PHASE 1 ENVIRONMENTAL ASSESSMENT

AP Burt & Sons Limited, First Avenue Industrial Estate First Avenue, Portbury, Bristol, BS20 7XS

Prepared for: Euro Property Investments Limited

SLR Ref: 416.08726.00001
Version No: Final V1
September 2018

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1.0 Introduction & Scope of Work

1.1 Introduction

This report concerns the site identified as AP Burt and Sons Limited, First Avenue Industrial Estate, First Avenue, Portbury, Bristol, BS20 7XS (the Site). The Site comprises an industrial warehouse facility and distribution yard occupying approximately 1.05 hectares (Ha) which is operated by AP Burt & sons Limited. The Site location is presented in Drawing 01 and site boundary and current layout are presented in Drawing 02.

In August 2018, SLR Consulting Limited (SLR) was instructed by Afia Farhan on behalf of Euro Property Investments Limited to provide a Phase One Environmental Assessment (Desk Study) for the Site.

This assessment has been requested in order to ascertain the environmental liabilities associated with the Site.

1.2 Scope of Work

The purpose of this report is to introduce the Site and present a preliminary environmental risk assessment, which will collate information concerning potential contaminants, pathways and receptors and other relevant characteristics of the Site and its surrounds. This involves a study of the Site's current and historical land use and is best achieved via a combination of desk-based research, site reconnaissance and regulatory consultation.

The scope of work comprised:

- a brief site visit to identify existing contaminant sources such as storage tanks, chemical stores, burning grounds etc. and also identify any remaining evidence of historic contaminative activities, both on and adjacent to the Site;
- review of the current and historical uses of the Site and surrounding area, including any current or past industrial and waste management activities, to identify any contaminative linkages;
- review of the underlying soils and the geological, hydrological and hydrogeological features, including any abstraction or discharge consents within the vicinity of the Site;
- obtaining information from British Geological Survey (BGS) to enable a preliminary assessment of land stability;
- review of any accessible information from regulatory authorities and other sources such as Environment Agency (EA), the Local Authority, GroundSure, the BGS and the Ordnance Survey (OS);
- review of contaminant sources, pathways and receptors applicable to the Site;
- collation of information about the Site's setting and conditions to form a conceptual site model (CSM) and environmental risk assessment of the actual and potential pollution linkages identified; and
- preparation of this report, detailing the collated information and recommendations for further investigation works, if deemed necessary.

Site Photographs are included in Appendix 01, historical maps are included at Appendix 02 and the GroundSure Report is included at Appendix 03.

It should be noted that the site inspection did not extend to any underground features, any enclosed spaces where special entry precautions would have been required, the structural condition of buildings, the geotechnical stability of walls, or the potential environmental impact on any media other than that of the land. A full asbestos survey was not carried out.

2.0 Current & Historic Land Use

2.1 Site Location

The Site comprises a quadrilateral – roughly rectangular shaped – plot of land located to the west of First Avenue, BS20 7XS, (National Grid Reference 350196, 176485). The Site is set in a commercial area immediately adjacent to Portbury Docks and covers an approximate area of 1.05ha.

The study boundary and Site location are presented in Drawing 01.

2.2 Current Land Use

A formal site inspection was carried out on 20th August 2018. SLR staff interviewed Tim Davies of AP Burt & Sons, the current site tenants which included a site inspection walkover. The site inspection enabled SLR to compile information with respect to the following:

- land use;
- past and present site operations;
- site access, and;
- land quality and potential contaminants.

The Site was recently a production and storage warehouse and distribution yard occupying approximately 1.05ha, at the present time AP Burt and Sons are in the process of vacating the Site. Vacation works involve the removal of machinery, stocks of paper, adhesive and ink, waste disposal and ancillary equipment and fittings relating to their occupation. The Site is entirely hard surfaced with the exception of areas of mature hedge along the northern site boundary and a narrow embankment of grass and trees between First Avenue and the Site.

The Site is bound to the north by an east-west trending densely vegetated drainage channel, beyond which lies a high volume outdoor vehicle storage / parking area. It is bound to the east by heavily vegetated land and a distribution warehouse, to the west by an additional high volume outdoor vehicle storage / parking area, and to the south by a storage and distribution warehouse belonging to a logistics company.

The operations of the current tenants, AP Burt & Sons, comprised specialist printing and distribution of consumer packaging products.

The following observations were established during inspection of the property:

- The Site can be roughly divided into five key areas of variable size and purpose:
    - Staff and visitor parking located along the eastern boundary;
    - goods delivery and loading yard in the central and northern half of the Site;
    - production floor, staff welfare and offices in the southern, (east-west trending) half of the main building;
    - storage warehouse and packaging area in the western (northwest trending) half of the main building;
    - waste ink drum and IBC storage area in north west corner of the Site.
- External site surfacing comprises concrete (50%) and asphalt (50%) in generally good condition (occasional cracks and pitting noted in places);

- a drainage channel is located beyond the northern edge of the Site, trending roughly east-west;
- chemicals stored on-site comprised water based inks and varnishes, starch based adhesives and cleaning products;
- processes inside the main building comprise ink mixing, printing, machine repairs, mixing of glues, packaging and storage paper products;
- surfacing on the production floor and within the warehouse was in good condition and generally clean. Localised areas of heavy staining where inks had built up around former printing press locations were evident and in the process of being removed. Concrete floor slabs within the main buildings were in good condition with occasional hairline cracks;
- general waste ink is stored externally in the northwest corner of the Site within individual IBC's (1000 litre capacity) in an unbunded area directly on the surface concrete slab. Rust staining is evident on concrete slabs in this area from the storage of drums that are no longer present;
- waste drums of ink intended for disposal and drums of ink that are due to be shipped to another AP Burt site are stored on pallets within the northern wing of the building and in an external covered area in the centre of the Site. No staining was visible around these and the drums appeared to be in good condition;
- a disused solvent / waste spirit burner associated with a previous site operator is located along the southern boundary of the Site outside the main building;
- an electrical substation is located in the southwest corner of the Site;
- a large, disused water storage tank is located in the northwest corner of the Site along with an associated sprinkler pump system;
- there are no below ground storage tanks (AST) located on-site.
- there appears to be a single above ground storage tank (AST) (approximately 500L volume) located adjacent to the water tank. This is thought to have held fuel oil/diesel. Interviewed personnel did not know its use, although it appears to be related to the Site's disused sprinkler pump system.
- a further AST is located in the south-eastern corner of the Site this is reported to hold waste ink and to be emptied regularly. Light staining was visible on base of the tank.
- site drainage is in good condition and present throughout the site comprising yard gullies which drain to surface water drainage. No interceptors were present on-site, drainage was believed by site management to go to public sewerage;
- processes associated with the current user had ceased operation approximately 1 month prior to SLRs visit, with work on-site relating to their vacation of the Site;
- during operation waste streams solely comprise ink, paper and general waste. During decommissioning skips had been brought to site and contained machine, general waste, parts, office supplies, tools and metals.

Further to the above information and based on SLRs previous walkover of the Site in 2014 it is established that the previous site operation comprised a magazine printing works, known to use spirit based inks and solvents.

Potential asbestos containing materials were not observed, however an asbestos survey carried out by the previous owners / occupiers suggested potential presence of asbestos in floor tiles, although no subsequent testing was carried out.

Photographs relating to the above observations from the Site inspection are presented in Appendix 01.

2.3 Historical Land Use

Historical mapping has been reviewed with the aim of identifying historical land use and the location of previous potentially contaminative land uses on and around the Site.

The historical maps were obtained from GroundSure and are contained in Appendix 02 of this report. Table 2-1 summarises this information. The 'site' refers to the red line boundary shown on Drawing 01.

Table 2-1: Historical Land Use

Date	Land Use
1883-1938	On-site: The Site and surrounding land use largely comprises open undeveloped land. Two surface water drains crosscut the Site trending northeast to southwest and southeast to northwest. Off-site: The Bristol and Portishead Railway Line trends east to west approximately 600m south of the Site. St. Georges Wharf is present approximately 600m north of the Site. Marsh Lane is present approximately 500m east of the Site and Cattle Drove approximately 400m to the west. The boundary between St. Georges Wharf and the land is labelled as Old Sea Bank.
1955-1970	On-site: The Site remains unchanged. Off-site: Structures consistent with the current location of the Portbury Docks car storage facility (off Redland Avenue) are present between 500 and 750m northeast of the Site. A land drain is present approximately 100m north of the Site trending east to west.
1978-1980, 1979, 1984-1989	On-site: No significant change. Off-site: A bund trending east to west with electricity pylons standing on it is now present immediately north of the Site. West Dock Road is now present approximately 150m east of the Site trending roughly north to south. A rectangular structure labelled as a tank is present approximately 170m to the north. Land approximately 80m to the west is labelled as a spoil tip. Structures consistent with the current location of the Portbury Docks car storage facility now appear as a plant nursery, caravan park and works. The Old Sea Bank appears redeveloped as St. Georges Quay and The Royal Portbury Docks 500m to the north. St. Georges Road is now present running parallel to the quayside. A substation, warehouses, offices and works are now present immediately to the west of St. Georges Quay in an area defined as Gordano Quay. A large roundabout is now present approximately 750m south of the Site.

Date	Land Use
1989-1990,	On-site: A rectangular structure is now present in the southeast corner of the Site and defined as a works. Off-site: Additional works, substations, a mill and warehouse are now present immediately south of the Site. Portbury Way and First Avenue now appear immediately adjacent to and south of the Site. Significant redevelopment of St. Georges Quay is evident in the vicinity of Marsh Lane and St. Georges Road, including an additional works and conveyor. Information indicates drains adjacent to the Site have been infilled between 1980 and 1989.
1991-1995	On-site: Site access road constructed. Off-site: Minor redevelopment of adjacent properties, including the works and warehouses. No information regarding development > 250m radius of the site is available.
2002	On-site: The Site appears redeveloped and now appears in its 2018 layout with L-shaped main building and separate water above ground storage tank (AST) and compressor buildings to the north. Off-site: There has been significant redevelopment in the land surrounding St. Georges Quay, including significant expansion of the works, construction of a coal stockyard, additional large warehouses and offices, expansion of the conveyor system and additional pipelines. Land to the south of the Site also appears redeveloped, with the construction of additional warehouses and works beyond Portbury Way. Drainage infrastructure immediately north of the Site now appears more robust.
2010, 2014	On-site: No significant change. Off-site: Minor additional development of St. Georges Quay has occurred along with an additional warehouse around Gordano Quay.

3.0 Previous Reporting

SLR completed a previous Phase One Desk Study[1] in August 2014. This consisted of a review of geo-environmental information and site walkover to assess site conditions. At this time AP Burt & Sons had been in possession of the Site for approximately 6-8 weeks.

Site uses were the same as those present in 2018 and the previous tenant was known to have utilised spirit based inks and operated a waste spirit burner.

The report concluded that no significant pollutant linkages were present and the Site was suitable for its use. The Site was not considered to be a significant risk with regard to land quality, given a setting of relatively low environmental sensitivity.

[1] Phase One Desk Study, First Avenue Industrial Estate, prepared by SLR Consulting Limited for Ironmongers Company, August 2014. SLR Ref: 407.04793.0002

5.0 Planning Searches

North Somerset Councils planning portal has been searched for entries relating to the First Avenue Site, Table 5-1, below summarises planning applications that relate to the Site.

Table 5-1: Summary of Planning Searches

Planning Reference	Decision Date	Summary
1079/83	1999	Planning application for convention centre that was later withdrawn.
A/0538/89	1989	Advertisement consent for erection of new signs for Christies Panel Products. Address uncertain, potentially refers to neighbouring site
0243/88	1988	Planning permission for erection of manufacturing unit for furniture industry. Address uncertain, potentially refers to neighbouring site.
00/P/0126/F	2000	Installation of after burner, chiller and flue/chimney to be located externally on the north west elevation of an existing portal frame building.
94/0066	1994	Extension and modification of printing works
94/1181	1994	Construction of new switch/transformer room. Screen for sprinkler tank and pump room, screen for waste compaction area and associated works
1795/82	1983	Planning permission for use classes III/IV and X. road layout, services and drainage details at Royal Portbury Dock

Review of the planning portal indicates that the present day building was given planning permission in 1994 with alterations to the building which included the addition of the spirit burner given planning permission in 2000. The planning record does not identify any previous uses of the Site.

6.0 Site Conditions

6.1 Environmental Setting

A summary of the main physical features of the Site are given in Table 4-1. Appendix 03 contains GroundSure GeoInsight and EnviroInsight data and Appendix 04 BGS borehole logs.

Table 6-1: Summary of Physical Site Features

Geography and Geology	Elevation	The Site elevation is approximately 8-9m above ordnance datum (AOD).
	Gradient	The Site is generally flat. There is a slight gradient to the north towards Royal Portbury Dock Road.
	Made Ground	Made Ground is recorded within the published geological mapping, comprising "artificial deposit" across the entire site.
	Superficial Drift Geology	Superficial deposits are recorded on-site, comprising Tidal Flat Deposits of clay and silt.
	Solid Geology	The Site is directly underlain by the Mercia Mudstone Group of Triassic age.
	Mining, and Ground Stability Hazards	The Site is not in a recognised area affected by underground coal mining activity and therefore the risk of subsidence related to shallow mining is negligible. The Site is not located within an area of shrink / swell, landslide or soluble / collapsible rock hazard. The Site is located in an area of moderate compressible ground / running sand hazard.
	Boreholes	No British Geological Survey (BGS) boreholes are recorded within the Site boundary, however a number of moderate depth (10-30m) boreholes surround the Site in all directions. Copies of logs are contained in Appendix 04. Boreholes to the southwest of the Site recorded up to 4m of Made Ground comprising largely inert soil and stones with bricks, this was underlain by silty / sandy clay, with basal sand / gravel associated with Quaternary Tidal Flat Deposits to variable depths (typically 1mAOD), overlying stiff red marl associated with the Mercia Mudstone (base not proven). Groundwater was encountered approximately 3.8-mAOD.
Hydrology	Surface Water / River Network	The nearest surface water feature is approximately 24m north of the Site, comprising an unnamed secondary river (drainage channel) trending roughly northeast to southwest.
	Flood Risk	The Site is not located within a floodplain. The nearest floodplain comprises a Zone 2 – tidal floodplain, located approximately 1m north of the Site, corresponding with the northeast – southwest trending drainage channel.

		Additional Zone 2 / Zone 3 floodplains cross cut the land adjacent to and surrounding the Site, corresponding with local drainage channels, however these floodplains also benefit from flood defences.
	Surface Water Abstractions	There are no surface water abstractions within 2km of the Site.
Hydrogeology	Aquifer	The superficial deposits are classified as unproductive. The underlying Mercia Mudstone is classified as a secondary B aquifer.
	Groundwater Abstractions	There are ten groundwater abstractions recorded within 2km of the Site; The nearest groundwater abstraction is record for general use and is located 450m to the northeast. There are no potable water supply abstractions within 2km of the Site.
	Source Protection Zones (SPZ)	The Site is not in a Source Protection Zone or within 500m of a Source Protection Zone.
	Groundwater Vulnerability	A secondary aquifer with intermediate risk from leaching is located approximately 240m northeast of the Site, corresponding with soils leaching risk.

6.2 Environmental Search Data

The GroundSure EnviroInsight data was reviewed to gain publicly available environmental data for the Site and its immediate vicinity. The MAGIC website (Multi-Agency Geographic Information for the Countryside) was also consulted regarding any groundwater abstractions, Source Protection Zones or ecologically designated sites within 2km of the subject property.

A copy of the GroundSure information obtained by SLR is contained in Appendices 03 and a summary of the search information is provided below:

- Sites determined as Contaminated Land under Part 2A EPA 1990 - there are no determined sites within 500m of the Site;
- Discharge consents – There are twenty discharge consents within 500m of the Site, the nearest is 60m west of the Site and attributed to trade discharge from Plot 28 of the Royal Portbury Docks.
- Radioactive Substances Licences – there are no licences within 500m of the Site.
- EA recorded pollution incidents – There are four recorded incidents within 500m, none are attributed to the subject area. All pollution incidents are recorded as minor (category 3 / 4). The nearest recorded pollution incident was 340m west of the Site, relating to an unidentified pollutant.
- Landfill sites – There are five recorded Environment Agency landfills located within 2km of the Site. The nearest recorded landfill site is located approximately 40m west of the Site, relating to inert & industrial waste. The locations of these landfills correspond with the BGS borehole logs recording Made Ground of inert or construction fill, and are considered to relate to the reclamation and redevelopment of the wider industrial estate from the

historical marshland. From professional experience, SLR is aware that this was a widespread practice across the wider Avonmouth area in order to facilitate land development.

- Licensed waste management/treatment/transfer/disposal facilities – There are three records for licensed waste treatment facilities within 1,500m of the Site. All of the licenses are related to Banyard Gas Waste Facility, located approximately 490m south of the Site. Annual tonnage is approximately 135 tonnes.
- Petrol and fuel sites – There are no recorded petrol and fuel sites within 500m of the Site.
- Ecological Designations – There are four Sites of Special Scientific Interest within 2,000m of the Site. The nearest SSSI is located approximately 1080m northwest of the Site and associated with the Severn Estuary.

Groundwater and surface water abstraction data was discussed in Table 4-1, above.

7.0 Preliminary Conceptual Model

7.1 Preliminary Conceptual Site Model

This report section uses the information gathered in previous sections and aims to identify all the potential Contaminants, Pathways and Receptors present with respect to the Site and assess their significance and acceptability.

When considering the contaminants, receptors and pathways relevant to this Site, SLR has been mindful that the report is for due diligence purposes.

The statutory guidance for Part 2A defines a Contaminant as:

"a substance which is in, on or under the land and which has the potential to cause significant harm to a relevant receptor, or to cause significant pollution of controlled waters".

Based on available information which includes a visual inspection of the Site, the GroundSure Report and historic mapping, it appears the Site was undeveloped until 1989 / 1990 when a large square building associated with an industrial works was constructed in the southeast corner of the Site. The Site is currently used by a company providing specialist printing and distribution of consumer packaging products, but they are in the process of vacating the premises.

The potential contaminant linkages have been detailed in Table 5-1.

Table 7-1: Preliminary Conceptual Site Model

Source	Pathway	Receptor	Significant	Comments
Site history indicates the Site was undeveloped until the 1990s when a commercial building associated with an industrial works was constructed in the southeast corner of the Site. The Site was redeveloped at some point between 1995 and 2002 to its current configuration. Current on-site use comprises printing for consumer packaging using water based inks and varnishes.	Direct ingestion or dermal contact	On-site Health (Human Health)	Negligible	The Site is entirely hard surfaced; no external alterations to the Site are planned. It is therefore considered there is no pathway for current or future site users to come into contact with soils beneath the Site.
	Vertical migration of contaminants	Groundwater	Negligible	The Site is almost entirely hard surfaced meaning that there is no mechanism for infiltration and subsequent leaching of water based inks or hazardous inks / varnishes from soils to groundwater. It is considered that infiltration from drainage joints is possible, however, this is likely to be a minimal risk. Site management practices appear good, which would minimise risks from leaks or spills.
	Lateral migration of dissolved contaminants	Surface Water	Negligible	The surface water drainage ditch immediately to the north of the Site is heavily vegetated and separated from the Site by a raised embankment. The drainage channel is likely to be in hydraulic continuity with underlying

Source	Pathway	Receptor	Significant	Comments
				groundwater, however the risk of contamination is negligible owing to the small volumes and good site management practices of products stored on-site.

7.2 Interpretation & Conclusions

Table 5-1 indicates that there are no potentially significant contamination linkages with respect to human health or groundwater / surface water associated with the Site. As such the Site poses a low environmental risk.

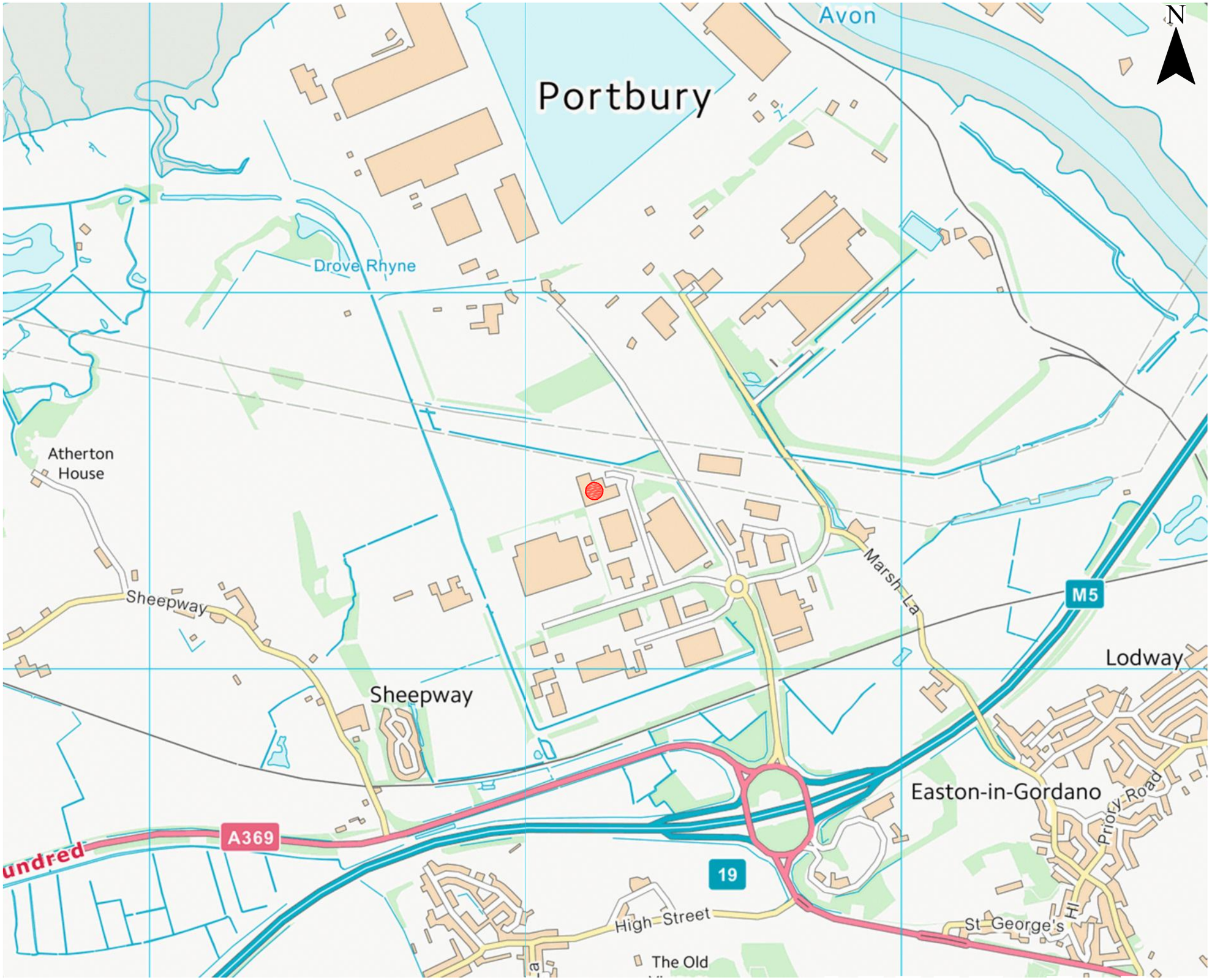
In summary:

- The Site was redeveloped at some point between 1994 and 2002 with construction of a new building / warehouse corresponding with the current structure. Accordingly, the historical industrial use of the Site is relatively recent in age terms, having previously been greenfield.
- The Site is entirely hard surfaced, with the exception of the mature hedgerow along the northern site boundary and grass verge along the eastern site boundary.
- The Site has until several months ago been used for printing on consumer packaging using water based inks and varnish and also makes glue for use on-site. This activity has ceased and during the walkover AP Burt and Sons were in the process of decommissioning the Site. Raw materials were stored in small containers (IBCs or drums) inside shipping containers. The previous tenants also used the Site for printing but used solvent based paints and had a part B permit for burning waste paint solvents on-site, the infrastructure for which is still on-site, although not currently used.
- There were no visual signs of staining or leaks to the ground surface which comprises concrete slabs in relatively good condition. Historically the Site reported that the current floor tiles may potentially contain asbestos, however no testing of these tiles has been completed. SLR recommends a review of the site's current asbestos register.
- There are no below ground tanks on-site and no fuels or oils are actively used on-site.
- The underlying geology comprises Tidal Flat Deposits – Clay and Silts which are classified as unproductive strata, overlying Mercia Mudstone bedrock which is classified as a secondary B aquifer.
- There are ten groundwater abstractions recorded within 2km of the Site; The nearest groundwater abstraction point corresponds with general use for Lafarge aggregates located 460m to the northeast.
- The Site is not located within a groundwater source protection zone, the nearest recorded pollution incident was 340m west of the Site, relating to an unidentified pollutant.
- The adjacent properties to the west and south are recorded as being historical landfills which accepted inert wastes, and are probably associated with the reclamation of the surrounding area from marshland during its initial development. Review of BGS boreholes logs for these "landfilled" areas confirms that the Made Ground comprises soil and stones with bricks typical of inert wastes. This is due to the placement of inert waste soils to create a development platform by raising the surrounding industrial estate above the floodplain.

