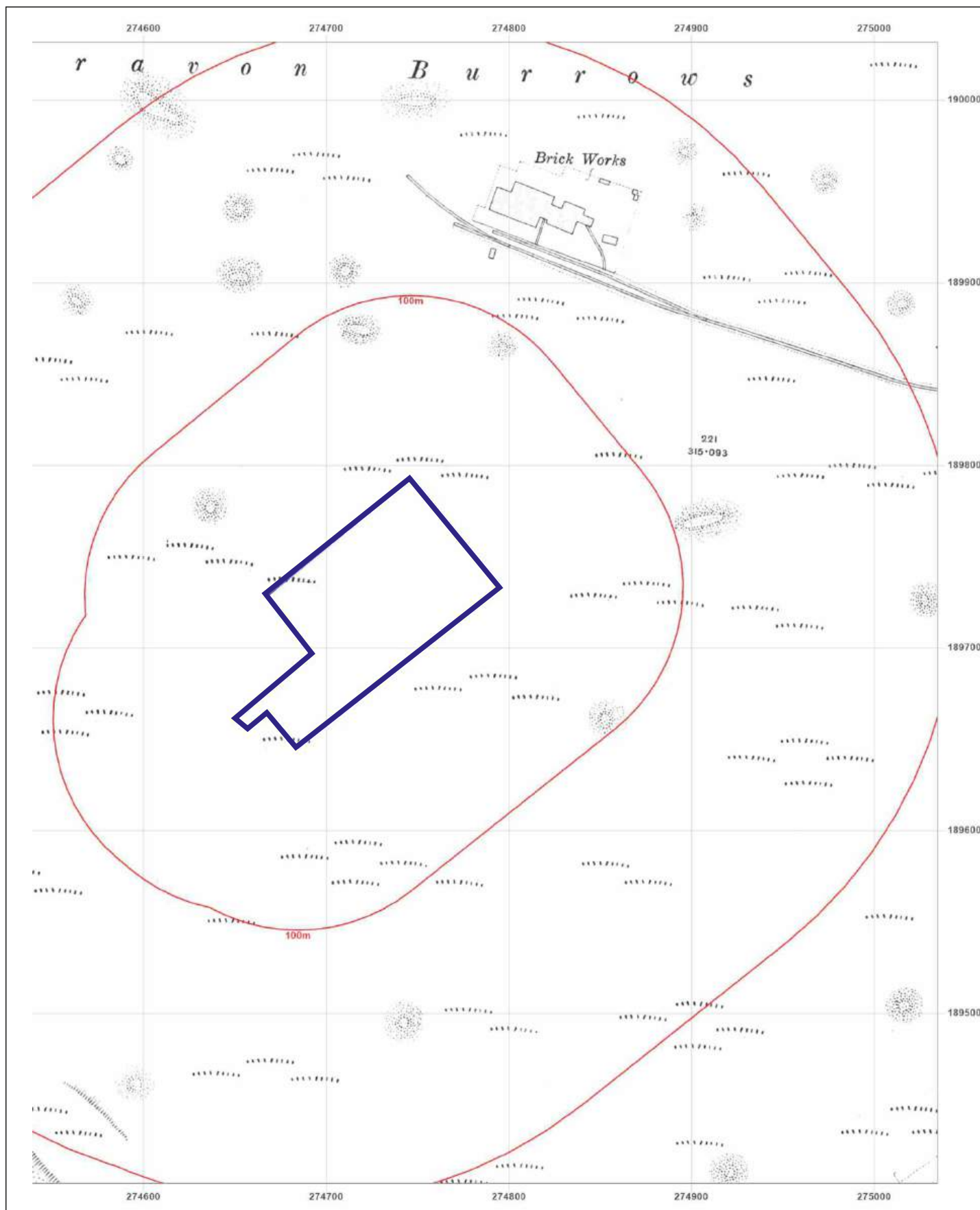


FIGURE 5
THE SITE IN 1917

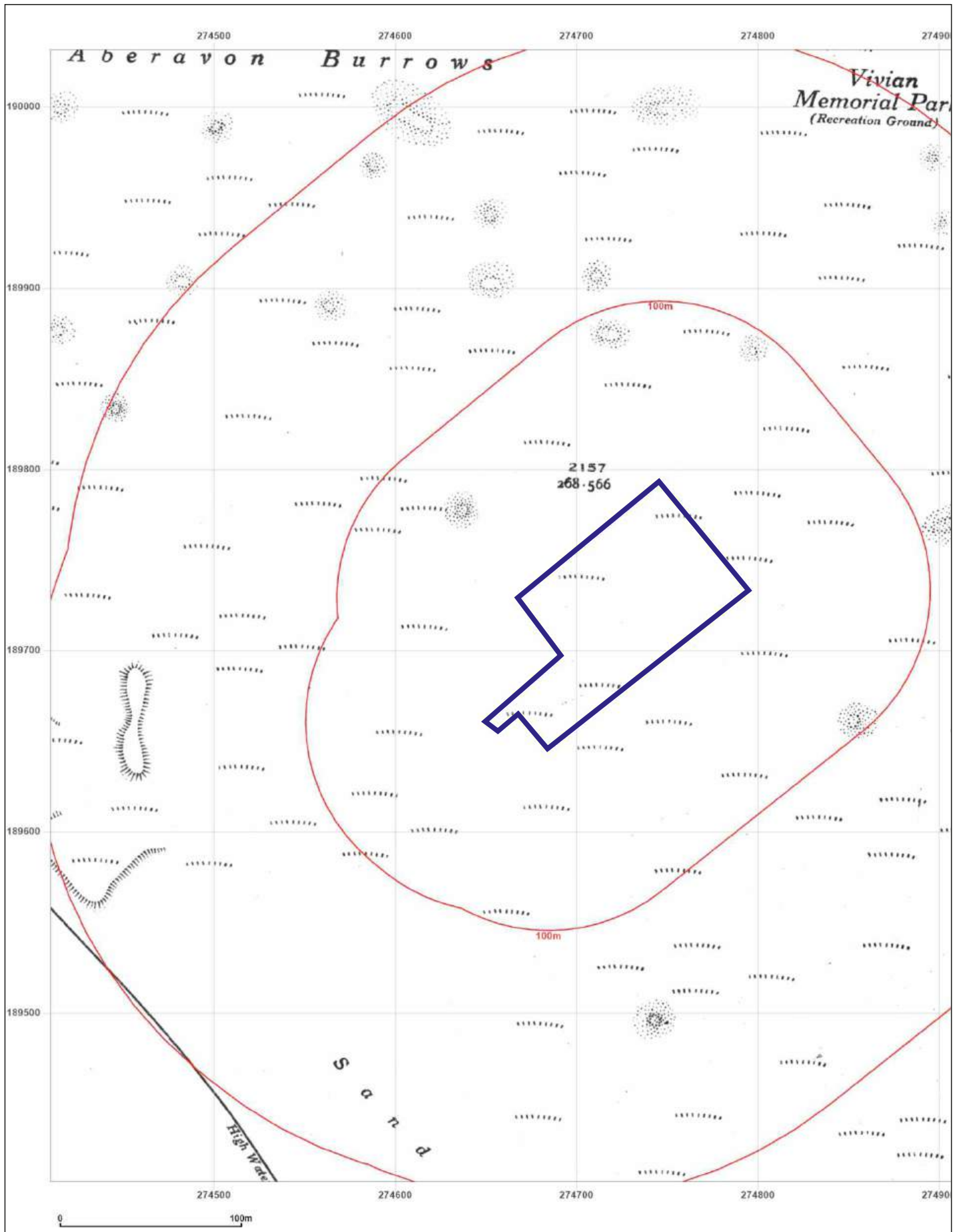


FIGURE 6
THE SITE IN 1939.

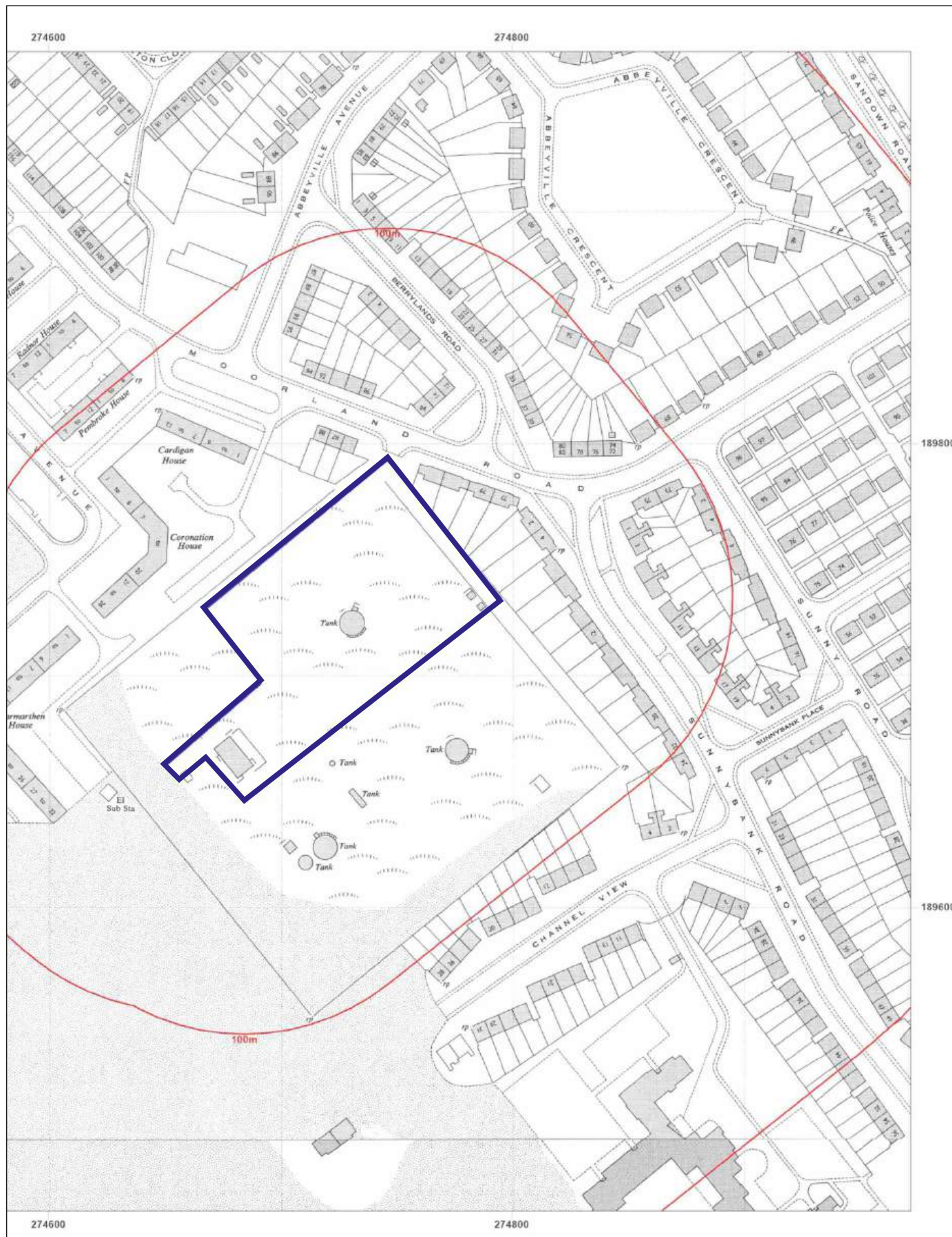


FIGURE 7
THE SITE IN 1955.

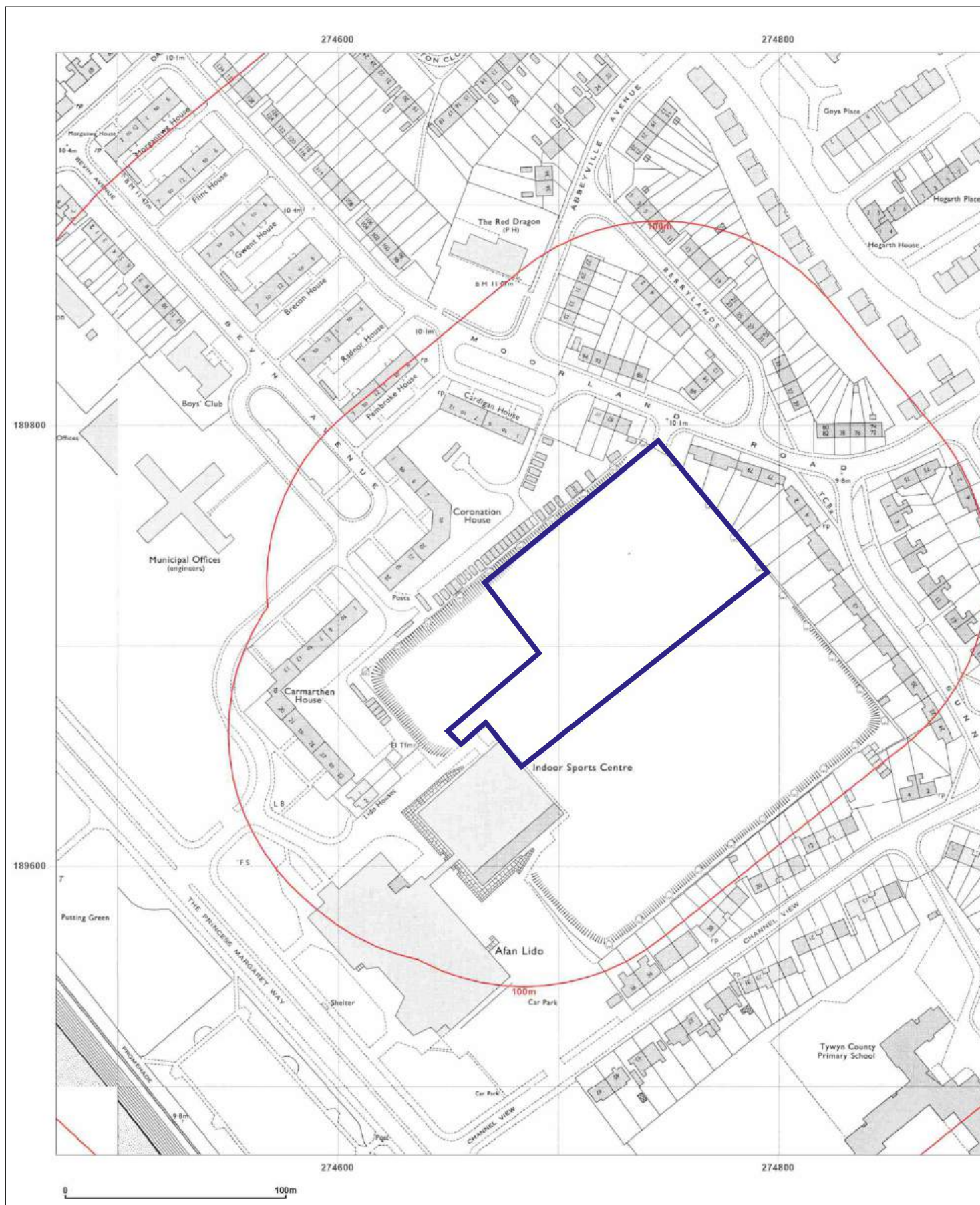


FIGURE 8
THE SITE IN 1966.

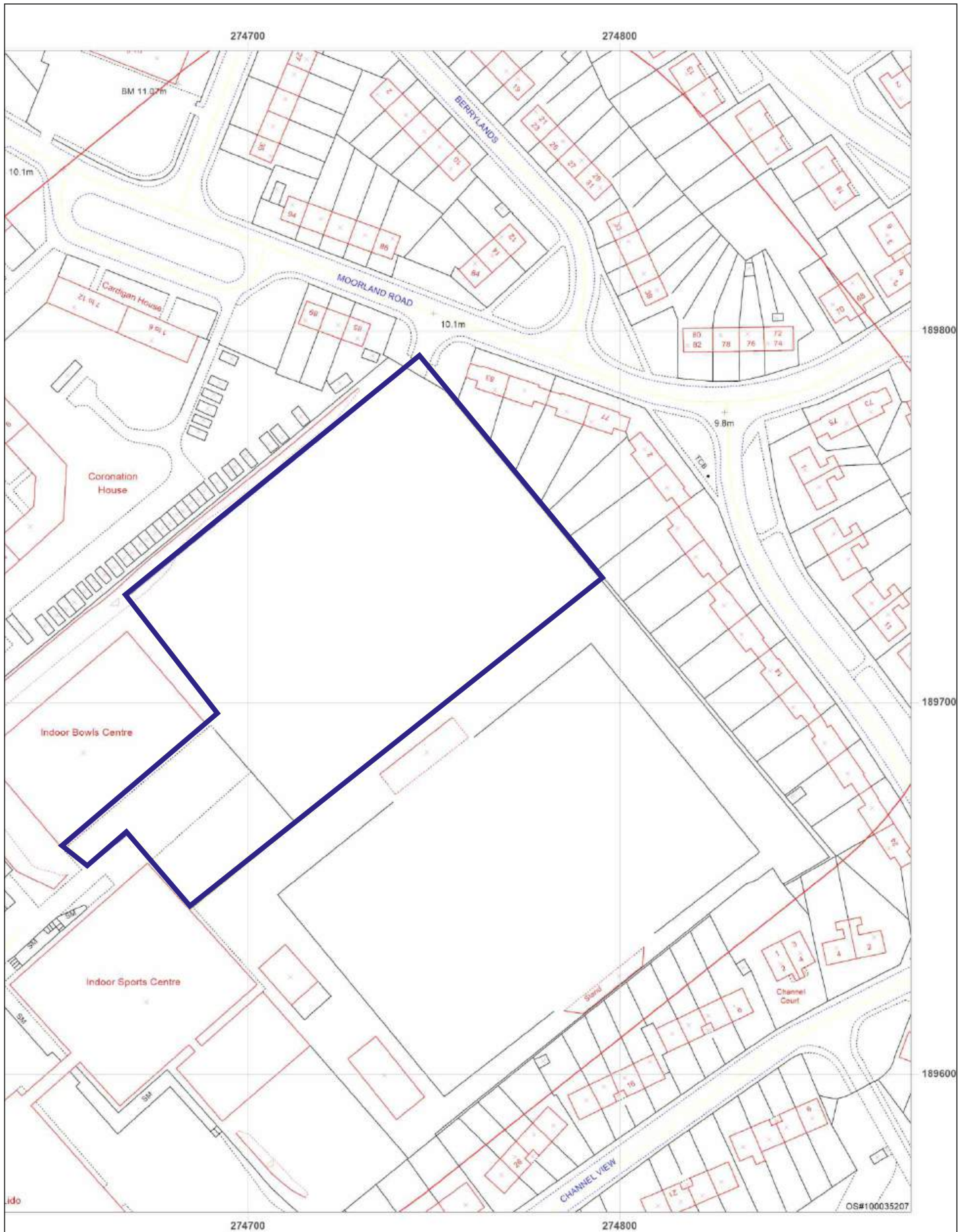


FIGURE 9
THE SITE IN 2003

5. GEOLOGY

The geology under this (or any other) site can usually be divided into two components. The bedrock, and the superficial deposits (including Made Ground) overlying the bedrock. For a contaminated land study, the superficial deposits are usually the more important of the two as they are the shallowest. This means they are the most likely to be impacted by contamination. Indeed, with Made Ground, it can itself be a source of contamination. The shallowest soils are also more likely to have a pathway to above-ground receptors. The deeper underlying geology will influence the hydrogeology, controlled waters and mining history. A Geoinsight report was purchased to obtain geological information for the Phase 1. It is included in full in Appendix A. This report will also draw on archive material from other sources. These include the B.G.S. Geoindex, the Geological Survey map that covers the site (SS 78NE), the Memoirs of the Geological Survey, South Wales Coalfield, Part IV, Pontypridd and Maesteg (1963), the Coal Authority Interactive Viewer and mining archive material held by the author. This will enable a complete understanding of the site geology, particularly the coal mining. The information from these two latter sources will be further discussed in the mine gas risk assessment.

Superficial Deposits (Natural Ground only)

Figure 11 is the 1:50,000 Superficial Deposits map taken from page 70 of the Geoinsight Report. The map is clearly based on the B.G.S. Geoindex. The site sits on a large area of Blown Sand. To the northeast is the boundary of a large area of Alluvium (yellow). To the southwest are marine beach deposits. On higher ground in the northeast corner is Devensian Diamicton (blue). Formerly known as boulder clay, the material is characteristically a poorly sorted mixture of gravel, cobbles and boulders with a sandy silty clay matrix. The Devensian is the last glacial period in Britain. What can be said with certainty is that the superficial deposits beneath the site are of considerable thickness. The author has done several boreholes in the area over a period of many years.

Made Ground

Figure 10 is from page 68 of the Geoinsight Report. The ground beneath the site is classed as landscaped ground. This refers to the construction of the Sandfields Estate shown by the historical mapping in Figures 6 and 7. The original sandhills were up to 10m high and were flattened off so the estate could be built on flat ground. This was confirmed recently by a small geotechnical investigation

carried out by Barratt Associates. Two trial pits were dug and to establish foundation conditions for the proposed changing room development. The two trial pits proved blown sand to depths of 1.3m and 2.0m respectively. A thin (100mm) layer of Asphalt overlaid 200mm-300mm of concrete laid directly on the sand. The report is attached as Appendix B.

Solid (Bedrock) Geology:-

Figure 12 is taken from page 72 of the Geoinsight report. The site lays right in the corner of the six-inch Geological Survey sheet covering the site (SS 78NE) and so the Geoinsight map has been used in preference. The first thing to note is the dashed line running northwest-southeast very close to the site. This is the conjectured position of a large fault, the Giant's Grave Fault. The underlying bedrock is poorly known because the thickness of the superficial deposits exceeds 30m toward the beach. The bedrock has been identified as the Middle Coal Measures in boreholes. The geology and its influence on coal mining will be discussed further in the mine gas risk assessment.

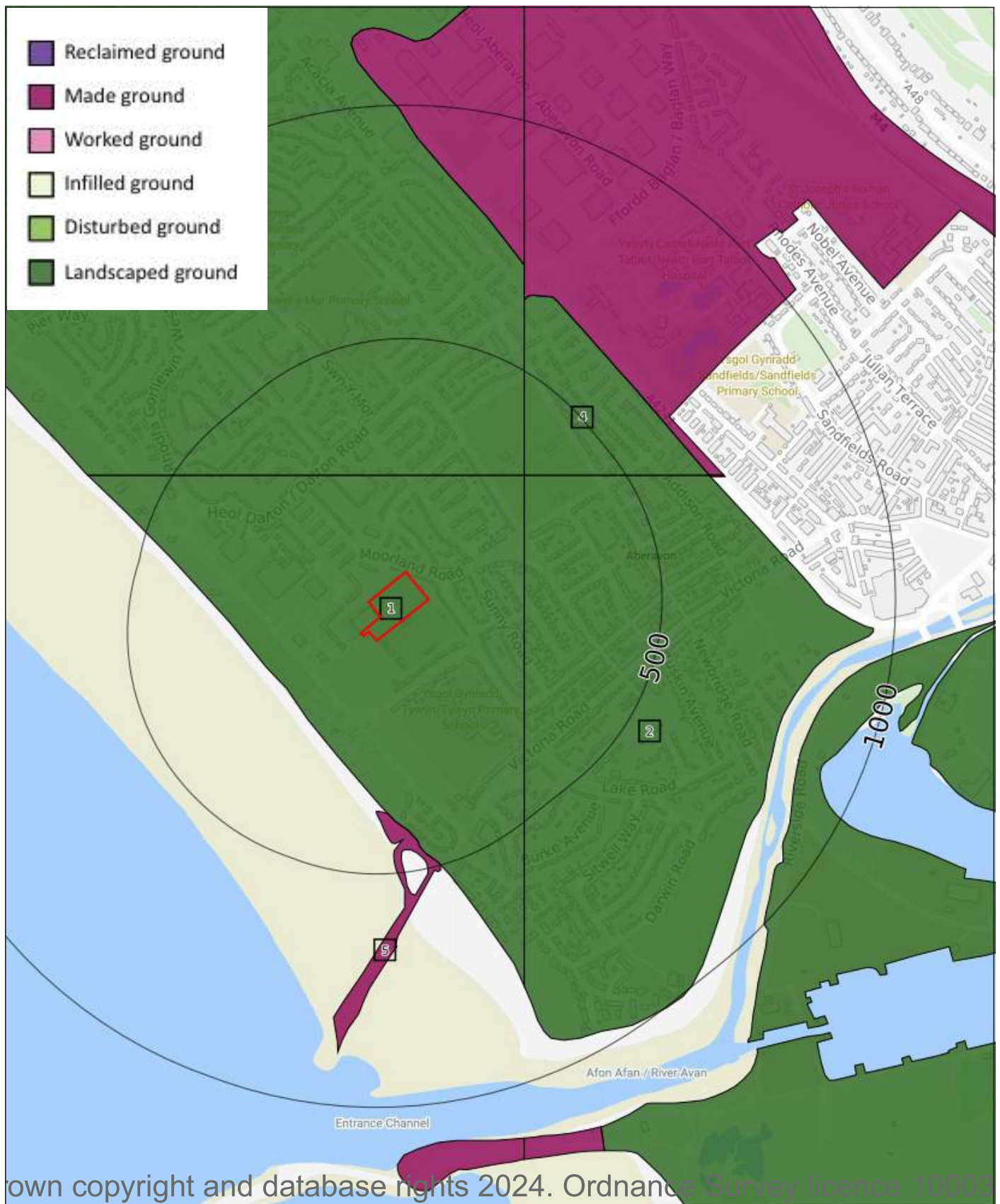


FIGURE 10
B.G.S. MAP OF DISTURBED GROUND AT 1:50,000 SCALE.



FIGURE 11
B.G.S. 1:50,000 MAP OF SUPERFICIAL DEPOSITS.

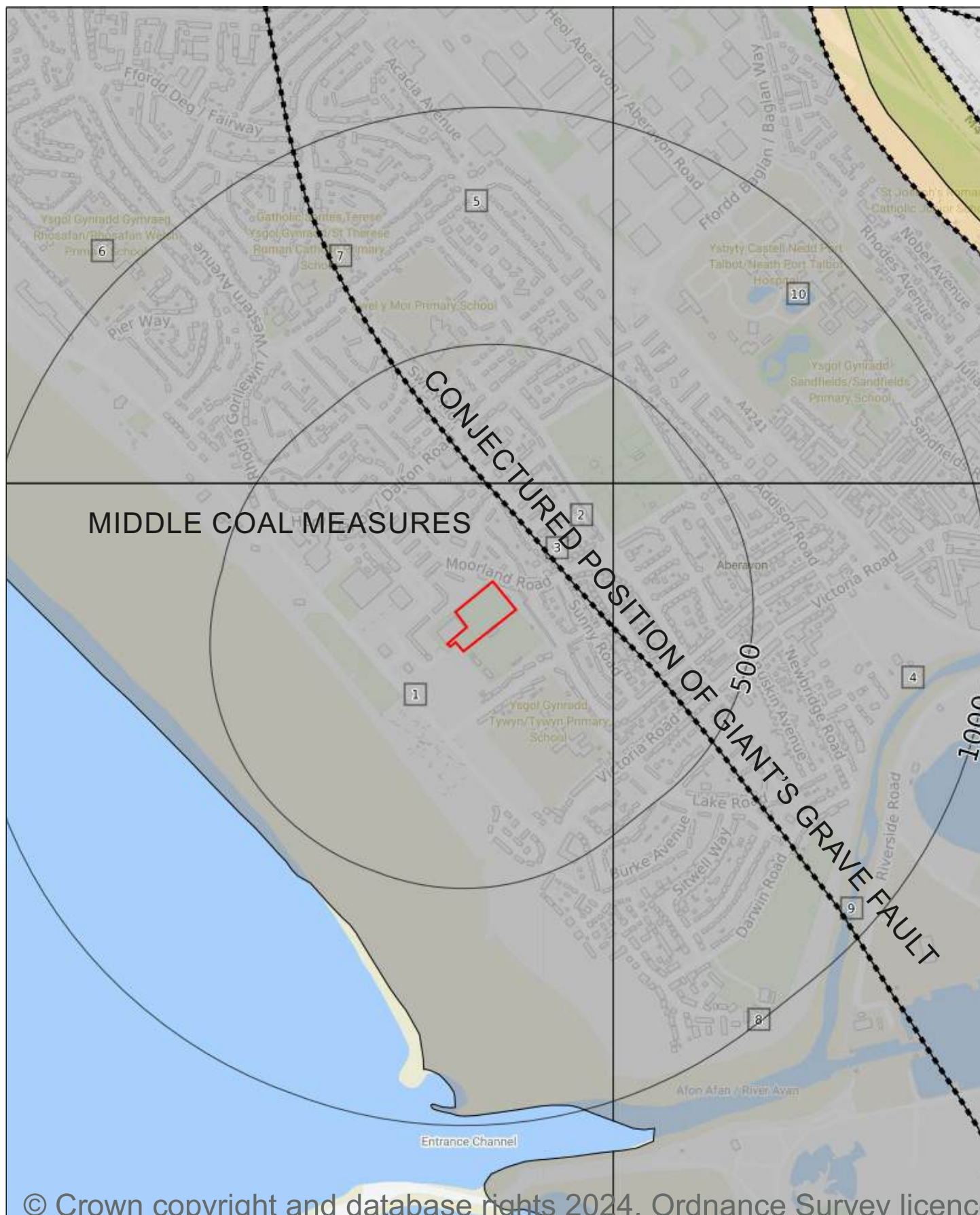


FIGURE 12
B.G.S. 1:50,000 BEDROCK GEOLOGY MAP.