- The Site is bordered by a shallow surface drain (known as a rhine locally) to the north.
- Surrounding land use comprises an industrial estate to the south (mostly logistics / distribution depots), drainage channel to the north, vehicle parking to the west, and light industrial to the southeast.

The Site is currently not considered to be a significant risk with regard to land quality, given a setting of relatively low environmental sensitivity, located on low permeability soils and limited historical light industrial / commercial land use of circa 28 years in duration.

DRAWINGS



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PHASE 1 ENVIRONMENTAL ASSESSMENT

SITE LO□ATION

DRAWING 0□

Scale 1:10,000@A3

Date AUGUST 2018

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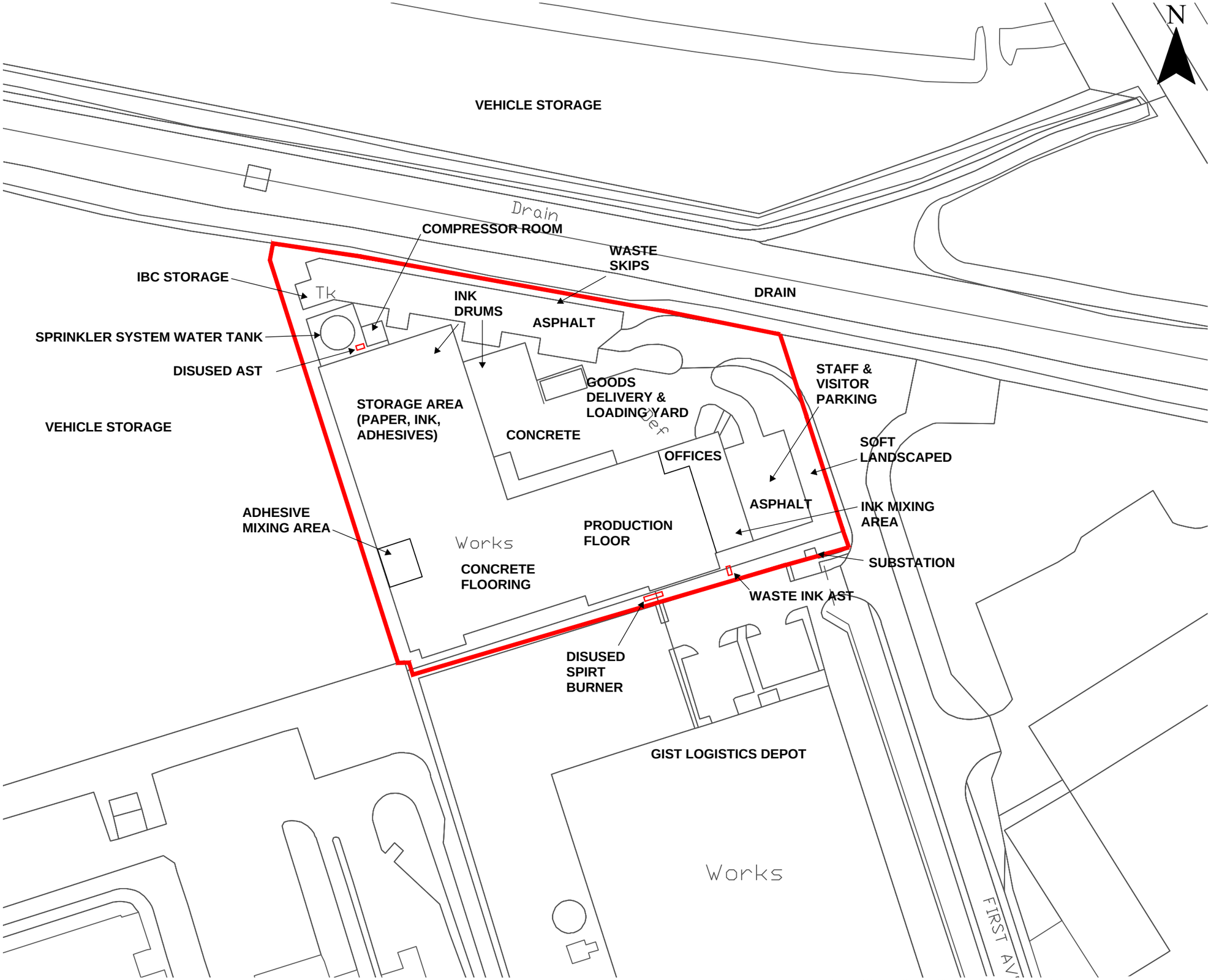

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PHASE 1 ENVIRONMENTAL ASSESSMENT

SITE LAYOUT

DRAWING 02

Scale	Date
1:1000@A3	AUGUST 2018

416.08726.00001.002_SITE LAYOUT.dwg

APPENDIX 01

Photographs

Plate 1	Land to west.

Plate 2	Land to south (GIST Depot)

Plate 3	Land to east of site looking south.

Plate 4	Land to north.

Plate 5	View of site entrance looking west.

Plate 6	View of southern wing (Left) and northern wing (right) with courtyard in foreground and external covered areas.

Plate 7	Face of southern wing and car parking in east of site.

Plate 8	Western boundary of site, viewed looking south.

Plate 9	Southern boundary of site, view to the east..

Plate 10	Spirt burner on southern boundary.

Plate 11	Waste inks stored in IBCs.

Plate 12	Compressor room and screen around water AST to rear.

Plate 13	Compressor room floor slab.

Plate 14	Water Aboveground Storage Tank

Plate 15	Diesel/Fuel Oil AST associated with sprinkler system (empty)

Plate 16	Northern end of northern wing.

Plate 17	Northern boundary of site, northern wing (right) and external covered area centre.

Plate 18	View east across forecourt from within external covered area, waste skips to left.

Plate 19	Surplus inks waiting for disposal or shipment to addiotnal AP Burt Site.

Plate 20	Waste paper bailer 1.

Plate 21	Waste paper bailer 2 (Right) and view of southern wing.

Plate 22	AST to east of southern wing, ink staining on side.

Plate 23	Drainage

Plate 24	Ink drums stored in northern wing.

Plate 25	Norther wing looking south.

Plate 26	Southern wing looking east towards offices.

Plate 27	Southern wing looking west towards (left to right) store, welding area, adhesive mixing area

Plate 28	Relict machinery, lost ink on floor slab.

Plate 29	Southern wing looking east, floor slab staining in foreground.

Plate 30	Adhesive mixing room.

Plate 31	Ink mixing room floor.

Plate 32	Ink mixing room.

Plate 33	Office area.

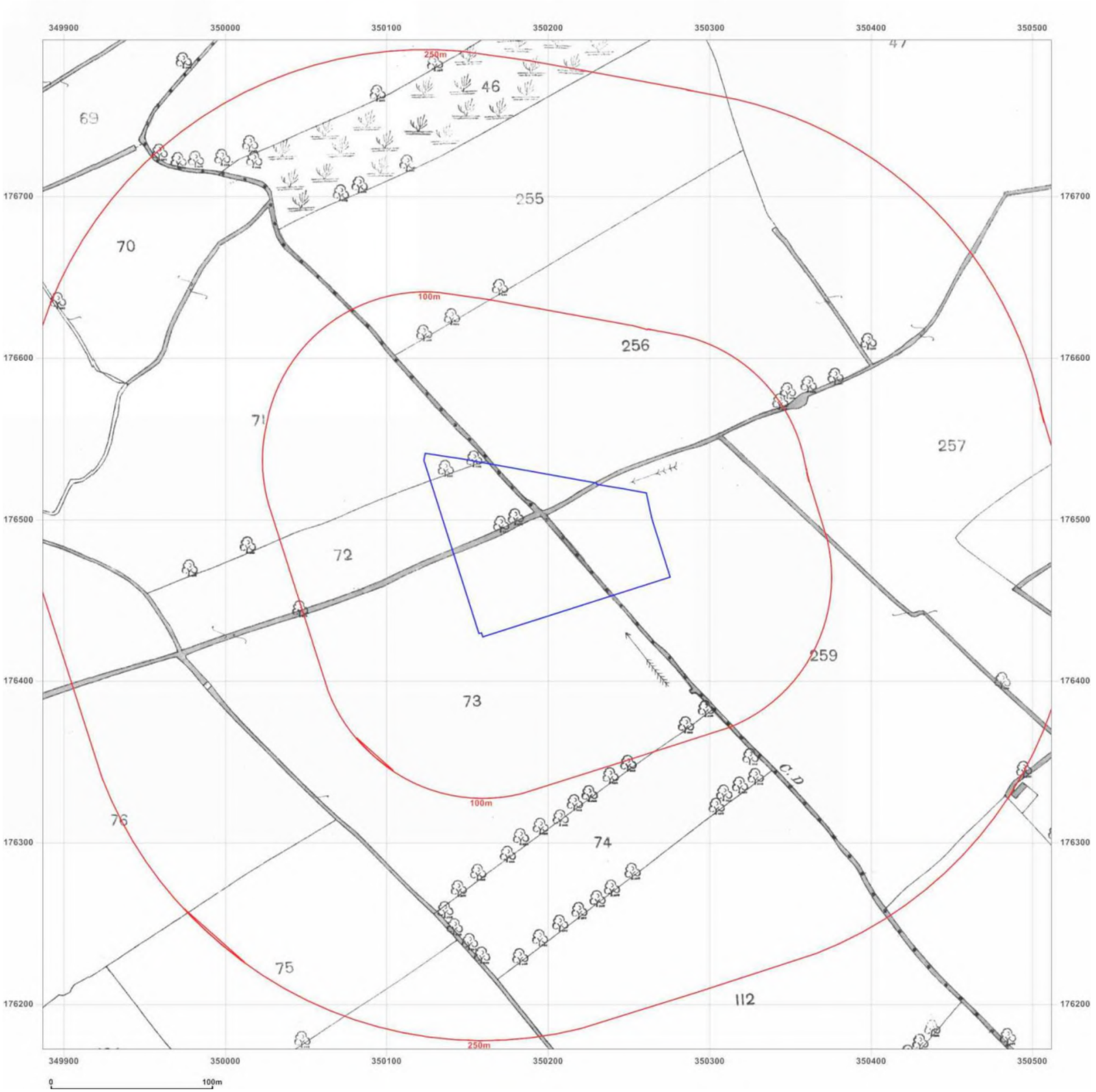
Plate 34	Cleaning products store.

Plate 35	Substation adjacent to southern wing.

Plate 36	Made Ground in soft landscaped area adjacent to site entrance.

APPENDIX 02

Historical Mapping



emapsite™

Site Details:

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Report Ref: EMS-495823_667160
Grid Ref: 350199, 176484

Map Name: County Series

Map date: **1884**

Scale: 1:2,500

Printed at: 1:2,500

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W E
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Surveyed 1884
Revised 1884
Edition N/A
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Levelled N/A

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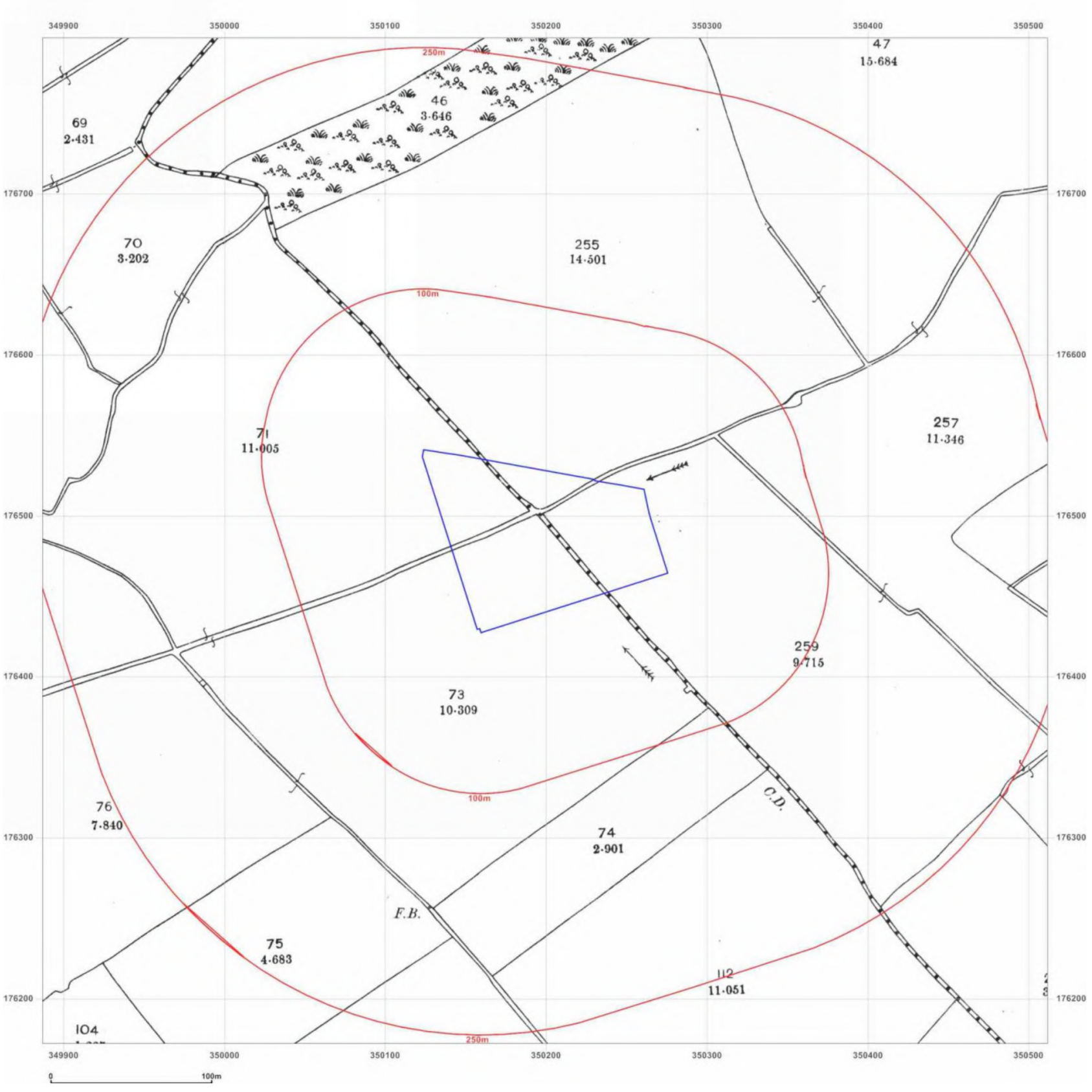

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Grid Ref: 350199, 176484

Map Name: County Series

Map date: **1903**

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Printed at: 1:2,500

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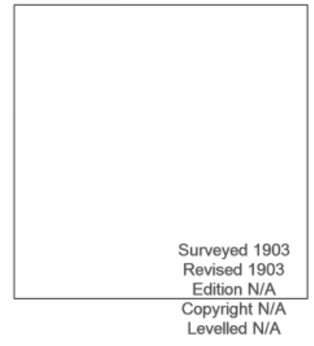

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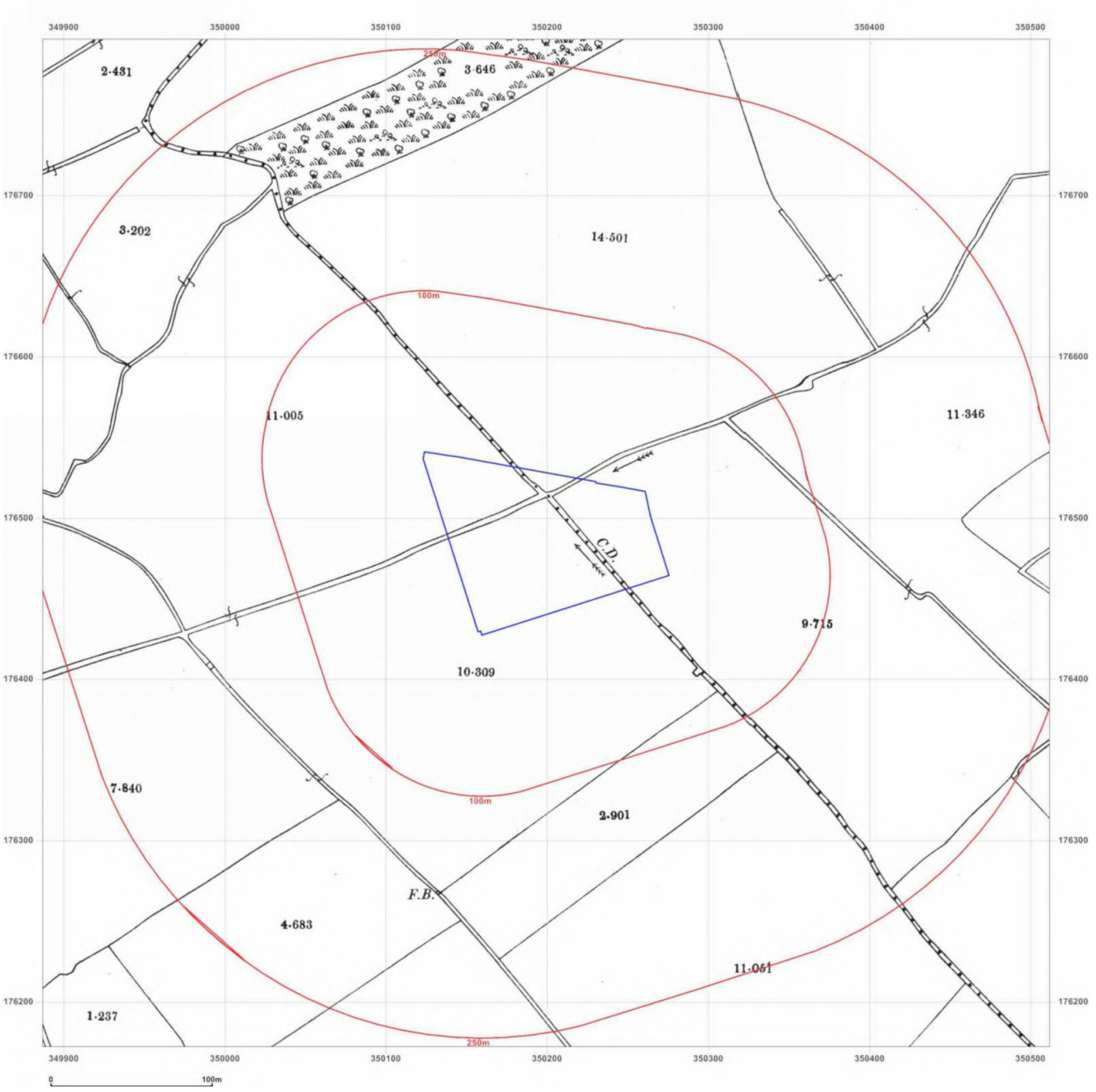

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Site Details:

AP Burt Site, First Avenue Industrial Estate,First Avenue,Portbury Docks, Bristol,BS20 7XS

Client Ref: EMS_495823_667160
Report Ref: EMS-495823_667160
Grid Ref: 350199, 176484

Map Name: County Series

Map date: **1903**

Scale: 1:2,500

Printed at: 1:2,500

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Surveyed 1903
Revised 1903
Edition N/A
Copyright N/A
Levelled N/A

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Production date: 20 August 2018