6. HYDROGEOLOGY

In the past when compiling a Part 1 Desk Study the necessary information about Hydrogeology and other environmental factors could be obtained from the Environment Agency. In Wales this is no longer the case due to the N.R.W. (to whom the responsibilities of the E.A. have been devolved) failing to publish this information to date. It is now necessary to purchase the information off a private organisation such as Groundsure. This has been done for this report and the full Enviroinsight report is attached as Appendix A. All the information in the following sections 6-12 has been taken directly from the report.

The Superficial Aquifer map for the site is on page 35 of the Enviroinsight Report. Figure 13 is taken directly from the report. The aquifer map mimics the superficial deposits map in Figure 11 closely. The Beach Sand southwest of the site has a Secondary Aquifer-Undifferentiated classification. This classification is used when it is not possible to assign A or B to a site. Formerly these would have been either Minor or Non-Aquifers. The classification is due to the probable salinity of the underlying groundwater. The Blown Sand and Alluvium are lumped together as Secondary A. Formerly known as Minor Aquifers the official definition is:- permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow in rivers.

Page 37 of the Enviroinsight Report shows the bedrock aquifer classification. The entire map is Secondary (A) and is not reproduced here. Formerly known as Minor Aquifers the official definition is:- permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow in rivers. This reflects the nature of the Middle Coal Measures in the area. Although predominantly argillaceous, there are permeable sandstone layers within the Middle Coal Measures. These sandstones have a low porosity but are highly permeable due to the well-developed jointing which allows high flow rates. Because of the relative abundance of surface water in South Wales the only non-industrial groundwater abstractions tend to be private wells on properties remote from mains supply.

7. HYDROLOGY AND WATER QUALITY

The Ordnance Survey Water Network Mastermap is on page 46 of the report. The closest water body is the Afon Afan. This is approximately 800m southeast of the site. There are no closer surface water features. The site is within a Coastal

Catchment not within a river Water Body Catchment Area. The Operational Catchment Area is Neath, and the Management Catchment Area is Tawe to Cadoxton.

The 2016 classification of the Swansea Bay Coastal Catchment is Ecological-Good, Chemical rating- Fail and overall rating- Moderate. The nearest monitoring point is 203m southwest of the site.

The Swansea Carboniferous Coal Measures 2017 groundwater rating is Overall-Poor, Chemical rating- Poor and Quantitative rating-Good.

8. ABSTRACTIONS

The Enviroinsight report lists no active groundwater abstraction licences within 2000m of the site. There are no licensed Potable Abstractions within 2000m of the site. There are no Source Protection Zones, or Source Protection Zones within Confined Aquifer within a 500m radius of the site.

There are multiple surface water abstraction licenses connected with industrial use by the Tata Steelworks and Civil and Marine Cement Ltd. These range from 1186m-1688m away.

9. POLLUTION INCIDENTS

There has been six Environment Agency/Natural Resources Wales Recorded Pollution Incidents within 500m of the site. These are all smoke or dust incidents almost certainly connected to the steelworks. None of the recorded pollution incidents will have any bearing on the site.

There are no sites designated as Part 2a contaminated land within 500m of the site. There are no COMAH sites within 500m. There are no explosive sites. There are no I.P.C. authorisations, Part A (1) or I.P.P.C. Authorised activities. There is one Part A (2)/B licenses within 500m. This is a petrol station which has had no enforcement. There are no licensed Discharges within 500m. There are no Red List discharge consents or Dangerous/Radioactive Authorisations within 500m. There are no List 1 or List 2 Dangerous Substance Inventory Sites within 500m of the site.

10. LANDFILL

There are no active or recently closed landfills within 500m of the site. There are no historic landfills within 500m of the site on the B.G.S. or Local Authority databases. The N.R.W. database records no landfill within 500m of the site.

There is a solitary waste exemption licences 108m south of the site. This was for a Persimmon Construction site and probably relates to the crushing of concrete following the demolition of the Afan Lido. This is probably now lapsed.

11. FLOOD RISK

Flood risk for the site will be dealt with as a separate matter for the planning application. For a Phase 1 report the risk of flooding of possibly contaminated land needs to be considered. The RoFRaS is on page 49 of the Enviroinsight report. This shows no flood risk within 50m of the site. There is a historical record of flooding from the sea 141m southwest of the site in May 2008. The surface water flooding risk is described as 0.1m-0.3m for the 1 in 30 return period. The groundwater flooding map is on page 55 of the Enviroinsight Report. The risk is low for the site and low or moderate for everywhere within 250m of the site.

12. ECOLOGICAL AND ARCHAEOLOGICAL CONSIDERATIONS

There are no known archaeological considerations. There are no S.S.S.I.s within 2000m of the site, no nature reserves or any land with a special ecological designation.

13. PREVIOUS CONTAMINATION STUDIES

None recorded.

14. LPA AND BUILDING CONTROL RECORDS

It is not anticipated that N.P.T. will hold any planning or building control records within the site boundary beyond the current application although they apparently built the original artificial pitch.

15. CONTAMINANTS OF CONCERN AND SOURCE AREAS

The information contained in the preceding sections showed a single possible contaminative use of the site. This was an unidentified tank and another structure, possibly also a tank. These were removed approximately 60 years ago. The positions of both are now below permanent capping areas, namely an artificial football pitch with a permeable tarmac base and a tarmac car park.

16. REVISED RISK ASSESSMENT FOR SOILS

Even if minor contamination was suspected at the site there can be no viable pathways to above ground receptors. For this reason, the potential risk has been removed from Table 1.

17. RISK ASSESSMENT FOR CONTROLLED WATERS

If there is no contaminant source, there can be no viable pathway to controlled waters and no onward pathway to more distant environmental receptors. For this reason, the potential risk has been removed from Table 1 overleaf.

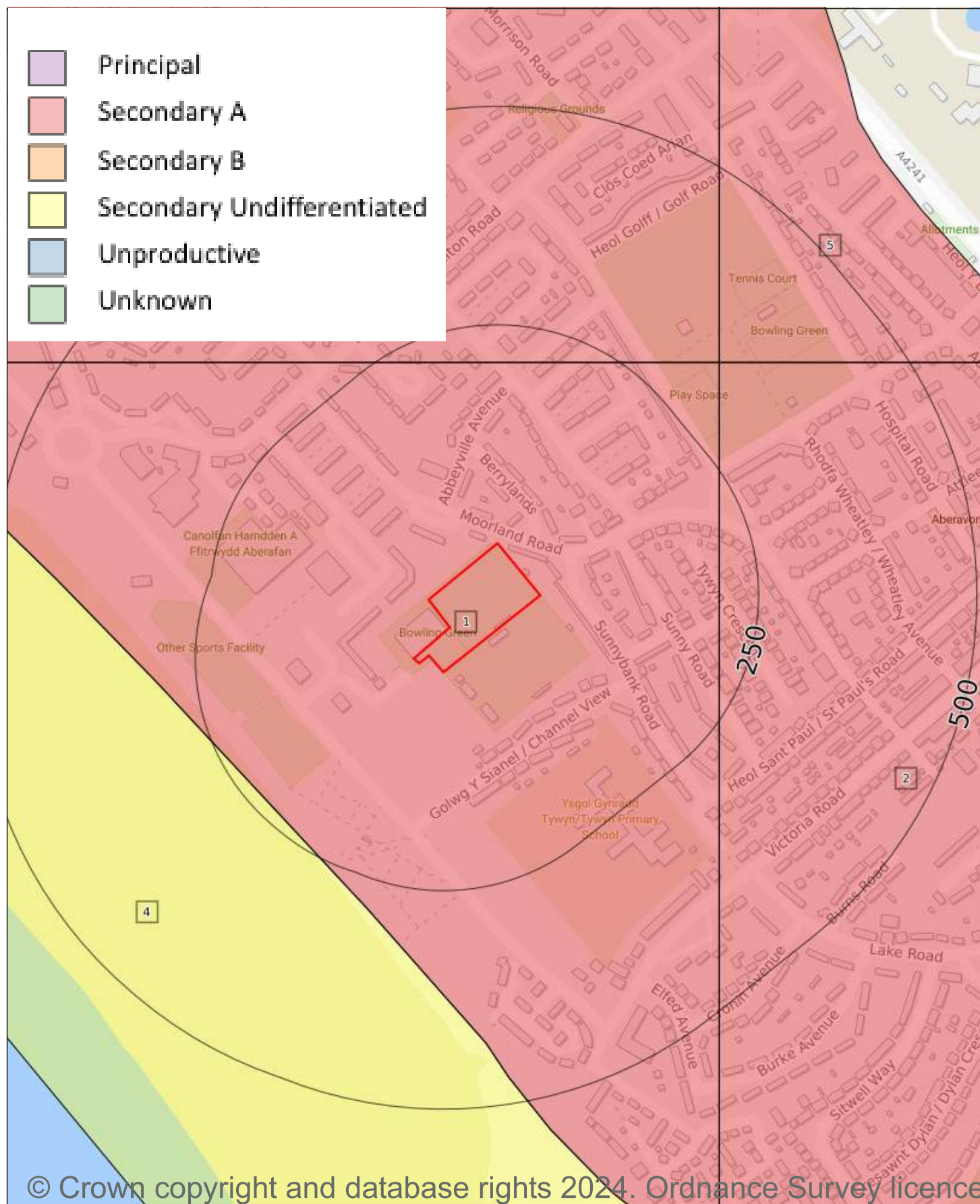


FIGURE 13
SUPERFICIAL AQUIFERS.

TABLE 1						
INITIAL QUALITATIVE HUMAN HEALTH RISK ASSESSMENT AND ENVIRONMENTAL RISK ASSESSMENT AT AFAN UNITED, PORT TALBOT						
CONTAMINANT SOURCE	PATHWAYS	RECEPTORS	POTENTIAL SEVERITY	PROBABILITY OF RISK	LEVEL OF RISK	FURTHER ACTION REQUIRED
ON SITE: POTENTIAL CONTAMINATION IN SOILS/MADE GROUND. POSSIBLY ELEVATED LEVELS OF METALS AND PAH	INGESTION, DERMAL CONTACT, INHALATION	FUTURE END USERS, VISITORS	MEDIUM	LOW	LOW	THE SITE WAS BRIEFLY THE SITE OF A TANK (POSSIBLY TWO) IN THE PAST. THE CONTENTS OF THE TANK(S) ARE UNKNOWN, BUT THERE WAS NO CONNECTION TO ANY INDUSTRIAL INFRASTRUCTURE. THE TANKS WERE REMOVED 60 YEARS AGO. THE FORMER SITE(S) OF THE TANKS HAVE PERMANENT TARMAC CAPPING. THERE IS NO REASON TO SUSPECT THAT THERE IS ANY CONTAMINATION AT THE SITE AND CERTAINLY NO VIABLE PATHWAYS TO USERS OF THE SITE. NO FURTHER ACTION REQUIRED.
	CONTACT WITH CONTAMINATED GROUNDWATER	FUTURE END USERS, VISITORS AND CONSTRUCTION WORKERS	MEDIUM			
	PERMEATION OF WATER PIPES	FUTURE END USERS AND SITE VISITORS	MEDIUM			
	INGESTION OF HOME GROWN PRODUCE	FUTURE END USERS	N/A			
ON SITE: ASBESTOS AT OR NEAR GROUND SURFACE IN SOILS/MADE GROUND	INHALATION OF FIBRES IN AIRBORNE DUST	FUTURE END USERS AND SITE VISITORS	HIGH	LOW	LOW	NO SOURCE OF ASBESTOS ON OR NEAR TO THE SITE. NO FURTHER ACTION REQUIRED.
		CONSTRUCTION WORKERS	HIGH	LOW	LOW	
ON SITE: POTENTIAL CONTAMINATION IN SOILS/MADE GROUND. POSSIBLY ELEVATED LEVELS OF CONTAMINANTS	RUN OFF	SURFACE DRAINAGE	MEDIUM	LOW	LOW	BECAUSE THERE IS LITTLE POSSIBILITY OF CONTAMINATION OF SOIL ON THE SITE THERE IS NO THREAT TO THE WIDER ENVIRONMENT.
	MIGRATION THROUGH SOIL VIA LEACHING	SHALLOW GROUNDWATER				
	ONWARD MIGRATION OF GROUNDWATER	BEDROCK AQUIFER				

18. GROUND GAS POTENTIAL

The updated (2017) WLGA & NRW guidelines on the Development of Land Affected by Contamination state that “Ground gas is a contaminant and should be considered as a potential contaminant source in the preliminary risk assessment on sites where gas generation and /or migration is suspected”. However, all other sources of ground gas need to be examined.

There is no biodegradable Made Ground at the site. The site is built directly onto Blown Sand as would be expected from the historical O.S. and the present day level of the site. This has also been established by two trial pits excavated by others. There are no natural organic soils at the site. Therefore, on-site generation of ground gas can be completely discounted at this stage.

Moving on to the risk of migration from elsewhere, the two most common sources for ground gas migrating onto a site from elsewhere are landfill sites and mines, particularly coal mines.

Landfill sites have been found to be sources of gases, particularly methane, caused by the breakdown of organic material contained within them. There have been instances where migration of these gases has caused explosions or asphyxiation at receptors off site. These occurrences are rare and usually outside Britain in completely unregulated circumstances. In contrast, landfills in Britain have been tightly regulated and managed for many years, and a sense of perspective is necessary when assessing the threat from a landfill close to a site. At the present time “close” is generally taken to mean 250m, although there are no specific studies that have arrived at this figure. The figure dates to a 2003 E.A. publication “Building on or within 250m of a Landfill”. The document and 250m figure were subsequently adopted in L.P.A. planning guidance. The original document itself stresses that conditions can vary enormously. In particular, the document acknowledges that there must be viable pathways from any potential source of Landfill gases to a receptor, for there to be any risk. As stated in Section 10, there are no landfills within 500m of the site. The risk of migration of Landfill Gas to site can be completely discounted.

19. DETAILED COAL MINING GAS RISK ASSESSMENT

This leaves the risk from Coal Mining. Gas production was a constant problem during the coal mining heyday of the South Wales Coalfield. The loss of life through explosion or asphyxiation was huge. However, there were vast differences in the potential for gas production between different areas, and in different seams. As a generalisation,

the deep steam coals of the Middle and Lower Coal Measures were the most problematic in the Coalfield. Gas production in coal mines takes two forms. Methane trapped under pressure in the coal is released during mining operations. The production of Methane stops very shortly after the end of mining activity. The production of Carbon Dioxide and Carbon Monoxide is due to oxidation of the coal. If conditions are suitable, this gas production can carry on long after mining ceases.

The geological desk study contained in Section 5 established that the site is underlain by the Middle Coal Measures. Because of this the site is within a Coal Mining Reporting Area. To obtain further mining information, the Coal Authority Interactive Viewer was used. This contains multiple datasets relating to past coal mining. The primary source for the C.A. Interactive Viewer is the British Coal Rationalised Development Plan. This itself drew heavily on the Geological Survey Figure 14 is taken from the planning window of the Interactive Viewer. The Coal Mining Reporting Area (hatched) is computer generated, hence the artificial square boundary. This overlaps the coalfield boundary significantly. The thinking behind this is that it is a catch-all. In places where bedrock conditions cannot be ascertained accurately because of thick superficial deposits the C.M.R.A. boundary is designed to ensure that no coal bearing deposits are excluded. This is the reason it can be seen extending across Swansea Bay although no mining has ever been carried out in this area. The thick water-bearing superficial deposits would cause enormous engineering problems. There can be no unrecorded workings because the technology was not available prior to the compulsory keeping of mine plans. The National Coal Board did several deep boreholes nearby in the 1950s which found workable coal seams in excess of 200m depth, but the project went no further. Figure 14 shows areas of recorded shallow mining in mauve and suspected shallow mining in blue. The closest is 2300m from the site. Figure 15 is the Mining data window from the Viewer. This shows the closest mine entry to the site is 1900m away. The closest recorded mining at any depth is 2850m away.

Because the site is within the C.M.R.A. a Coal Mine Gas Risk Assessment will be required under current legislation. Recently, local authorities have been requesting specific mine gas risk assessments conducted in accordance with 'CL:AIRE - Good Practice for Risk Assessment for Coal Mine Gas Emissions, October 2021' and having regard to current guidance - 'Land Contamination: Risk Management (LCRM; 2020)'. There is usually a demand to follow the decision tree in Figure 13.1 of the Decision support tool for mine gas risk assessment. This is on page 35 of the CL:AIRE document. The tool will now be used bringing in the information above taken from the C.A. Viewer. In this instance the flow chart can be followed to reach the decision overleaf.

IS THE SITE WITHIN A C.A. DEFINED COAL MINING REPORTING AREA

>YES>

ARE ALL THESE STATEMENTS TRUE.

ALL MINE ENTRIES >50m FROM SITE BOUNDARY. >YES>

ALL WORKINGS >150m DEPTH >YES> (NO WORKINGS)

NO FAULTS OR POTENTIAL PATHWAYS CONNECTING THE SURFACE TO DEEPER UNFLOODED WORKINGS. THE LARGE FAULT PRESENT NEARBY IRRELEVANT AS THERE ARE NO WORKINGS BENEATH THE SITE.

OUTSIDE AREA OF PAST OR PROBABLE SHALLOW WORKINGS ON THE COAL AUTHORITY INTERACTIVE VIEWER. >YES>

NEGLECTIBLE RISK ZONE.

DETAILED FINDINGS WITHIN THIS REPORT (YES-SEE SECTION 5)

MITIGATION NOT REQUIRED.

NO FURTHER ACTION REQUIRED.

Finally, part of the site is within an area where <1% of properties are affected by Radon. No Radon protective measures will be required.

A summary of the Ground Gas Risk Assessment of the site is contained in Table 2 overleaf.

TABLE 2 INITIAL GROUND GAS RISK ASSESSMENT AFAN UNITED, PORT TALBOT.					
SOURCE	PATHWAY	RECEPTOR	CONSEQUENCE CLASSIFICATION	RISK	FURTHER ACTION
HAZARDOUS GROUND GAS FROM OFF SITE SOURCE	INHALATION, INJURY FROM EXPLOSION	SITE USERS, VISITORS, CONSTRUCTION WORKERS	SEVERE	LOW. NO LANDFILL WITHIN 500m. NO COAL WORKINGS BENEATH THE SITE. NO RISK FROM MINE GAS.	NO FURTHER ACTION REQUIRED
HAZARDOUS GROUND GAS FROM OFF SITE SOURCE	DAMAGE FROM EXPLOSION	BUILDINGS	SEVERE		
HAZARDOUS GROUND GAS FROM ON SITE SOURCE	INHALATION, INJURY FROM EXPLOSION	SITE USERS, VISITORS, CONSTRUCTION WORKERS	SEVERE	LOW. NO POSSIBILITY OF ON SITE GENERATION FROM MADE GROUND OR ORGANIC SOILS.	NO FURTHER ACTION REQUIRED
HAZARDOUS GROUND GAS FROM ON SITE SOURCE	DAMAGE FROM EXPLOSION	BUILDINGS	SEVERE		
RADON GAS	LONG TERM HAZARD FROM INHALATION	SITE USERS	SEVERE	LOW. <1% OF PROPERTIES AFFECTED BY RADON.	NO FURTHER ACTION REQUIRED

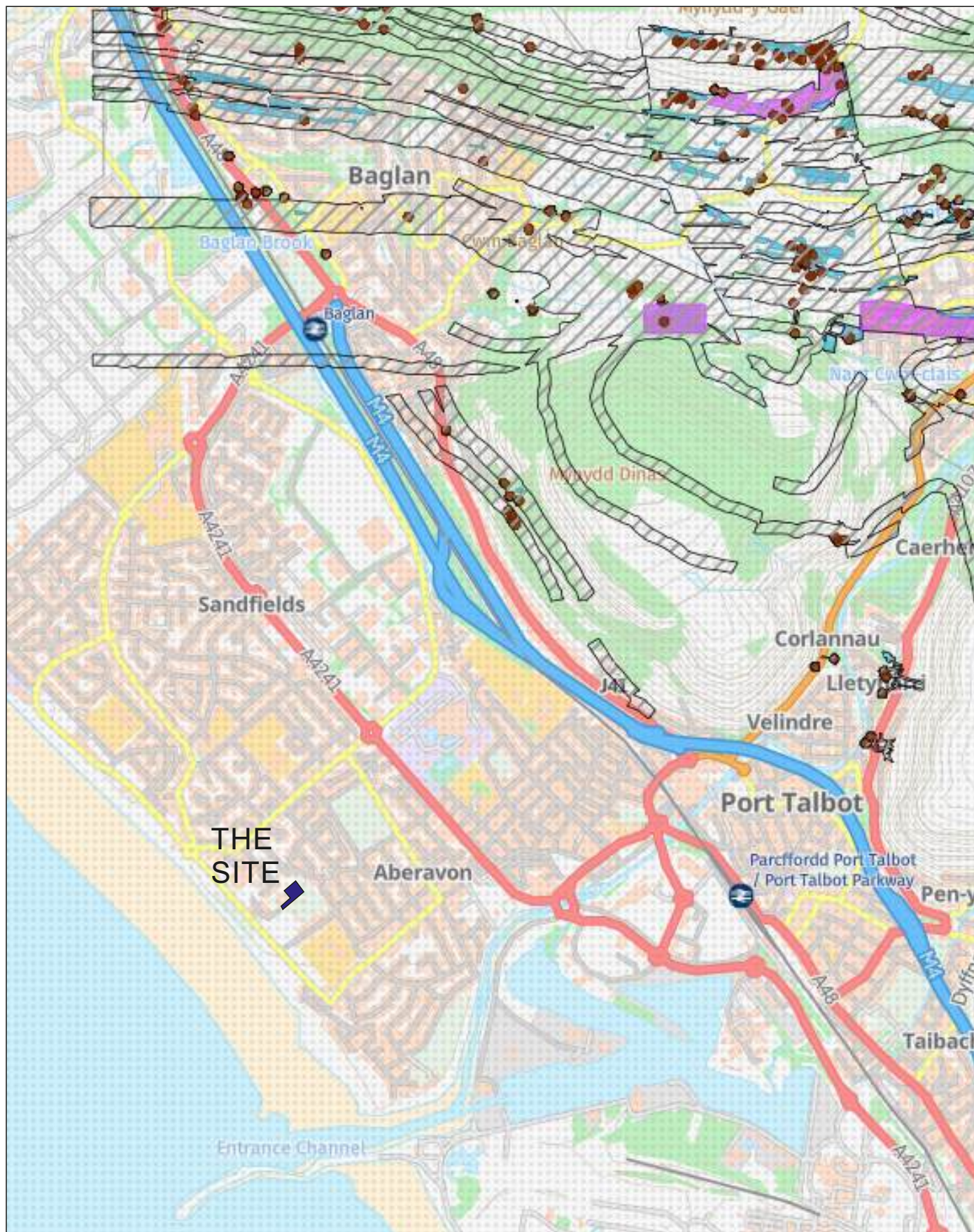


FIGURE 14

COAL AUTHORITY INTERACTIVE VIEWER, PLANNING WINDOW SHOWING AREAS OF KNOWN (MAUVE) AND SUSPECTED (BLUE) SHALLOW MINING. BROWN CIRCLES ARE MINE ENTRY 20m ZONES

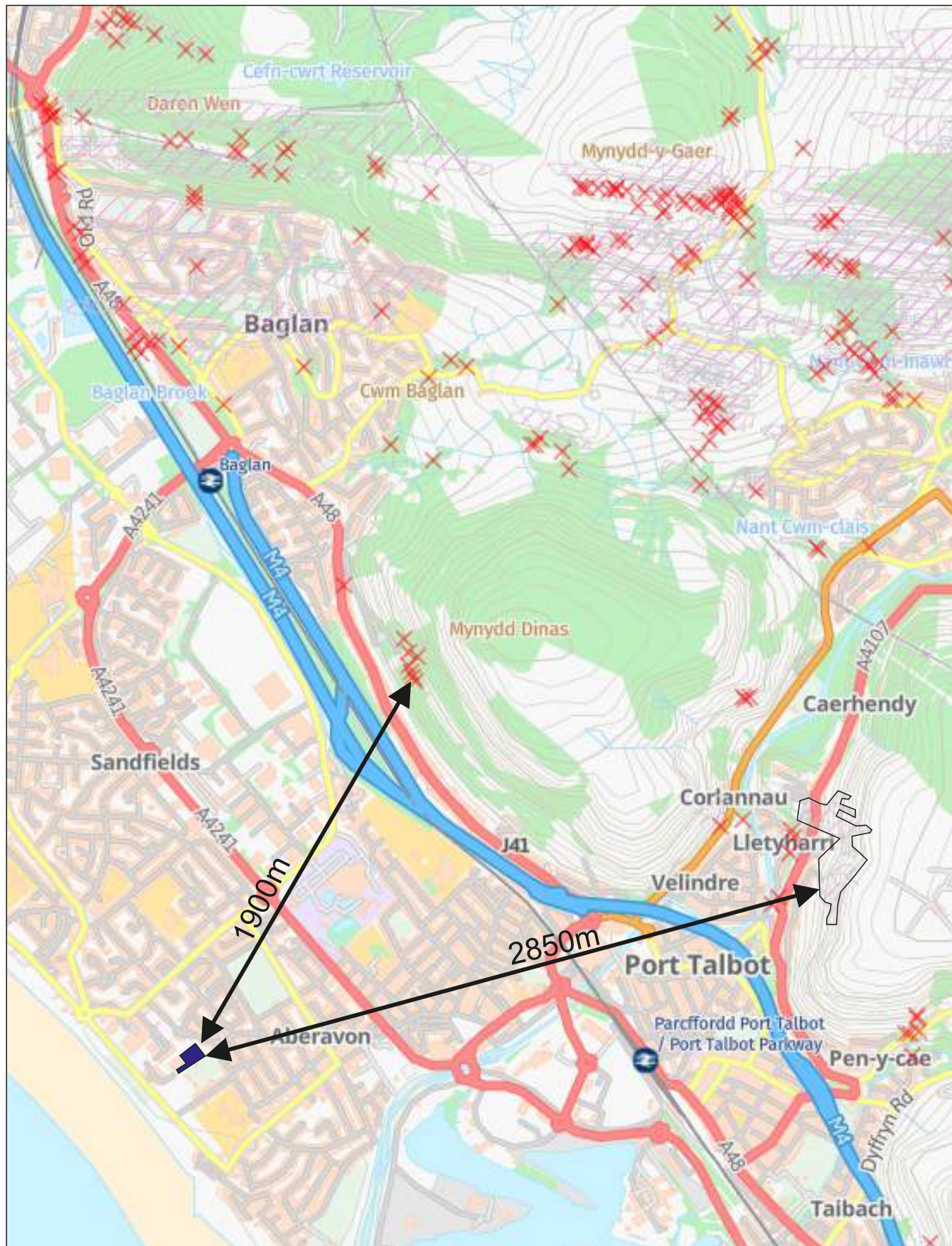


FIGURE 15

C.A.VIEWER, MINING DATA WINDOW. RED CROSSES ARE MINE ENTRIES, HATCHING IS RECORDED MINING AT ANY DEPTH.

20. CONCEPTUAL SITE MODEL (C.S.M.)

A C.S.M. is a required part of a standard Phase 1 template. This is a diagrammatic method of showing potential contamination pathways. Since the conclusion of this report is that there are no pathways and hence no risk from soils or ground gas at the site Tables 1 and 2 serve as the C.S.M.

21. CONCLUSIONS

This Phase 1 desk study has used extensive research to conclude there is an no risk from soil contamination at the site. The former presence of a tank 60 years ago does not provide a credible risk in the author's opinion. The use of the tank is unknown. The entire site, including the pitch area where the tank was sited, is now capped with tarmac. This makes the classification of the site unusual from the angle of permitted contaminant levels (S4ULs/C4SLs). The site is clearly not residential. The Public Open Space and Public Open Space near residential properties are also unsuitable. The thinking behind these two classifications is that people could come into contact with contaminated soil directly, or in the case of the latter, indirectly by tracking it into homes. This is clearly not the case with the capping covering the site. This leaves the only other possible classification as Commercial.

The "anecdotal evidence that steelworks slag and other made ground was used to develop the Sandfields area" is partially true. However, the author has carried out multiple site investigations in the area over the last 30+ years. The findings of these are that slag was only used as road subbase in residential areas. Industrial areas such as the former B.P. Plant did indeed use large quantities of slag. The author would also question whether slag should be classed as a contaminant per se. However, since the trial pits established there was no slag at the site, this point is irrelevant.

With no soil contamination on the site there can be no threat to the broader environment. This risk from ground gases was fully quantified and found to be non-existent. The coal mine gas risk assessment was carried out in accordance with the CL:AIRE publication Good Practice for Risk Assessment for Coal Gas Emissions: October 2021 and done by a competent person as defined by said publication. The author started work in the coal industry over forty years ago and continues to work on coal mining legacy issues.

The conclusions of this report mean N.P.T. can safely discharge the desk study conditions. It is the author's opinion that there is no viable argument for carrying

out an intrusive investigation. Condition 4 is a standard Unexpected Contamination Condition. This is not pre-commencement but will run throughout the groundworks phase of construction. The proposed building will not require any Radon Protective Measures.

Richard Davies BSc. (Hons), MSc., F.G.S.

24/010/2024

APPENDIX A
GROUNDURE ENVIROINSIGHT
AND GEOINSIGHT REPORT
AFAN UNITED
PORT TALBOT

274375,189730,

Order Details

Date: 09/09/2024
Your ref: AFAN_UTD
Our Ref: GS-2BN-IDN-B59-KKQ

Site Details

Location: 274703 189713
Area: 0.93 ha
Authority: [Castell-nedd Port Talbot - Neath Port Talbot County Borough](#) ↗



Summary of findings

[p. 2 >](#) **Aerial image**

[p. 9 >](#)

OS MasterMap site plan

[p.14 >](#) [Insight User Guide](#) ↗

Summary of findings

Page	Section	Past land use >	On site	0-50m	50-250m	250-500m	500-2000m
15 >	1.1 >	Historical industrial land uses >	3	4	10	10	-
17 >	1.2 >	Historical tanks >	1	6	0	1	-
17 >	1.3 >	Historical energy features >	0	3	2	12	-
18	1.4	Historical petrol stations	0	0	0	0	-
18 >	1.5 >	Historical garages >	0	0	0	3	-
19	1.6	Historical military land	0	0	0	0	-
Page	Section	Past land use - un-grouped >	On site	0-50m	50-250m	250-500m	500-2000m
20 >	2.1 >	Historical industrial land uses >	3	4	12	12	-
22 >	2.2 >	Historical tanks >	2	10	0	1	-
22 >	2.3 >	Historical energy features >	0	4	2	17	-
23	2.4	Historical petrol stations	0	0	0	0	-
24 >	2.5 >	Historical garages >	0	0	0	8	-
Page	Section	Waste and landfill >	On site	0-50m	50-250m	250-500m	500-2000m
25	3.1	Active or recent landfill	0	0	0	0	-
25	3.2	Historical landfill (BGS records)	0	0	0	0	-
26	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
26	3.4	Historical landfill (EA/NRW records)	0	0	0	0	-
26	3.5	Historical waste sites	0	0	0	0	-
26	3.6	Licensed waste sites	0	0	0	0	-
26 >	3.7 >	Waste exemptions >	0	0	1	0	-
Page	Section	Current industrial land use >	On site	0-50m	50-250m	250-500m	500-2000m
28 >	4.1 >	Recent industrial land uses >	0	1	4	-	-
29 >	4.2 >	Current or recent petrol stations >	0	0	0	1	-
29	4.3	Electricity cables	0	0	0	0	-
29	4.4	Gas pipelines	0	0	0	0	-
29	4.5	Sites determined as Contaminated Land	0	0	0	0	-



30	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
30	4.7	Regulated explosive sites	0	0	0	0	-
30	4.8	Hazardous substance storage/usage	0	0	0	0	-
30	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
30	4.10	Licensed industrial activities (Part A(1))	0	0	0	0	-
31 >	4.11 >	Licensed pollutant release (Part A(2)/B) >	0	0	0	1	-
31	4.12	Radioactive Substance Authorisations	0	0	0	0	-
31	4.13	Licensed Discharges to controlled waters	0	0	0	0	-
31	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
32	4.15	Pollutant release to public sewer	0	0	0	0	-
32	4.16	List 1 Dangerous Substances	0	0	0	0	-
32	4.17	List 2 Dangerous Substances	0	0	0	0	-
32 >	4.18 >	Pollution Incidents (EA/NRW) >	0	0	3	5	-
33	4.19	Pollution inventory substances	0	0	0	0	-
34	4.20	Pollution inventory waste transfers	0	0	0	0	-
34	4.21	Pollution inventory radioactive waste	0	0	0	0	-
Page	Section	Hydrogeology >	On site	0-50m	50-250m	250-500m	500-2000m
35 >	5.1 >	Superficial aquifer >	Identified (within 500m)				
37 >	5.2 >	Bedrock aquifer >	Identified (within 500m)				
39 >	5.3 >	Groundwater vulnerability >	Identified (within 50m)				
40	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
40	5.5	Groundwater vulnerability- local information	None (within 0m)				
41	5.6	Groundwater abstractions	0	0	0	0	0
42 >	5.7 >	Surface water abstractions >	0	0	0	0	13
44	5.8	Potable abstractions	0	0	0	0	0
45	5.9	Source Protection Zones	0	0	0	0	-
45	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-
Page	Section	Hydrology >	On site	0-50m	50-250m	250-500m	500-2000m
46	6.1	Water Network (OS MasterMap)	0	0	0	-	-



46	6.2	Surface water features	0	0	0	-	-
47 >	6.3 >	WFD Surface water body catchments >	1	-	-	-	-
47 >	6.4 >	WFD Surface water bodies >	0	0	1	-	-
48 >	6.5 >	WFD Groundwater bodies >	1	-	-	-	-
Page	Section	River and coastal flooding >	On site	0-50m	50-250m	250-500m	500-2000m
49	7.1	Risk of flooding from rivers and the sea	None (within 50m)				
50 >	7.2 >	Historical Flood Events >	0	0	1	-	-
50	7.3	Flood Defences	0	0	0	-	-
50 >	7.4 >	Areas Benefiting from Flood Defences >	0	0	1	-	-
51	7.5	Flood Storage Areas	0	0	0	-	-
52	7.6	Flood Zone 2	None (within 50m)				
52	7.7	Flood Zone 3	None (within 50m)				
Page	Section	Surface water flooding >					
53 >	8.1 >	Surface water flooding >	1 in 30 year, 0.1m - 0.3m (within 50m)				
Page	Section	Groundwater flooding >					
55 >	9.1 >	Groundwater flooding >	Low (within 50m)				
Page	Section	Environmental designations	On site	0-50m	50-250m	250-500m	500-2000m
56	10.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	0
56	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
56	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
56	10.4	Special Protection Areas (SPA)	0	0	0	0	0
57	10.5	National Nature Reserves (NNR)	0	0	0	0	0
57	10.6	Local Nature Reserves (LNR)	0	0	0	0	0
57	10.7	Designated Ancient Woodland	0	0	0	0	0
57	10.8	Biosphere Reserves	0	0	0	0	0
58	10.9	Forest Parks	0	0	0	0	0
58	10.10	Marine Conservation Zones	0	0	0	0	0
58	10.11	Green Belt	0	0	0	0	0
58	10.12	Proposed Ramsar sites	0	0	0	0	0



58	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
59	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
59	10.15	Nitrate Sensitive Areas	0	0	0	0	0
59	10.16	Nitrate Vulnerable Zones	0	0	0	0	0
60	10.17	SSSI Impact Risk Zones	0	-	-	-	-
60	10.18	SSSI Units	0	0	0	0	0
Page	Section	Visual and cultural designations	On site	0-50m	50-250m	250-500m	500-2000m
61	11.1	World Heritage Sites	0	0	0	-	-
61	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
61	11.3	National Parks	0	0	0	-	-
61	11.4	Listed Buildings	0	0	0	-	-
62	11.5	Conservation Areas	0	0	0	-	-
62	11.6	Scheduled Ancient Monuments	0	0	0	-	-
62	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations >	On site	0-50m	50-250m	250-500m	500-2000m
63 >	12.1 >	Agricultural Land Classification >	Grade 5 (within 250m)				
64	12.2	Open Access Land	0	0	0	-	-
64	12.3	Tree Felling Licences	0	0	0	-	-
64	12.4	Environmental Stewardship Schemes	0	0	0	-	-
64	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
65	13.1	Priority Habitat Inventory	0	0	0	-	-
65	13.2	Habitat Networks	0	0	0	-	-
65	13.3	Open Mosaic Habitat	0	0	0	-	-
65	13.4	Limestone Pavement Orders	0	0	0	-	-
Page	Section	Geology 1:10,000 scale >	On site	0-50m	50-250m	250-500m	500-2000m
66 >	14.1 >	10k Availability >	Identified (within 500m)				
68 >	14.2 >	Artificial and made ground (10k) >	1	0	2	2	-
70 >	14.3 >	Superficial geology (10k) >	1	0	3	1	-



71	14.4	Landslip (10k)	0	0	0	0	-
72 >	14.5 >	Bedrock geology (10k) >	1	0	5	1	-
73 >	14.6 >	Bedrock faults and other linear features (10k) >	0	0	3	0	-
Page	Section	Geology 1:50,000 scale >	On site	0-50m	50-250m	250-500m	500-2000m
74 >	15.1 >	50k Availability >	Identified (within 500m)				
75 >	15.2 >	Artificial and made ground (50k) >	1	0	0	0	-
76 >	15.3 >	Artificial ground permeability (50k) >	1	0	-	-	-
77 >	15.4 >	Superficial geology (50k) >	1	0	1	0	-
78 >	15.5 >	Superficial permeability (50k) >	Identified (within 50m)				
78	15.6	Landslip (50k)	0	0	0	0	-
78	15.7	Landslip permeability (50k)	None (within 50m)				
79 >	15.8 >	Bedrock geology (50k) >	1	0	1	0	-
80 >	15.9 >	Bedrock permeability (50k) >	Identified (within 50m)				
80 >	15.10 >	Bedrock faults and other linear features (50k) >	0	0	2	0	-
Page	Section	Boreholes >	On site	0-50m	50-250m	250-500m	500-2000m
81 >	16.1 >	BGS Boreholes >	0	0	3	-	-
Page	Section	Natural ground subsidence >					
83 >	17.1 >	Shrink swell clays >	Negligible (within 50m)				
84 >	17.2 >	Running sands >	Negligible (within 50m)				
85 >	17.3 >	Compressible deposits >	Negligible (within 50m)				
86 >	17.4 >	Collapsible deposits >	Negligible (within 50m)				
87 >	17.5 >	Landslides >	Very low (within 50m)				
88 >	17.6 >	Ground dissolution of soluble rocks >	Negligible (within 50m)				
Page	Section	Mining and ground workings >	On site	0-50m	50-250m	250-500m	500-2000m
90	18.1	BritPits	0	0	0	0	-
91 >	18.2 >	Surface ground workings >	0	0	9	-	-
91	18.3	Underground workings	0	0	0	0	0
91	18.4	Underground mining extents	0	0	0	0	-
92	18.5	Historical Mineral Planning Areas	0	0	0	0	-



92	18.6	Non-coal mining	0	0	0	0	0
92	18.7	JPB mining areas	None (within 0m)				
92	18.8	The Coal Authority non-coal mining	0	0	0	0	-
93	18.9	Researched mining	0	0	0	0	-
93	18.10	Mining record office plans	0	0	0	0	-
93	18.11	BGS mine plans	0	0	0	0	-
93 >	18.12 >	Coal mining >	Identified (within 0m)				
94	18.13	Brine areas	None (within 0m)				
94	18.14	Gypsum areas	None (within 0m)				
94	18.15	Tin mining	None (within 0m)				
94	18.16	Clay mining	None (within 0m)				
Page	Section	Ground cavities and sinkholes	On site	0-50m	50-250m	250-500m	500-2000m
95	19.1	Natural cavities	0	0	0	0	-
95	19.2	Mining cavities	0	0	0	0	0
95	19.3	Reported recent incidents	0	0	0	0	-
95	19.4	Historical incidents	0	0	0	0	-
96	19.5	National karst database	0	0	0	0	-
Page	Section	Radon >					
97 >	20.1 >	Radon >	Less than 1% (within 0m)				
Page	Section	Soil chemistry >	On site	0-50m	50-250m	250-500m	500-2000m
99 >	21.1 >	BGS Estimated Background Soil Chemistry >	1	0	-	-	-
99 >	21.2 >	BGS Estimated Urban Soil Chemistry >	4	7	-	-	-
100 >	21.3 >	BGS Measured Urban Soil Chemistry >	0	1	-	-	-
Page	Section	Railway infrastructure and projects >	On site	0-50m	50-250m	250-500m	500-2000m
101	22.1	Underground railways (London)	0	0	0	-	-
101	22.2	Underground railways (Non-London)	0	0	0	-	-
102	22.3	Railway tunnels	0	0	0	-	-
102 >	22.4 >	Historical railway and tunnel features >	0	0	5	-	-
102	22.5	Royal Mail tunnels	0	0	0	-	-



103	22.6	Historical railways	0	0	0	-	-
103	22.7	Railways	0	0	0	-	-
103	22.8	Crossrail 1	0	0	0	0	-
103	22.9	Crossrail 2	0	0	0	0	-
103	22.10	HS2	0	0	0	0	-

Recent aerial photograph



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Capture Date: 14/04/2020

Site Area: 0.93ha



Contact us with any questions at:

info@groundsure.com

01273 257 755

Date: 9 September 2024

Recent site history - 2017 aerial photograph



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Capture Date: 26/05/2017

Site Area: 0.93ha



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01273 257 755

Date: 9 September 2024

Recent site history - 2009 aerial photograph



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Capture Date: 13/10/2009

Site Area: 0.93ha



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Date: 9 September 2024

Recent site history - 2001 aerial photograph



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Capture Date: 27/08/2001

Site Area: 0.93ha



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Date: 9 September 2024

Recent site history - 2000 aerial photograph



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Capture Date: 18/06/2000

Site Area: 0.93ha



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Date: 9 September 2024

OS MasterMap site plan



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Site Area: 0.93ha



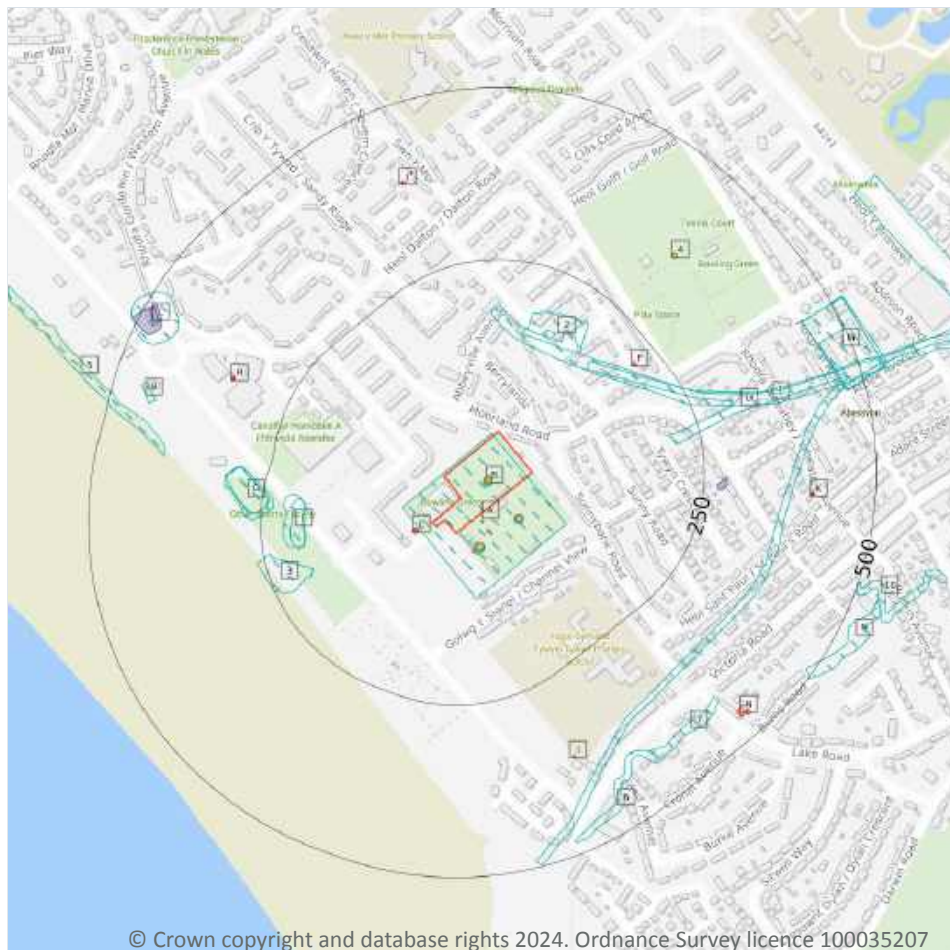
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Date: 9 September 2024

1 Past land use



- Site Outline
- Search buffers in metres (m)
- Historical industrial land uses
- Historical tanks
- Historical energy features
- Historical garages

1.1 Historical industrial land uses

Records within 500m

27

Potentially contaminative land use features digitised from historical Ordnance Survey mapping at 1:10,000 and 1:10,560 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on [page 15](#) >

ID	Location	Land use	Dates present	Group ID
A	On site	Unspecified Commercial/Industrial	1965	331653



ID	Location	Land use	Dates present	Group ID
B	On site	Unspecified Tanks	1965	336616
B	On site	Unspecified Tank	1962	338792
A	29m S	Unspecified Tank	1962	338794
A	31m S	Unspecified Tanks	1965	336618
A	34m SE	Unspecified Tank	1962	338793
A	36m SE	Unspecified Tanks	1965	336617
1	132m N	Railway Sidings	1914 - 1921	374716
2	146m N	Brick Works	1914 - 1921	356431
D	157m NE	Railway Sidings	1897	383664
E	183m W	Unspecified Heap	1947	372335
3	186m SW	Unspecified Heap	1947	339610
E	187m W	Unspecified Heap	1897	381819
G	232m W	Unspecified Pit	1980	370800
G	240m W	Unspecified Pit	1982	362155
G	240m W	Unspecified Pit	1965	383864
G	240m W	Unspecified Pit	1993	384796
5	401m W	Unspecified Ground Workings	1921 - 1947	351493
6	407m SE	Unspecified Ground Workings	1897	346083
7	419m SE	Unspecified Ground Workings	1947	345958
8	434m W	Coastguard Station	1980	349155
L	442m NW	Garage	1965	341534
M	450m NE	Hospital	1965 - 1982	364125
M	450m NE	Hospital	1993	386142
M	456m E	Hospital	1947	390891
9	490m SE	Unspecified Ground Workings	1947	357092
10	498m E	Unspecified Ground Workings	1897	354183

This data is sourced from Ordnance Survey / Groundsure.



1.2 Historical tanks

Records within 500m

8

Tank features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on [page 15 >](#)

ID	Location	Land use	Dates present	Group ID
B	On site	Unspecified Tank	1955 - 1956	45255
A	9m S	Unspecified Tank	1956	44380
A	10m S	Unspecified Tank	1955	45104
A	24m S	Unspecified Tank	1955 - 1956	44906
A	31m S	Unspecified Tank	1955 - 1956	41589
A	33m S	Unspecified Tank	1955 - 1956	45432
A	35m SE	Unspecified Tank	1955 - 1956	42788
4	358m NE	Unspecified Tank	1939	40047

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m

17

Energy features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on [page 15 >](#)

ID	Location	Land use	Dates present	Group ID
C	24m SW	Electricity Substation	1955 - 1956	24343
C	24m SW	Electricity Transformer	1971	21210
C	25m SW	Electricity Substation	1993	24337



ID	Location	Land use	Dates present	Group ID
F	212m NE	Electricity Transformer	1971	21165
F	213m NE	Electricity Substation	1993	20456
H	335m W	Electricity Transformer	1966	21202
H	336m W	Electricity Substation	1993	20612
I	365m S	Electricity Transformer	1966	21203
I	366m S	Electricity Substation	1993	20613
J	385m N	Electricity Substation	1970	24282
J	385m N	Electricity Substation	1956	24957
J	394m N	Electricity Substation	1993 - 1997	24874
J	396m N	Electricity Substation	1986	21729
K	405m E	Electricity Transformer	1968 - 1969	22060
K	406m E	Electricity Substation	1986 - 1991	21713
N	455m SE	Electricity Substation	1955	20438
N	465m SE	Electricity Substation	1968 - 1991	22892

This data is sourced from Ordnance Survey / Groundsure.

1.4 Historical petrol stations

Records within 500m

0

Petrol stations digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

1.5 Historical garages

Records within 500m

3

Garages digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-



grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on [page 15](#) >

ID	Location	Land use	Dates present	Group ID
D	269m E	Garage	1968 - 1991	8458
L	465m NW	Garage	1969	7621
L	471m NW	Garage	1961 - 1966	7881

This data is sourced from Ordnance Survey / Groundsure.

1.6 Historical military land

Records within 500m

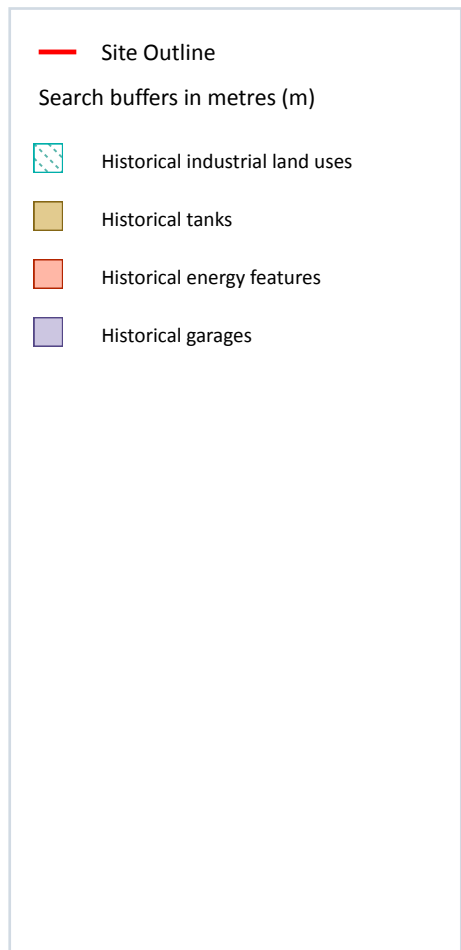
0

Areas of military land digitised from multiple sources including the National Archives, local records, MOD records and verified other sources, intelligently grouped into contiguous features.

This data is sourced from Ordnance Survey / Groundsure / other sources.



2 Past land use - un-grouped



2.1 Historical industrial land uses

31

Potentially contaminative land use features digitised from historical Ordnance Survey mapping at 1:10,000 and 10,560 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on [page 20](#) >

ID	Location	Land Use	Date	Group ID
A	On site	Unspecified Tanks	1965	336616
A	On site	Unspecified Tank	1962	338792
B	On site	Unspecified Commercial/Industrial	1965	331653

ID	Location	Land Use	Date	Group ID
B	29m S	Unspecified Tank	1962	338794
B	31m S	Unspecified Tanks	1965	336618
B	34m SE	Unspecified Tank	1962	338793
B	36m SE	Unspecified Tanks	1965	336617
D	132m N	Railway Sidings	1914	374716
D	132m N	Railway Sidings	1921	374716
E	146m N	Brick Works	1914	356431
E	146m N	Brick Works	1921	356431
F	157m NE	Railway Sidings	1897	383664
G	183m W	Unspecified Heap	1947	372335
1	186m SW	Unspecified Heap	1947	339610
G	187m W	Unspecified Heap	1897	381819
I	232m W	Unspecified Pit	1980	370800
I	240m W	Unspecified Pit	1993	384796
I	240m W	Unspecified Pit	1982	362155
I	240m W	Unspecified Pit	1965	383864
M	401m W	Unspecified Ground Workings	1947	351493
M	401m W	Unspecified Ground Workings	1921	351493
3	407m SE	Unspecified Ground Workings	1897	346083
4	419m SE	Unspecified Ground Workings	1947	345958
5	434m W	Coastguard Station	1980	349155
O	442m NW	Garage	1965	341534
P	450m NE	Hospital	1993	386142
P	450m NE	Hospital	1982	364125
P	450m NE	Hospital	1965	364125
P	456m E	Hospital	1947	390891
6	490m SE	Unspecified Ground Workings	1947	357092
7	498m E	Unspecified Ground Workings	1897	354183

This data is sourced from Ordnance Survey / Groundsure.



Contact us with any questions at:

info@groundsure.com ↗

01273 257 755

Date: 9 September 2024

2.2 Historical tanks

Records within 500m

13

Tank features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on [page 20 >](#)

ID	Location	Land Use	Date	Group ID
A	On site	Unspecified Tank	1956	45255
A	On site	Unspecified Tank	1955	45255
B	9m S	Unspecified Tank	1956	44380
B	10m S	Unspecified Tank	1955	45104
B	24m S	Unspecified Tank	1956	44906
B	24m S	Unspecified Tank	1955	44906
B	31m S	Unspecified Tank	1955	41589
B	32m S	Unspecified Tank	1956	41589
B	33m S	Unspecified Tank	1955	45432
B	34m S	Unspecified Tank	1956	45432
B	35m SE	Unspecified Tank	1956	42788
B	35m SE	Unspecified Tank	1955	42788
2	358m NE	Unspecified Tank	1939	40047

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m

23

Energy features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on [page 20 >](#)

ID	Location	Land Use	Date	Group ID
C	24m SW	Electricity Substation	1956	24343



ID	Location	Land Use	Date	Group ID
C	24m SW	Electricity Transformer	1971	21210
C	24m SW	Electricity Substation	1955	24343
C	25m SW	Electricity Substation	1993	24337
H	212m NE	Electricity Transformer	1971	21165
H	213m NE	Electricity Substation	1993	20456
J	335m W	Electricity Transformer	1966	21202
J	336m W	Electricity Substation	1993	20612
K	365m S	Electricity Transformer	1966	21203
K	366m S	Electricity Substation	1993	20613
L	385m N	Electricity Substation	1956	24957
L	385m N	Electricity Substation	1970	24282
L	394m N	Electricity Substation	1993	24874
L	394m N	Electricity Substation	1997	24874
L	396m N	Electricity Substation	1986	21729
N	405m E	Electricity Transformer	1968	22060
N	406m E	Electricity Transformer	1969	22060
N	406m E	Electricity Substation	1991	21713
N	406m E	Electricity Substation	1986	21713
Q	455m SE	Electricity Substation	1955	20438
Q	465m SE	Electricity Substation	1969	22892
Q	465m SE	Electricity Substation	1968	22892
Q	466m SE	Electricity Substation	1991	22892

This data is sourced from Ordnance Survey / Groundsure.