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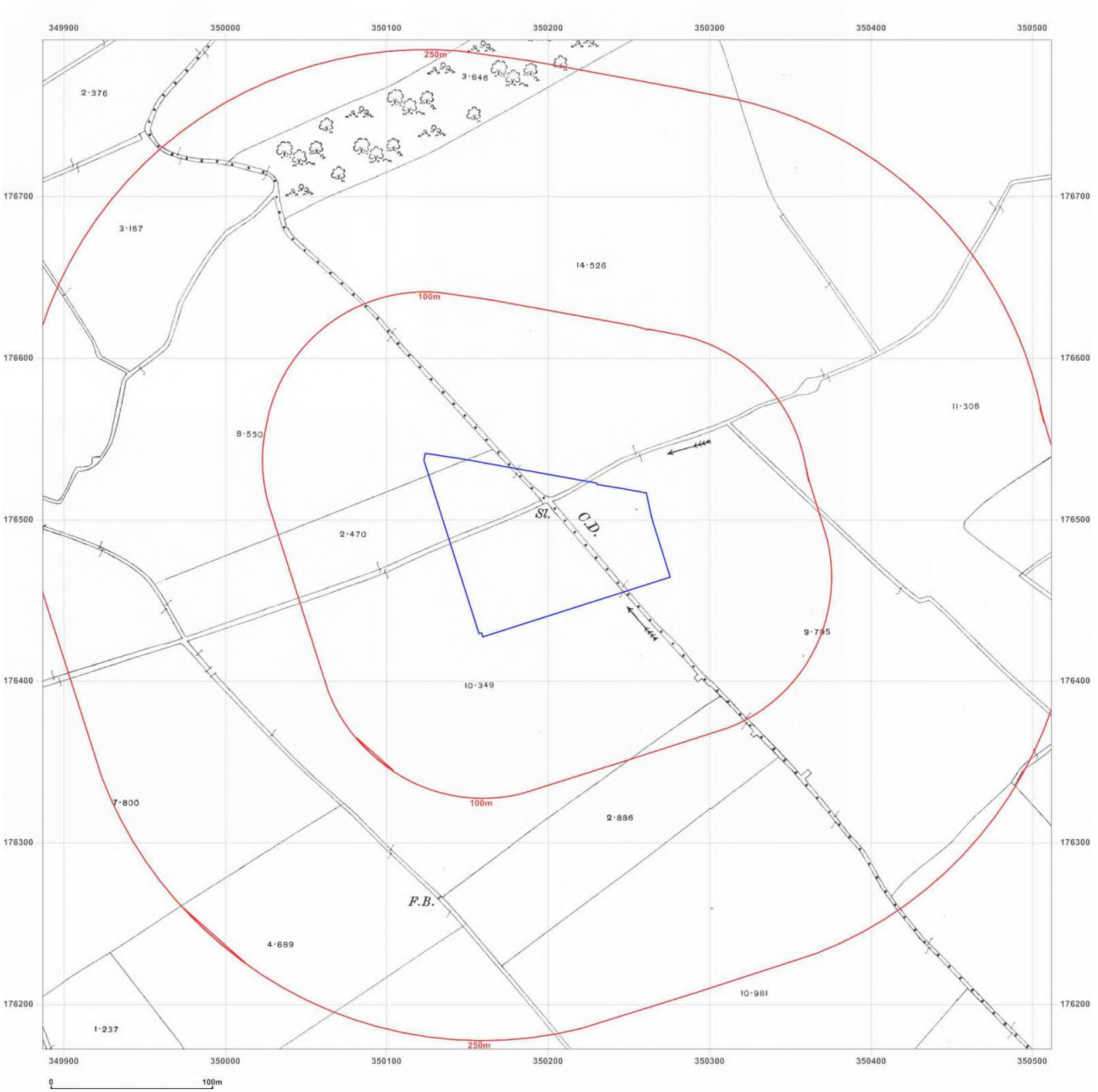

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Site Details:

AP Burt Site, First Avenue Industrial Estate,First Avenue,Portbury Docks, Bristol,BS20 7XS

Client Ref: EMS_495823_667160
Report Ref: EMS-495823_667160
Grid Ref: 350199, 176484

Map Name: County Series

Map date: **1916**

Scale: 1:2,500

Printed at: 1:2,500

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Surveyed 1916
Revised 1916
Edition N/A
Copyright N/A
Levelled N/A

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Production date: 20 August 2018

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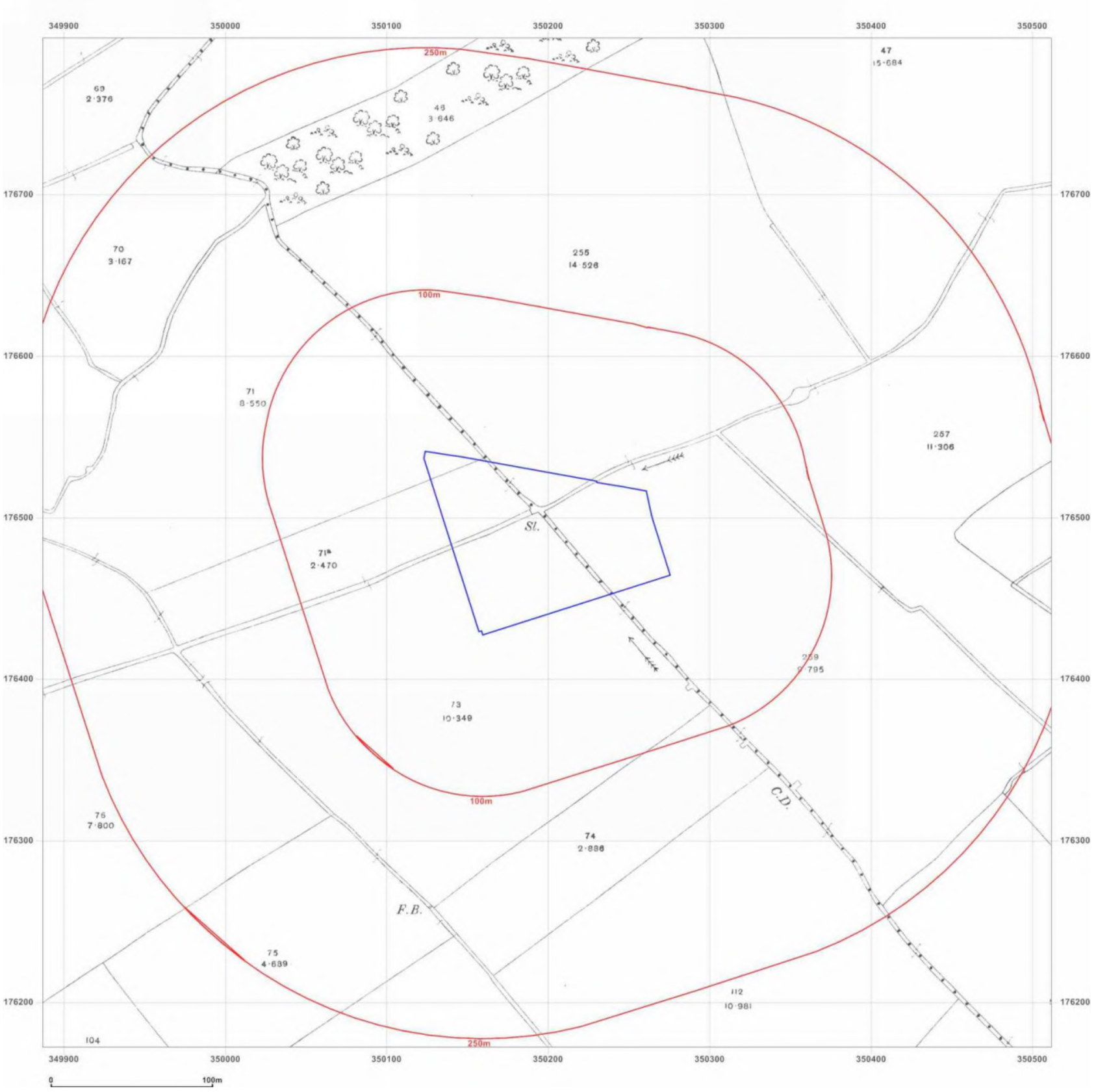

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Site Details:

AP Burt Site, First Avenue Industrial Estate,First Avenue,Portbury Docks, Bristol,BS20 7XS

Client Ref: EMS_495823_667160
Report Ref: EMS-495823_667160
Grid Ref: 350199, 176484

Map Name: County Series

Map date: **1916**

Scale: 1:2,500

Printed at: 1:2,500

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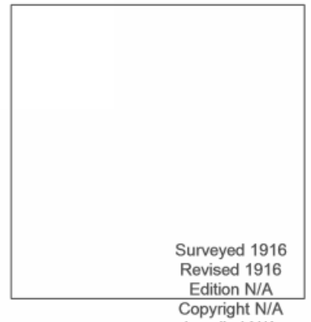

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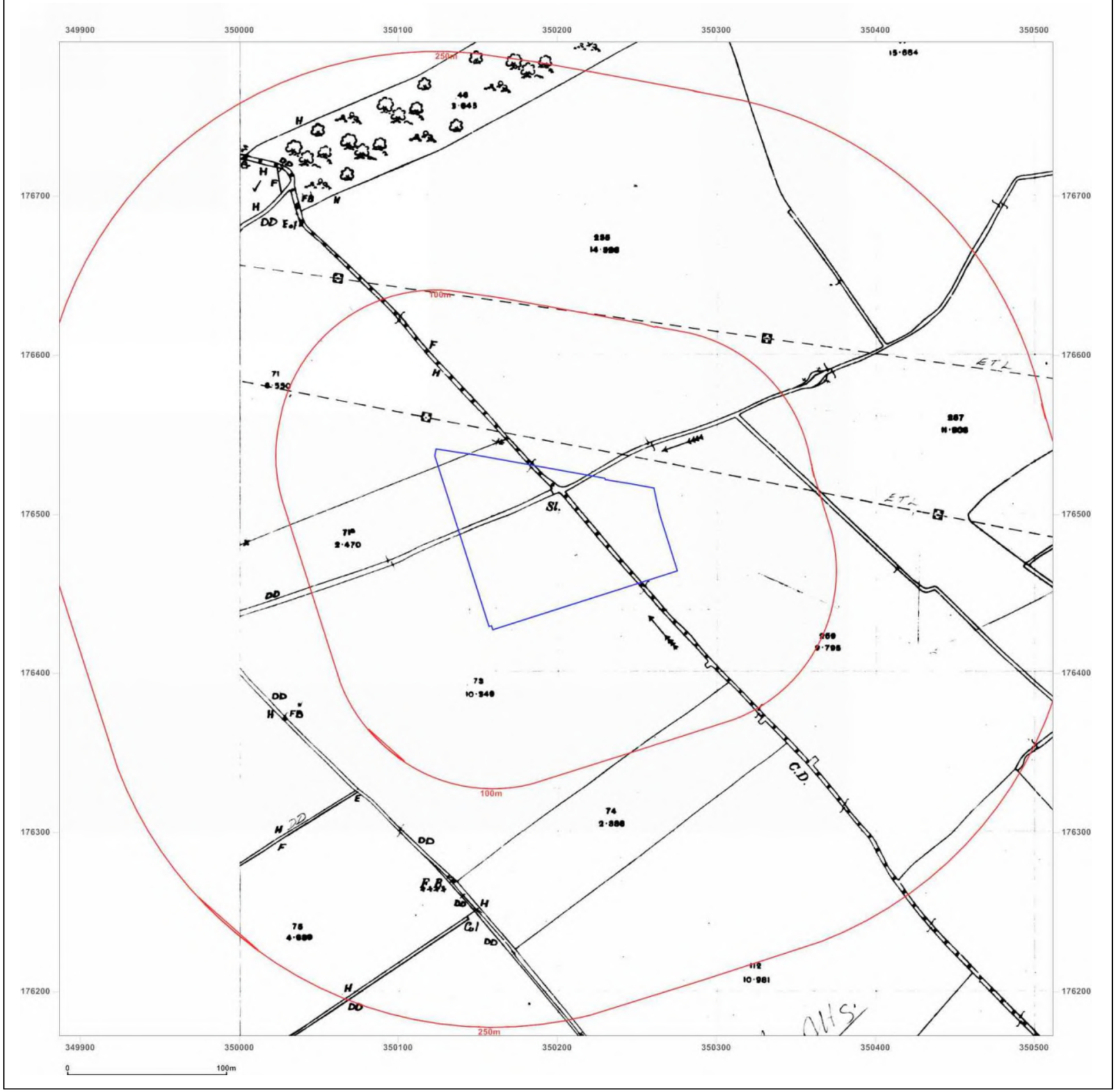

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Site Details:

AP Burt Site, First Avenue Industrial Estate,First Avenue,Portbury Docks, Bristol,BS20 7XS

Client Ref: EMS_495823_667160
Report Ref: EMS-495823_667160
Grid Ref: 350199, 176484

Map Name: National Grid

Map date: **1974**

Scale: 1:2,500

Printed at: 1:2,500

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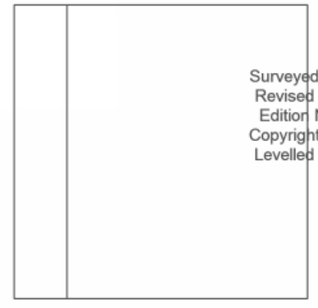

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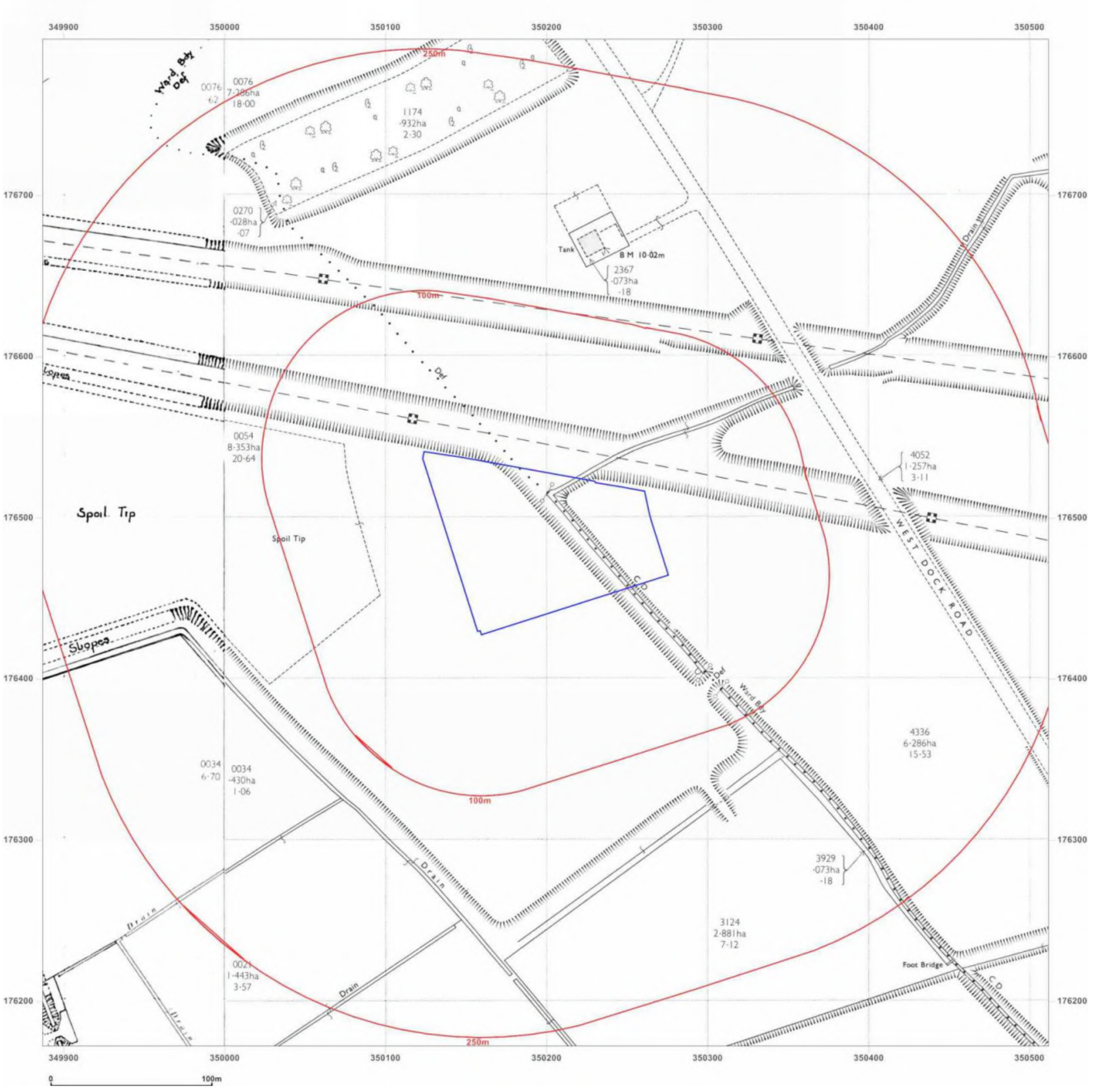

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Site Details:

AP Burt Site, First Avenue Industrial Estate,First Avenue,Portbury Docks, Bristol,BS20 7XS

Client Ref: EMS_495823_667160
Report Ref: EMS-495823_667160
Grid Ref: 350199, 176484

Map Name: National Grid
Map date: **1978-1980**
Scale: 1:2,500
Printed at: 1:2,500

N
W E
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Surveyed 1966
Revised 1980
Edition N/A
Copyright 1980
Levelled 1966

Surveyed 1972
Revised 1978
Edition N/A
Copyright 1980
Levelled 1977

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Production date: 20 August 2018

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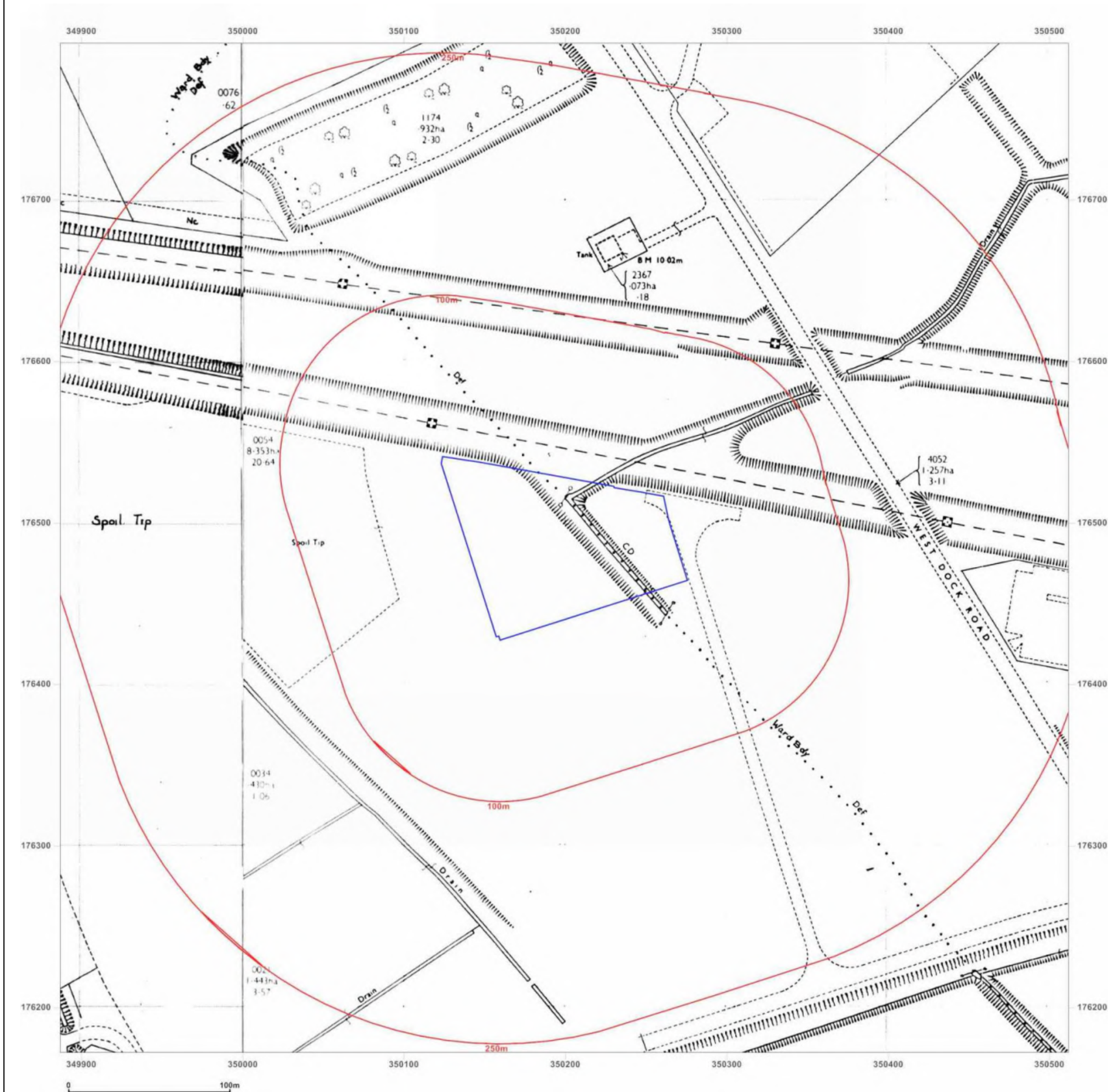

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Site Details:

AP Burt Site, First Avenue Industrial Estate,First Avenue,Portbury Docks, Bristol,BS20 7XS

Client Ref: EMS_495823_667160
Report Ref: EMS-495823_667160
Grid Ref: 350199, 176484

Map Name: National Grid

Map date: **1984-1989**

Scale: 1:2,500

Printed at: 1:2,500

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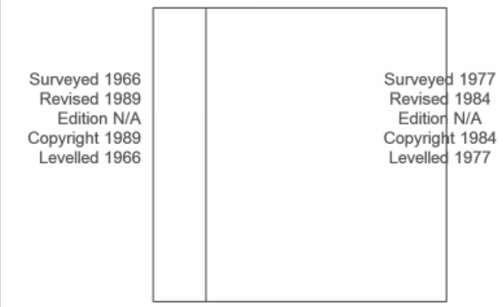