2.4 Historical petrol stations

Records within 500m

0

Petrol stations digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.



This data is sourced from Ordnance Survey / Groundsure.

2.5 Historical garages

Records within 500m

8

Garages digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on [page 20](#) >

ID	Location	Land Use	Date	Group ID
F	269m E	Garage	1968	8458
F	269m E	Garage	1991	8458
F	269m E	Garage	1986	8458
F	270m E	Garage	1969	8458
O	465m NW	Garage	1969	7621
O	471m NW	Garage	1966	7881
O	471m NW	Garage	1966	7881
O	471m NW	Garage	1961	7881

This data is sourced from Ordnance Survey / Groundsure.



3 Waste and landfill



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- Site Outline
- Search buffers in metres (m)
- Waste exemptions

3.1 Active or recent landfill

Records within 500m

0

Active or recently closed landfill sites under Environment Agency/Natural Resources Wales regulation.

This data is sourced from the Environment Agency and Natural Resources Wales.

3.2 Historical landfill (BGS records)

Records within 500m

0

Landfill sites identified on a survey carried out on behalf of the DoE in 1973. These sites may have been closed or operational at this time.

This data is sourced from the British Geological Survey.



3.3 Historical landfill (LA/mapping records)

Records within 500m**0**

Landfill sites identified from Local Authority records and high detail historical mapping.

This data is sourced from the Ordnance Survey/Groundsure and Local Authority records.

3.4 Historical landfill (EA/NRW records)

Records within 500m**0**

Known historical (closed) landfill sites (e.g. sites where there is no PPC permit or waste management licence currently in force). This includes sites that existed before the waste licensing regime and sites that have been licensed in the past but where a licence has been revoked, ceased to exist or surrendered and a certificate of completion has been issued.

This data is sourced from the Environment Agency and Natural Resources Wales.

3.5 Historical waste sites

Records within 500m**0**

Waste site records derived from Local Authority planning records and high detail historical mapping.

This data is sourced from Ordnance Survey/Groundsure and Local Authority records.

3.6 Licensed waste sites

Records within 500m**0**

Active or recently closed waste sites under Environment Agency/Natural Resources Wales regulation.

This data is sourced from the Environment Agency and Natural Resources Wales.

3.7 Waste exemptions

Records within 500m**1**

Activities involving the storage, treatment, use or disposal of waste that are exempt from needing a permit. Exemptions have specific limits and conditions that must be adhered to.

Features are displayed on the Waste and landfill map on [page 25](#) >

ID	Location	Site	Reference	Category	Sub-Category	Description
1	108m S	Persimmon Homes West Wales, Land At Princess Margaret Way, Port Talbot, Neath Port Talbot, Sa12 6qw	NRW-WME091773	Using waste exemption	Not on a farm	Use of waste in construction

This data is sourced from the Environment Agency and Natural Resources Wales.



4 Current industrial land use



- Site Outline
- Search buffers in metres (m)
- Recent industrial land uses
- △ Current or recent petrol stations
- Licensed pollutant release (Part A(2)/B)
- Pollution Incidents (EA/NRW)

4.1 Recent industrial land uses

Records within 250m

5

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on [page 28](#) >

ID	Location	Company	Address	Activity	Category
1	25m SW	Electricity Sub Station	West Glamorgan, SA12	Electrical Features	Infrastructure and Facilities
3	91m NW	Electricity Sub Station	West Glamorgan, SA12	Electrical Features	Infrastructure and Facilities
4	142m W	Electricity Sub Station	West Glamorgan, SA12	Electrical Features	Infrastructure and Facilities



ID	Location	Company	Address	Activity	Category
5	207m NE	Electricity Sub Station	West Glamorgan, SA12	Electrical Features	Infrastructure and Facilities
6	224m W	Electricity Sub Station	West Glamorgan, SA12	Electrical Features	Infrastructure and Facilities

This data is sourced from Ordnance Survey.

4.2 Current or recent petrol stations

Records within 500m

1

Open, closed, under development and obsolete petrol stations.

Features are displayed on the Current industrial land use map on [page 28](#) >

ID	Location	Company	Address	LPG	Status
C	471m NW	TEXACO	Princess Margaret Way, Aberavon, Port Talbot, Neath Port Talbot, SA12 7PE	No	Open

This data is sourced from Experian.

4.3 Electricity cables

Records within 500m

0

High voltage underground electricity transmission cables.

This data is sourced from National Grid.

4.4 Gas pipelines

Records within 500m

0

High pressure underground gas transmission pipelines.

This data is sourced from National Grid.

4.5 Sites determined as Contaminated Land

Records within 500m

0

Contaminated Land Register of sites designated under Part 2a of the Environmental Protection Act 1990.

This data is sourced from Local Authority records.



4.6 Control of Major Accident Hazards (COMAH)

Records within 500m

0

Control of Major Accident Hazards (COMAH) sites. This data includes upper and lower tier sites, and includes a historical archive of COMAH sites and Notification of Installations Handling Hazardous Substances (NIHHS) records.

This data is sourced from the Health and Safety Executive.

4.7 Regulated explosive sites

Records within 500m

0

Sites registered and licensed by the Health and Safety Executive under the Manufacture and Storage of Explosives Regulations 2005 (MSER). The last update to this data was in April 2011.

This data is sourced from the Health and Safety Executive.

4.8 Hazardous substance storage/usage

Records within 500m

0

Consents granted for a site to hold certain quantities of hazardous substances at or above defined limits in accordance with the Planning (Hazardous Substances) Regulations 2015.

This data is sourced from Local Authority records.

4.9 Historical licensed industrial activities (IPC)

Records within 500m

0

Integrated Pollution Control (IPC) records of substance releases to air, land and water. This data represents a historical archive as the IPC regime has been superseded.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.10 Licensed industrial activities (Part A(1))

Records within 500m

0

Records of Part A(1) installations regulated under the Environmental Permitting (England and Wales) Regulations 2016 for the release of substances to the environment.

This data is sourced from the Environment Agency and Natural Resources Wales.



4.11 Licensed pollutant release (Part A(2)/B)

Records within 500m

1

Records of Part A(2) and Part B installations regulated under the Environmental Permitting (England and Wales) Regulations 2016 for the release of substances to the environment.

Features are displayed on the Current industrial land use map on [page 28](#) >

ID	Location	Address	Details	
C	496m NW	St. Albans Operating Company Limited, Murco Service Station, Princess Margaret Way, Port Talbot, SA12 7PE	Process: Unloading of Petrol into Storage at Service Stations Status: Current Permit Permit Type: Part B	Enforcement: No enforcements issued Date of enforcement: No enforcements issued Comment: No enforcements issued

This data is sourced from Local Authority records.

4.12 Radioactive Substance Authorisations

Records within 500m

0

Records of the storage, use, accumulation and disposal of radioactive substances regulated under the Radioactive Substances Act 1993.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.13 Licensed Discharges to controlled waters

Records within 500m

0

Discharges of treated or untreated effluent to controlled waters under the Water Resources Act 1991.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.14 Pollutant release to surface waters (Red List)

Records within 500m

0

Discharges of specified substances under the Environmental Protection (Prescribed Processes and Substances) Regulations 1991.

This data is sourced from the Environment Agency and Natural Resources Wales.



4.15 Pollutant release to public sewer

Records within 500m**0**

Discharges of Special Category Effluents to the public sewer.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.16 List 1 Dangerous Substances

Records within 500m**0**

Discharges of substances identified on List I of European Directive E 2006/11/EC, and regulated under the Environmental Damage (Prevention and Remediation) Regulations 2015.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.17 List 2 Dangerous Substances

Records within 500m**0**

Discharges of substances identified on List II of European Directive E 2006/11/EC, and regulated under the Environmental Damage (Prevention and Remediation) Regulations 2015.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.18 Pollution Incidents (EA/NRW)

Records within 500m**8**

Records of substantiated pollution incidents. Since 2006 this data has only included category 1 (major) and 2 (significant) pollution incidents.

Features are displayed on the Current industrial land use map on [page 28 >](#)

ID	Location	Details	
2	77m SW	Incident Date: 16/12/2009 Incident Identification: 741055 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Smoke	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 1 (Major)
A	170m SE	Incident Date: 05/04/2001 Incident Identification: 1728 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Smoke	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)



ID	Location	Details	
A	170m SE	Incident Date: 05/04/2001 Incident Identification: 1728 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Smoke	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
B	375m SE	Incident Date: 18/04/2013 Incident Identification: 1103899 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Dust	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
B	375m SE	Incident Date: 29/09/2014 Incident Identification: 1282145 Pollutant: Multiple Pollutants Pollutant Description: 2 Pollutants Including Smoke	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
B	375m SE	Incident Date: 10/12/2001 Incident Identification: 47522 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Dust	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 3 (Minor)
B	375m SE	Incident Date: 28/10/2001 Incident Identification: 39962 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Fumes	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)
7	397m E	Incident Date: 07/09/2001 Incident Identification: 29479 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Chemical Odour	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)

This data is sourced from the Environment Agency and Natural Resources Wales.

4.19 Pollution inventory substances

Records within 500m	0
----------------------------	----------

The pollution inventory (substances) includes reporting on annual emissions of certain regulated substances to air, controlled waters and land. A reporting threshold for each substance is also included. Where emissions fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.



4.20 Pollution inventory waste transfers

Records within 500m

0

The pollution inventory (waste transfers) includes reporting on annual transfers and recovery/disposal of controlled wastes from a site. A reporting threshold for each waste type is also included. Where releases fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.

4.21 Pollution inventory radioactive waste

Records within 500m

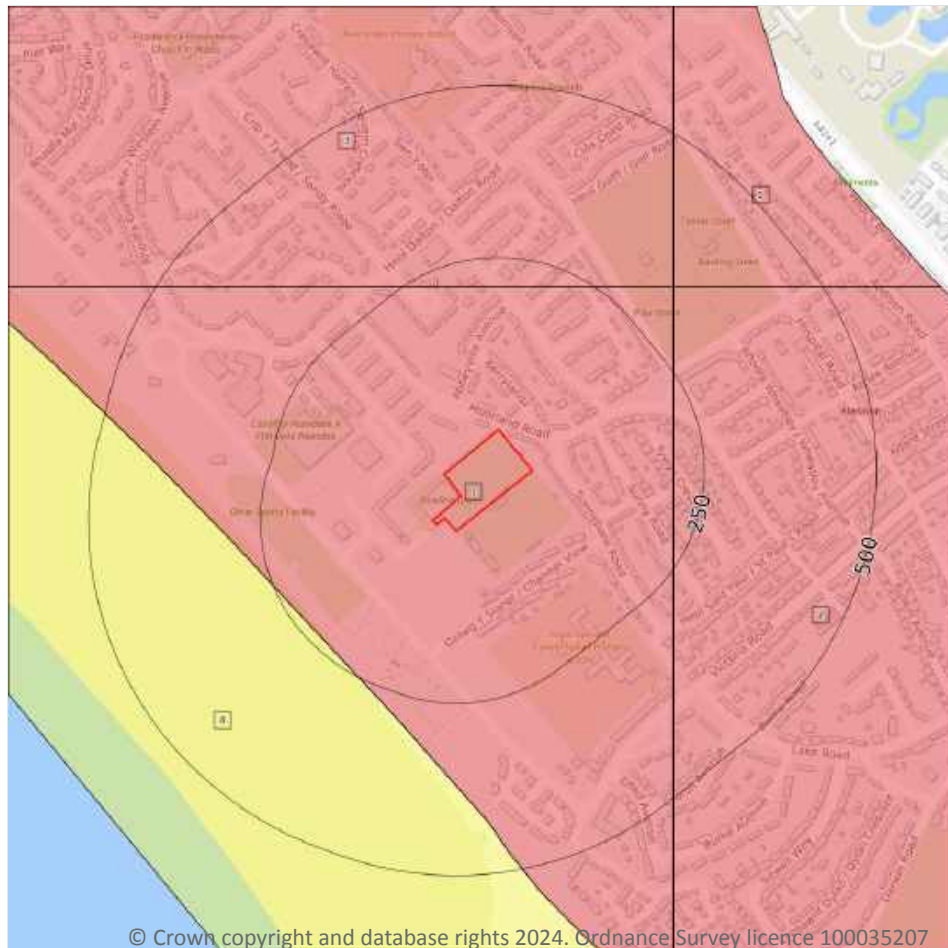
0

The pollution inventory (radioactive wastes) includes reporting on annual releases of radioactive substances from a site, including the means of release. Where releases fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.



5 Hydrogeology - Superficial aquifer



- Site Outline
- Search buffers in metres (m)
- Principal
 - Secondary A
 - Secondary B
 - Secondary Undifferentiated
 - Unproductive
 - Unknown

5.1 Superficial aquifer

Records within 500m

5

Aquifer status of groundwater held within superficial geology.

Features are displayed on the Hydrogeology map on [page 35 >](#)

ID	Location	Designation	Description
1	On site	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
2	205m E	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers



ID	Location	Designation	Description
3	207m N	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
4	234m SW	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type
5	328m NE	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.



Bedrock aquifer



- Site Outline
- Search buffers in metres (m)
- Principal
 - Secondary A
 - Secondary B
 - Secondary Undifferentiated
 - Unproductive

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5.2 Bedrock aquifer

Records within 500m

4

Aquifer status of groundwater held within bedrock geology.

Features are displayed on the Bedrock aquifer map on [page 37](#) >

ID	Location	Designation	Description
1	On site	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
2	205m E	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

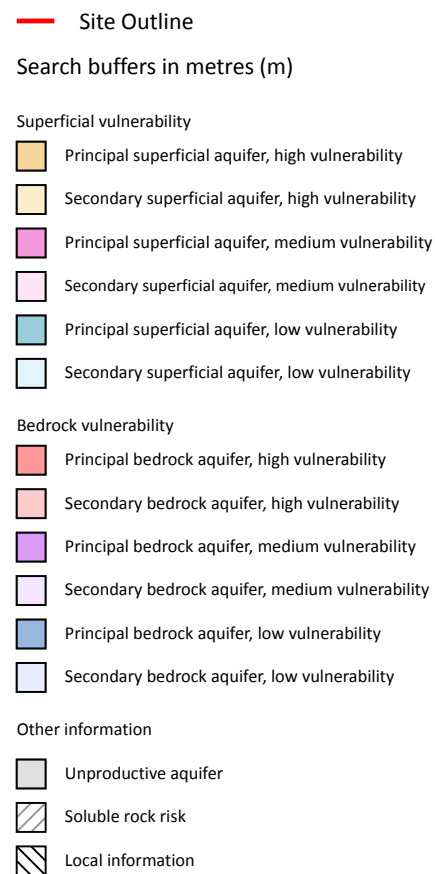


ID	Location	Designation	Description
3	207m N	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
4	328m NE	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.



Groundwater vulnerability



5.3 Groundwater vulnerability

Records within 50m

1

An assessment of the vulnerability of groundwater to a pollutant discharged at ground level based on the hydrological, geological, hydrogeological and soil properties within a one kilometre square grid. Groundwater vulnerability is described as High, Medium or Low as follows:

- High - Areas able to easily transmit pollution to groundwater. They are likely to be characterised by high leaching soils and the absence of low permeability superficial deposits.
- Medium - Intermediate between high and low vulnerability.
- Low - Areas that provide the greatest protection from pollution. They are likely to be characterised by low leaching soils and/or the presence of superficial deposits characterised by a low permeability.

Features are displayed on the Groundwater vulnerability map on [page 39](#) >



ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	On site	Summary Classification: Secondary superficial aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: High Infiltration value: >70% Dilution value: >550mm/year	Vulnerability: High Aquifer type: Secondary Thickness: >10m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Secondary Flow mechanism: Well connected fractures

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.

5.4 Groundwater vulnerability- soluble rock risk

Records on site	0
------------------------	----------

This dataset identifies areas where solution features that enable rapid movement of a pollutant may be present within a 1km grid square.

This data is sourced from the British Geological Survey and the Environment Agency.

5.5 Groundwater vulnerability- local information

Records on site	0
------------------------	----------

This dataset identifies areas where additional local information affecting vulnerability is held by the Environment Agency. Further information can be obtained by contacting the Environment Agency local Area groundwater team through the Environment Agency National Customer Call Centre on 03798 506 506 or by email on enquiries@environment-agency.gov.uk ↗.

This data is sourced from the British Geological Survey and the Environment Agency.

Abstractions and Source Protection Zones



- Site Outline
- Search buffers in metres (m)
- Source Protection Zone 1
Inner catchment
- Source Protection Zone 2
Outer catchment
- Source Protection Zone 3
Total catchment
- Source Protection Zone 4
Zone of Special Interest
- Source Protection Zone 1c
Inner catchment - confined aquifer
- Source Protection Zone 2c
Outer catchment - confined aquifer
- Source Protection Zone 3c
Total catchment - confined aquifer
- Drinking water abstraction licences
Point features
- Drinking water abstraction licences
Polygon features
- Drinking water abstraction licences
Linear features
- Groundwater abstraction licence (point)
- Groundwater abstraction licence (area)
- Groundwater abstraction licence (linear)
- Surface Water Abstractions (point)
- Surface Water Abstractions (area)
- Surface Water Abstractions (linear)

5.6 Groundwater abstractions

Records within 2000m

0

Licensed groundwater abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, between two points (line data) or a larger area.

This data is sourced from the Environment Agency and Natural Resources Wales.

5.7 Surface water abstractions

Records within 2000m

13

Licensed surface water abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, a stretch of watercourse or a larger area.

Features are displayed on the Abstractions and Source Protection Zones map on [page 41](#) >

ID	Location	Details	
-	1186m E	Status: Active Licence No: 21/58/61/0009 Details: Process Water - Medium Direct Source: - Point: - Data Type: Point Name: - Easting: 275980 Northing: 189690	Annual Volume (m ³): 14933610 Max Daily Volume (m ³): 40914 Original Application No: - Original Start Date: 12/11/2010 Expiry Date: - Issue No: - Version Start Date: - Version End Date: -
-	1186m E	Status: Active Licence No: 21/58/61/0009 Details: Evaporative Cooling - High Direct Source: - Point: - Data Type: Point Name: - Easting: 275980 Northing: 189690	Annual Volume (m ³): 14933610 Max Daily Volume (m ³): 40914 Original Application No: - Original Start Date: 12/11/2010 Expiry Date: - Issue No: - Version Start Date: - Version End Date: -
-	1186m E	Status: Historical Licence No: 21/58/61/0009 Details: Process Water Direct Source: EAW Surface Water Point: RIVER AFAN TO PORT TALBOT DOCKS Data Type: Point Name: Tata Steel UK Limited Easting: 275980 Northing: 189690	Annual Volume (m ³): 14933610 Max Daily Volume (m ³): 40914 Original Application No: - Original Start Date: 25/03/1966 Expiry Date: - Issue No: 101 Version Start Date: 12/11/2010 Version End Date: -
-	1186m E	Status: Historical Licence No: 21/58/61/0009 Details: Evaporative Cooling Direct Source: EAW Surface Water Point: RIVER AFAN TO PORT TALBOT DOCKS Data Type: Point Name: Tata Steel UK Limited Easting: 275980 Northing: 189690	Annual Volume (m ³): 14933610 Max Daily Volume (m ³): 40914 Original Application No: - Original Start Date: 25/03/1966 Expiry Date: - Issue No: 101 Version Start Date: 12/11/2010 Version End Date: -



ID	Location	Details	
-	1186m E	Status: Historical Licence No: 21/58/61/0009 Details: Process Water - Medium Direct Source: - Point: - Data Type: Point Name: - Easting: 275980 Northing: 189690	Annual Volume (m ³): 14933610 Max Daily Volume (m ³): 40912.8 Original Application No: - Original Start Date: 12/11/2010 Expiry Date: - Issue No: - Version Start Date: - Version End Date: -
-	1186m E	Status: Historical Licence No: 21/58/61/0009 Details: Evaporative Cooling - High Direct Source: - Point: - Data Type: Point Name: - Easting: 275980 Northing: 189690	Annual Volume (m ³): 14933610 Max Daily Volume (m ³): 40912.8 Original Application No: - Original Start Date: 12/11/2010 Expiry Date: - Issue No: - Version Start Date: - Version End Date: -
-	1244m E	Status: Historical Licence No: WA/058/0061/0060 Details: Transfer between Sources (Post Water Act 2003) - Very Low Direct Source: Green Park Weir Point: - Data Type: Point Name: - Easting: 276039 Northing: 189707	Annual Volume (m ³): 0 Max Daily Volume (m ³): - Original Application No: - Original Start Date: 30/09/2022 Expiry Date: 31/03/2029 Issue No: - Version Start Date: - Version End Date: -
-	1259m E	Status: Active Licence No: WA/058/0061/007 Details: Unknown (Impounding) - Direct Source: - Point: - Data Type: Point Name: - Easting: 276054 Northing: 189756	Annual Volume (m ³): 0 Max Daily Volume (m ³): - Original Application No: - Original Start Date: 29/05/2012 Expiry Date: - Issue No: - Version Start Date: - Version End Date: -
-	1670m SE	Status: Historical Licence No: 21/58/61/0042 Details: Process Water - Medium Direct Source: - Point: - Data Type: Point Name: - Easting: 276230 Northing: 188880	Annual Volume (m ³): 8000 Max Daily Volume (m ³): 397.44 Original Application No: - Original Start Date: 01/05/2014 Expiry Date: 31/03/2029 Issue No: - Version Start Date: - Version End Date: -



ID	Location	Details	
-	1670m SE	Status: Historical Licence No: 21/58/61/0042 Details: Dust Suppression Direct Source: EAW Surface Water Point: PORT TALBOT DOCKS PORT TALBOT Data Type: Point Name: Civil and Marine Ltd Easting: 276230 Northing: 188880	Annual Volume (m ³): 5000 Max Daily Volume (m ³): 49.68 Original Application No: - Original Start Date: 15/04/2002 Expiry Date: 14/04/2017 Issue No: 4 Version Start Date: 21/05/2010 Version End Date: -
-	1670m SE	Status: Historical Licence No: 21/58/61/0042 Details: Process Water Direct Source: EAW Surface Water Point: PORT TALBOT DOCKS PORT TALBOT Data Type: Point Name: Civil and Marine Ltd Easting: 276230 Northing: 188880	Annual Volume (m ³): 8000 Max Daily Volume (m ³): 49.68 Original Application No: - Original Start Date: 15/04/2002 Expiry Date: 31/03/2029 Issue No: 5 Version Start Date: 01/05/2014 Version End Date: -
-	1670m SE	Status: Active Licence No: 21/58/61/0042 Details: Process Water - Medium Direct Source: - Point: - Data Type: Point Name: - Easting: 276230 Northing: 188880	Annual Volume (m ³): 8000 Max Daily Volume (m ³): 49.68 Original Application No: - Original Start Date: 01/05/2014 Expiry Date: 31/03/2029 Issue No: - Version Start Date: - Version End Date: -
-	1688m SE	Status: Historical Licence No: 21/58/61/0042 Details: Dust Suppression Direct Source: EAW Surface Water Point: CIVIL & MARINE SLAG CEMENT LTD QUAY AT PORT TALBOT DOCKS Data Type: Point Name: Civil and Marine Ltd Easting: 276240 Northing: 188860	Annual Volume (m ³): 5000 Max Daily Volume (m ³): 49.68 Original Application No: - Original Start Date: 15/04/2002 Expiry Date: 14/04/2017 Issue No: 3 Version Start Date: 12/09/2008 Version End Date: -

This data is sourced from the Environment Agency and Natural Resources Wales.

5.8 Potable abstractions

Records within 2000m

0

Licensed potable water abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, a stretch of watercourse or a larger area.



This data is sourced from the Environment Agency and Natural Resources Wales.

5.9 Source Protection Zones

Records within 500m

0

Source Protection Zones define the sensitivity of an area around a potable abstraction site to contamination.

This data is sourced from the Environment Agency and Natural Resources Wales.

5.10 Source Protection Zones (confined aquifer)

Records within 500m

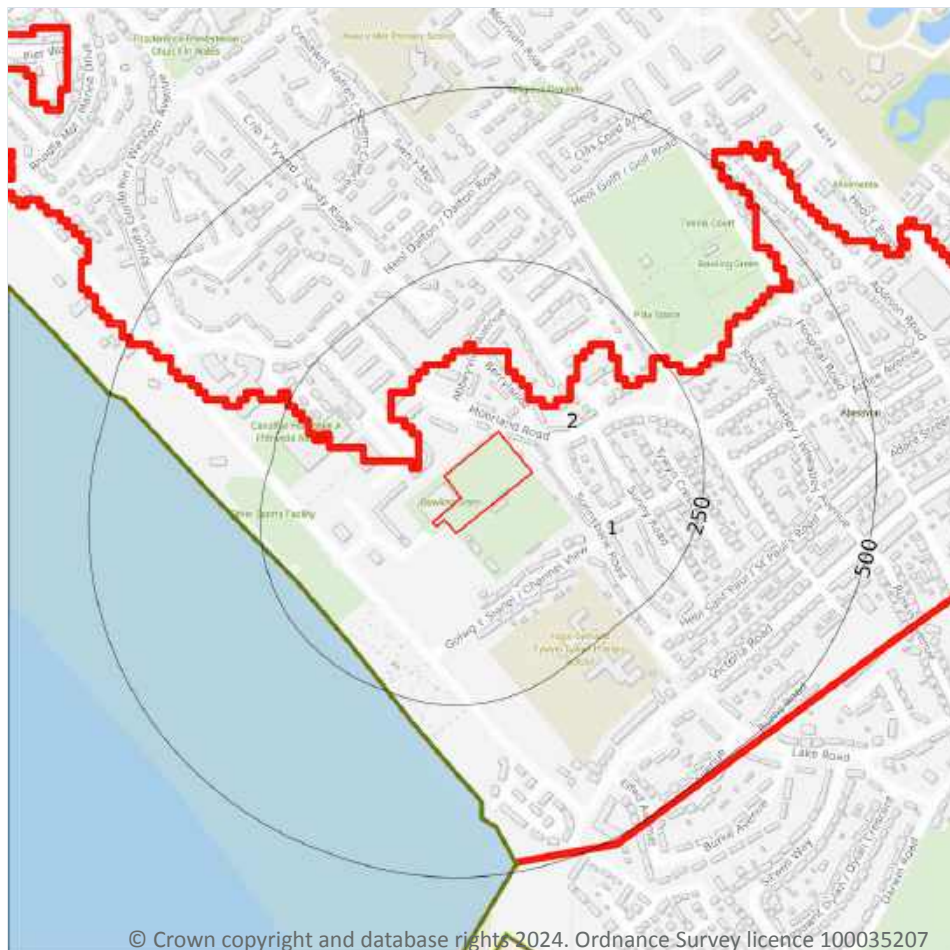
0

Source Protection Zones in the confined aquifer define the sensitivity around a deep groundwater abstraction to contamination. A confined aquifer would normally be protected from contamination by overlying geology and is only considered a sensitive resource if deep excavation/drilling is taking place.

This data is sourced from the Environment Agency and Natural Resources Wales.



6 Hydrology



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- Site Outline
- Search buffers in metres (m)
- Water Network (OS MasterMap)
- Surface water features (wider than 5m)
- Surface water features (narrower than 5m)
- ⋯ WFD River, canal and surface water transfer water bodies
- WFD Lake water bodies
- WFD Transitional and coastal water bodies
- WFD Surface water body catchments boundaries
- WFD Groundwater body boundaries

6.1 Water Network (OS MasterMap)

Records within 250m

0

Detailed water network of Great Britain showing the flow and precise central course of every river, stream, lake and canal.