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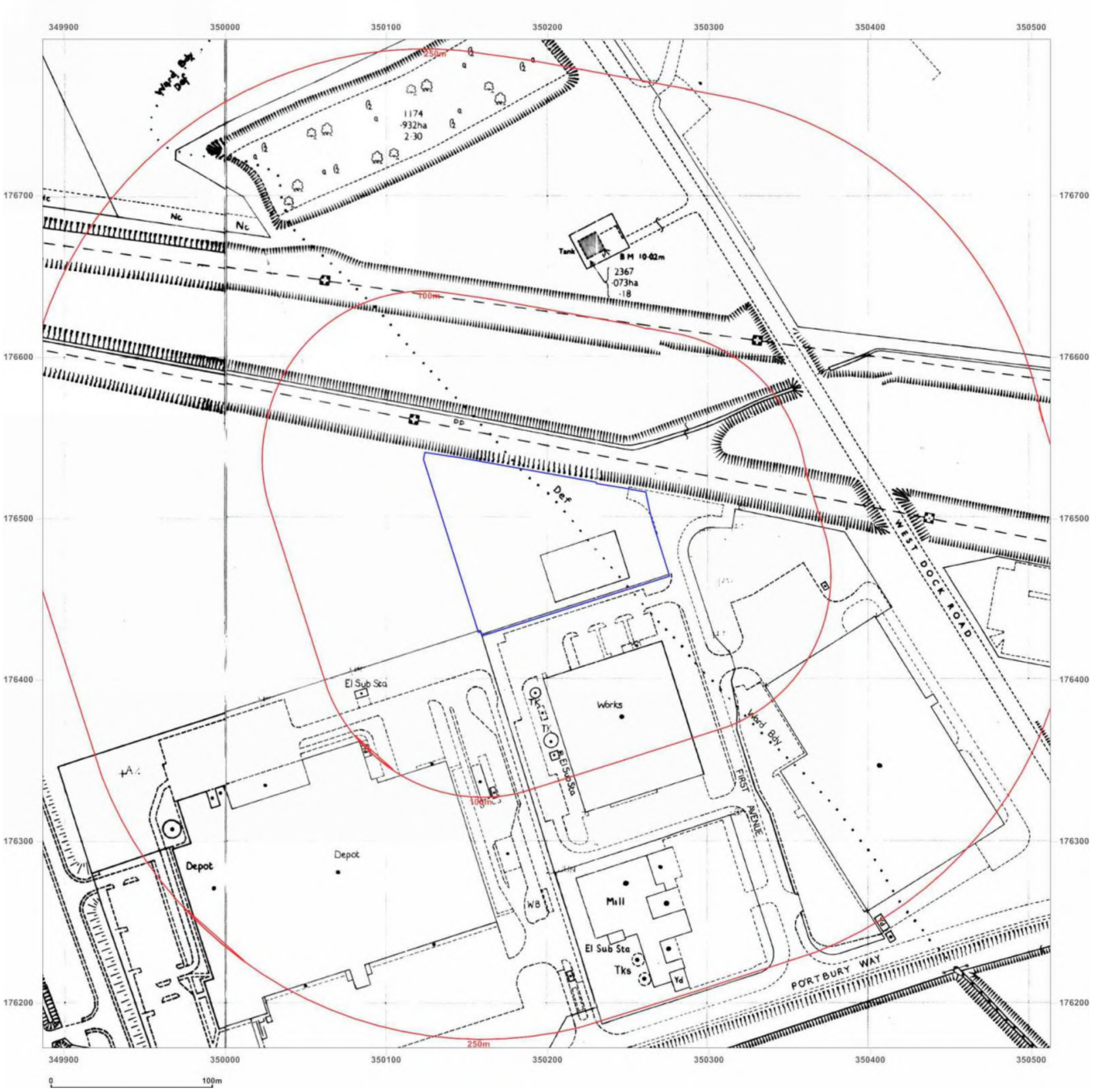

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Site Details:

AP Burt Site, First Avenue Industrial Estate,First Avenue,Portbury Docks, Bristol,BS20 7XS

Client Ref: EMS_495823_667160
Report Ref: EMS-495823_667160
Grid Ref: 350199, 176484

Map Name: National Grid

Map date: **1989-1990**

Scale: 1:2,500

Printed at: 1:2,500

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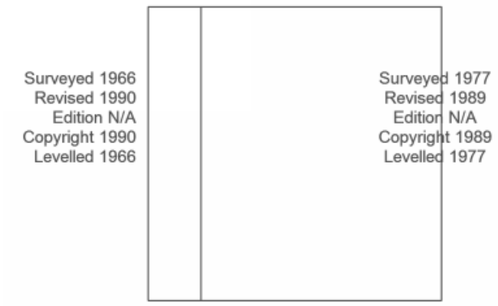

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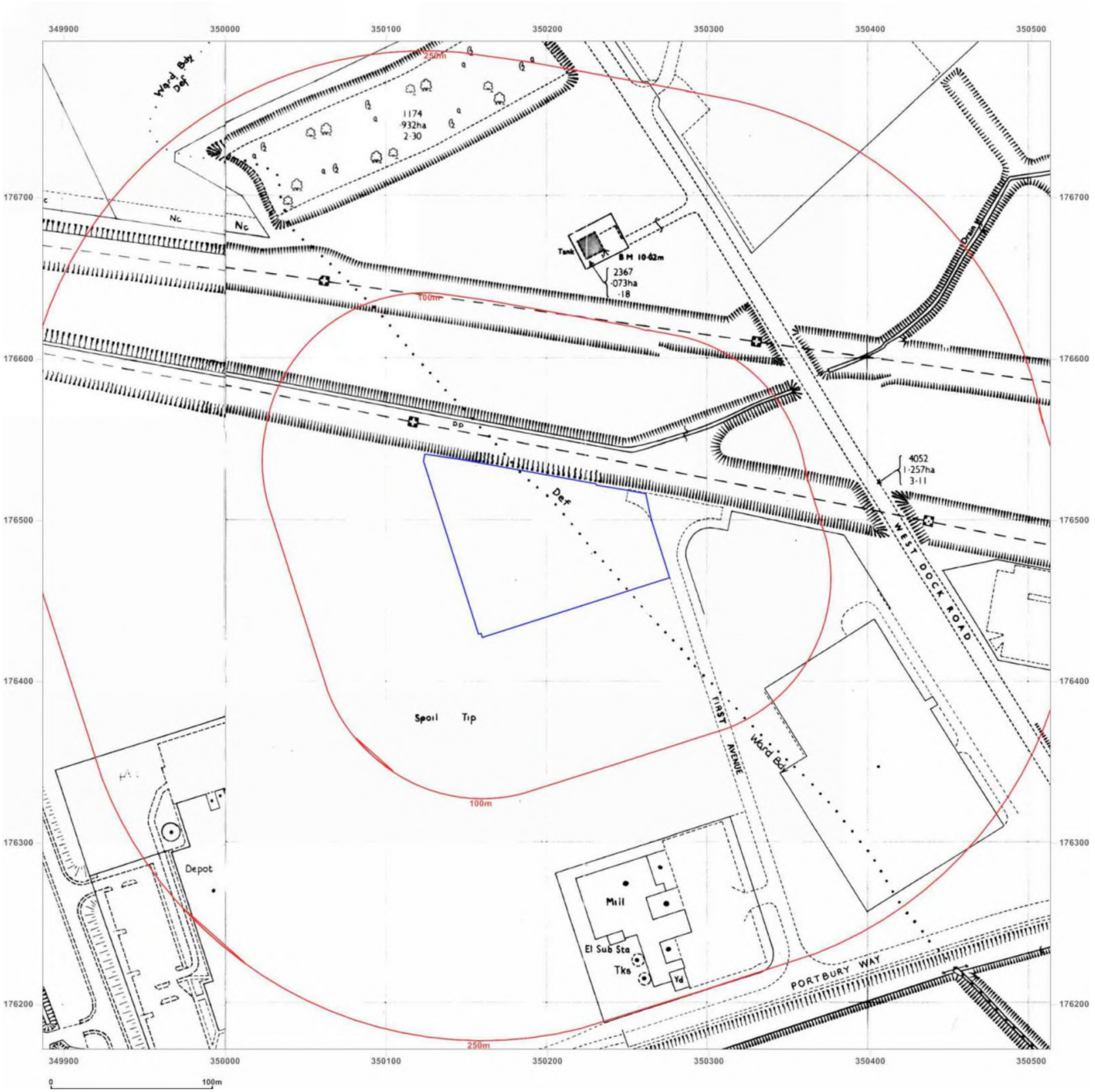

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Site Details:

AP Burt Site, First Avenue Industrial Estate,First Avenue,Portbury Docks, Bristol,BS20 7XS

Client Ref: EMS_495823_667160
Report Ref: EMS-495823_667160
Grid Ref: 350199, 176484

Map Name: National Grid

Map date: **1989-1990**

Scale: 1:2,500

Printed at: 1:2,500

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Surveyed 1966
Revised 1990
Edition N/A
Copyright 1990
Levelled 1966

Surveyed 1977
Revised 1989
Edition N/A
Copyright 1989
Levelled 1977

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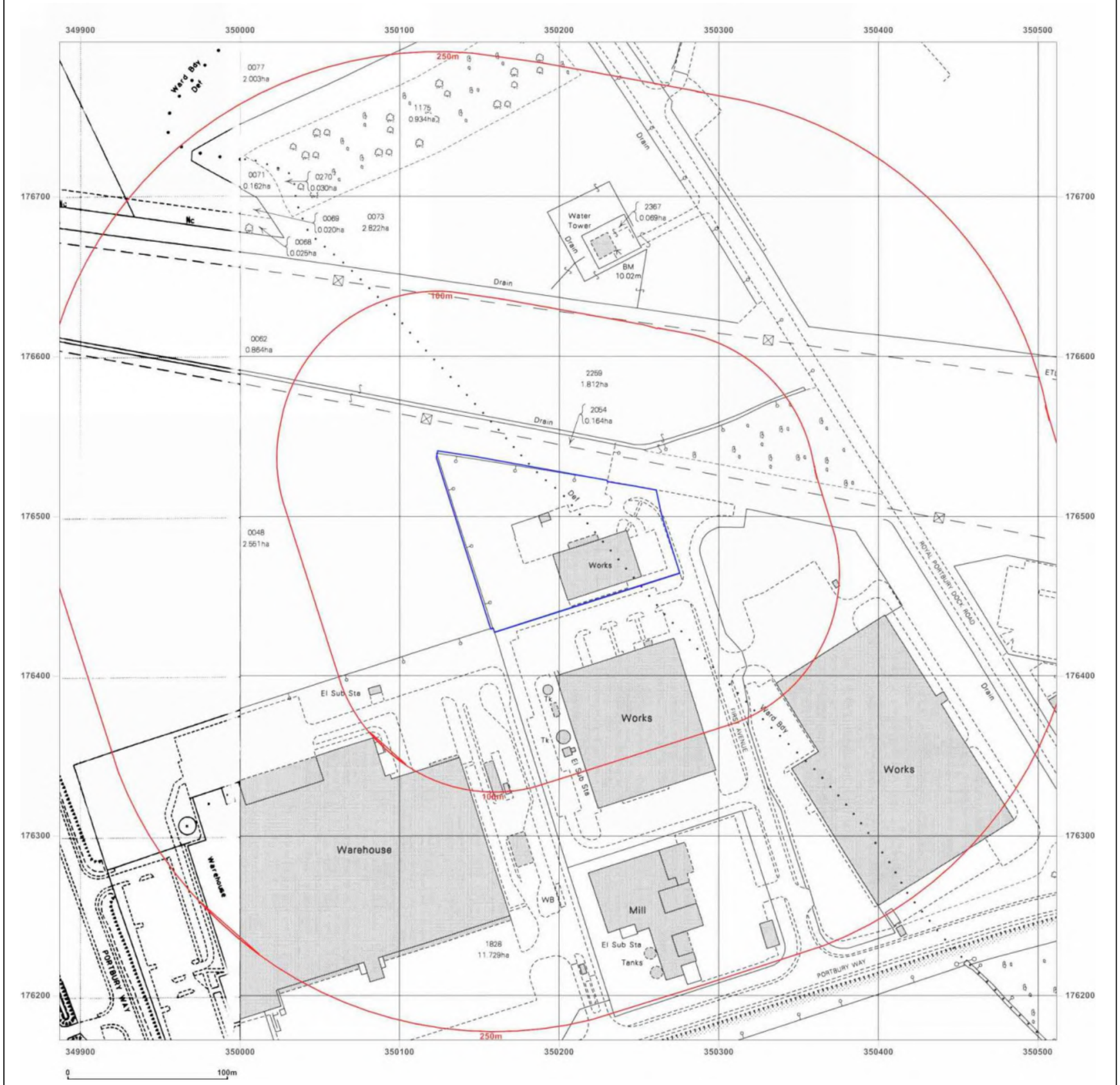

Site Details:

AP Burt Site, First Avenue Industrial Estate,First Avenue,Portbury Docks, Bristol,BS20 7XS

Client Ref: EMS_495823_667160
Report Ref: EMS-495823_667160
Grid Ref: 350199, 176484

Map Name: National Grid

Map date: **1991-1992**

Scale: 1:2,500

Printed at: 1:2,500

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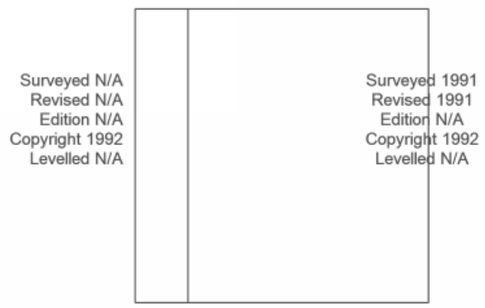

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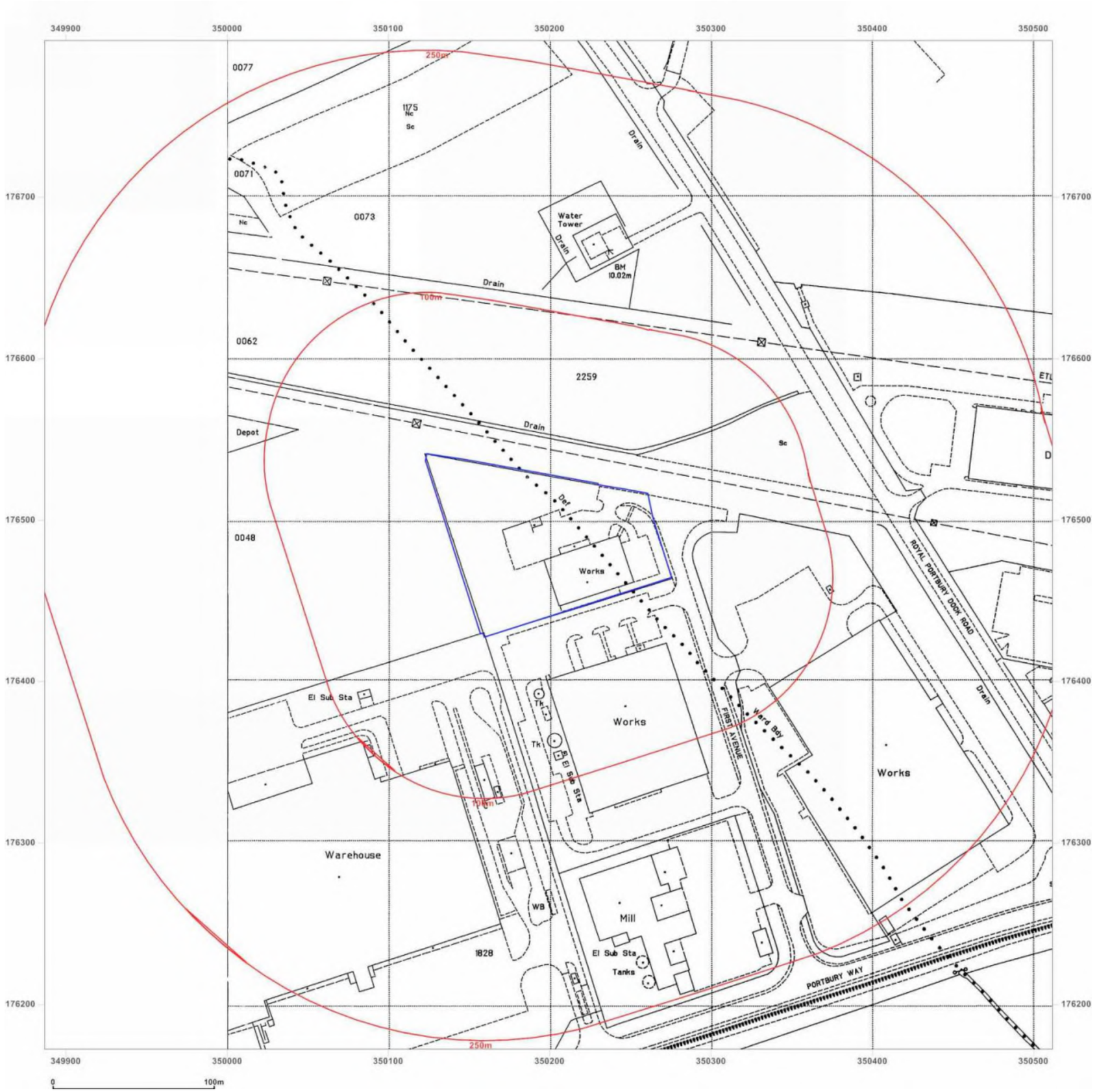

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Site Details:

AP Burt Site, First Avenue Industrial Estate,First Avenue,Portbury Docks, Bristol,BS20 7XS

Client Ref: EMS_495823_667160
Report Ref: EMS-495823_667160
Grid Ref: 350199, 176484

Map Name: National Grid

Map date: **1994**

Scale: 1:2,500

Printed at: 1:2,500

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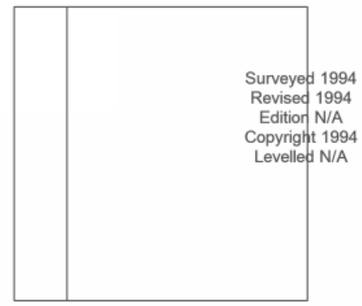

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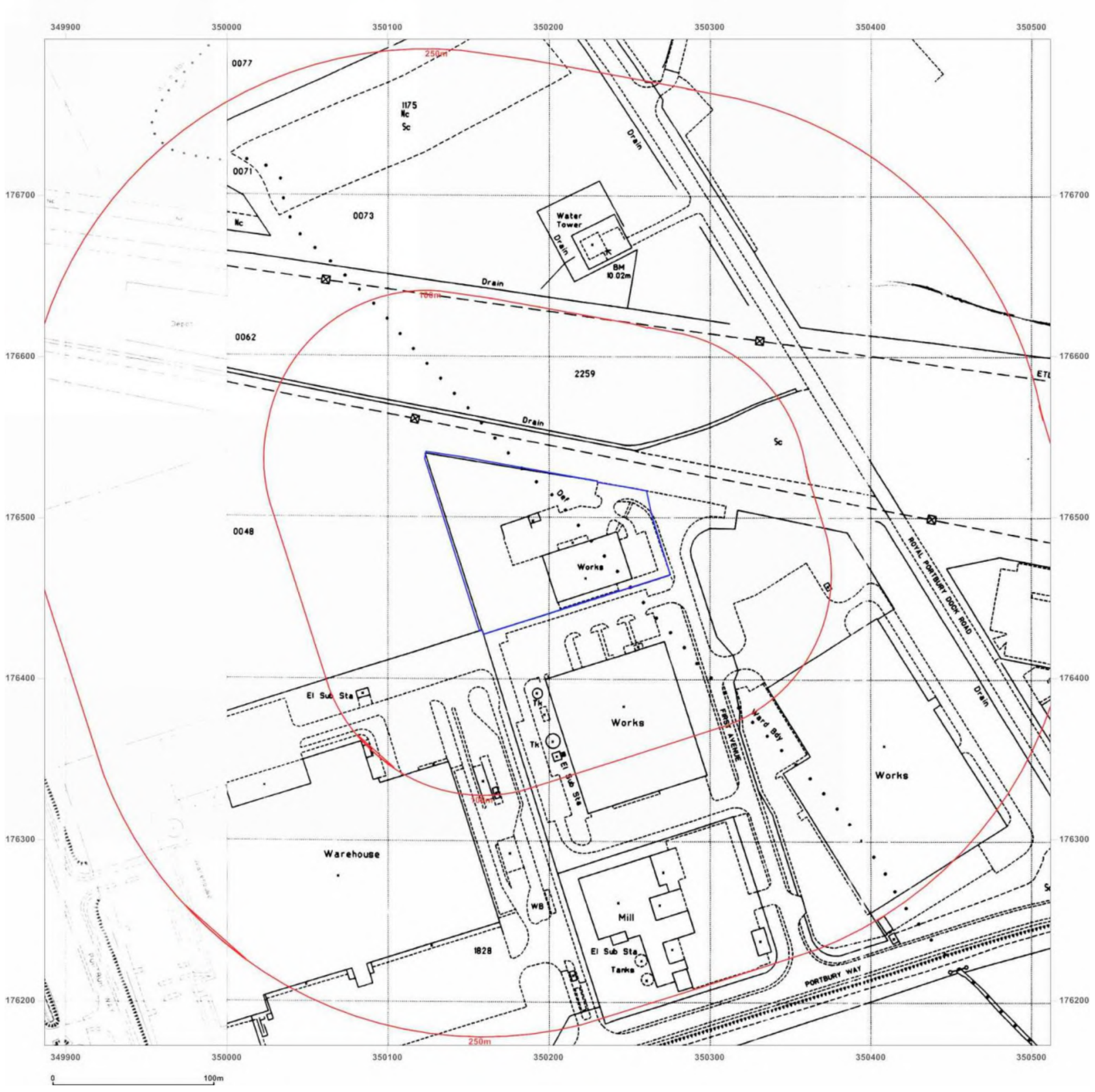

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Site Details:

AP Burt Site, First Avenue Industrial Estate,First Avenue,Portbury Docks, Bristol,BS20 7XS

Client Ref: EMS_495823_667160
Report Ref: EMS-495823_667160
Grid Ref: 350199, 176484

Map Name: National Grid

Map date: **1992-1995**

Scale: 1:2,500

Printed at: 1:2,500

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Surveyed N/A
Revised N/A
Edition N/A
Copyright 1995
Levelled N/A

Surveyed N/A
Revised N/A
Edition N/A
Copyright 1992
Levelled N/A

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Site Details:

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Client Ref: EMS_495823_667160
Report Ref: EMS-495823_667160
Grid Ref: 350199, 176484

Map Name: National Grid

Map date: **1994-1995**

Scale: 1:2,500

Printed at: 1:2,500

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Surveyed N/A
Revised N/A
Edition N/A
Copyright N/A
Levelled N/A

Surveyed N/A
Revised N/A
Edition N/A
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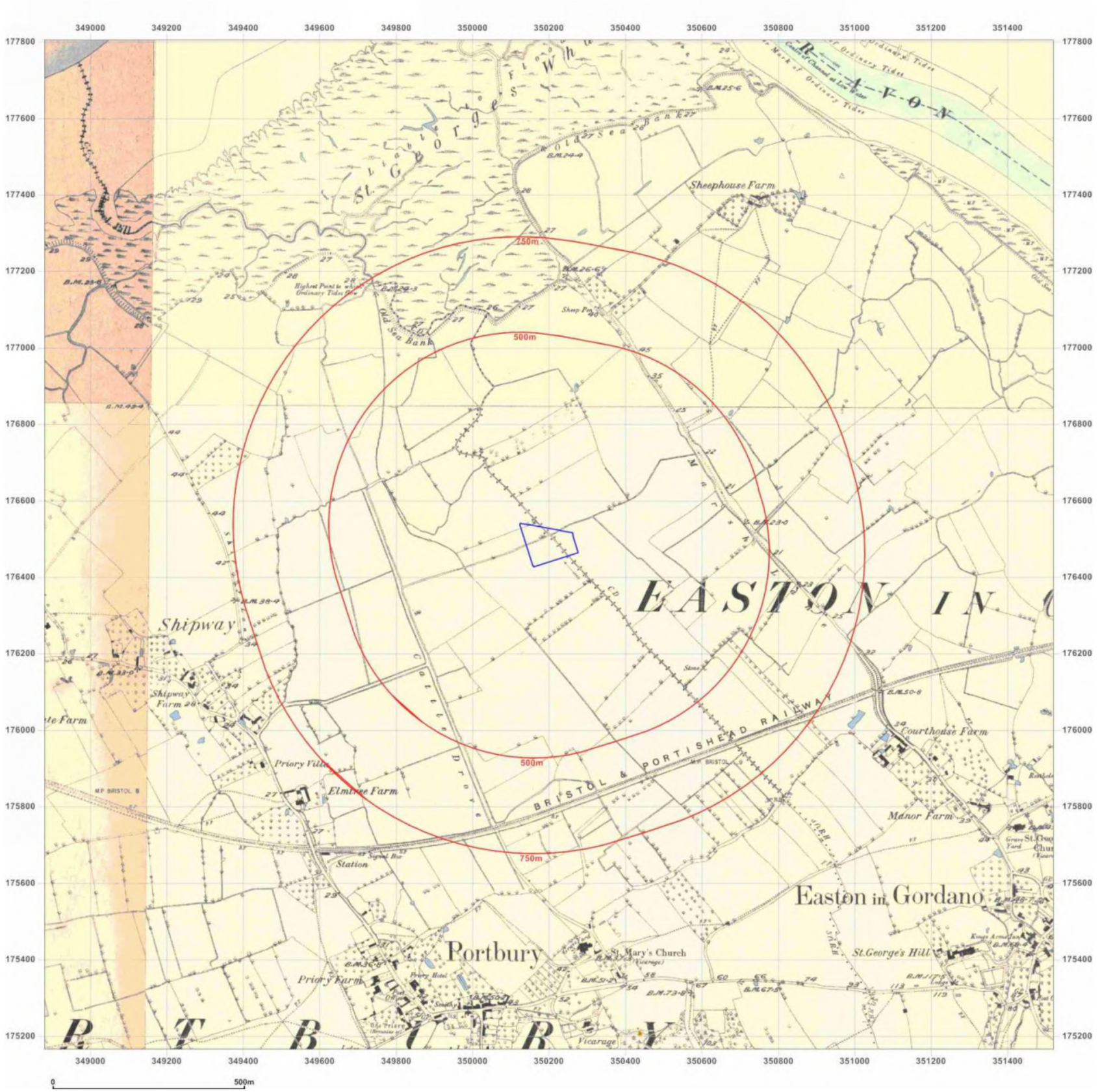

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Site Details:

AP Burt Site, First Avenue Industrial Estate,First Avenue,Portbury Docks, Bristol,BS20 7XS

Client Ref: EMS_495823_667160
Report Ref: EMS-495823_667160
Grid Ref: 350199, 176484

Map Name: County Series

Map date: **1883**

Scale: 1:10,560

Printed at: 1:10,560

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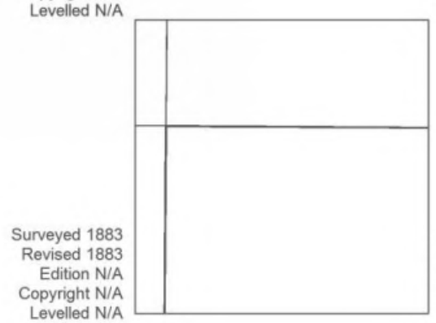
Surveyed 1883
Revised 1883
Edition N/A
Copyright N/A
Levelled N/A



Surveyed 1883
Revised 1883
Edition N/A
Copyright N/A
Levelled N/A

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Revised 1883
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1883
Revised 1883
Edition N/A
Copyright N/A
Levelled N/A

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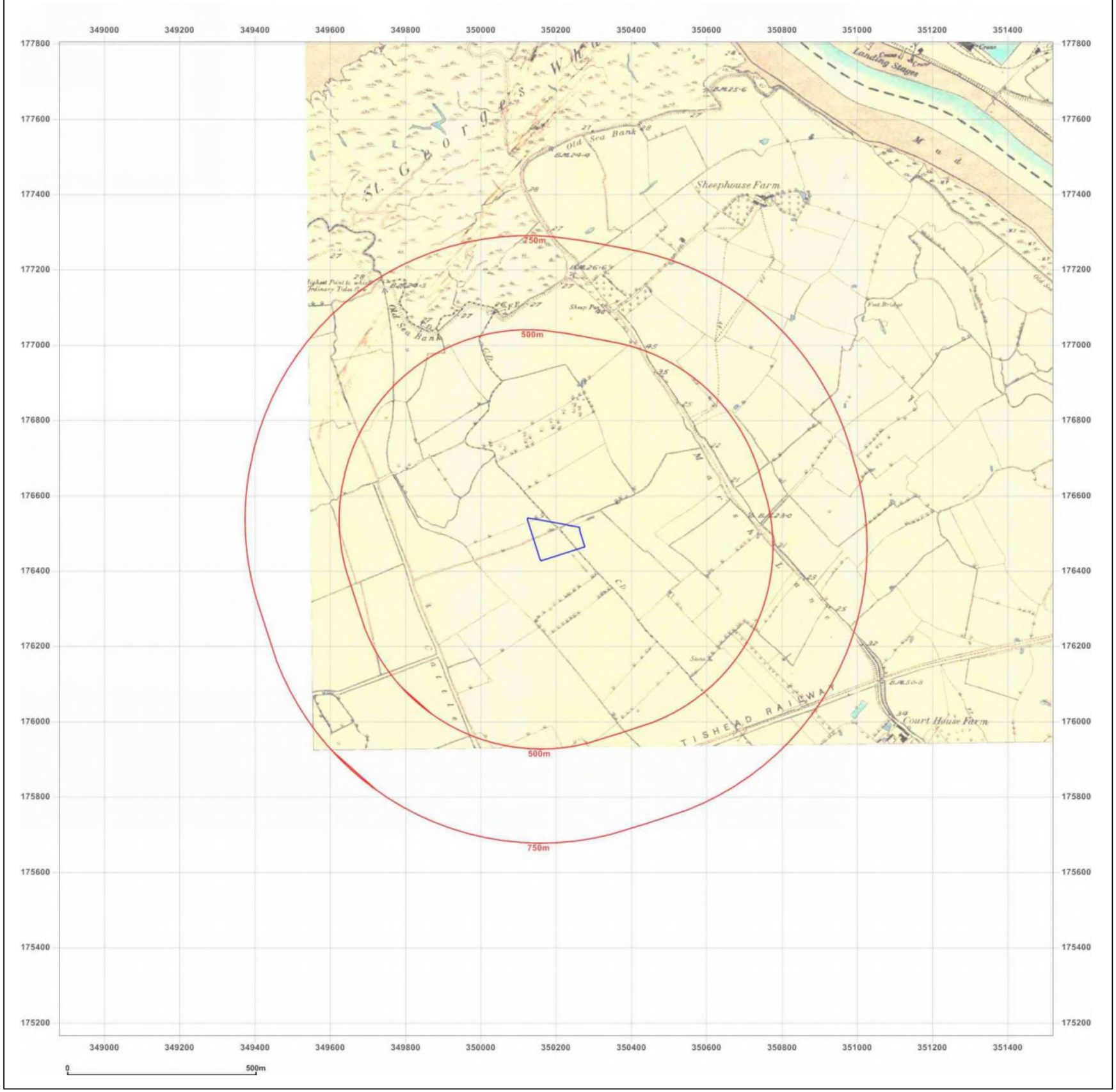

emapsite™

Site Details:

AP Burt Site, First Avenue Industrial Estate,First Avenue,Portbury Docks, Bristol,BS20 7XS

Client Ref: EMS_495823_667160
Report Ref: EMS-495823_667160
Grid Ref: 350199, 176484

Map Name: County Series

Map date: **1883**

Scale: 1:10,560

Printed at: 1:10,560

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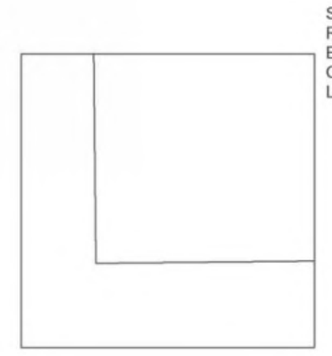

Surveyed 1883
Revised 1883
Edition N/A
Copyright N/A
Levelled N/A

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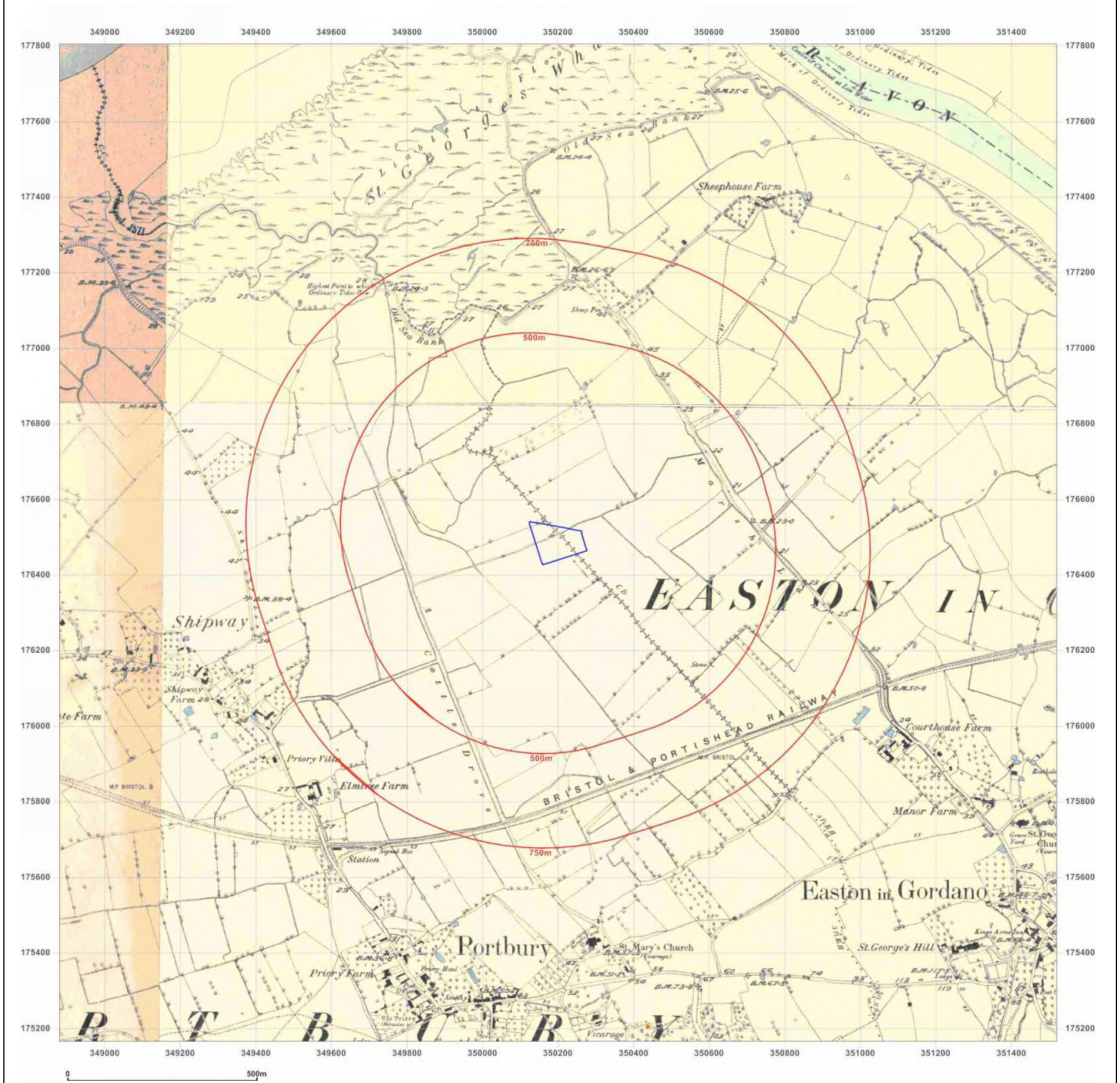

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Site Details:

AP Burt Site, First Avenue Industrial Estate,First Avenue,Portbury Docks, Bristol,BS20 7XS

Client Ref: EMS_495823_667160
Report Ref: EMS-495823_667160
Grid Ref: 350199, 176484

Map Name: County Series

Map date: **1884**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
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Surveyed 1883
Revised N/A
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1883
Revised N/A
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1882
Revised N/A
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1883
Revised N/A
Edition N/A
Copyright N/A
Levelled N/A

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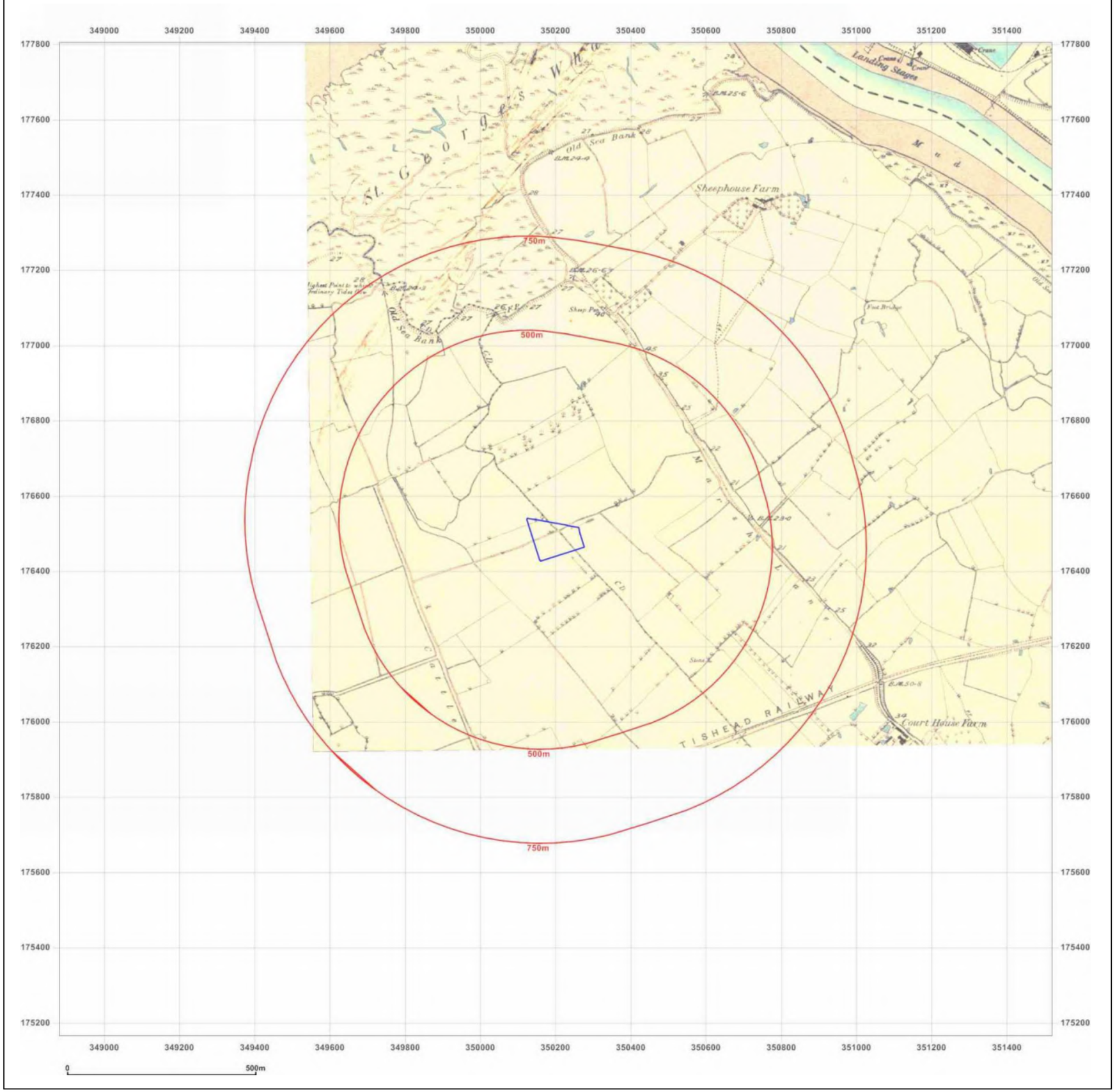

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Site Details:

AP Burt Site, First Avenue Industrial Estate,First Avenue,Portbury Docks, Bristol,BS20 7XS

Client Ref: EMS_495823_667160
Report Ref: EMS-495823_667160
Grid Ref: 350199, 176484

Map Name: County Series

Map date: **1887**

Scale: 1:10,560

Printed at: 1:10,560

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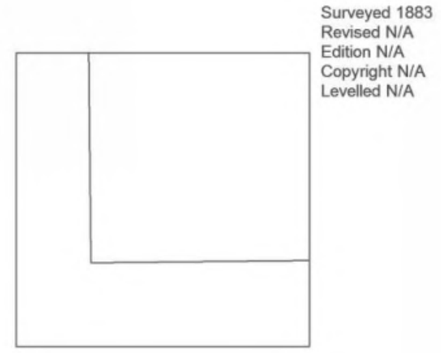

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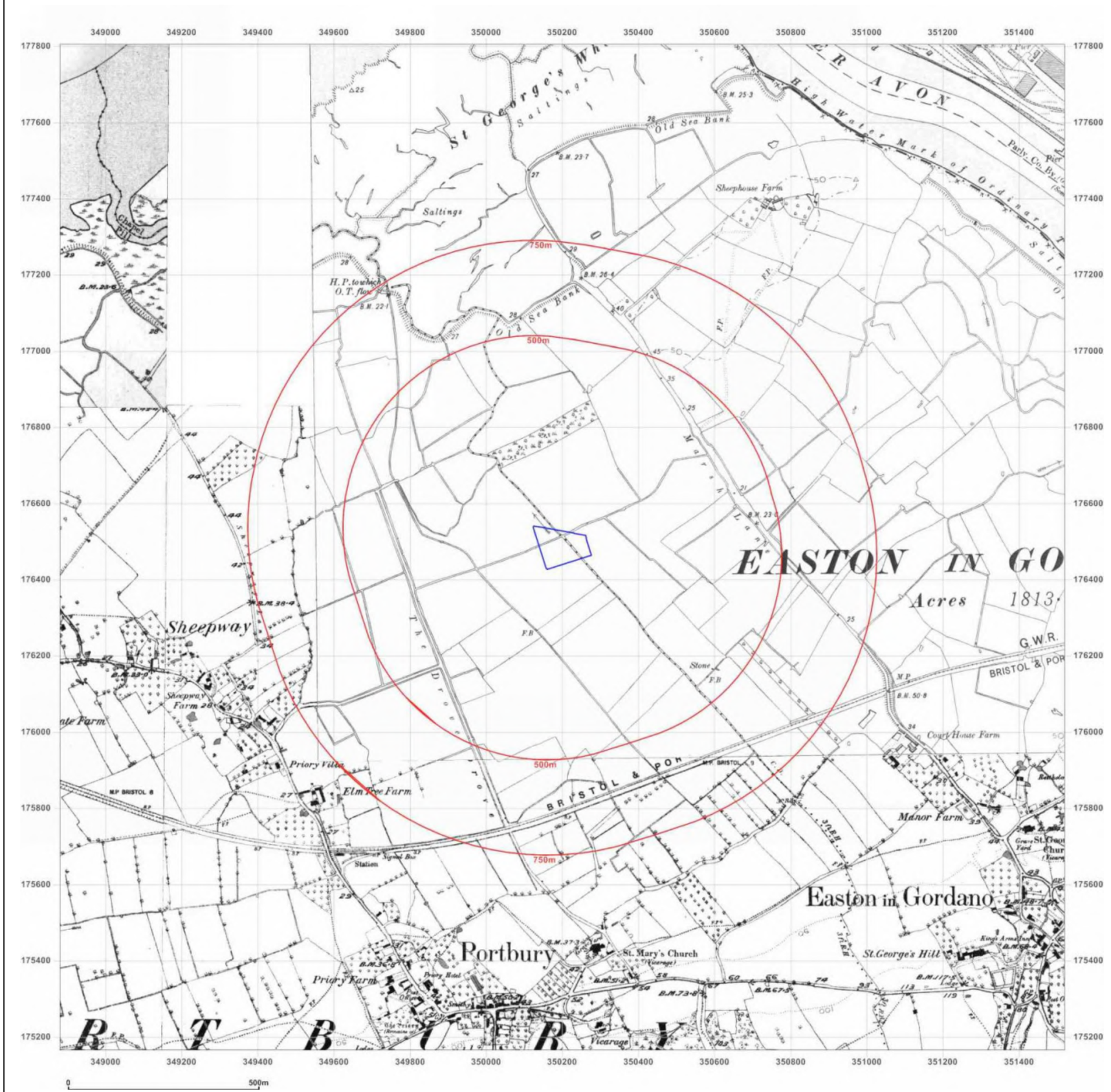

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Site Details:

AP Burt Site, First Avenue Industrial Estate,First Avenue,Portbury Docks, Bristol,BS20 7XS

Client Ref: EMS_495823_667160
Report Ref: EMS-495823_667160
Grid Ref: 350199, 176484

Map Name: County Series

Map date: **1901**

Scale: 1:10,560

Printed at: 1:10,560

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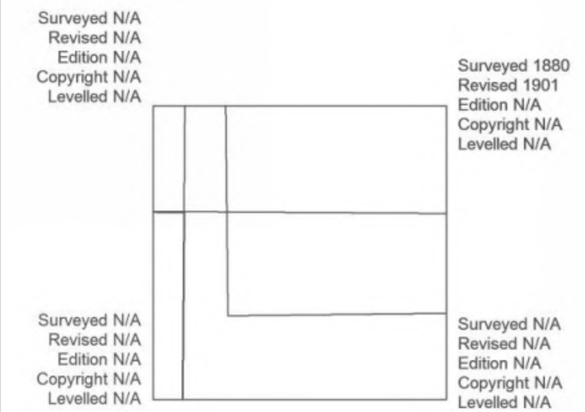