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m

0

Covering rivers, streams and lakes (some overlap with OS MasterMap Water Network data in previous section) but additionally covers smaller features such as ponds. Rivers and streams narrower than 5m are represented as a single line. Lakes, ponds and rivers or streams wider than 5m are represented as polygons.



This data is sourced from the Ordnance Survey.

6.3 WFD Surface water body catchments

Records on site

1

The Water Framework Directive is an EU-led framework for the protection of inland surface waters, estuaries, coastal waters and groundwater through river basin-level management planning. In terms of surface water, these basins are broken down into smaller units known as management, operational and water body catchments.

Features are displayed on the Hydrology map on [page 46](#) >

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
1	On site	Coastal catchment	Not part of a river WB catchment	331	Neath	Tawe to Cadoxton

This data is sourced from the Environment Agency and Natural Resources Wales.

6.4 WFD Surface water bodies

Records identified

1

Surface water bodies under the Directive may be rivers, lakes, estuary or coastal. To achieve the purpose of the Directive, environmental objectives have been set and are reported on for each water body. The progress towards delivery of the objectives is then reported on by the relevant competent authorities at the end of each six-year cycle. The river water body directly associated with the catchment listed in the previous section is detailed below, along with any lake, canal, coastal or artificial water body within 250m of the site.

Features are displayed on the Hydrology map on [page 46](#) >

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
4	203m SW	Coastal	Swansea Bay	GB641008260000	Moderate	Fail	Good	2016

This data is sourced from the Environment Agency and Natural Resources Wales.



6.5 WFD Groundwater bodies

Records on site

1

Groundwater bodies are also covered by the Directive and the same regime of objectives and reporting detailed in the previous section is in place.

Features are displayed on the Hydrology map on [page 46 >](#)

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
2	On site	Swansea Carboniferous Coal Measures	GB41002G201000	Poor	Poor	Good	2017

This data is sourced from the Environment Agency and Natural Resources Wales.



7 River and coastal flooding



- Site Outline
- Search buffers in metres (m)
- River and coastal flooding:
- High
- Medium
- Low
- Very Low
- Historical Flood Events
- Areas Used for Flood Storage
- Areas Benefiting from Flood Defences
- Flood Defences

7.1 Risk of flooding from rivers and the sea

Records within 50m

0

The chance of flooding from rivers and/or the sea in any given year, based on cells of 50m within the Risk of Flooding from Rivers and Sea (RoFRaS)/Flood Risk Assessment Wales (FRAW) models. Each cell is allocated one of four flood risk categories, taking into account flood defences and their condition. The risk categories for RoFRaS for rivers and the sea and FRAW for rivers are; Very low (less than 1 in 1000 chance in any given year), Low (less than 1 in 100 but greater than or equal to 1 in 1000 chance), Medium (less than 1 in 30 but greater than or equal to 1 in 100 chance) or High (greater than or equal to 1 in 30 chance). The risk categories for FRAW for the sea are; Very low (less than 1 in 1000 chance in any given year), Low (less than 1 in 200 but greater than or equal to 1 in 1000 chance), Medium (less than 1 in 30 but greater than or equal to 1 in 200 chance) or High (greater than or equal to 1 in 30 chance).

This data is sourced from the Environment Agency and Natural Resources Wales.



7.2 Historical Flood Events

Records within 250m

1

Records of historic flooding from rivers, the sea, groundwater and surface water. Records began in 1946 when predecessor bodies started collecting detailed information about flooding incidents, although limited details may be included on flooding incidents prior to this date. Takes into account the presence of defences, structures, and other infrastructure where they existed at the time of flooding, and includes flood extents that may have been affected by overtopping, breaches or blockages.

Features are displayed on the River and coastal flooding map on [page 49](#) >

ID	Location	Event name	Date of flood	Flood source	Flood cause	Type of flood
1	141m SW	Tideqa	2008-05-02 2008-05-02	Sea	Other	Tidal Coastal

This data is sourced from the Environment Agency and Natural Resources Wales.

7.3 Flood Defences

Records within 250m

0

Records of flood defences owned, managed or inspected by the Environment Agency and Natural Resources Wales. Flood defences can be structures, buildings or parts of buildings. Typically these are earth banks, stone and concrete walls, or sheet-piling that is used to prevent or control the extent of flooding.

This data is sourced from the Environment Agency and Natural Resources Wales.

7.4 Areas Benefiting from Flood Defences

Records within 250m

1

Areas that would benefit from the presence of flood defences in a 1 in 100 (1%) chance of flooding each year from rivers or 1 in 200 (0.5%) chance of flooding each year from the sea.

Features are displayed on the River and coastal flooding map on [page 49](#) >

ID	Location	
A	214m SW	Area benefiting from flood defences

This data is sourced from the Environment Agency and Natural Resources Wales.



7.5 Flood Storage Areas

Records within 250m

0

Areas that act as a balancing reservoir, storage basin or balancing pond to attenuate an incoming flood peak to a flow level that can be accepted by the downstream channel or to delay the timing of a flood peak so that its volume is discharged over a longer period.

This data is sourced from the Environment Agency and Natural Resources Wales.



River and coastal flooding - Flood Zones

7.6 Flood Zone 2

Records within 50m

0

Areas of land at risk of flooding, when the presence of flood defences are ignored. Covering land between Flood Zone 3 (see next section) and the extent of the flooding from rivers or the sea with a 1 in 1000 (0.1%) chance of flooding each year.

This data is sourced from the Environment Agency and Natural Resources Wales.

7.7 Flood Zone 3

Records within 50m

0

Areas of land at risk of flooding, when the presence of flood defences are ignored. Covering land with a 1 in 100 (1%) or greater chance of flooding each year from rivers or a 1 in 200 (0.5%) or greater chance of flooding each year from the sea.

This data is sourced from the Environment Agency and Natural Resources Wales.

8 Surface water flooding



— Site Outline

Search buffers in metres (m)

1 in 1000 return period

- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 250 return period

- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 100 return period

- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 30 return period

- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

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8.1 Surface water flooding

Highest risk on site

1 in 30 year, 0.1m - 0.3m

Highest risk within 50m

1 in 30 year, 0.1m - 0.3m

Ambiental Risk Analytics surface water (pluvial) FloodMap identifies areas likely to flood as a result of extreme rainfall events, i.e. land naturally vulnerable to surface water ponding or flooding. This data set was produced by simulating 1 in 30 year, 1 in 100 year, 1 in 250 year and 1 in 1,000 year rainfall events. Modern urban drainage systems are typically built to cope with rainfall events between 1 in 20 and 1 in 30 years, though some older ones may flood in a 1 in 5 year rainfall event.

Features are displayed on the Surface water flooding map on [page 53 >](#)

The data shown on the map and in the table above shows the highest likelihood of flood events happening at the site. Lower likelihood events may have greater flood depths and hence a greater potential impact on a site.

The table below shows the maximum flood depths for a range of return periods for the site.

Return period	Maximum modelled depth
1 in 1000 year	Between 0.3m and 1.0m
1 in 250 year	Between 0.3m and 1.0m
1 in 100 year	Between 0.1m and 0.3m
1 in 30 year	Between 0.1m and 0.3m

This data is sourced from Ambiantal Risk Analytics.



9 Groundwater flooding



— Site Outline
Search buffers in metres (m)

- High
- Moderate - High
- Moderate
- Low
- Negligible

9.1 Groundwater flooding

Highest risk on site

Low

Highest risk within 50m

Low

Groundwater flooding is caused by unusually high groundwater levels. It occurs when the water table rises above the ground surface or within underground structures such as basements or cellars. Groundwater flooding tends to exhibit a longer duration than surface water flooding, possibly lasting for weeks or months, and as a result it can cause significant damage to property. This risk assessment is based on a 1 in 100 year return period and a 5m Digital Terrain Model (DTM).

Features are displayed on the Groundwater flooding map on [page 55 >](#)

This data is sourced from Ambiantal Risk Analytics.

10 Environmental designations

10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m

0

Sites providing statutory protection for the best examples of UK flora, fauna, or geological or physiographical features. Originally notified under the National Parks and Access to the Countryside Act 1949, SSSIs were re-notified under the Wildlife and Countryside Act 1981. Improved provisions for the protection and management of SSSIs were introduced by the Countryside and Rights of Way Act 2000 (in England and Wales) and (in Scotland) by the Nature Conservation (Scotland) Act 2004 and the Wildlife and Natural Environment (Scotland) Act 2010.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.2 Conserved wetland sites (Ramsar sites)

Records within 2000m

0

Ramsar sites are designated under the Convention on Wetlands of International Importance, agreed in Ramsar, Iran, in 1971. They cover all aspects of wetland conservation and wise use, recognizing wetlands as ecosystems that are extremely important for biodiversity conservation in general and for the well-being of human communities. These sites cover a broad definition of wetland; marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, and even some marine areas.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.3 Special Areas of Conservation (SAC)

Records within 2000m

0

Areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs are designated under the EC Habitats Directive.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.4 Special Protection Areas (SPA)

Records within 2000m

0

Sites classified by the UK Government under the EC Birds Directive, SPAs are areas of the most important habitat for rare (listed on Annex I to the Directive) and migratory birds within the European Union.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.



10.5 National Nature Reserves (NNR)

Records within 2000m

0

Sites containing examples of some of the most important natural and semi-natural terrestrial and coastal ecosystems in Great Britain. They are managed to conserve their habitats, provide special opportunities for scientific study or to provide public recreation compatible with natural heritage interests.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.6 Local Nature Reserves (LNR)

Records within 2000m

0

Sites managed for nature conservation, and to provide opportunities for research and education, or simply enjoying and having contact with nature. They are declared by local authorities under the National Parks and Access to the Countryside Act 1949 after consultation with the relevant statutory nature conservation agency.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.7 Designated Ancient Woodland

Records within 2000m

0

Ancient woodlands are classified as areas which have been wooded continuously since at least 1600 AD. This includes semi-natural woodland and plantations on ancient woodland sites. 'Wooded continuously' does not mean there is or has previously been continuous tree cover across the whole site, and not all trees within the woodland have to be old.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.8 Biosphere Reserves

Records within 2000m

0

Biosphere Reserves are internationally recognised by UNESCO as sites of excellence to balance conservation and socioeconomic development between nature and people. They are recognised under the Man and the Biosphere (MAB) Programme with the aim of promoting sustainable development founded on the work of the local community.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.9 Forest Parks

Records within 2000m

0

These are areas managed by the Forestry Commission designated on the basis of recreational, conservation or scenic interest.

This data is sourced from the Forestry Commission.

10.10 Marine Conservation Zones

Records within 2000m

0

A type of marine nature reserve in UK waters established under the Marine and Coastal Access Act (2009). They are designated with the aim to protect nationally important, rare or threatened habitats and species.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.11 Green Belt

Records within 2000m

0

Areas designated to prevent urban sprawl by keeping land permanently open.

This data is sourced from the Ministry of Housing, Communities and Local Government.

10.12 Proposed Ramsar sites

Records within 2000m

0

Ramsar sites are areas listed as a Wetland of International Importance under the Convention on Wetlands of International Importance especially as Waterfowl Habitat (the Ramsar Convention) 1971. The sites here supplied have a status of 'Proposed' having been identified for potential adoption under the framework.

This data is sourced from Natural England.

10.13 Possible Special Areas of Conservation (pSAC)

Records within 2000m

0

Special Areas of Conservation are areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs are designated under the EC Habitats Directive. Those sites supplied here are those with a status of 'Possible' having been identified for potential adoption under the framework.

This data is sourced from Natural England and Natural Resources Wales.



10.14 Potential Special Protection Areas (pSPA)

Records within 2000m

0

Special Protection Areas (SPAs) are areas designated (or 'classified') under the European Union Wild Birds Directive for the protection of nationally and internationally important populations of wild birds. Those sites supplied here are those with a status of 'Potential' having been identified for potential adoption under the framework.

This data is sourced from Natural England.

10.15 Nitrate Sensitive Areas

Records within 2000m

0

Areas where nitrate concentrations in drinking water sources exceeded or was at risk of exceeding the limit of 50 mg/l set by the 1980 EC Drinking Water Directive. Voluntary agricultural measures as a means of reducing the levels of nitrate were introduced by DEFRA as MAFF, with payments being made to farmers who complied. The scheme was started as a pilot in 1990 in ten areas, later implemented within 32 areas. The scheme was closed to further new entrants in 1998, although existing agreements continued for their full term. All Nitrate Sensitive Areas fell within the areas designated as Nitrate Vulnerable Zones (NVZs) in 1996 under the EC Nitrate Directive (91/676/EEC).

This data is sourced from Natural England.

10.16 Nitrate Vulnerable Zones

Records within 2000m

0

Areas at risk from agricultural nitrate pollution designated under the EC Nitrate Directive (91/676/EEC). These are areas of land that drain into waters polluted by nitrates. Farmers operating within these areas have to follow mandatory rules to tackle nitrate loss from agriculture.

This data is sourced from Natural England and Natural Resources Wales.

SSSI Impact Zones and Units

10.17 SSSI Impact Risk Zones

Records on site

0

Developed to allow rapid initial assessment of the potential risks to SSSIs posed by development proposals. They define zones around each SSSI which reflect the particular sensitivities of the features for which it is notified and indicate the types of development proposal which could potentially have adverse impacts.

This data is sourced from Natural England.

10.18 SSSI Units

Records within 2000m

0

Divisions of SSSIs used to record management and condition details. Units are the smallest areas for which Natural England gives a condition assessment, however, the size of units varies greatly depending on the types of management and the conservation interest.

This data is sourced from Natural England and Natural Resources Wales.



11 Visual and cultural designations

11.1 World Heritage Sites

Records within 250m

0

Sites designated for their globally important cultural or natural interest requiring appropriate management and protection measures. World Heritage Sites are designated to meet the UK's commitments under the World Heritage Convention.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.2 Area of Outstanding Natural Beauty

Records within 250m

0

Areas of Outstanding Natural Beauty (AONB) are conservation areas, chosen because they represent 18% of the finest countryside. Each AONB has been designated for special attention because of the quality of their flora, fauna, historical and cultural associations, and/or scenic views. The National Parks and Access to the Countryside Act of 1949 created AONBs and the Countryside and Rights of Way Act, 2000 added further regulation and protection. There are likely to be restrictions to some developments within these areas.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

11.3 National Parks

Records within 250m

0

In England and Wales, the purpose of National Parks is to conserve and enhance landscapes within the countryside whilst promoting public enjoyment of them and having regard for the social and economic well-being of those living within them. In Scotland National Parks have the additional purpose of promoting the sustainable use of the natural resources of the area and the sustainable social and economic development of its communities. The National Parks and Access to the Countryside Act 1949 established the National Park designation in England and Wales, and The National Parks (Scotland) Act 2000 in Scotland.

This data is sourced from Natural England, Natural Resources Wales and the Scottish Government.

11.4 Listed Buildings

Records within 250m

0

Buildings listed for their special architectural or historical interest. Building control in the form of 'listed building consent' is required in order to make any changes to that building which might affect its special interest. Listed buildings are graded to indicate their relative importance, however building controls apply to all buildings equally, irrespective of their grade, and apply to the interior and exterior of the building in its entirety, together with any curtilage structures.



This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.5 Conservation Areas

Records within 250m

0

Local planning authorities are obliged to designate as conservation areas any parts of their own area that are of special architectural or historic interest, the character and appearance of which it is desirable to preserve or enhance. Designation of a conservation area gives broader protection than the listing of individual buildings. All the features within the area, listed or otherwise, are recognised as part of its character. Conservation area designation is the means of recognising the importance of all factors and of ensuring that planning decisions address the quality of the landscape in its broadest sense.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.6 Scheduled Ancient Monuments

Records within 250m

0

A scheduled monument is an historic building or site that is included in the Schedule of Monuments kept by the Secretary of State for Digital, Culture, Media and Sport. The regime is set out in the Ancient Monuments and Archaeological Areas Act 1979. The Schedule of Monuments has c.20,000 entries and includes sites such as Roman remains, burial mounds, castles, bridges, earthworks, the remains of deserted villages and industrial sites. Monuments are not graded, but all are, by definition, considered to be of national importance.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.7 Registered Parks and Gardens

Records within 250m

0

Parks and gardens assessed to be of particular interest and of special historic interest. The emphasis being on 'designed' landscapes, rather than on planting or botanical importance. Registration is a 'material consideration' in the planning process, meaning that planning authorities must consider the impact of any proposed development on the special character of the landscape.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.



12 Agricultural designations



-  Site Outline
- Search buffers in metres (m)
-  Grade 1 - excellent quality
-  Grade 2 - very good quality
-  Grade 3a - good quality
-  Grade 3b - moderate quality
-  Grade 4 - poor quality
-  Grade 5 - very poor quality
-  Timber felling licences
-  Open Access land

12.1 Agricultural Land Classification

Records within 250m

5

Classification of the quality of agricultural land taking into consideration multiple factors including climate, physical geography and soil properties. It should be noted that the categories for the grading of agricultural land are not consistent across England, Wales and Scotland.

Features are displayed on the Agricultural designations map on [page 63](#) >

ID	Location	Classification	Description
2	117m SW	Grade 5	Very poor quality agricultural land
3	120m SW	Grade 5	Very poor quality agricultural land
4	151m W	Grade 5	Very poor quality agricultural land

ID	Location	Classification	Description
5	200m W	Grade 5	Very poor quality agricultural land
6	219m W	Grade 5	Very poor quality agricultural land

This data is sourced from Natural Resources Wales.

12.2 Open Access Land

Records within 250m

0

The Countryside and Rights of Way Act 2000 (CROW Act) gives a public right of access to land without having to use paths. Access land includes mountains, moors, heaths and downs that are privately owned. It also includes common land registered with the local council and some land around the England Coast Path. Generally permitted activities on access land are walking, running, watching wildlife and climbing.

This data is sourced from Natural England and Natural Resources Wales.

12.3 Tree Felling Licences

Records within 250m

0

Felling Licence Application (FLA) areas approved by Forestry Commission England. Anyone wishing to fell trees must ensure that a licence or permission under a grant scheme has been issued by the Forestry Commission before any felling is carried out or that one of the exceptions apply.

This data is sourced from the Forestry Commission.

12.4 Environmental Stewardship Schemes

Records within 250m

0

Environmental Stewardship covers a range of schemes that provide financial incentives to farmers, foresters and land managers to look after and improve the environment. The schemes identified may be historical schemes that have now expired, or may still be active.

This data is sourced from Natural England.

12.5 Countryside Stewardship Schemes

Records within 250m

0

Countryside Stewardship covers a range of schemes that provide financial incentives to farmers, foresters and land managers to look after and improve the environment. Main objectives are to improve the farmed environment for wildlife and to reduce diffuse water pollution.

This data is sourced from Natural England.



13 Habitat designations

13.1 Priority Habitat Inventory

Records within 250m

0

Habitats of principal importance as named under Natural Environment and Rural Communities Act (2006) Section 41.

This data is sourced from Natural England.

13.2 Habitat Networks

Records within 250m

0

Habitat networks for 18 priority habitat networks (based primarily, but not exclusively, on the priority habitat inventory) and areas suitable for the expansion of networks through restoration and habitat creation.

This data is sourced from Natural England.

13.3 Open Mosaic Habitat

Records within 250m

0

Sites verified as Open Mosaic Habitat. Mosaic habitats are brownfield sites that are identified under the UK Biodiversity Action Plan as a priority habitat due to the habitat variation within a single site, supporting an array of invertebrates.

This data is sourced from Natural England.

13.4 Limestone Pavement Orders

Records within 250m

0

Limestone pavements are outcrops of limestone where the surface has been worn away by natural means over millennia. These rocks have the appearance of paving blocks, hence their name. Not only do they have geological interest, they also provide valuable habitats for wildlife. These habitats are threatened due to their removal for use in gardens and water features. Many limestone pavements have been designated as SSSIs which affords them some protection. In addition, Section 34 of the Wildlife and Countryside Act 1981 gave them additional protection via the creation of Limestone Pavement Orders, which made it a criminal offence to remove any part of the outcrop. The associated Limestone Pavement Priority Habitat is part of the UK Biodiversity Action Plan priority habitat in England.

This data is sourced from Natural England.



14 Geology 1:10,000 scale - Availability



— Site Outline
Search buffers in metres (m)

- Full coverage
- Partial coverage
- No coverage

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14.1 10k Availability

Records within 500m

4

An indication on the coverage of 1:10,000 scale geology data for the site, the most detailed dataset provided by the British Geological Survey. Either 'Full', 'Partial' or 'No coverage' for each geological theme.

Features are displayed on the Geology 1:10,000 scale - Availability map on [page 66](#) >

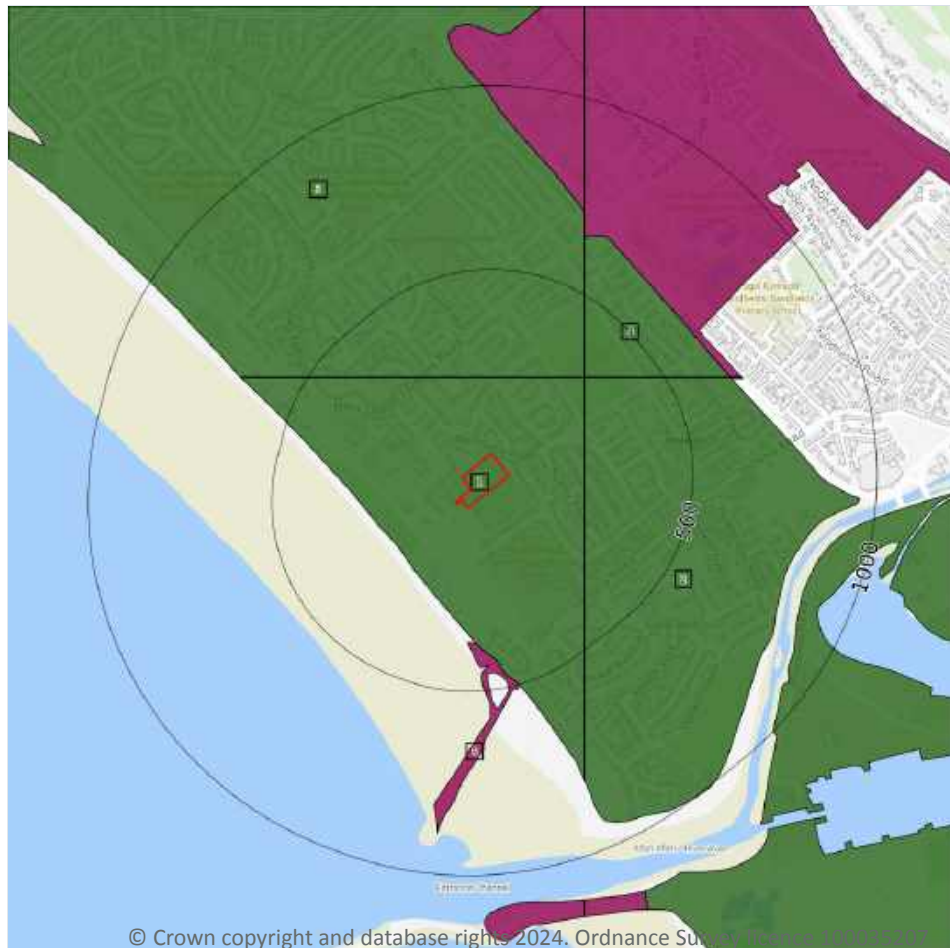
ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	Full	Full	Full	No coverage	SS78NW
2	205m E	Full	Full	Full	Full	SS78NE
3	207m N	Full	Full	Full	No coverage	SS79SW
4	328m NE	Full	Full	Full	Full	SS79SE



This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Artificial and made ground



- Site Outline**
- Search buffers in metres (m)**
- Reclaimed ground
 - Made ground
 - Worked ground
 - Infilled ground
 - Disturbed ground
 - Landscaped ground

14.2 Artificial and made ground (10k)

Records within 500m

5

Details of made, worked, infilled, disturbed and landscaped ground at 1:10,000 scale. Artificial ground can be associated with potentially contaminated material, unpredictable engineering conditions and instability.

Features are displayed on the Geology 1:10,000 scale - Artificial and made ground map on [page 68](#) >

ID	Location	LEX Code	Description	Rock description
1	On site	LSGR-UNKNOWN	Landscaped Ground (Undivided)	Unknown/unclassified Entry
2	205m E	LSGR-UNKNOWN	Landscaped Ground (Undivided)	Unknown/unclassified Entry
3	207m N	LSGR-UNKNOWN	Landscaped Ground (Undivided)	Unknown/unclassified Entry
4	328m NE	LSGR-UNKNOWN	Landscaped Ground (Undivided)	Unknown/unclassified Entry

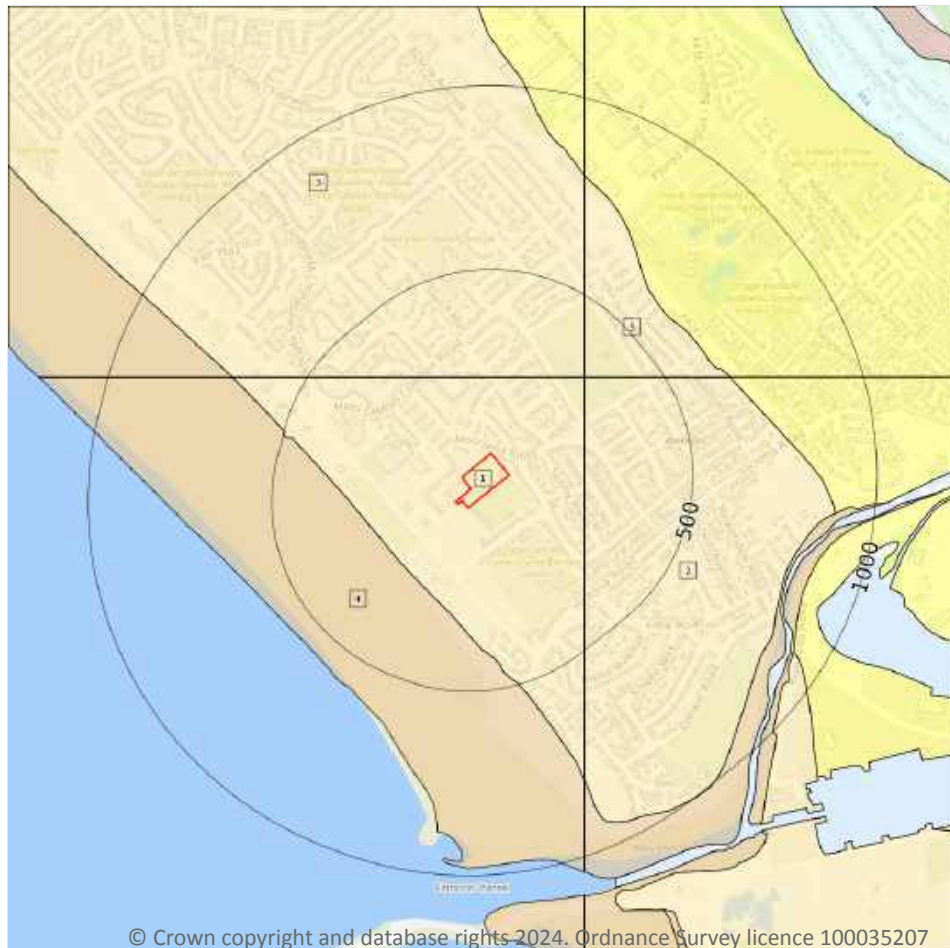


ID	Location	LEX Code	Description	Rock description
5	366m S	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Superficial



- Site Outline
- Search buffers in metres (m)
- Landslip (10k)
- Superficial geology (10k)
Please see table for more details.

14.3 Superficial geology (10k)

Records within 500m

5

Superficial geological deposits at 1:10,000 scale. Also known as 'drift', these are the youngest geological deposits, formed during the Quaternary. They rest on older deposits or rocks referred to as bedrock.