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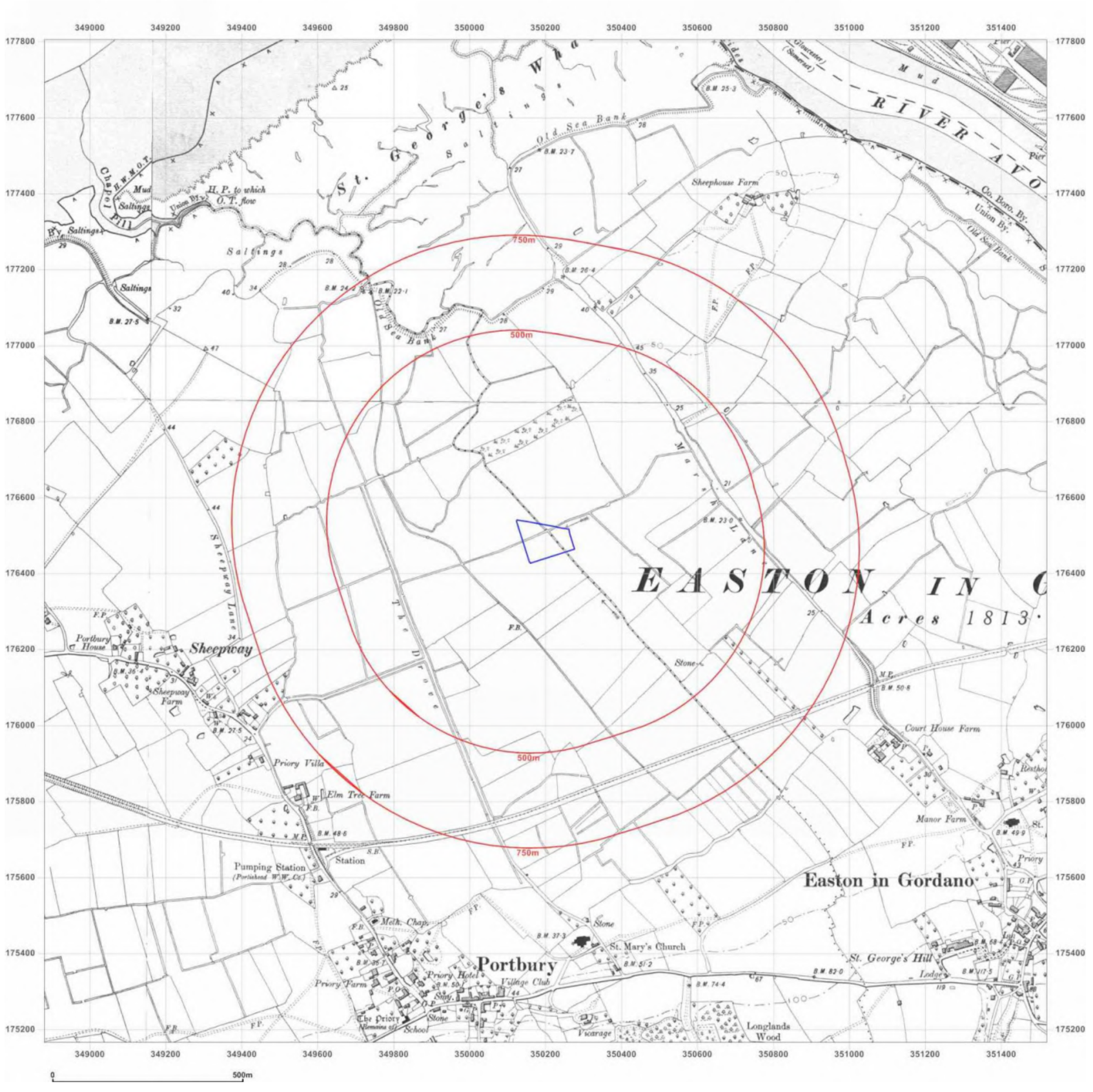

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Site Details:

AP Burt Site, First Avenue Industrial Estate,First Avenue,Portbury Docks, Bristol,BS20 7XS

Client Ref: EMS_495823_667160
Report Ref: EMS-495823_667160
Grid Ref: 350199, 176484

Map Name: County Series

Map date: **1902-1904**

Scale: 1:10,560

Printed at: 1:10,560

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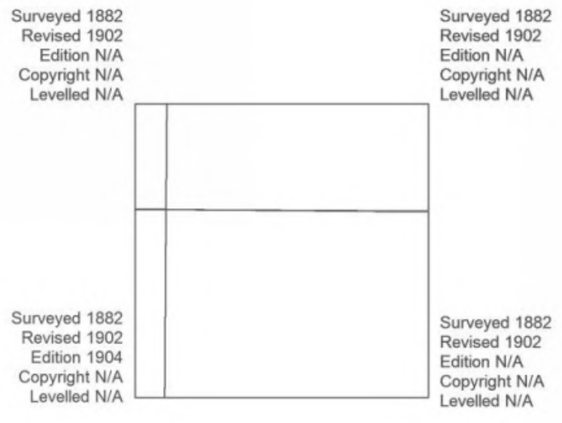

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sales@emapsite.com

Production date: 20 August 2018

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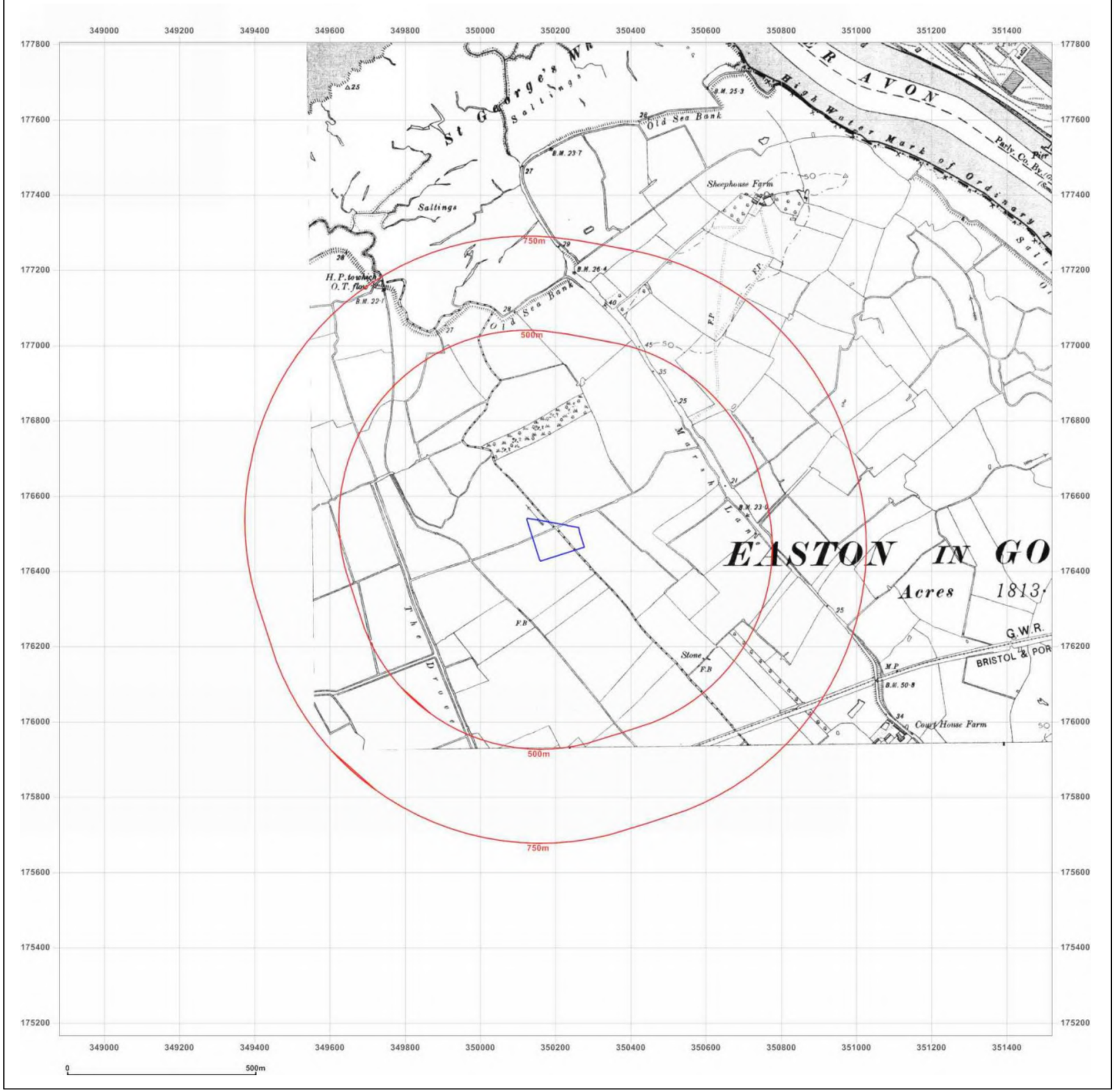

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Site Details:

AP Burt Site, First Avenue Industrial Estate,First Avenue,Portbury Docks, Bristol,BS20 7XS

Client Ref: EMS_495823_667160
Report Ref: EMS-495823_667160
Grid Ref: 350199, 176484

Map Name: County Series

Map date: **1904**

Scale: 1:10,560

Printed at: 1:10,560

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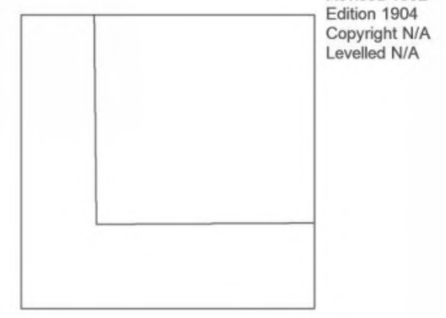

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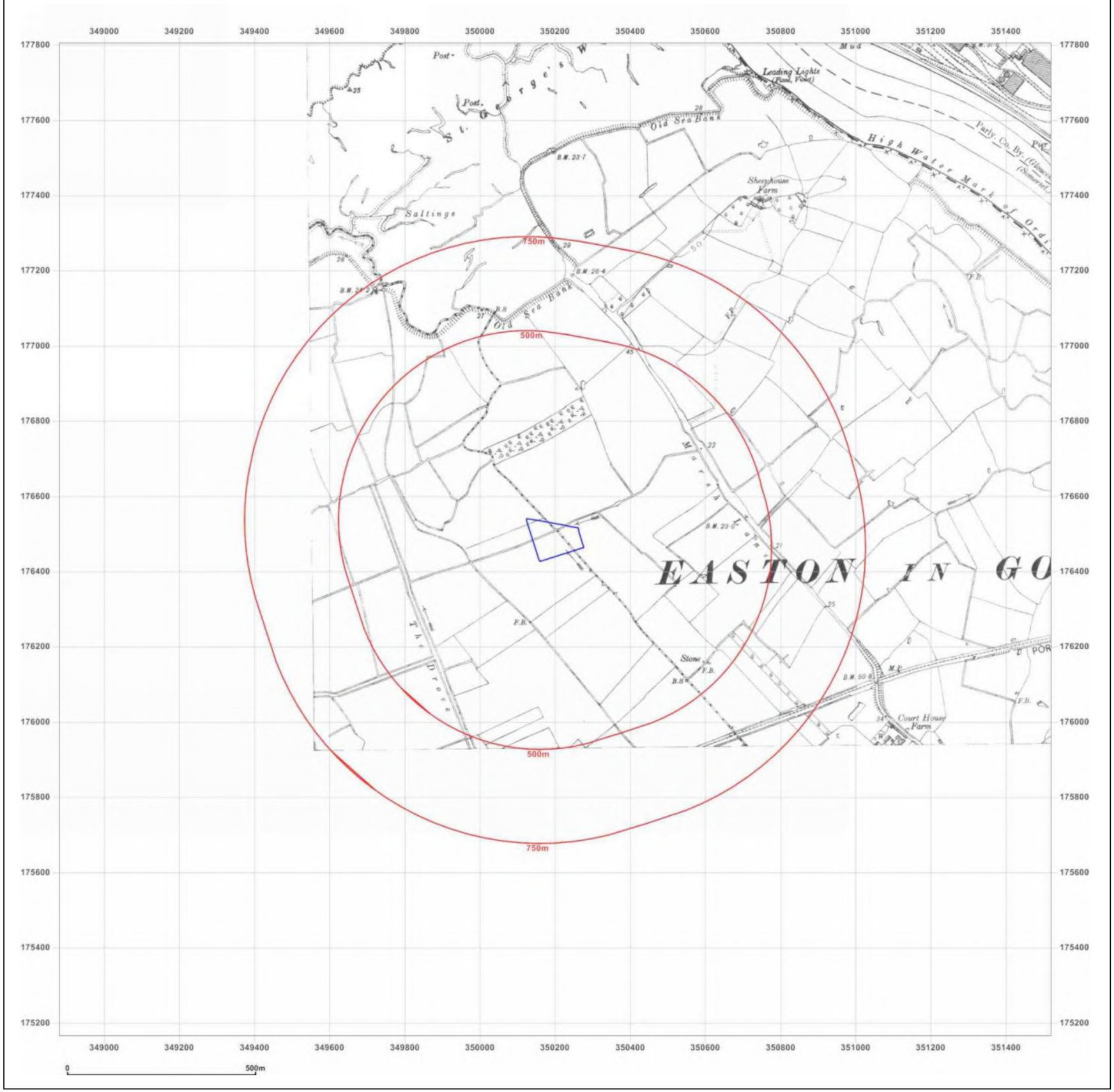

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Site Details:

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Client Ref: EMS_495823_667160
Report Ref: EMS-495823_667160
Grid Ref: 350199, 176484

Map Name: County Series

Map date: **1912**

Scale: 1:10,560

Printed at: 1:10,560

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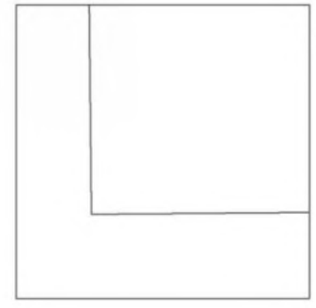

Surveyed 1880
Revised 1912
Edition N/A
Copyright N/A
Levelled N/A

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Production date: 20 August 2018

Map legend available at:
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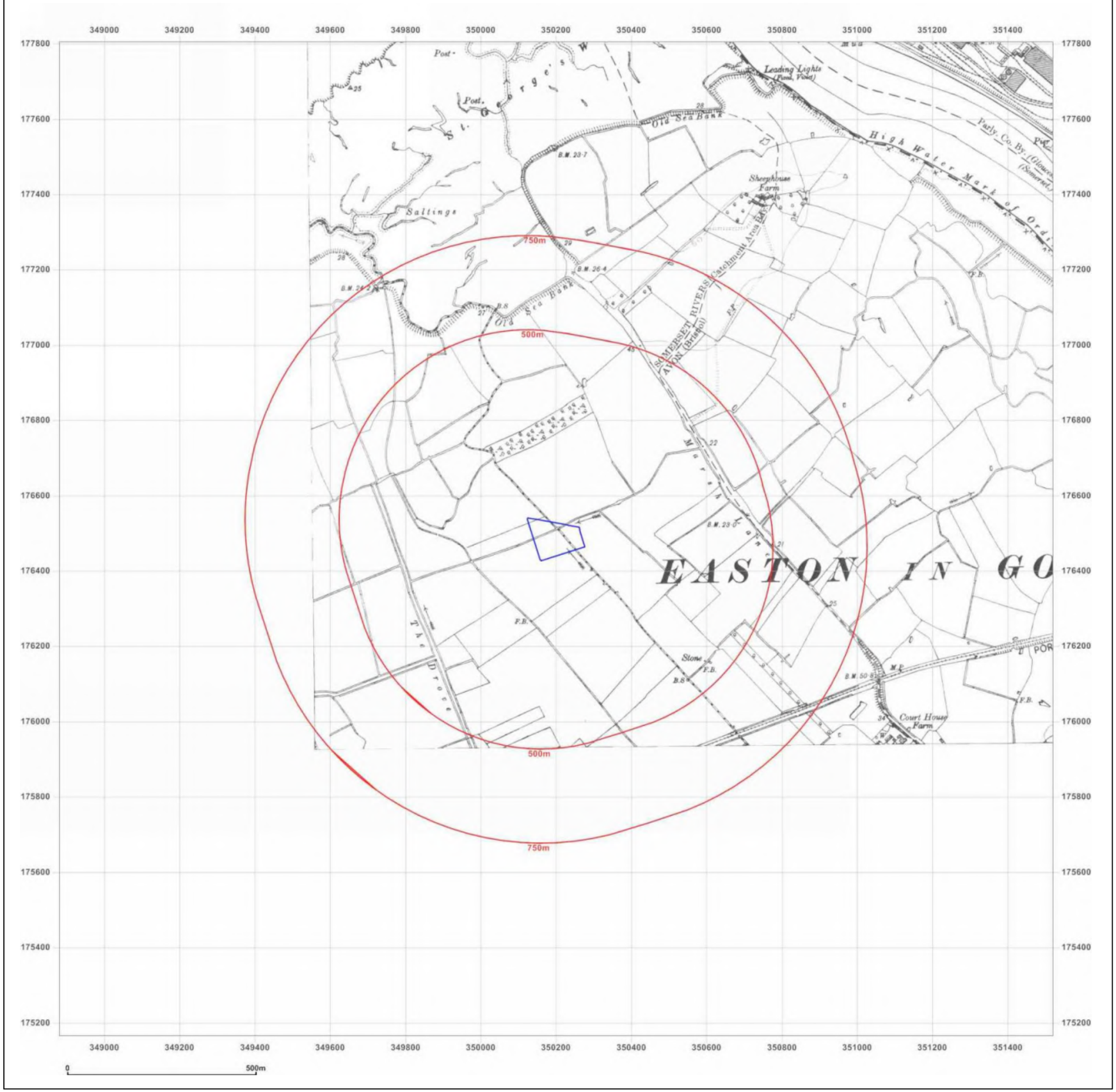

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Site Details:

AP Burt Site, First Avenue Industrial Estate,First Avenue,Portbury Docks, Bristol,BS20 7XS

Client Ref: EMS_495823_667160
Report Ref: EMS-495823_667160
Grid Ref: 350199, 176484

Map Name: County Series

Map date: **1912**

Scale: 1:10,560

Printed at: 1:10,560

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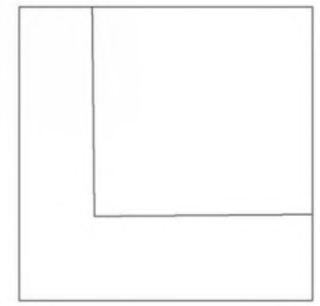

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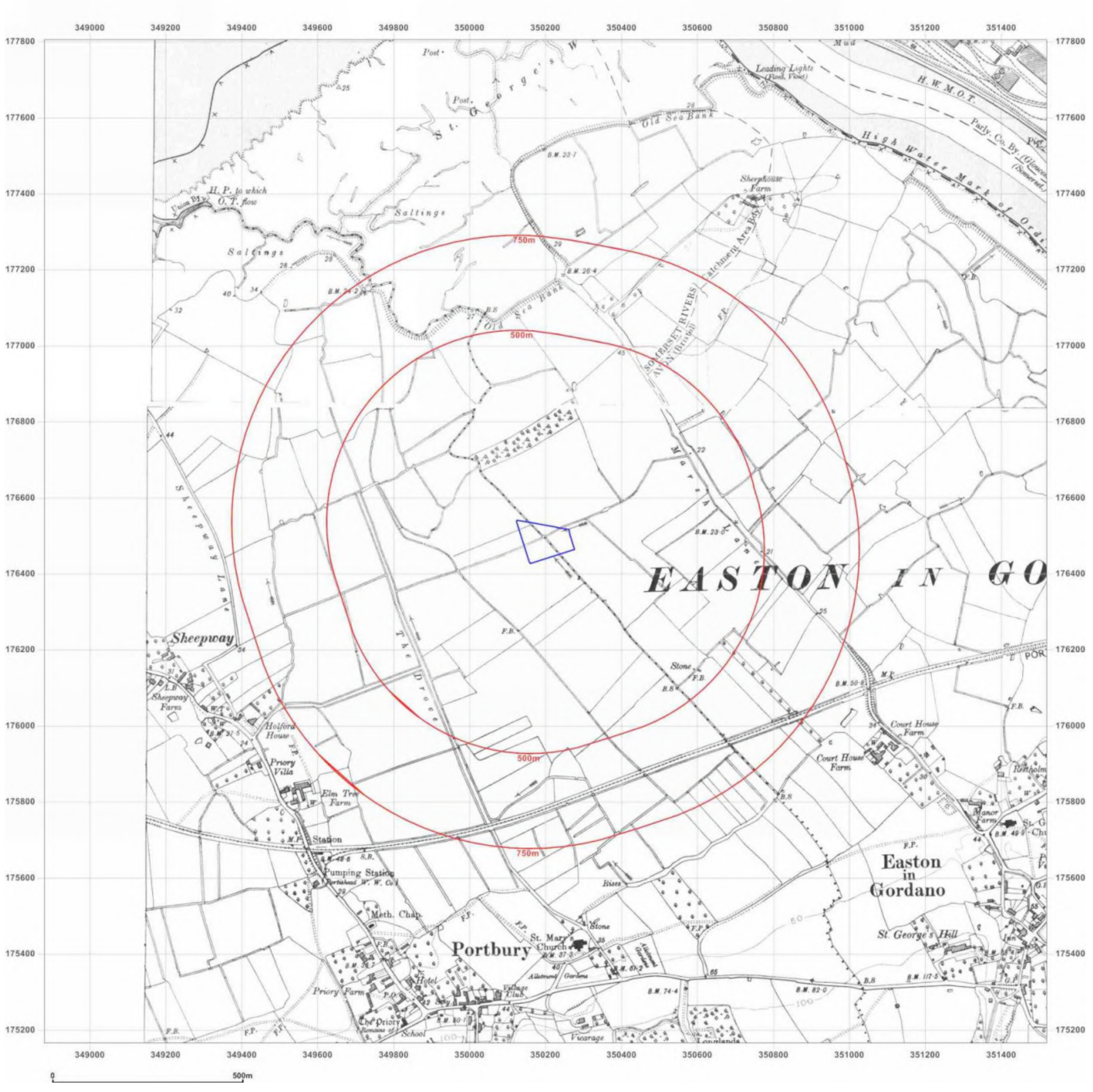

emapsite™

Site Details:

AP Burt Site, First Avenue Industrial Estate,First Avenue,Portbury Docks, Bristol,BS20 7XS

Client Ref: EMS_495823_667160
Report Ref: EMS-495823_667160
Grid Ref: 350199, 176484

Map Name: County Series

Map date: **1920**

Scale: 1:10,560

Printed at: 1:10,560

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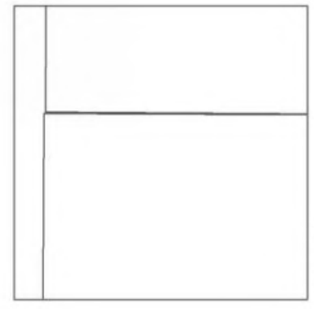
Surveyed 1882
Revised 1920
Edition 1920
Copyright N/A
Levelled N/A



Surveyed 1882
Revised 1920
Edition 1920
Copyright N/A
Levelled N/A

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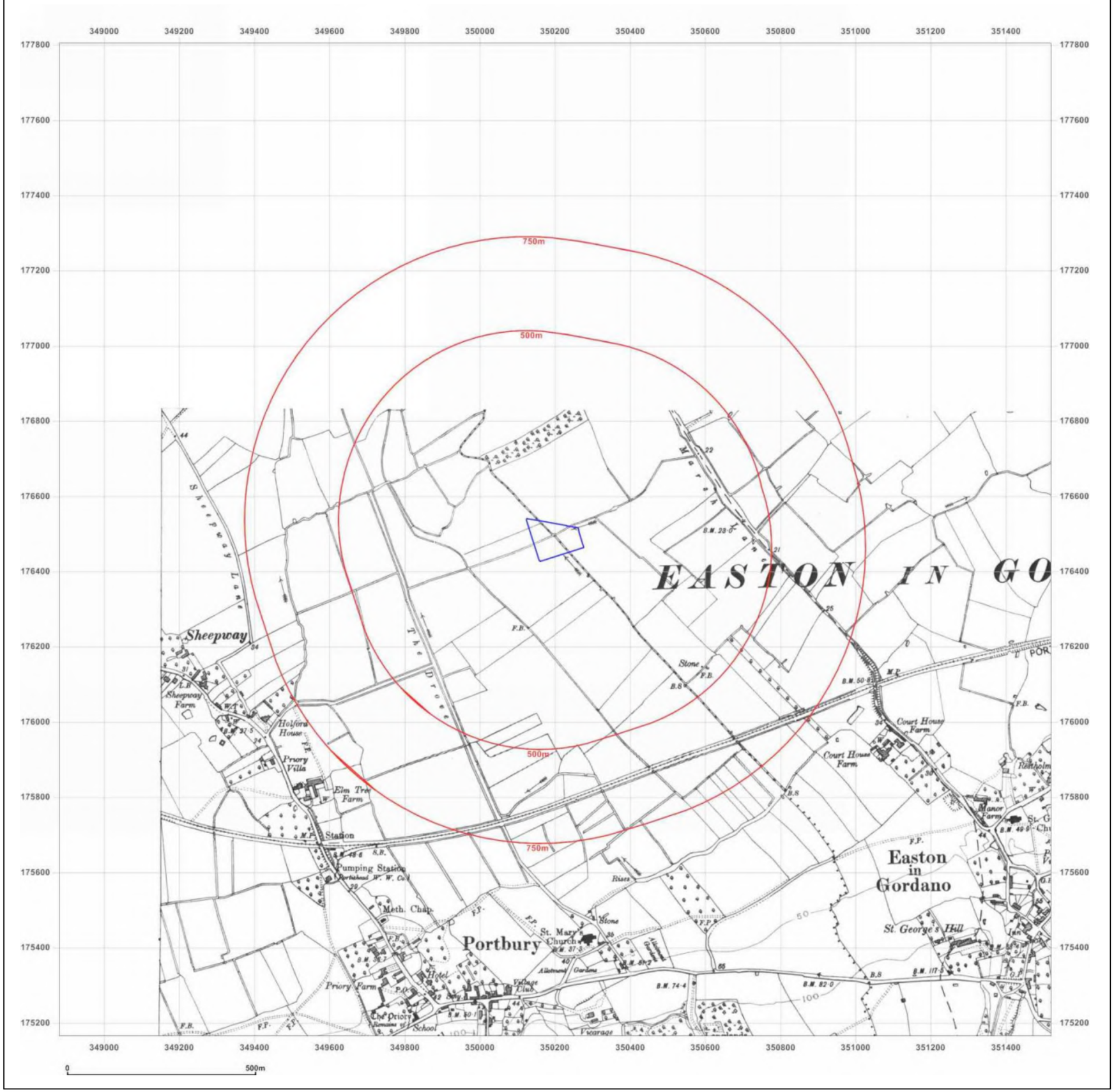

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Site Details:

AP Burt Site, First Avenue Industrial Estate,First Avenue,Portbury Docks, Bristol,BS20 7XS

Client Ref: EMS_495823_667160
Report Ref: EMS-495823_667160
Grid Ref: 350199, 176484

Map Name: County Series
Map date: **1920**
Scale: 1:10,560
Printed at: 1:10,560

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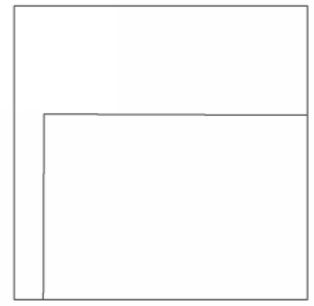

Surveyed 1882
Revised 1920
Edition N/A
Copyright N/A
Levelled N/A

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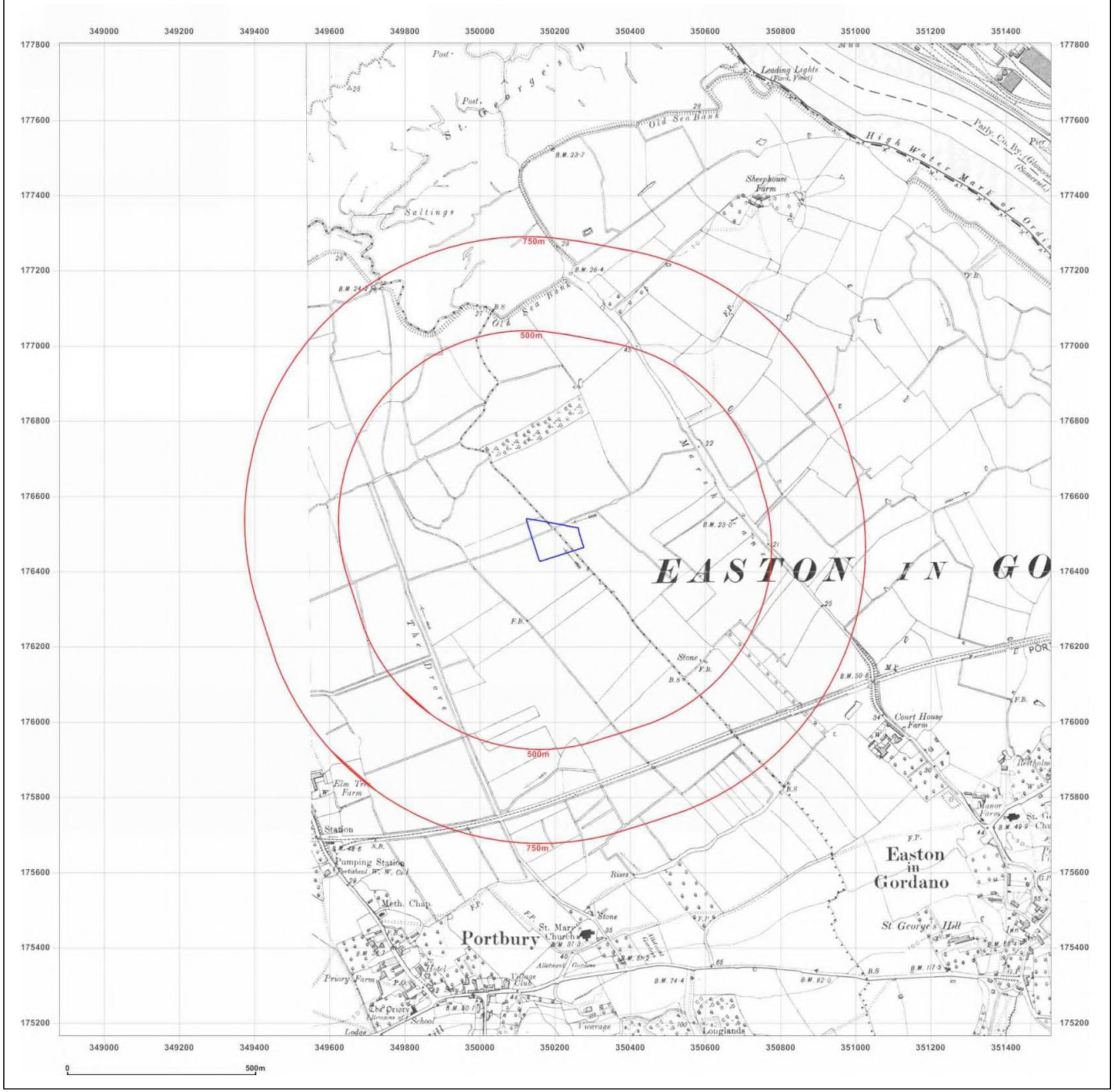

emapsite™

Site Details:

AP Burt Site, First Avenue
Industrial Estate,First
Avenue,Portbury Docks,
Bristol,BS20 7XS

Client Ref: EMS_495823_667160
Report Ref: EMS-495823_667160
Grid Ref: 350199, 176484

Map Name: County Series

Map date: **1921**

Scale: 1:10,560

Printed at: 1:10,560

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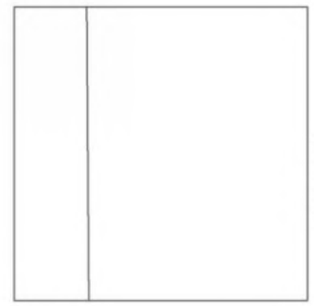

Surveyed 1881
Revised 1921
Edition N/A
Copyright N/A
Levelled N/A

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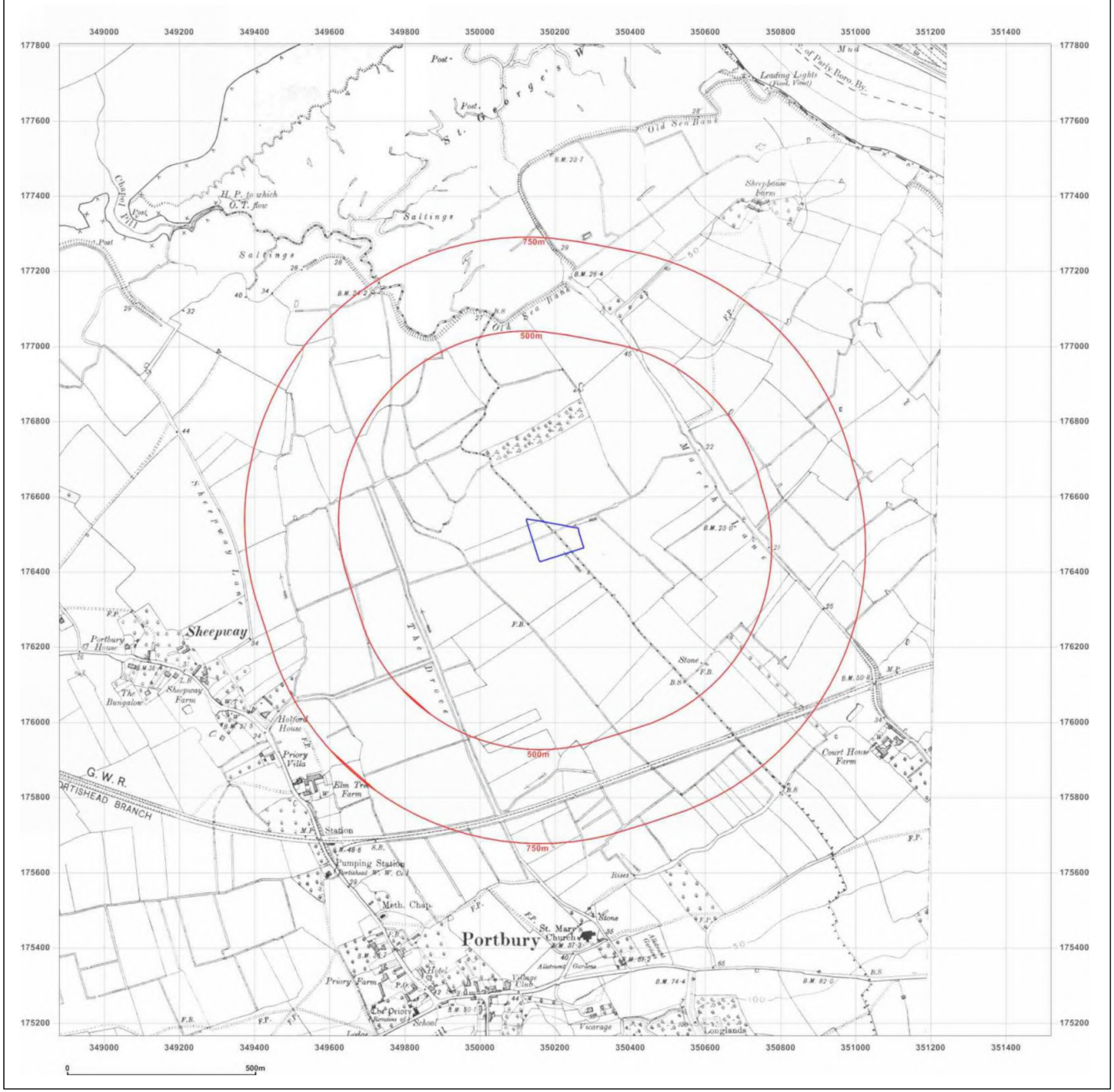

emapsite™

Site Details:

AP Burt Site, First Avenue
Industrial Estate,First
Avenue,Portbury Docks,
Bristol,BS20 7XS

Client Ref: EMS_495823_667160
Report Ref: EMS-495823_667160
Grid Ref: 350199, 176484

Map Name: County Series

Map date: **1922**

Scale: 1:10,560

Printed at: 1:10,560

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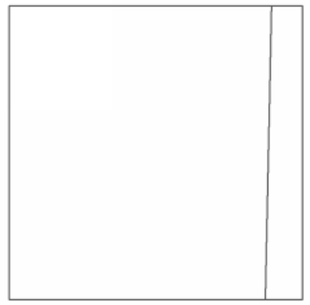
Surveyed 1886
Revised 1922
Edition N/A
Copyright N/A
Levelled N/A



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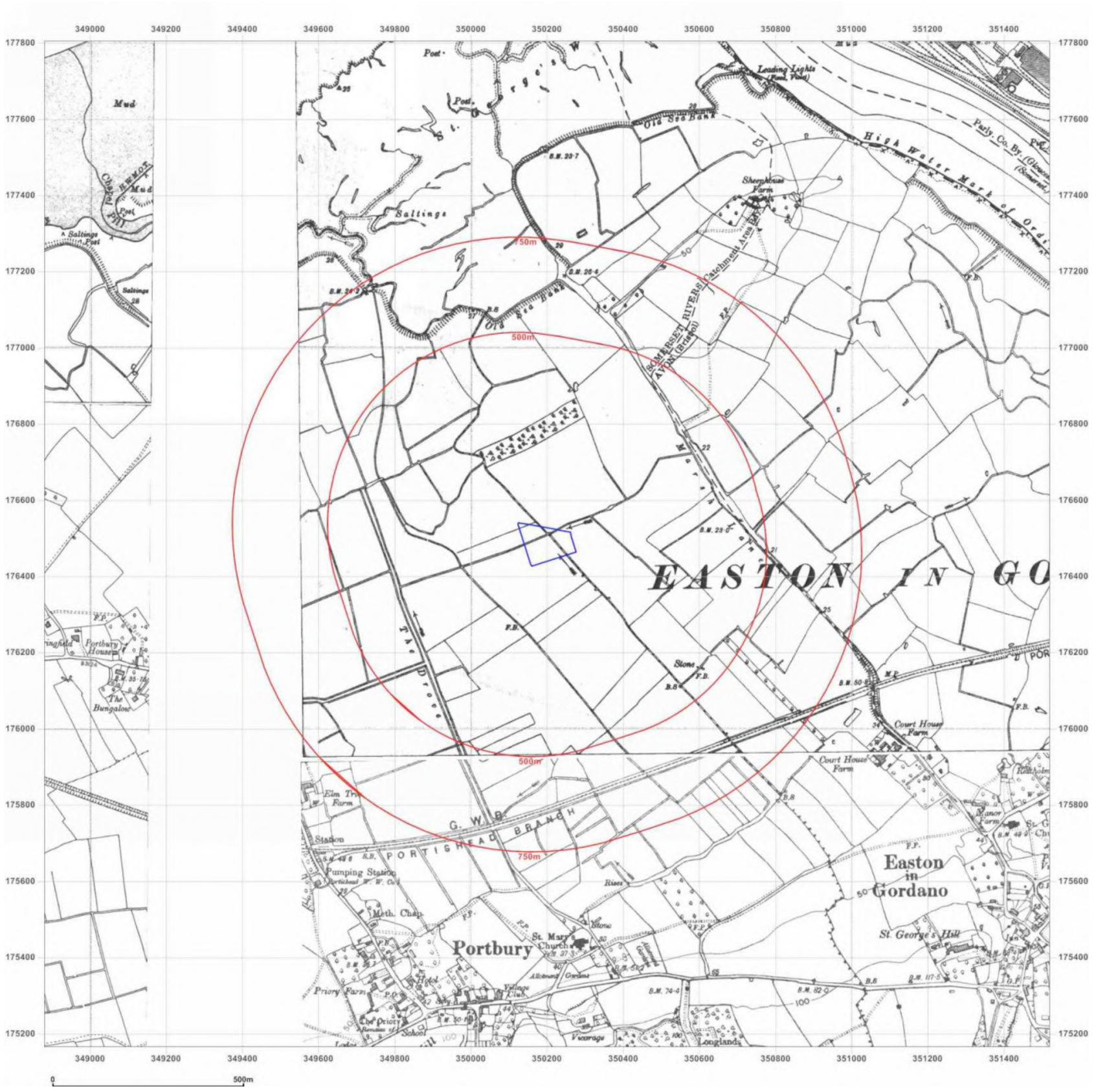

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Site Details:

AP Burt Site, First Avenue
Industrial Estate,First
Avenue,Portbury Docks,
Bristol,BS20 7XS

Client Ref: EMS_495823_667160
Report Ref: EMS-495823_667160
Grid Ref: 350199, 176484

Map Name: County Series

Map date: **1938**

Scale: 1:10,560

Printed at: 1:10,560

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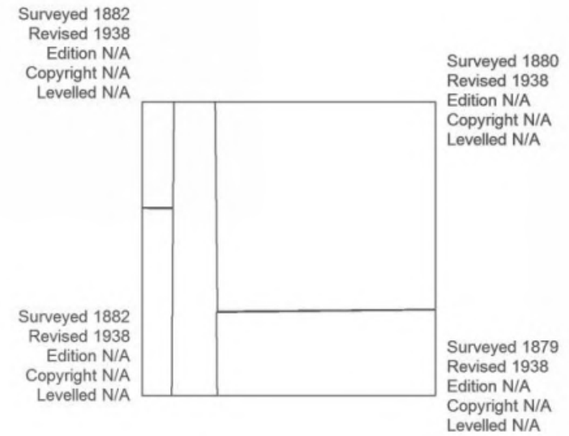

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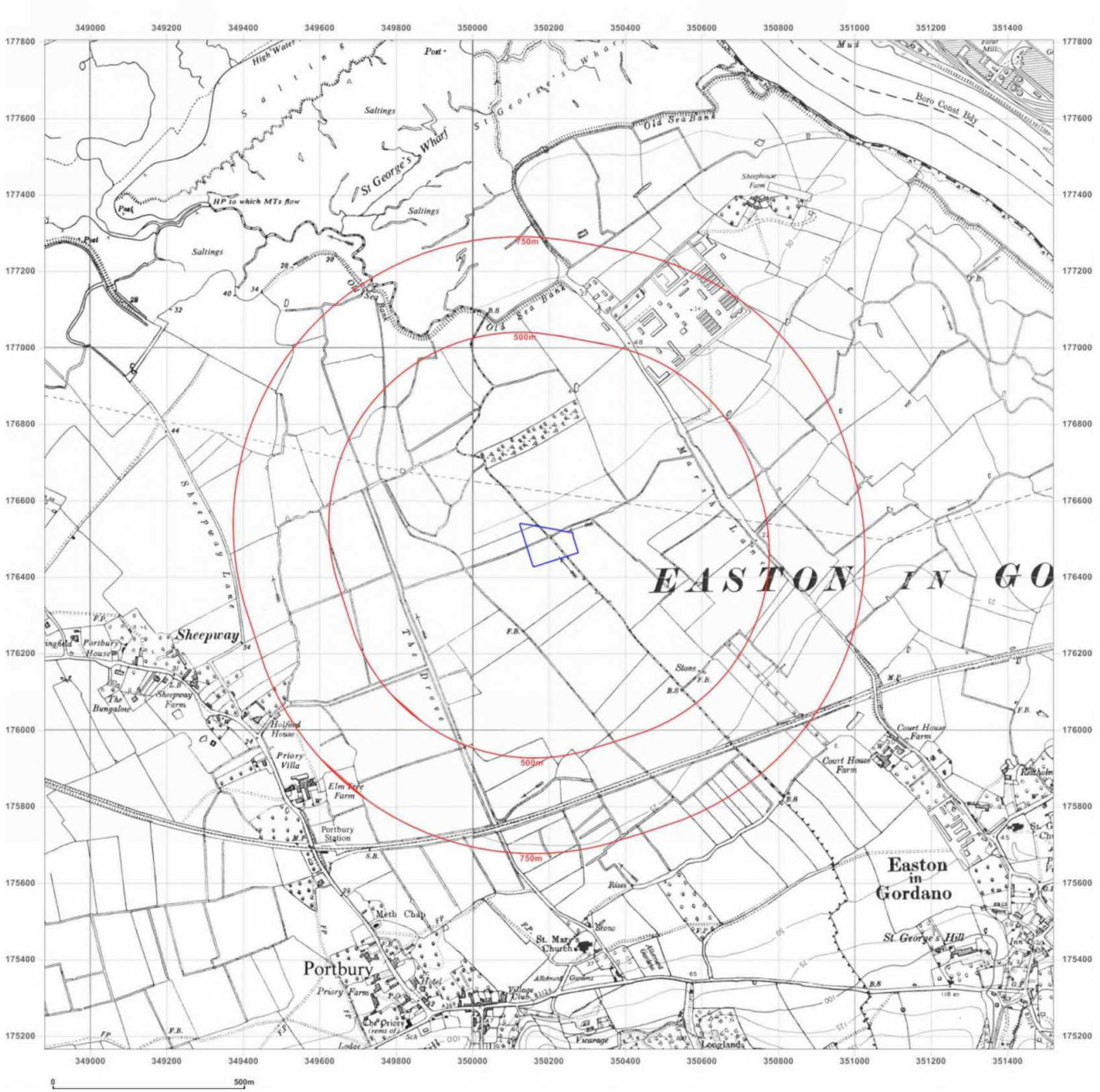