Features are displayed on the Geology 1:10,000 scale - Superficial map on [page 70](#) >

ID	Location	LEX Code	Description	Rock description
1	On site	BSA-S	Blown Sand - Sand	Sand
2	205m E	BSA-S	Blown Sand - Sand	Sand
3	207m N	BSA-S	Blown Sand - Sand	Sand
4	221m SW	BCHD-XSV	Beach Deposits - Sand And Gravel	Sand And Gravel



ID	Location	LEX Code	Description	Rock description
5	328m NE	BSA-S	Blown Sand - Sand	Sand

This data is sourced from the British Geological Survey.

14.4 Landslip (10k)

Records within 500m

0

Mass movement deposits on BGS geological maps at 1:10,000 scale. Primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground.

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Bedrock



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— Site Outline

Search buffers in metres (m)

.... Bedrock faults and other linear features (10k)

Bedrock geology (10k)
Please see table for more details.

14.5 Bedrock geology (10k)

Records within 500m

7

Bedrock geology at 1:10,000 scale. The main mass of rocks forming the Earth and present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

Features are displayed on the Geology 1:10,000 scale - Bedrock map on [page 72 >](#)

ID	Location	LEX Code	Description	Rock age
1	On site	SWMCM-MDSS	South Wales Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone	Bolsovia Sub-age - Duckmantian Sub-age
2	126m NE	SWMCM-MDSS	South Wales Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone	Bolsovia Sub-age - Duckmantian Sub-age



ID	Location	LEX Code	Description	Rock age
4	205m E	SWMCM-MDSS	South Wales Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone	Bolsovia Sub-age - Duckmantian Sub-age
5	207m N	SWMCM-MDSS	South Wales Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone	Bolsovia Sub-age - Duckmantian Sub-age
6	207m N	SWMCM-MDSS	South Wales Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone	Bolsovia Sub-age - Duckmantian Sub-age
8	208m E	SWMCM-MDSS	South Wales Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone	Bolsovia Sub-age - Duckmantian Sub-age
10	328m NE	SWMCM-MDSS	South Wales Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone	Bolsovia Sub-age - Duckmantian Sub-age

This data is sourced from the British Geological Survey.

14.6 Bedrock faults and other linear features (10k)

Records within 500m

3

Linear features at the ground or bedrock surface at 1:10,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

Features are displayed on the Geology 1:10,000 scale - Bedrock map on [page 72 >](#)

ID	Location	Category	Description
3	126m NE	FAULT	Normal fault, inferred
7	207m N	FAULT	Normal fault, inferred
9	208m E	FAULT	Normal fault, inferred

This data is sourced from the British Geological Survey.



15 Geology 1:50,000 scale - Availability



— Site Outline

Search buffers in metres (m)

□ Geological map tile

15.1 50k Availability

Records within 500m

1

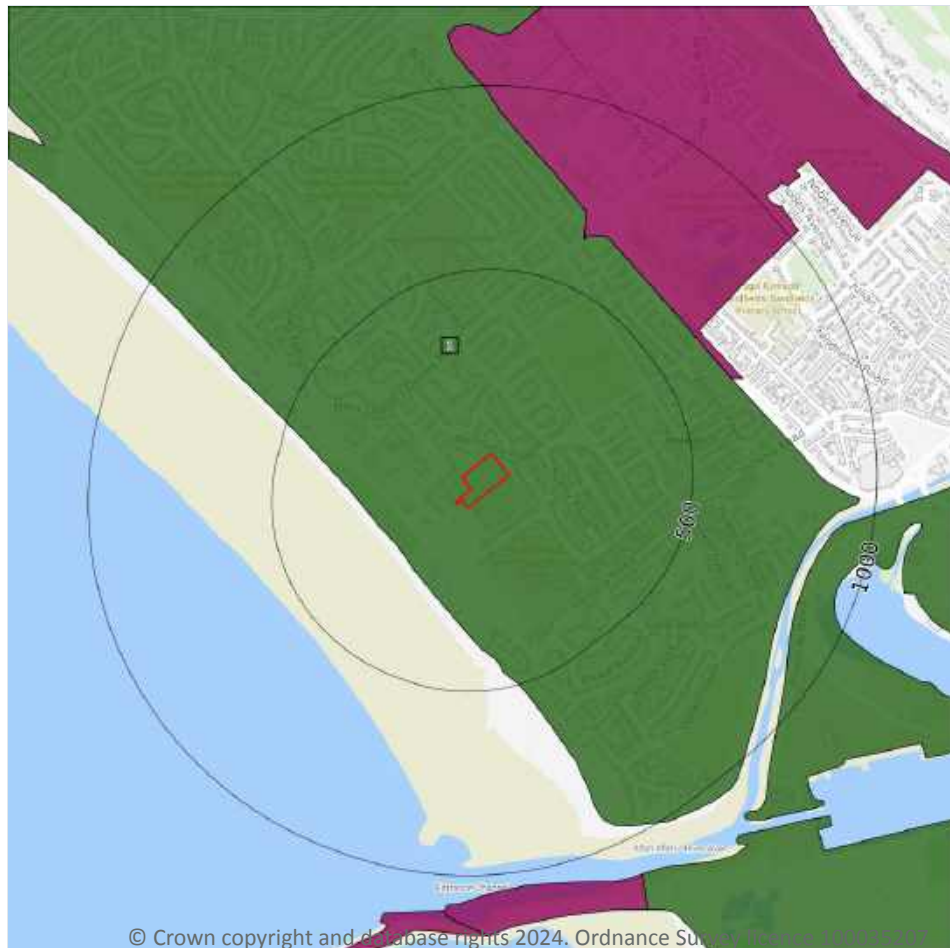
An indication on the coverage of 1:50,000 scale geology data for the site. Either 'Full' or 'No coverage' for each geological theme. Where 50k data is not available, this area has been filled in with 625k scale data.

Features are displayed on the Geology 1:50,000 scale - Availability map on [page 74](#) >

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	Full	Full	Full	Full	EW247_swansea_v4

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Artificial and made ground



- Site Outline
- Search buffers in metres (m)
- Made ground
 - Worked ground
 - Infilled ground
 - Disturbed ground
 - Landscaped ground

15.2 Artificial and made ground (50k)

Records within 500m

1

Details of made, worked, infilled, disturbed and landscaped ground at 1:50,000 scale. Artificial ground can be associated with potentially contaminated material, unpredictable engineering conditions and instability.

Features are displayed on the Geology 1:50,000 scale - Artificial and made ground map on [page 75 >](#)

ID	Location	LEX Code	Description	Rock description
1	On site	LSGR-ARTGR	LANDSCAPED GROUND (UNDIVIDED)	ARTIFICIALLY MODIFIED GROUND

This data is sourced from the British Geological Survey.



15.3 Artificial ground permeability (50k)

Records within 50m

1

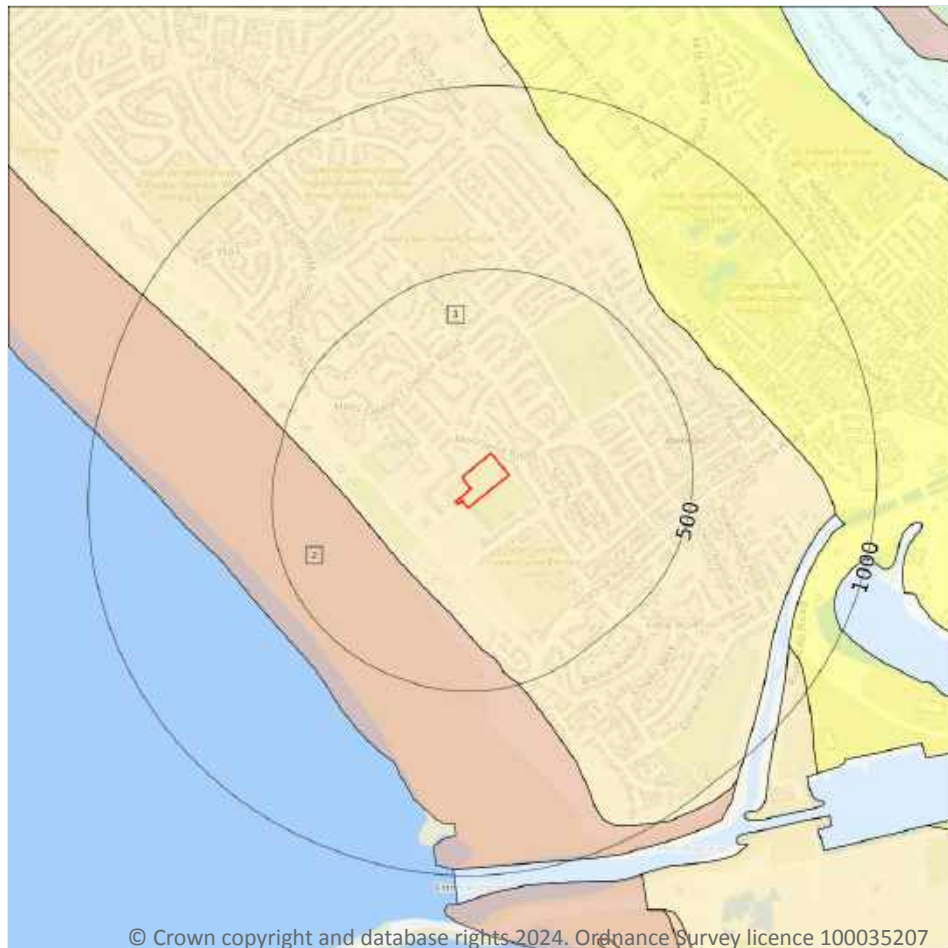
A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any artificial deposits (the zone between the land surface and the water table).

Location	Flow type	Maximum permeability	Minimum permeability
On site	Mixed	Very High	Low

This data is sourced from the British Geological Survey.



Geology 1:50,000 scale - Superficial



— Site Outline

Search buffers in metres (m)

 Landslip (50k)

Superficial geology (50k)
Please see table for more details.

15.4 Superficial geology (50k)

Records within 500m

2

Superficial geological deposits at 1:50,000 scale. Also known as 'drift', these are the youngest geological deposits, formed during the Quaternary. They rest on older deposits or rocks referred to as bedrock.

Features are displayed on the Geology 1:50,000 scale - Superficial map on [page 77 >](#)

ID	Location	LEX Code	Description	Rock description
1	On site	BSA-S	BLOWN SAND	SAND
2	222m SW	MBD-S	MARINE BEACH DEPOSITS	SAND

This data is sourced from the British Geological Survey.



15.5 Superficial permeability (50k)

Records within 50m**1**

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any superficial deposits (the zone between the land surface and the water table).

Location	Flow type	Maximum permeability	Minimum permeability
On site	Intergranular	High	High

This data is sourced from the British Geological Survey.

15.6 Landslip (50k)

Records within 500m**0**

Mass movement deposits on BGS geological maps at 1:50,000 scale. Primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground.

This data is sourced from the British Geological Survey.

15.7 Landslip permeability (50k)

Records within 50m**0**

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any landslip deposits (the zone between the land surface and the water table).

This data is sourced from the British Geological Survey.



Geology 1:50,000 scale - Bedrock



— Site Outline

Search buffers in metres (m)

.... Bedrock faults and other linear features (50k)

Bedrock geology (50k)
Please see table for more details.

15.8 Bedrock geology (50k)

Records within 500m

2

Bedrock geology at 1:50,000 scale. The main mass of rocks forming the Earth and present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

Features are displayed on the Geology 1:50,000 scale - Bedrock map on [page 79 >](#)

ID	Location	LEX Code	Description	Rock age
1	On site	SWMCM-MDSS	SOUTH WALES MIDDLE COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
2	126m NE	SWMCM-MDSS	SOUTH WALES MIDDLE COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN

This data is sourced from the British Geological Survey.



15.9 Bedrock permeability (50k)

Records within 50m

1

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of bedrock (the zone between the land surface and the water table).

Location	Flow type	Maximum permeability	Minimum permeability
On site	Fracture	Moderate	Low

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

Records within 500m

2

Linear features at the ground or bedrock surface at 1:50,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

Features are displayed on the Geology 1:50,000 scale - Bedrock map on [page 79 >](#)

ID	Location	Category	Description
3	126m NE	FAULT	Fault, inferred, displacement unknown
4	208m E	FAULT	Fault, inferred, displacement unknown

This data is sourced from the British Geological Survey.



16 Boreholes



— Site Outline
Search buffers in metres (m)

- Confidential
- 0 - 10m
- 10 - 30m
- 30m+
- Unknown

16.1 BGS Boreholes

Records within 250m

3

The Single Onshore Boreholes Index (SOBI); an index of over one million records of boreholes, shafts and wells from all forms of drilling and site investigation work held by the British Geological Survey. Covering onshore and nearshore boreholes dating back to at least 1790 and ranging from one to several thousand metres deep.

Features are displayed on the Boreholes map on [page 81](#) >

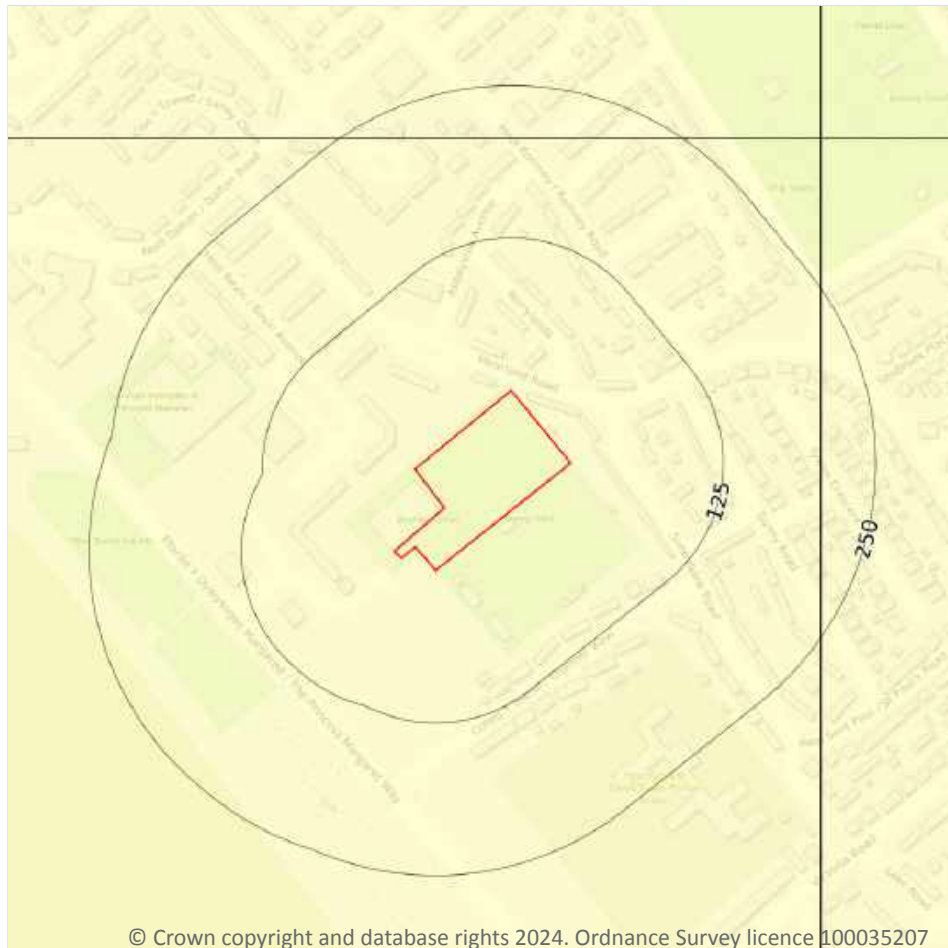
ID	Location	Grid reference	Name	Length	Confidential	Web link
1	143m SW	274560 189550	ABERAVON MARSHES 3	408.0	N	370928 ↗
2	150m S	274650 189500	ABERAVON, NO 3	405.33	N	370933 ↗
3	223m SW	274520 189480	ABERAVON PROMENADE EXTENSION 2	12.49	N	370930 ↗



This data is sourced from the British Geological Survey.



17 Natural ground subsidence - Shrink swell clays



- Site Outline**
- Search buffers in metres (m)
- ☐ No data
 - ☐ Negligible
 - ☐ Very low
 - ☐ Low
 - ☐ Moderate
 - ☐ High

17.1 Shrink swell clays

Records within 50m

1

The potential hazard presented by soils that absorb water when wet (making them swell), and lose water as they dry (making them shrink). This shrink-swell behaviour is controlled by the type and amount of clay in the soil, and by seasonal changes in the soil moisture content (related to rainfall and local drainage).

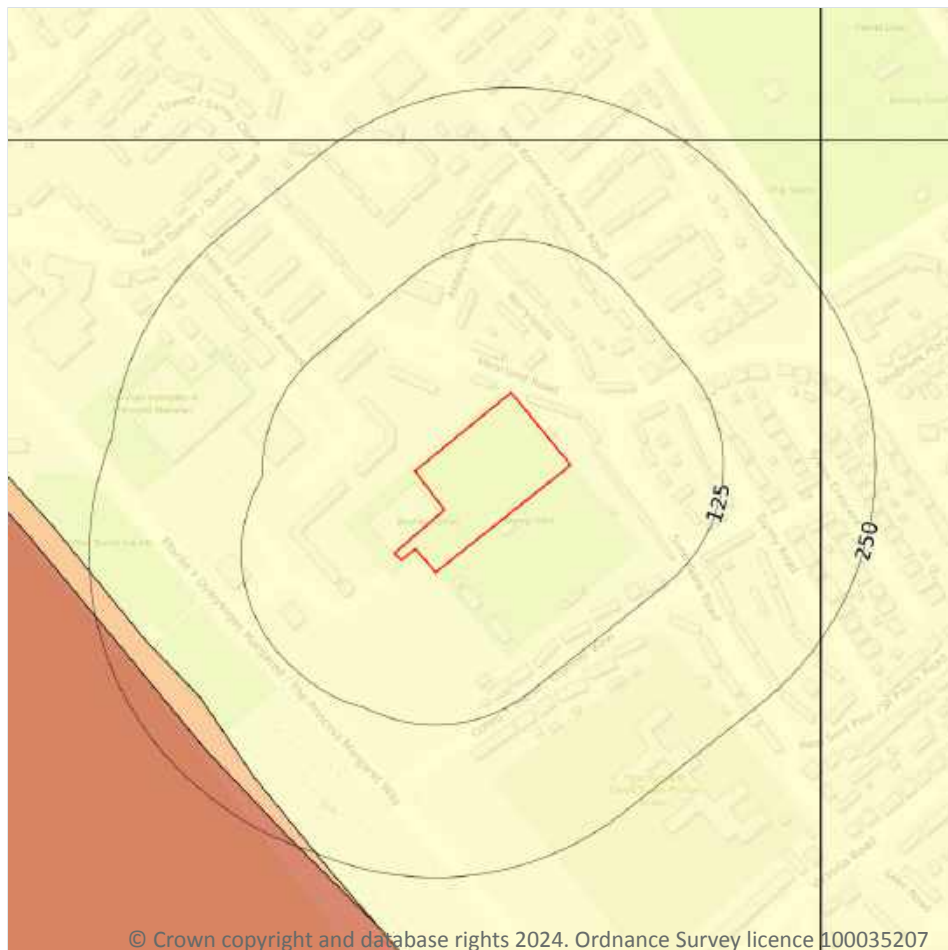
Features are displayed on the Natural ground subsidence - Shrink swell clays map on [page 83](#) >

Location	Hazard rating	Details
On site	Negligible	Ground conditions predominantly non-plastic.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Running sands



- Site Outline
- Search buffers in metres (m)
- ☐ No data
 - ☐ Negligible
 - ☐ Very low
 - ☐ Low
 - ☐ Moderate
 - ☐ High

17.2 Running sands

Records within 50m

1

The potential hazard presented by rocks that can contain loosely-packed sandy layers that can become fluidised by water flowing through them. Such sands can 'run', removing support from overlying buildings and causing potential damage.

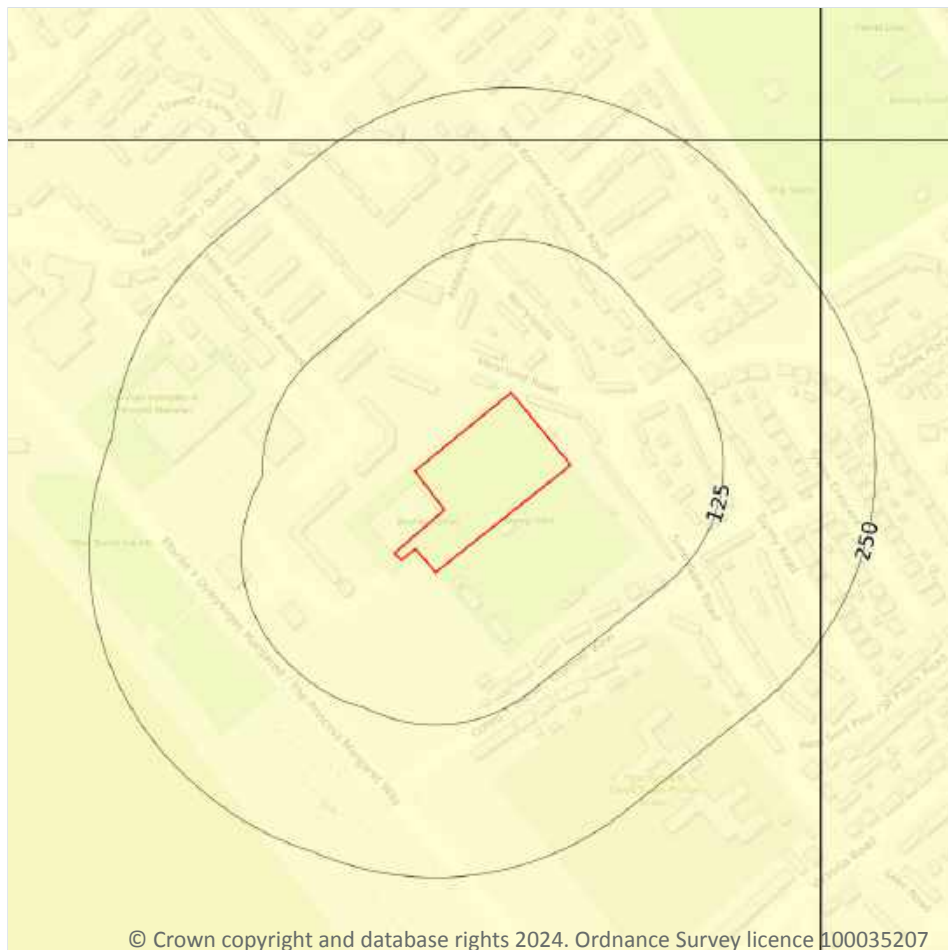
Features are displayed on the Natural ground subsidence - Running sands map on [page 84 >](#)

Location	Hazard rating	Details
On site	Negligible	Running sand conditions are not thought to occur whatever the position of the water table. No identified constraints on lands use due to running conditions.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Compressible deposits



- Site Outline
- Search buffers in metres (m)
- ☐ No data
 - ☐ Negligible
 - ☐ Very low
 - ☐ Low
 - ☐ Moderate
 - ☐ High

17.3 Compressible deposits

Records within 50m

1

The potential hazard presented by types of ground that may contain layers of very soft materials like clay or peat and may compress if loaded by overlying structures, or if the groundwater level changes, potentially resulting in depression of the ground and disturbance of foundations.

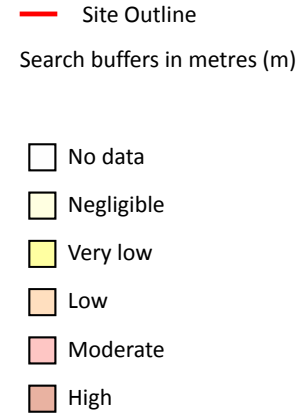
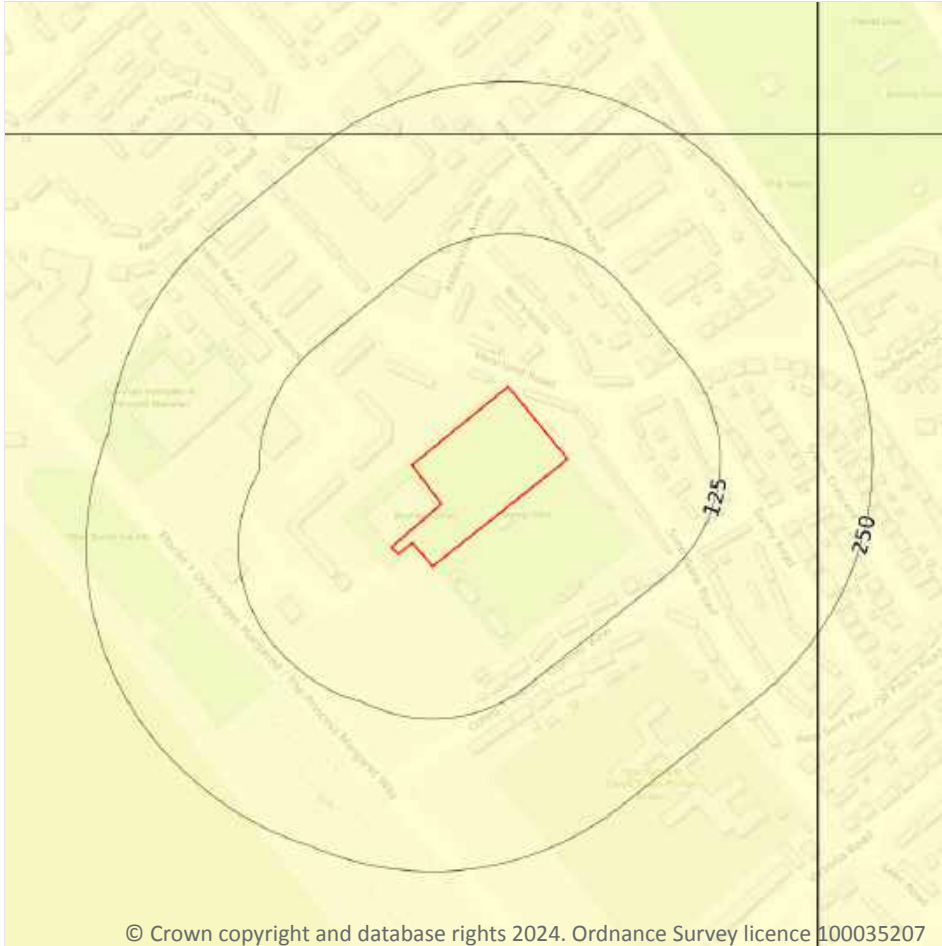
Features are displayed on the Natural ground subsidence - Compressible deposits map on [page 85 >](#)

Location	Hazard rating	Details
On site	Negligible	Compressible strata are not thought to occur.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Collapsible deposits



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17.4 Collapsible deposits

Records within 50m

1

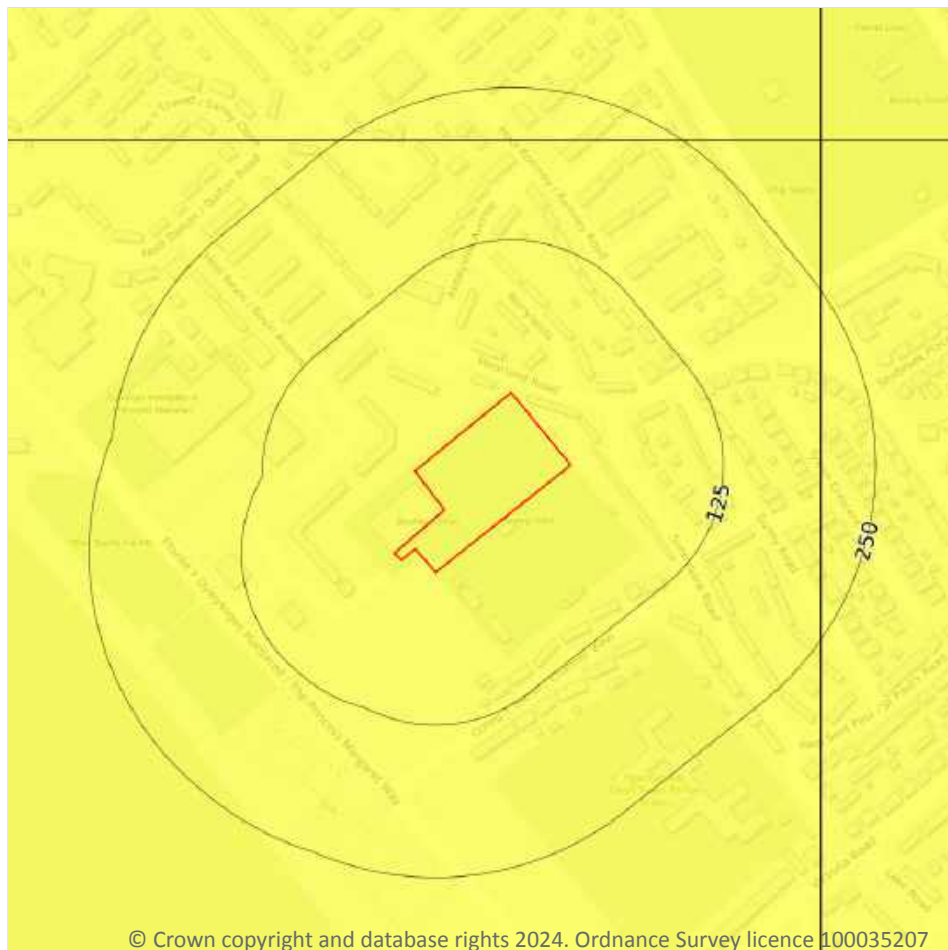
The potential hazard presented by natural deposits that could collapse when a load (such as a building) is placed on them or they become saturated with water.

Features are displayed on the Natural ground subsidence - Collapsible deposits map on [page 86](#) >

Location	Hazard rating	Details
On site	Negligible	Deposits with potential to collapse when loaded and saturated are believed not to be present.

This data is sourced from the British Geological Survey.

Natural ground subsidence - Landslides



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- Site Outline
- Search buffers in metres (m)
- ☐ No data
 - ☐ Negligible
 - ☒ Very low
 - ☐ Low
 - ☐ Moderate
 - ☐ High

17.5 Landslides

Records within 50m

1

The potential for landsliding (slope instability) to be a hazard assessed using 1:50,000 scale digital maps of superficial and bedrock deposits, combined with information from the BGS National Landslide Database and scientific and engineering reports.

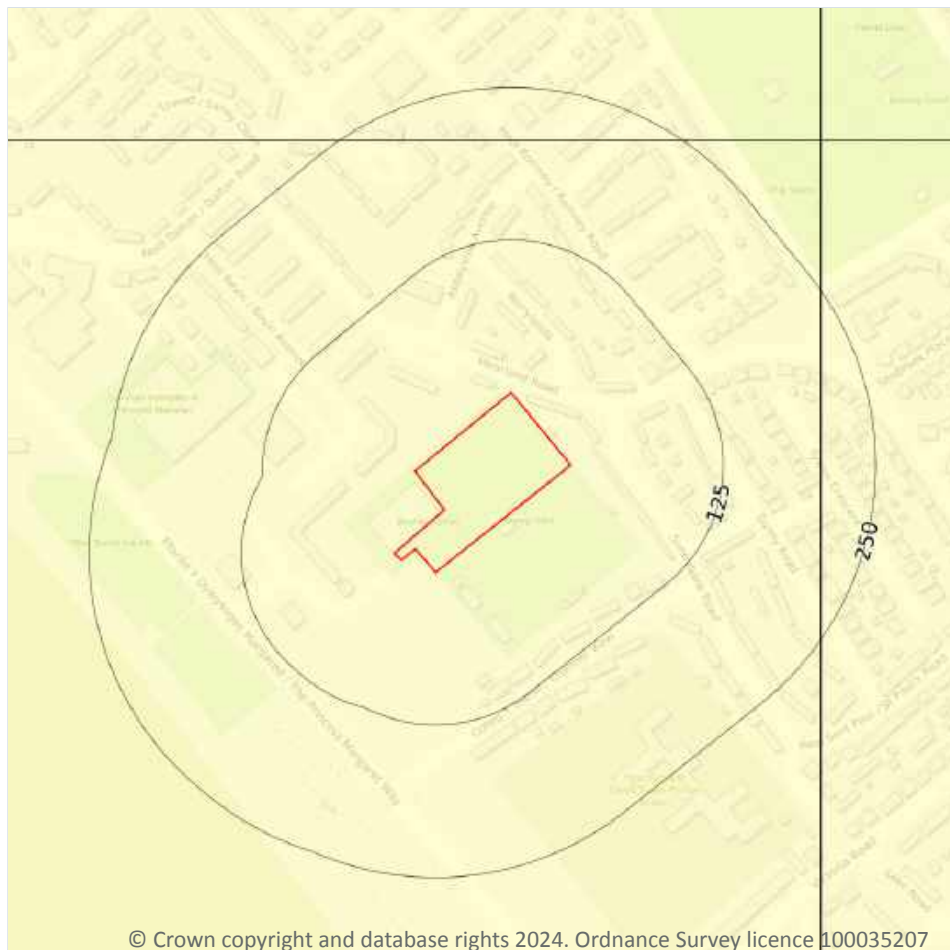
Features are displayed on the Natural ground subsidence - Landslides map on [page 87](#) >

Location	Hazard rating	Details
On site	Very low	Slope instability problems are not likely to occur but consideration to potential problems of adjacent areas impacting on the site should always be considered.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Ground dissolution of soluble rocks



- Site Outline
- Search buffers in metres (m)
- ☐ No data
 - ☐ Negligible
 - ☐ Very low
 - ☐ Low
 - ☐ Moderate
 - ☐ High

17.6 Ground dissolution of soluble rocks

Records within 50m

1

The potential hazard presented by ground dissolution, which occurs when water passing through soluble rocks produces underground cavities and cave systems. These cavities reduce support to the ground above and can cause localised collapse of the overlying rocks and deposits.

Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on [page 88](#)

Location	Hazard rating	Details
On site	Negligible	Soluble rocks are either not thought to be present within the ground, or not prone to dissolution. Dissolution features are unlikely to be present.



This data is sourced from the British Geological Survey.



18 Mining and ground workings



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- Site Outline
- Search buffers in metres (m)
- BritPits
- Surface ground workings
- Underground workings
- Underground mining extents
- Historical mineral planning areas
- TCA non-coal mining
- Non Coal Mining
- Sporadic underground mining of restricted extent possible
- Localised small scale underground mining possible
- Small scale mining possible
- Underground mining known or likely within or in close proximity
- Underground mining known within or in very close proximity

18.1 BritPits

Records within 500m

0

BritPits (an abbreviation of British Pits) is a database maintained by the British Geological Survey of currently active and closed surface and underground mineral workings. Details of major mineral handling sites, such as wharfs and rail depots are also held in the database.

This data is sourced from the British Geological Survey.

18.2 Surface ground workings

Records within 250m

9

Historical land uses identified from Ordnance Survey mapping that involved ground excavation at the surface. These features may or may not have been subsequently backfilled.

Features are displayed on the Mining and ground workings map on [page 90](#) >

ID	Location	Land Use	Year of mapping	Mapping scale
A	146m N	Brick Works	1914	1:10560
A	146m N	Brick Works	1921	1:10560
B	183m W	Unspecified Heap	1947	1:10560
1	186m SW	Unspecified Heap	1947	1:10560
B	187m W	Unspecified Heap	1897	1:10560
C	232m W	Unspecified Pit	1980	1:10000
C	240m W	Unspecified Pit	1982	1:10000
C	240m W	Unspecified Pit	1965	1:10560
C	240m W	Unspecified Pit	1993	1:10000

This is data is sourced from Ordnance Survey/Groundsure.

18.3 Underground workings

Records within 1000m

0

Historical land uses identified from Ordnance Survey mapping that indicate the presence of underground workings e.g. mine shafts.

This is data is sourced from Ordnance Survey/Groundsure.

18.4 Underground mining extents

Records within 500m

0

This data identifies underground mine workings that could present a potential risk, including adits and seam workings. These features have been identified from BGS Geological mapping and mine plans sourced from the BGS and various collections and sources.

This data is sourced from Groundsure.



18.5 Historical Mineral Planning Areas

Records within 500m

0

Boundaries of mineral planning permissions for England and Wales. This data was collated between the 1940s (and retrospectively to the 1930s) and the mid 1980s. The data includes permitted, withdrawn and refused permissions.

This data is sourced from the British Geological Survey.

18.6 Non-coal mining

Records within 1000m

0

The potential for historical non-coal mining to have affected an area. The assessment is drawn from expert knowledge and literature in addition to the digital geological map of Britain. Mineral commodities may be divided into seven general categories - vein minerals, chalk, oil shale, building stone, bedded ores, evaporites and 'other' commodities (including ball clay, jet, black marble, graphite and chert).

This data is sourced from the British Geological Survey.

18.7 JPB mining areas

Records on site

0

Areas which could be affected by former coal and other mining. This data includes some mine plans unavailable to the Coal Authority.

This data is sourced from Johnson Poole and Bloomer.

18.8 The Coal Authority non-coal mining

Records within 500m

0

This data provides an indication of the potential zone of influence of recorded underground non-coal mining workings. Any and all analysis and interpretation of Coal Authority Data in this report is made by Groundsure, and is in no way supported, endorsed or authorised by the Coal Authority. The use of the data is restricted to the terms and provisions contained in this report. Data reproduced in this report may be the copyright of the Coal Authority and permission should be sought from Groundsure prior to any re-use.

This data is sourced from The Coal Authority.



18.9 Researched mining

Records within 500m

0

This data indicates areas of potential mining identified from alternative or archival sources, including; BGS Geological paper maps, Lidar data, aerial photographs (from World War II onwards), archaeological data services, websites, Tithe maps, and various text/plans from collected books and reports. Some of this data is approximate and Groundsure have interpreted the resultant risk area and, where possible, specific areas of risk have been captured.

This data is sourced from Groundsure.

18.10 Mining record office plans

Records within 500m

0

This dataset is representative of Mining Record Office and/or plan extents held by Groundsure and should be considered approximate. Where possible, plans have been located and any specific areas of risk they depict have been captured.

This data is sourced from Groundsure.

18.11 BGS mine plans

Records within 500m

0

This dataset is representative of BGS mine plans held by Groundsure and should be considered approximate. Where possible, plans have been located and any specific areas of risk they depict have been captured.

This data is sourced from Groundsure.

18.12 Coal mining

Records on site

1

Areas which could be affected by past, current or future coal mining.

Location	Details
On site	The site is located within a coal mining area as defined by the Coal Authority. A Consultants Coal Mining Report is recommended to further assess coal mining issues at the site. This can be ordered directly through Groundsure or your preferred search provider.

This data is sourced from the Coal Authority.



18.13 Brine areas

Records on site	0
-----------------	---

The Cheshire Brine Compensation District indicates areas that may be affected by salt and brine extraction in Cheshire and where compensation would be available where damage from this mining has occurred. Damage from salt and brine mining can still occur outside this district, but no compensation will be available.

This data is sourced from the Cheshire Brine Subsidence Compensation Board.

18.14 Gypsum areas

Records on site	0
-----------------	---

Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.15 Tin mining

Records on site	0
-----------------	---

Generalised areas that may be affected by historical tin mining.

This data is sourced from Groundsure.

18.16 Clay mining

Records on site	0
-----------------	---

Generalised areas that may be affected by kaolin and ball clay extraction.

This data is sourced from the Kaolin and Ball Clay Association (UK).

19 Ground cavities and sinkholes

19.1 Natural cavities

Records within 500m

0

Industry recognised national database of natural cavities. Sinkholes and caves are formed by the dissolution of soluble rock, such as chalk and limestone, gulls and fissures by cambering. Ground instability can result from movement of loose material contained within these cavities, often triggered by water.

This data is sourced from Stantec UK Ltd.

19.2 Mining cavities

Records within 1000m

0

Industry recognised national database of mining cavities. Degraded mines may result in hazardous subsidence (crown holes). Climatic conditions and water escape can also trigger subsidence over mine entrances and workings.

This data is sourced from Stantec UK Ltd.

19.3 Reported recent incidents

Records within 500m

0

This data identifies sinkhole information gathered from media reports and Groundsure's own records. This data goes back to 2014 and includes relative accuracy ratings for each event and links to the original data sources. The data is updated on a regular basis and should not be considered a comprehensive catalogue of all sinkhole events. The absence of data in this database does not mean a sinkhole definitely has not occurred during this time.

This data is sourced from Groundsure.

19.4 Historical incidents

Records within 500m

0

This dataset comprises an extract of 1:10,560, 1:10,000, 1:2,500 and 1:1,250 scale historical Ordnance Survey maps held by Groundsure, dating back to the 1840s. It shows shakeholes, deneholes and other 'holes' as noted on these maps. Dene holes are medieval chalk extraction pits, usually comprising a narrow shaft with a number of chambers at the base of the shaft. Shakeholes are an alternative name for suffusion sinkholes, most commonly found in the limestone landscapes of North Yorkshire but also extensively noted around the Brecon Beacons National Park.

Not all 'holes' noted on Ordnance Survey mapping will necessarily be present within this dataset.



This data is sourced from Groundsure.

19.5 National karst database

Records within 500m

0

This is a comprehensive database of national karst information gathered from a wide range of sources. BGS have collected data on five main types of karst feature: Sinkholes, stream links, caves, springs, and incidences of associated damage to buildings, roads, bridges and other engineered works.

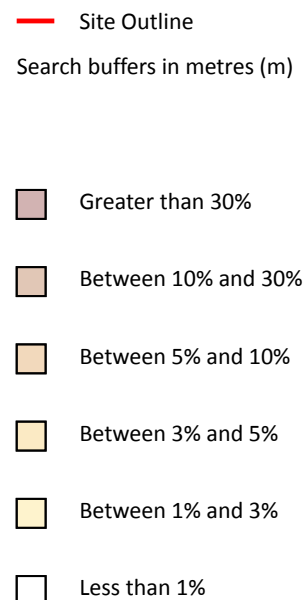
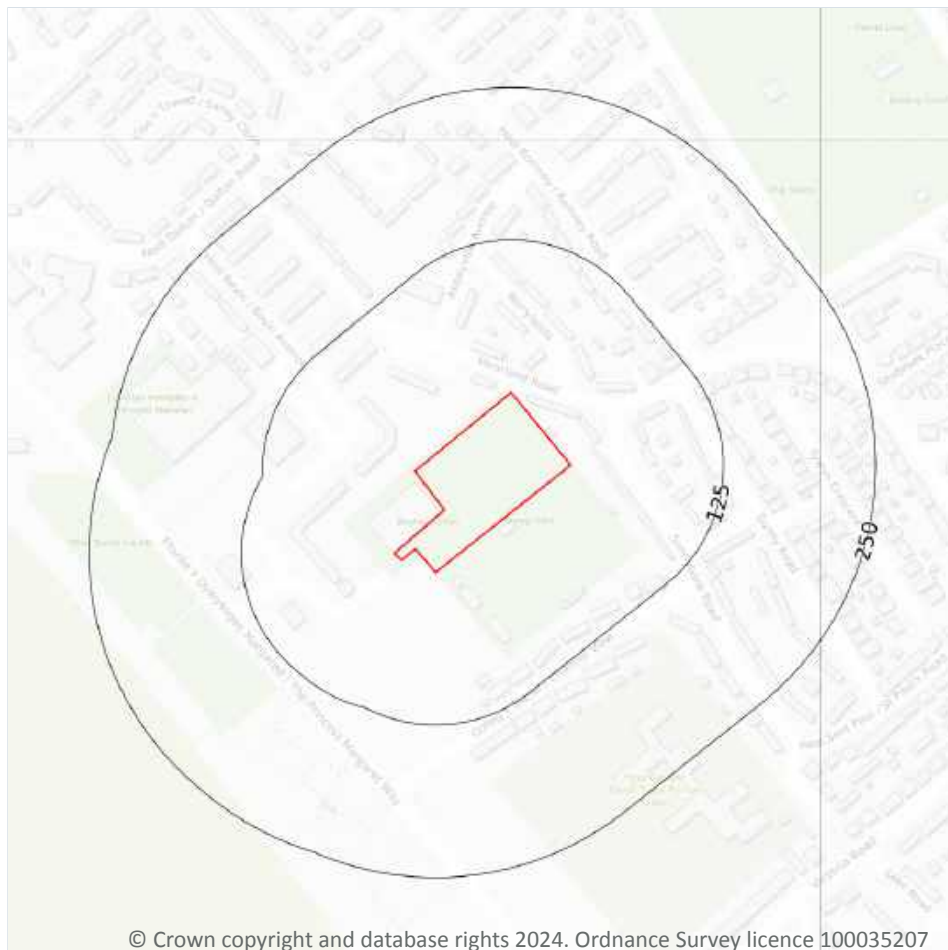
Since the database was set up in 2002 data covering most of the evaporite karst areas of the UK have now been added, along with data covering about 60% of the Chalk, and 35% of the Carboniferous Limestone outcrops. Many of the classic upland karst areas have yet to be included. Recorded so far are: Over 800 caves, 1300 stream sinks, 5600 springs, 10,000 sinkholes.

The database is not yet complete, and not all records have been verified. The absence of data does not mean that karst features are not present at a site. A reliability rating is included with each record.

This data is sourced from the British Geological Survey.



20 Radon



20.1 Radon

Records on site

1

The Radon Potential data classifies areas based on their likelihood of a property having a radon level at or above the Action Level in Great Britain. The dataset is intended for use at 1:50,000 scale and was derived from both geological assessments and indoor radon measurements (more than 560,000 records). A minimum 50m buffer should be considered when searching the maps, as the smallest detectable feature at this scale is 50m. The findings of this section should supersede any estimations derived from the Indicative Atlas of Radon in Great Britain (1:100,000 scale).

Features are displayed on the Radon map on [page 97](#) >

Location	Estimated properties affected	Radon Protection Measures required
On site	Less than 1%	None



This data is sourced from the British Geological Survey and UK Health Security Agency.



21 Soil chemistry

21.1 BGS Estimated Background Soil Chemistry

Records within 50m

1

The estimated values provide the likely background concentration of the potentially harmful elements Arsenic, Cadmium, Chromium, Lead and Nickel in topsoil. The values are estimated primarily from rural topsoil data collected at a sample density of approximately 1 per 2 km². In areas where rural soil samples are not available, estimation is based on stream sediment data collected from small streams at a sampling density of 1 per 2.5 km²; this is the case for most of Scotland, Wales and southern England. The stream sediment data are converted to soil-equivalent concentrations prior to the estimation.

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	35 - 45 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg

This data is sourced from the British Geological Survey.

21.2 BGS Estimated Urban Soil Chemistry

Records within 50m

11

Estimated topsoil chemistry of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc and bioaccessible Arsenic and Lead in 23 urban centres across Great Britain. These estimates are derived from interpolation of the measured urban topsoil data referred to above and provide information across each city between the measured sample locations (4 per km²).

Location	Arsenic (mg/kg)	Bioaccessible Arsenic (mg/kg)	Lead (mg/kg)	Bioaccessible Lead (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Copper (mg/kg)	Nickel (mg/kg)	Tin (mg/kg)
On site	15	2.6	119	82	0.4	53	32	26	8
On site	15	2.6	114	78	0.4	53	32	26	8
On site	16	2.8	126	87	0.5	54	33	25	8
On site	16	2.8	115	79	0.5	54	32	25	8
5m E	15	2.6	112	77	0.4	54	32	26	8
7m N	15	2.6	113	78	0.4	53	32	26	8
29m E	16	2.8	114	78	0.5	55	32	25	8



Location	Arsenic (mg/kg)	Bioaccessible Arsenic (mg/kg)	Lead (mg/kg)	Bioaccessible Lead (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Copper (mg/kg)	Nickel (mg/kg)	Tin (mg/kg)
35m N	15	2.6	121	83	0.4	54	32	26	8
46m S	18	3.2	137	94	0.6	54	35	24	8
46m NE	15	2.6	111	76	0.4	54	31	25	8
48m S	18	3.2	124	85	0.6	55	34	24	8

This data is sourced from the British Geological Survey.

21.3 BGS Measured Urban Soil Chemistry

Records within 50m

1

The locations and measured total concentrations (mg/kg) of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc in urban topsoil samples from 23 urban centres across Great Britain. These are collected at a sample density of 4 per km².

Location	Arsenic (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Copper (mg/kg)	Nickel (mg/kg)	Lead (mg/kg)	Tin (mg/kg)	Sample Type
9m NE	14.7	0.4	53.1	32.3	26.1	113.8	8.2	Topsoil

This data is sourced from the British Geological Survey.



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-  Site Outline
- Search buffers in metres (m)
-  Crossrail 1 Stations
-  Crossrail 1 Route
-  Crossrail 2 Stations
-  Crossrail 2 Route
-  Crossrail 2 Worksites
-  Crossrail 2 Safeguarding
-  Crossrail 2 Headhouses
-  Railway stations
-  Active railways
-  Active tunnels
-  Abandoned railways
-  Historic railways
-  Historic tunnels
-  Underground stations
-  Underground Lines
-  Royal Mail tunnels
-  HS2 optimised route
-  HS2 Stations
-  HS2 Depots
-  HS2 Surface Safeguarding
-  HS2 Subsurface Safeguarding

Records within 250m	0
---------------------	---

This data is sourced from publicly available information by Groundsure.

Records within 250m	0
---------------------	---

Details of the Merseyrail system, the Tyne and Wear Metro and the Glasgow Subway. Not all parts of all systems are located underground. The data contains location information only and does not include a depth assessment.

This data is sourced from publicly available information by Groundsure.

22.3 Railway tunnels

Records within 250m

0

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

22.4 Historical railway and tunnel features

Records within 250m

5

Railways and tunnels digitised from historical Ordnance Survey mapping as scales of 1:1,250, 1:2,500, 1:10,000 and 1:10,560.

Features are displayed on the Railway infrastructure and projects map on [page 101 >](#)

Location	Land Use	Year of mapping	Mapping scale
132m N	Railway Sidings	1914	10560
132m N	Railway Sidings	1921	10560
132m N	Railway Sidings	1917	2500
157m NE	Railway Sidings	1897	10560
164m NE	Railway Sidings	1899	2500

This data is sourced from Ordnance Survey/Groundsure.

22.5 Royal Mail tunnels

Records within 250m

0

The Post Office Railway, otherwise known as the Mail Rail, is an underground railway running through Central London from Paddington Head District Sorting Office to Whitechapel Eastern Head Sorting Office. The line is 10.5km long. The data includes details of the full extent of the tunnels, the depth of the tunnel, and the depth to track level.

This data is sourced from Groundsure/the Postal Museum.



22.6 Historical railways

Records within 250m

0

Former railway lines, including dismantled lines, abandoned lines, disused lines, historic railways and razed lines.

This data is sourced from OpenStreetMap.

22.7 Railways

Records within 250m

0

Currently existing railway lines, including standard railways, narrow gauge, funicular, trams and light railways.

This data is sourced from Ordnance Survey and OpenStreetMap.

22.8 Crossrail 1

Records within 500m

0

The Crossrail railway project links 41 stations over 100 kilometres from Reading and Heathrow in the west, through underground sections in central London, to Shenfield and Abbey Wood in the east.

This data is sourced from publicly available information by Groundsure.

22.9 Crossrail 2

Records within 500m

0

Crossrail 2 is a proposed railway linking the national rail networks in Surrey and Hertfordshire via an underground tunnel through London.

This data is sourced from publicly available information by Groundsure.

22.10 HS2

Records within 500m

0

HS2 is a proposed high speed rail network running from London to Manchester and Leeds via Birmingham. Main civils construction on Phase 1 (London to Birmingham) of the project began in 2019, and it is currently anticipated that this phase will be fully operational by 2026. Construction on Phase 2a (Birmingham to Crewe) is anticipated to commence in 2021, with the service fully operational by 2027. Construction on Phase 2b (Crewe to Manchester and Birmingham to Leeds) is scheduled to begin in 2023 and be operational by 2033.

This data is sourced from HS2 Ltd.



Data providers

Groundsure works with respected data providers to bring you the most relevant and accurate information. To find out who they are and their areas of expertise see <https://www.groundsure.com/sources-reference> ↗.

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APPENDIX B
BARRATT ASSOCIATES
SITE INVESTIGATION REPORT
AFAN UNITED
PORT TALBOT

Barratt Associates Ltd.

Civil, Structural & Geotechnical Engineering Consultants

GO CONCEPT DESIGNS LTD

**AFAN LIDO FC
PORT TALBOT SA12 6PE**

REPORT ON GROUND INVESTIGATION

Contract: 23738

Date: February 2024

Barratt Associates Limited
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Llanelli, SA14 7DJ
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REPORT ON GROUND INVESTIGATION

carried out at

**AFAN LIDO FC
PORT TALBOT SA12 6PE**

Prepared for

**GO CONCEPT DESIGNS LTD
73 Mariners Quay
Port Talbot
SA12 6AN**

Contract No: 23738

Date: February 2024

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1.0 INTRODUCTION

- 1.1 It is understood that the proposed development comprises of a single storey changing room facility of lightweight frame construction.
- 1.2 On the instructions of Go Concept Design Limited, on behalf of Afan Lido FC, an investigation was undertaken to determine ground conditions to enable foundation and soakaway design to be carried out.
- 1.3 It is recommended that a copy of this report be submitted to the relevant authorities to enable them to carry out their own site assessments and provide any comments.
- 1.4 This report has been prepared for the sole use of the Client for the purpose described and no extended duty of care to any third party is implied or offered. Third parties using any information contained within this report do so at their own risk.
- 1.5 The comments given in this report and the opinions expressed herein are based on the information received, the conditions encountered during site works, and on the results of tests made in the field and laboratory. However, there may be conditions prevailing at the site which have not been disclosed by the investigation and which have not been taken into account in the report.
- 1.6 The comments on groundwater conditions are based on observations made at the time the site work was carried out. It should be noted that groundwater levels vary owing to seasonal or other effects.

2.0 SITE SETTING

2.1 Site Location

- 2.1.1 The location of the proposed changing rooms is situated along the south eastern edge of the astroturf pitch, which is 180m north east of The Princess Margaret Way, south west of Moorland Road, Aberavon and may be located by National Grid Reference SS 74760 89693.

2.2 Site Description

- 2.2.1 The site of the proposed changing rooms is occupied by a flat area of asphalt with the boundary of the site and a stand for an adjoining pitch to the south east.

2.3 Geological Setting

- 2.3.1 The geological map indicates the site to be underlain by Artificially Modified Ground overlying Blown Sand overlying South Wales middle Coal Measures which consist of siltstone and sandstone.
- 2.3.2 Local existing boreholes close to the site indicate that the site is likely to be underlain by Blown Sand. This information is based upon records provided by the British Geological Survey.
- 2.3.3 The site is not located in a high-risk area for underground mine workings.

3.0 SITE WORK

- 3.1 The site work was carried out on the 16th January 2024. The locations of exploratory holes have been planned to give a representative view of the soil below the site.
- 3.2 Two trial pits, designated TP1 and TP2, were dug by mechanical excavator at the positions shown on the site plan, Appendix 1, Figure A1.1. The depths of trial pits, descriptions of strata encountered and comments on groundwater conditions are given in the trial pit records, Appendix 2, Figures A2.1 to A2.2.
- 3.3 Representative disturbed samples were taken at the depths shown on the trial pit records and despatched to the laboratory.
- 3.4 Dynamic probing was carried out in the trial pits using Mackintosh Probe apparatus and the results included in Figures A2.1 to A2.2.
- 3.5 The ground levels at the trial pit locations were not determined.
- 3.6 Soakaway tests were carried out in TP1, in line with guidelines given in BRE Digest 365, ref. 7.1. The results are included in Figures A2.3 and A2.4.

4.0 LABORATORY TESTS

4.1 Geotechnical Testing

- 4.1.1 Geotechnical soil analysis was undertaken of samples obtained during the investigation as follows:
- 1 No. Particle Size Distributions (by Wet Sieving)
- 4.1.2 The laboratory test report is given in Appendix 3, Figures A3.1.

5.0 GROUND CONDITIONS ENCOUNTERED

5.1 Made Ground

5.1.1 Made Ground was encountered to 0.40m in TP1 and to 0.28m below ground level in TP2. The Made Ground generally consists of 100mm thickness of asphalt overlying hard lean concrete composed of cemented blast furnace slag.

5.2 Blown Sand

5.2.1 Underlying the Made Ground in TP1, very stiff red brown silty clay was encountered to 0.50m representing a thickness of 100mm. This thin bed of clay was absent in TP2.

5.2.2 Yellow brown slightly silty medium sand was encountered below the clay in TP1 and the Made Ground in TP2. This continued to the full depth of the trial pits at 1.30m and 2.00m respectively.

5.3 Groundwater

5.3.1 Groundwater was not encountered in the trial pits.

6.0 GEOTECHNICAL ASSESSMENT AND RECOMMENDATIONS IN RELATION TO THE PROPOSED DEVELOPMENT

6.1 Structural Details

- 6.1.1 It is understood that the proposed development is to consist of single storey structure of lightweight frame construction. Worst case scenario column loads are likely to be of the order of 50kN but the structure is proposed to be long in comparison to its width in order to fit along the side or the pitch.
- 6.1.2 Precise structural details were not available at the time of preparation of this report.

6.2 Assessment of Soil Condition

- 6.2.1 The results of the Mackintosh probe in trial pit 1 from 0.75m below ground level indicated a M100 value of 95 to 100 which is equivalent to an SPT N value of 12, Ref. 7.2. However, at the other end of the proposed structure the M100 value from 1.00m below ground level varied from 16 to 45 which is equivalent to a SPT N value of between 2 and 6 with an average of 4.
- 6.2.2 An SPT N value of 12 indicates that the sand is medium dense, however, an SPT N value of 2 to 6 indicates the sand is very loose to loose. The particle size distribution undertaken on sand sample, shown in Figure A3.1, indicated that the sand was 93% medium sand which is badly graded and likely to result in significant settlement if a load is applied to it.

6.3 Foundation Design

- 6.3.1 On the basis of observations made on site together with results of in-situ and laboratory tests, consideration could be given to the adoption of reinforced shallow spread foundations to support the proposed structure. It is considered that due to the variable and loose density and the single size of the sand the foundations should be linked and reinforced. The foundations could take the form of a raft foundation or alternatively pad foundations below the stanchions which are linked with a reinforced trench fill foundation.
- 6.3.2 It is recommended that such foundations should be taken through any Made Ground and clay and be placed in the underlying sand at a minimum depth of 0.60m.
- 6.3.3 Pad foundations linked with reinforced trench fill foundations at the minimum depth of 0.60m may be designed to an allowable bearing pressure of 50kPa, which would provide an adequate factor of safety against shear failure. For 1m square pad foundations linked with reinforced trench fill foundations differential settlements are likely to be less than 15mm, however, these should be checked when the final structural loading is known.

6.3.4 Raft foundations at the minimum depth of 0.60m may be designed to an allowable bearing pressure of 25kPa, which would provide an adequate factor of safety against shear failure. Differential settlement of the raft is likely to be of the order of 25mm.

6.3.5 When undertaking the soakaway tests the sides of the trial pit started to collapse from the bottom as soon as the water was poured. It is therefore recommended that the soakaway be kept at least 5m away from any of the proposed foundations.

6.4 Ground Floor Slabs

6.4.1 The ground floor slab of the frame structure should be suspended. The ground floor slab of the raft foundation will, of course, be part of the raft.

6.5 Excavations

6.5.1 The safety of all excavations should be assessed and managed in accordance with Regulation 22 of CDM 2015 Managing Health and Safety in Construction, ref 7.3.

6.5.2 On the basis of observations on site together with the results of in-situ and laboratory tests, it is considered that excavations to less than 0.90m for foundations and services encountering the sand are likely to be stable in the short term. However, if the excavations become wet during inclement weather, then they are likely to become unstable.

6.5.3 Groundwater should not be expected in shallow excavations for foundations or services.

6.6 Surface Water Soakaways

6.6.1 The results of the soakaway tests gave infiltration rates in the sand of between 2.7×10^{-5} m/s and 8.3×10^{-5} m/s which suggests the stratum to be of good drainage characteristics.

6.6.2 It is recommended that the soakaways be kept at least 5m away from any of the proposed foundations.

7.0 REFERENCES

- 7.1 Building Research Establishment, Digest 365, Soakaway Design, 2016.
- 7.2 Fakher, A., Khodaparast M. and Jones C. J. F. P., 2005, 'The use of the Mackintosh Probe for Site Investigation in soft soils'. Quarterly Journal of Engineering Geology and Hydrogeology, 39, p189-196.
- 7.3 HSE, Managing Health and Safety in Construction - 2015, Construction (Design and Management) Regulation 22, Excavations.
- 7.4 British Standards Institute: BS EN 1997-2:2007 Incorporating corrigendum June 2010, 'Eurocode 7 - Geotechnical Design – Part 2: Ground investigation and testing.'
- 7.5 British Standards Institute: BS 5930:2015 'Code of practice for ground investigations', BSI 2015.
- 7.6 British Standard 1377:1990, Part 9, 'Methods of Test for Soils for Civil Engineering Purposes'.
- 7.7 ISO 22475-1:2006, 'Geotechnical Investigation and Testing – Sampling Methods and Groundwater Measurements' Part 1: Technical Principles for Execution.
- 7.8 ISO 14688 Part 1:2002 and Part 2:2004, 'Geotechnical Investigation and Testing – Identification and Classification of Soil'.

For and on behalf of Barratt Associates Limited



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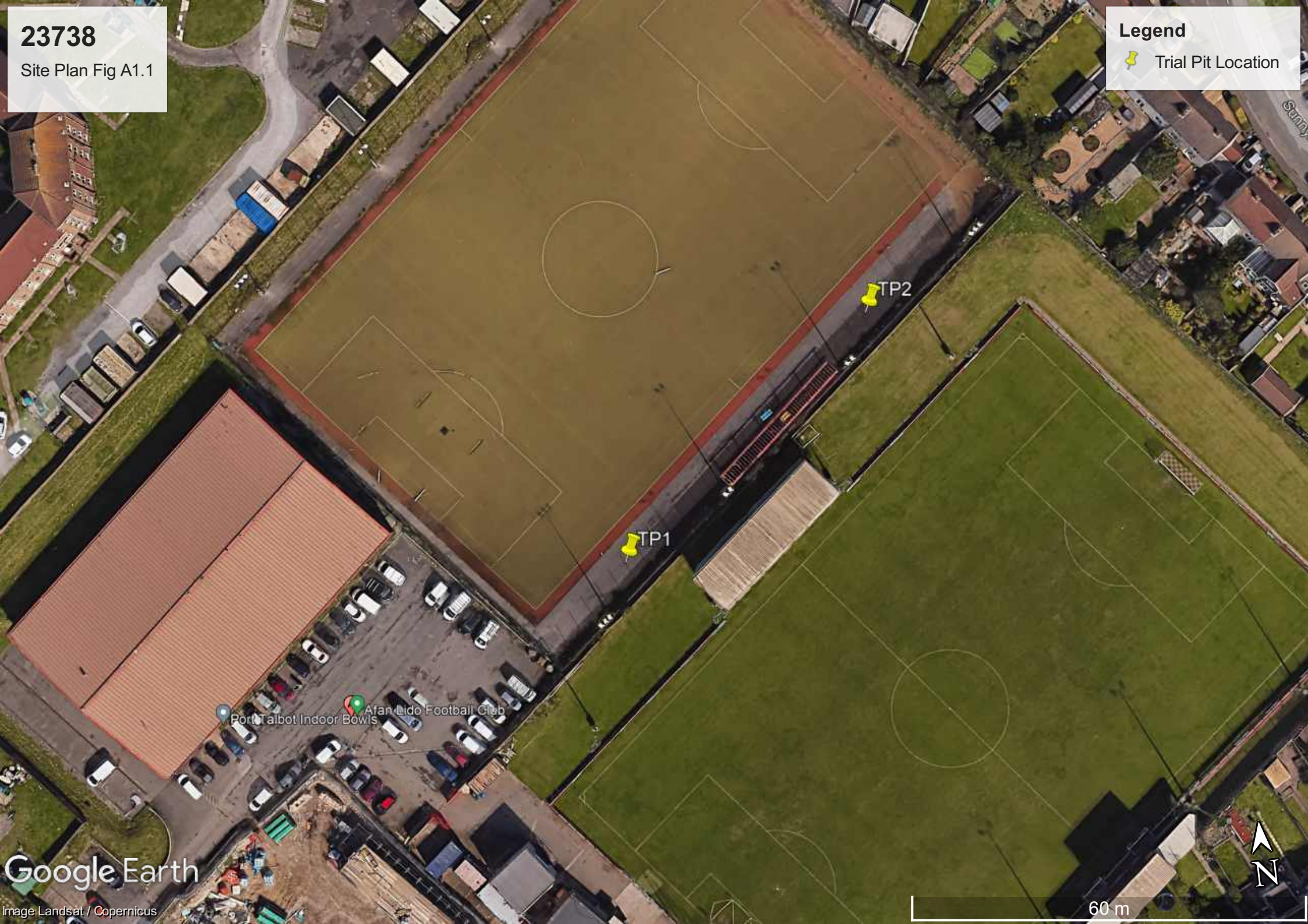


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APPENDIX 1
DRAWINGS

Legend

 Trial Pit Location




60 m

APPENDIX 2

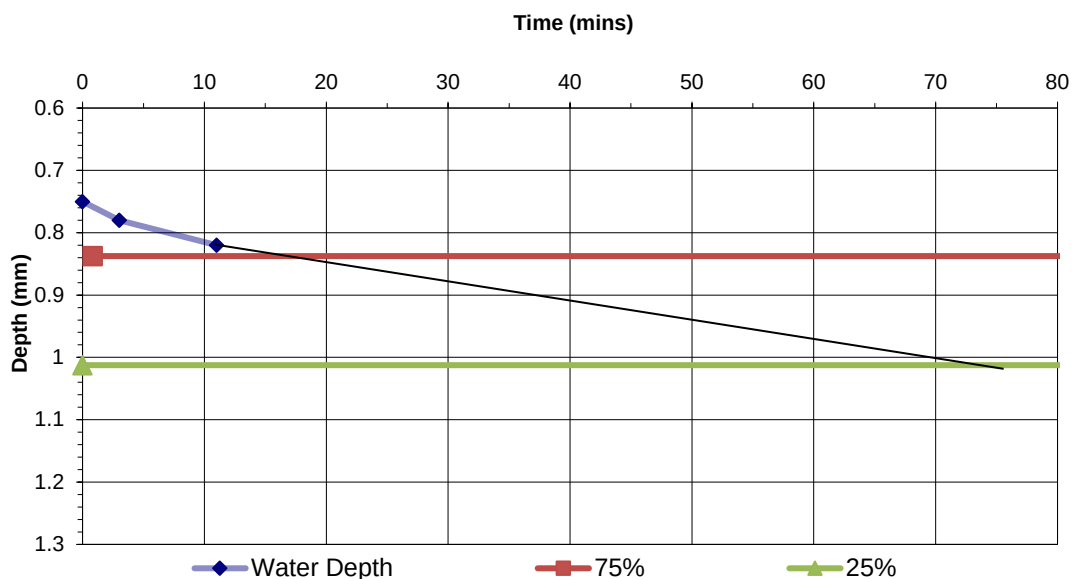
SITE WORK

Job No:	23738				Trial Pit No.		TP1											
Location:	Afan Lido FC, Port Talbot, SA12 6PE				Dimensions (m)		1.10 x 0.60											
GRN	SS 74722 89683				Date :		16/01/2024											
Machine	Kubota 6 tonne				Elevation													
Description of Strata		Stata Changes			Samples		Depth	SPT								Water		
		Depth (m)			Depth (m)	Type		M100						N Value	Level (m)			
		Top	Bottom												Depth	Standing	Time	
MADE GROUND Asphalt			0.00	0.10			0.75	95							12			
MADE GROUND Hard lean concrete composed of cemented blast furnace slag			0.10	0.40			0.85	100							12			
Very stiff rusty red brown silty CLAY			0.40	0.50														
Yellow brown slightly silty medium SAND (Blown Sand)			0.50	1.30														
			Remarks:															
			Ground water not encountered.															

Job No:	23738					Trial Pit No.	TP2											
Location:	Afan Lido FC, Port Talbot, SA12 6PE					Dimensions (m)	1.00 x 0.60											
GRN	SS 74770 89720					Date :	16/01/2024											
Machine	Kubota 6 tonne					Elevation												
Description of Strata		Stata Changes			Samples		Depth	SPT								Water		
		Depth (m)			Depth (m)	Type		M100					N Value	Level (m)				
		Top	Bottom											Depth	Standing	Time		
MADE GROUND Asphalt		0.00	0.10				1.00	16							2			
MADE GROUND Hard lean concrete composed of cemented blast furnace slag		0.10	0.28				1.10	21							3			
Yellow brown slightly silty medium SAND (Blown Sand)		0.28	2.00		1.50	D	1.20	20							3			
							1.30	21						3				
							1.40	45						6				
							1.50	24						3				
							1.60	35						5				
							1.70	45						6				
		Remarks: Ground water not encountered.																

CALCULATION OF INFILTRATION RATE IN ACCORDANCE WITH BRE DG 365: 2016

Client:			
Site:	Afan Lido FC, Port Talbot, SA12 6PE		
Job No:	23738	Test No:	TP1 Test 1
Date	16/01/2024	Weather:	sunny
INPUT DATA AND CALCULATION			
Time (min)	Depth (m)	Size of Trial Pit	Length (m) = 1.10
0	0.75		Width (m) = 0.60
3	0.78		Depth (m) = 1.10
11	0.82		
		Depth to water at start of test (m) = 0.75	
		Depth to water at end of test (m) = 0.82	
		Depth to water at 75% level (m) = 0.84	
		Depth to water at 50% level (m) = 0.93	
		Depth to water at 25% level (m) = 1.01	
		Base area of pit (m ²) = 0.66	
		Effective area of loss a_{s50} (m ²) = 1.26	
		$V_{P75} - V_{P25}$ (m ³) = 0.12	
		From the graph:	
		t_{p75} (min) = 17	
		t_{p25} (min) = 73	
		Soil infiltration rate, f , (m/s) =	2.74E-05 normal test
			8.22E-06 pit with stone
		Tested by: WS	Date: 16/01/2024
		Checked by: IL	Date: 17/01/2024



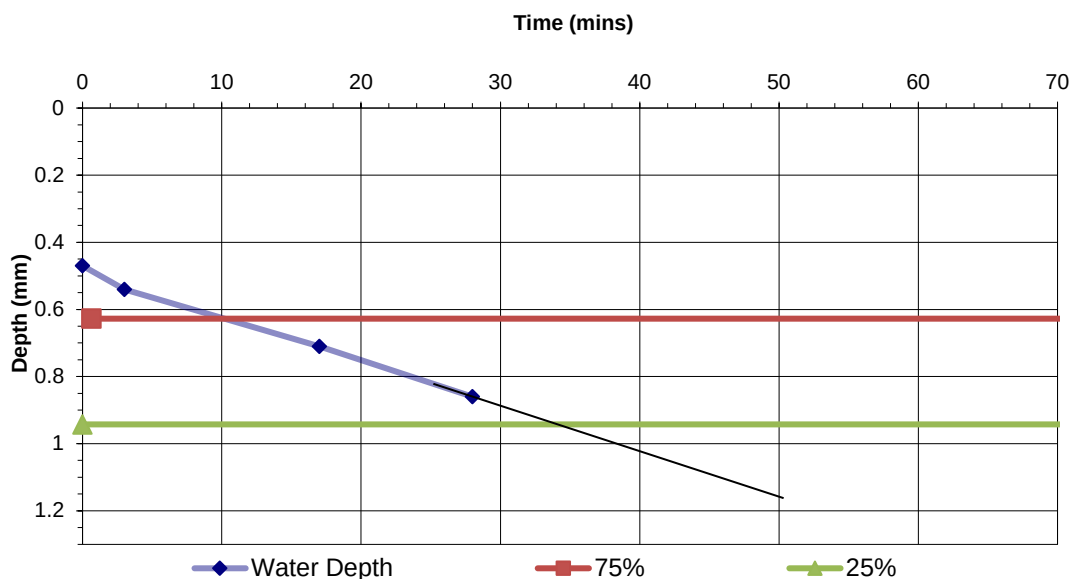
Notes

Line extrapolated.

Sand unstable underwater hole depth reduced to 1.1m

CALCULATION OF INFILTRATION RATE IN ACCORDANCE WITH BRE DG 365: 2016

Client:			
Site:	Afan Lido FC, Port Talbot, SA12 6PE		
Job No:	23738	Test No:	TP1 Test 2
Date	16/01/2024	Weather:	sunny
INPUT DATA AND CALCULATION			
Time (min)	Depth (m)	Size of Trial Pit	Length (m) = 1.10
0	0.47		Width (m) = 0.60
3	0.54		Depth (m) = 1.10
17	0.71		
28	0.86	Depth to water at start of test (m) = 0.47	
		Depth to water at end of test (m) = 0.86	
		Depth to water at 75% level (m) = 0.63	
		Depth to water at 50% level (m) = 0.79	
		Depth to water at 25% level (m) = 0.94	
		Base area of pit (m ²) = 0.66	
		Effective area of loss a _{s50} (m ²) = 1.73	
		V _{P75} - V _{P25} (m ³) = 0.21	
		From the graph:	
		t _{p75} (min) = 10	
		t _{p25} (min) = 34	
		Soil infiltration rate, f, (m/s) =	8.34E-05 normal test
			2.50E-05 pit with stone
		Tested by: WS	Date: 16/01/2024
		Checked by: IL	Date: 17/01/2024



Notes

Line extrapolated.

Sand unstable underwater hole depth reduced to 1.1m

APPENDIX 2

GENERAL NOTES ON SITE WORKS

A2.1 SITE WORK

A2.1.1 General

Site work is carried out in general accordance with the guidelines given in ISO 1997, 7.4 and BS 5930, ref. 7.5.

A2.1.2 Trial Pits

Shallow trial pits are generally dug by mechanical excavator, however, in difficult access locations or adjacent to structures, such pits may be hand dug. Pits are best used where the ground will stand unsupported and generally, the maximum depth of machine dug pits is 4m to 5m. Where personnel are required to enter pits, it is essential that side support is provided. Entry by personnel into unsupported pits deeper than 1.2m is not allowed for health and safety reasons.

Trial pits allow the in-situ condition of the ground to be examined both laterally and vertically and also allow discontinuities to be recorded. The field record should give the orientation of the pit with details of which face was logged, assessment of stability of sides of pit and groundwater as well as the strata encountered. Photographs of the pit should also be taken.

In-situ testing, such as hand penetrometer, hand vane, Macintosh probe, or similar, can be undertaken in the sides or base of pits while both disturbed and undisturbed samples recovered.

It is generally advisable to backfill the pits as soon as possible, open pits should not be left unattended.

A2.2 IN-SITU TESTS

A2.2.1 Standard Penetration Test

The Standard Penetration Test is carried out in accordance with the proposals recommended by ISO 1997, ref. 7.4, BS 1377, Part 9, 1990 ref. 7.6.

The standard penetration test, **SPT**, covers the determination of the resistance of soils to the penetration of a split barrel sampler. A 50mm diameter split barrel sampler is driven 450mm into the soil using a 63.5kg hammer with a 760mm drop. The penetration resistance is expressed as the number of blows required to obtain 300mm penetration below an initial seating drive of 150mm through any disturbed ground at the bottom of the borehole. The number of blows to achieve the standard penetration of 300mm is reported as the 'N' value.

The test is generally carried out in fine soils, however, it may also be carried out in coarse granular soils, weak rocks and glacial tills using the same procedure as for the SPT but with a 50mm diameter, 60° apex solid cone replacing the split spoon sampler, **CPT**.

When attempting the standard penetration test in very dense material or weathered rocks it may be necessary to terminate the test before completion to prevent damage to the equipment. In these circumstances it is important to distinguish how the blow count relates to the penetration of the sampler. This may be achieved in the following manner:

- Where the seating drive has been completed, the test drive is terminated if 50 blows are reached before the full penetration of 300mm is achieved. The penetration for 50 blows is recorded and an approximate N value obtained by linear extrapolation of the number of blows for the partial test drive.
- If the seating drive of 150mm is not achieved within the first 25 blows, the penetration after 25 blows is recorded and the test drive then commenced.
- For tests in soft rocks, the test drive should be terminated after 100 blows where the penetration of 300mm has not been achieved.

The N-value obtained from the Standard Penetration Test may be used to assess the relative density of sands and gravels as follows:

Term	SPT N-Value : Blows/300mm Penetration
Very Loose	0 - 4
Loose	4 - 10
Medium Dense	10 - 30
Dense	30 - 50
Very Dense	Over 50

A2.2.2 Mackintosh Probe

The mackintosh probe is a lightweight dynamic cone penetrometer consisting of a 12.7mm diameter rod with a 27.94mm diameter, 30° cone of tempered steel at one end. The impact is provided by means of a 4.5kg dead weight with a standard drop height of 300mm. The total weight of the instrument is about 12kg.

The results are recorded as the number of blows of the hammer to drive the cone 100mm, M_{100} .

An approximate correlation between the results of the Standard Penetration Test (N) and the Mackintosh value (M) for soft clays has been derived by Sabtan and Shehata, this including data presented by Chan and Chin (1972) ref.7.2, as follows:-

$$'N' \text{ value} = 0.15(M_{100})^{0.96}$$

A2.3 SAMPLES

A2.3.1 General

Samples have been recovered and stored in accordance with the guidelines given in ISO 22475-1:2006, ref. 7.7 and BS 5930, ref. 7.5.

The undisturbed samples recovered from the percussive sampler were of varying diameters depending upon the depth taken and the ground conditions encountered.

B represents large bulk disturbed samples

D represents small disturbed sample

W represents water sample

 represents water strike

 represents level to which water rose

A2.4 DESCRIPTION OF SOILS

A2.4.1 General

The procedures and principles given in ISO 14688 Parts 1 and 2, ref. 7.8, supplemented by section 6 of BS 5930, ref. 7.5 have been used in the soil descriptions contained within this report.

APPENDIX 3
LABORATORY TESTS



Laboratory Report



Contract Number: 70793

Client Ref: **23278**

Client PO:

Date Received: **19-01-2024**

Date Completed: **30-01-2024**

Report Date: **30-01-2024**

Client: **Barratt Associates**

This report has been checked and approved by:

Contract Title: **Afan Lido**

For the attention of: **Bill Sell**

B. Evans

Brendan Evans
Office Administrator

Description	Qty
PSD Wet Sieve method BS 1377:1990 - Part 2 : 9.2 - * UKAS	1
Disposal of samples for job	1

Notes: Observations and Interpretations are outside the UKAS Accreditation

* - denotes test included in laboratory scope of accreditation

- denotes test carried out by approved contractor

@ - denotes non accredited tests

This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This test report/certificate shall not be reproduced except in full, without the approval of GEO Site & Testing Services Ltd. Any opinions or interpretations stated - within this report/certificate are excluded from the laboratories UKAS accreditation.

Approved Signatories:

Brendan Evans (Office Administrator) - Darren Bourne (Quality Senior Technician) - Paul Evans (Director)
Richard John (Quality/Technical Manager) - Shaun Jones (Laboratory manager) - Shaun Thomas (Site Manager)
Wayne Honey (Human Resources/ Health and Safety Manager)

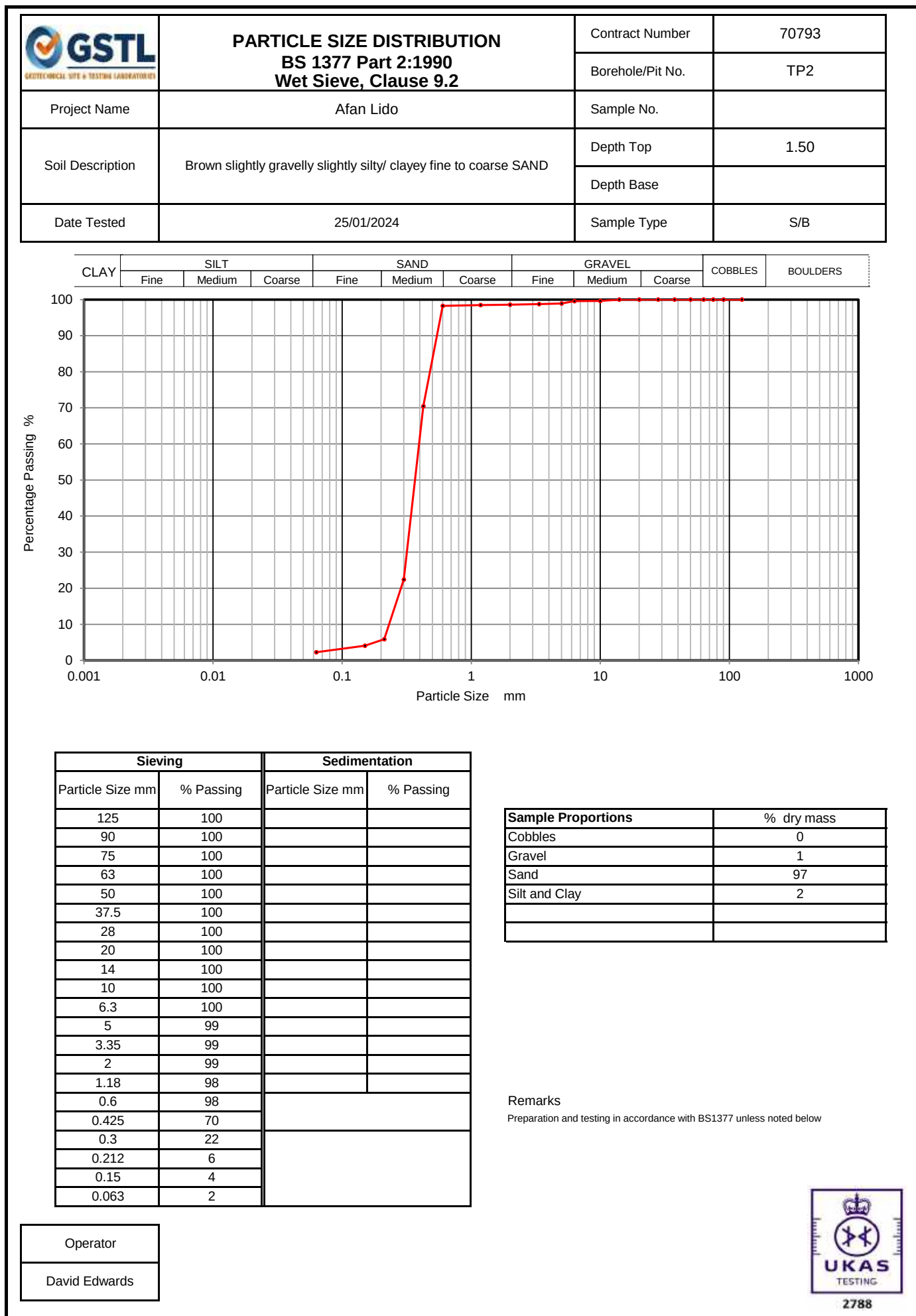


Fig A3.1

APPENDIX 3

GENERAL NOTES ON LABORATORY TESTS ON SOILS

A3.1 GENERAL

- A3.1.1 Where applicable all tests are carried out in accordance with the relevant British Standard. The laboratory test procedures are given in the laboratory test reports.
- A3.1.2 Any discussion in this report is based on the values and results obtained from the appropriate tests. Due allowance should be made, when considering any result in isolation, of the possible inaccuracy of any such individual result. Details of the accuracy of results are included in this section, where applicable.