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Site Details:

AP Burt Site, First Avenue
Industrial Estate,First
Avenue,Portbury Docks,
Bristol,BS20 7XS

Client Ref: EMS_495823_667160
Report Ref: EMS-495823_667160
Grid Ref: 350199, 176484

Map Name: Provisional
Map date: **1955-1960**
Scale: 1:10,560
Printed at: 1:10,560

N
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Surveyed N/A
Revised 1960
Edition N/A
Copyright N/A
Levelled N/A

Surveyed N/A
Revised 1955
Edition 1955
Copyright N/A
Levelled N/A

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Production date: 20 August 2018

Map legend available at:
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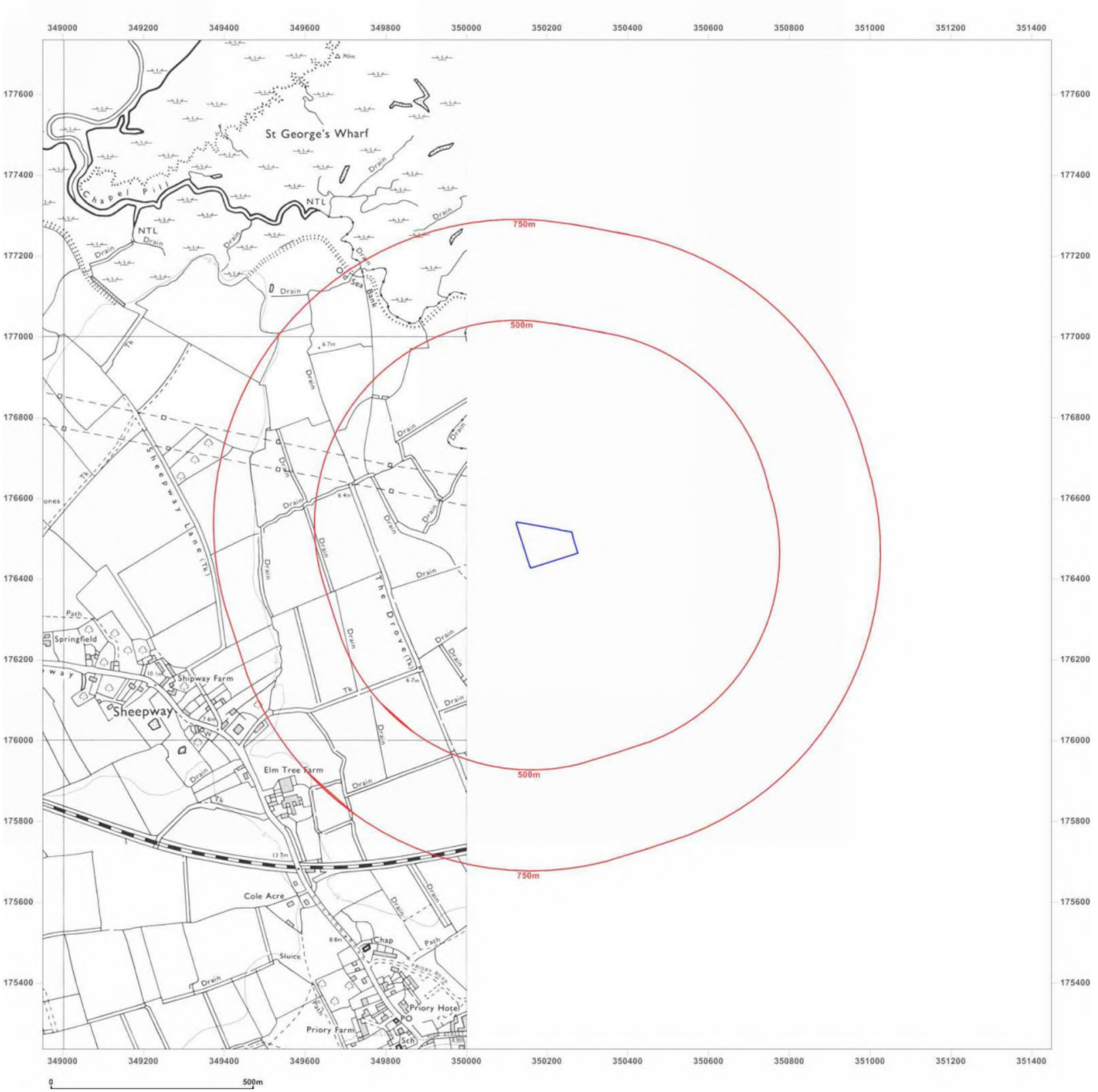

emapsite™

Site Details:

AP Burt Site, First Avenue Industrial Estate,First Avenue,Portbury Docks, Bristol,BS20 7XS

Client Ref: EMS_495823_667160
Report Ref: EMS-495823_667160
Grid Ref: 350199, 176484

Map Name: National Grid

Map date: **1969**

Scale: 1:10,000

Printed at: 1:10,000

N
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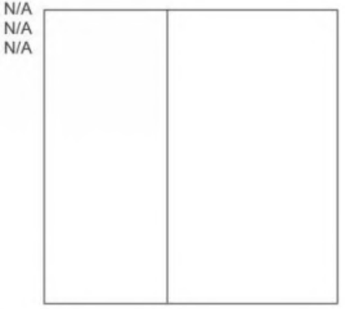
Surveyed 1969
Revised 1969
Edition N/A
Copyright N/A
Levelled N/A



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Production date: 20 August 2018

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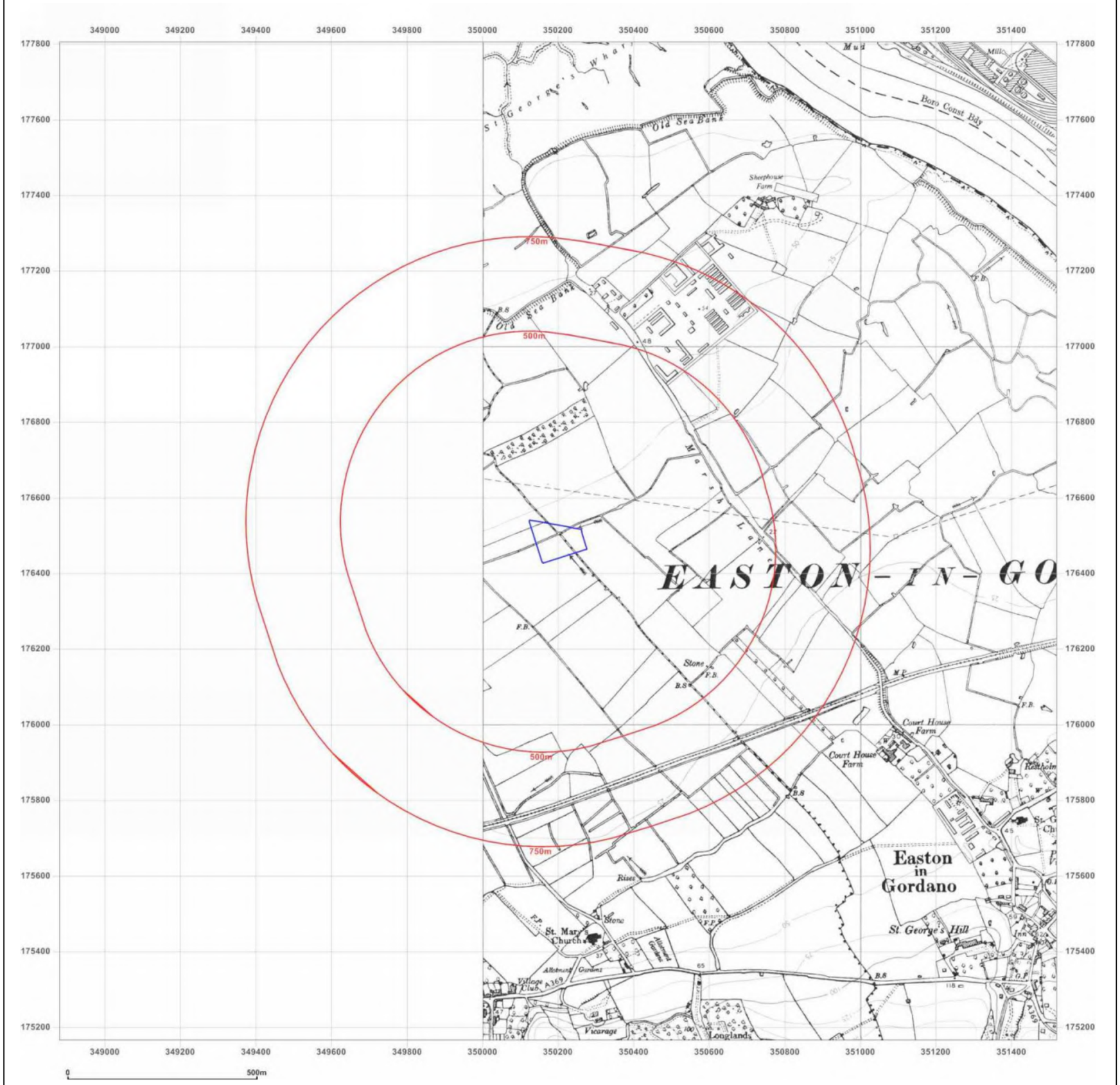

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Site Details:

AP Burt Site, First Avenue Industrial Estate,First Avenue,Portbury Docks, Bristol,BS20 7XS

Client Ref: EMS_495823_667160
Report Ref: EMS-495823_667160
Grid Ref: 350199, 176484

Map Name: Provisional
Map date: **1970**
Scale: 1:10,560
Printed at: 1:10,560

N
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Surveyed N/A
Revised 1970
Edition 1955
Copyright N/A
Levelled N/A

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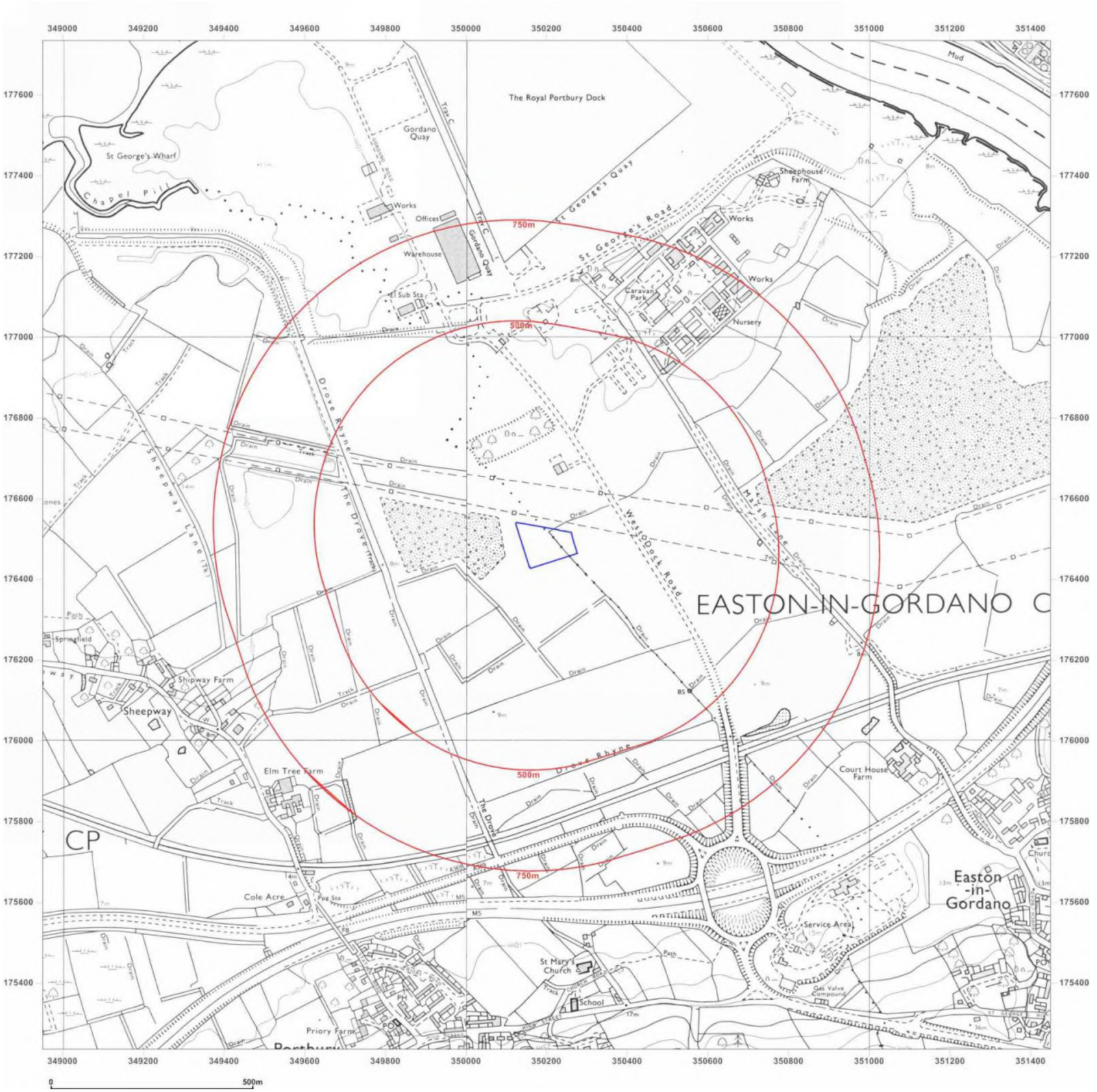

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Site Details:

AP Burt Site, First Avenue Industrial Estate,First Avenue,Portbury Docks, Bristol,BS20 7XS

Client Ref: EMS_495823_667160
Report Ref: EMS-495823_667160
Grid Ref: 350199, 176484

Map Name: National Grid

Map date: **1979**

Scale: 1:10,000

Printed at: 1:10,000

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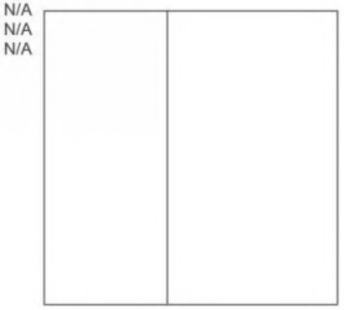
Surveyed 1977
Revised 1979
Edition N/A
Copyright N/A
Levelled N/A



Surveyed 1977
Revised 1979
Edition N/A
Copyright N/A
Levelled N/A

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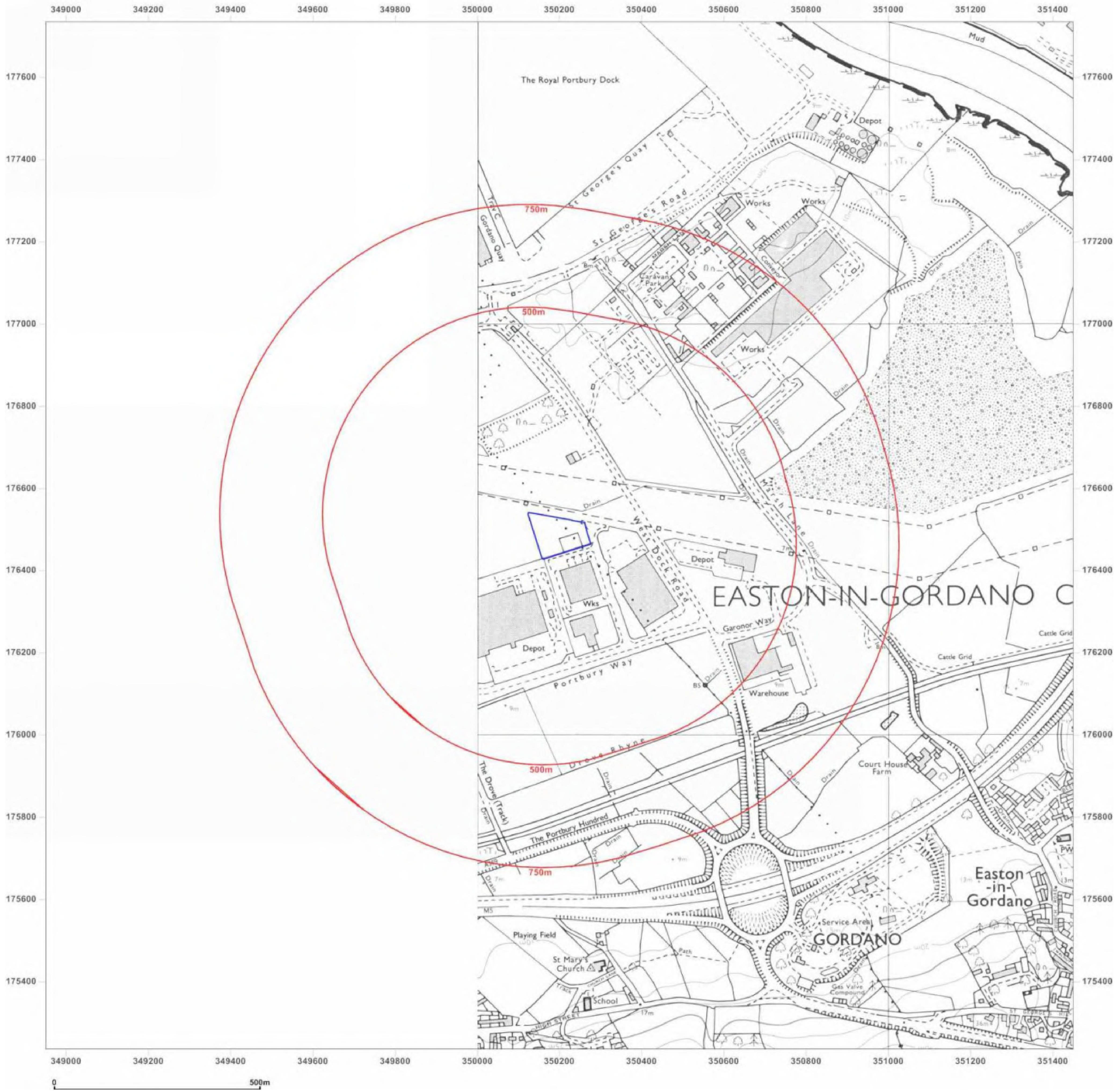

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Site Details:

AP Burt Site, First Avenue Industrial Estate,First Avenue,Portbury Docks, Bristol,BS20 7XS

Client Ref: EMS_495823_667160
Report Ref: EMS-495823_667160
Grid Ref: 350199, 176484

Map Name: National Grid

Map date: **1991**

Scale: 1:10,000

Printed at: 1:10,000

N
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Surveyed 1984
Revised 1991
Edition N/A
Copyright N/A
Levelled N/A

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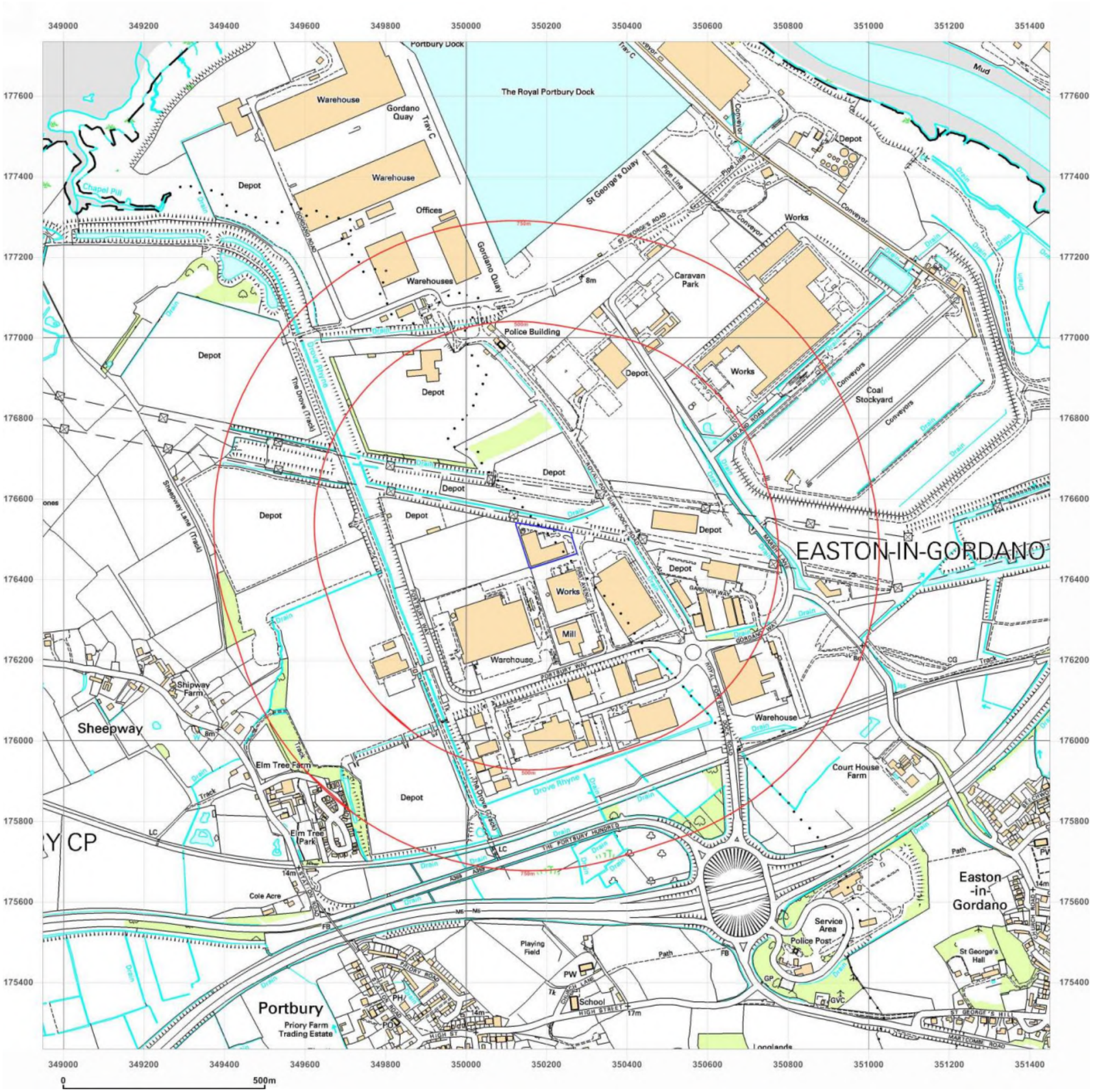

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Site Details:

AP Burt Site, First Avenue Industrial Estate,First Avenue,Portbury Docks, Bristol,BS20 7XS

Client Ref: EMS_495823_667160
Report Ref: EMS-495823_667160
Grid Ref: 350199, 176484

Map Name: 1:10,000 Raster
Map date: **2002**
Scale: 1:10,000
Printed at: 1:10,000

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2002

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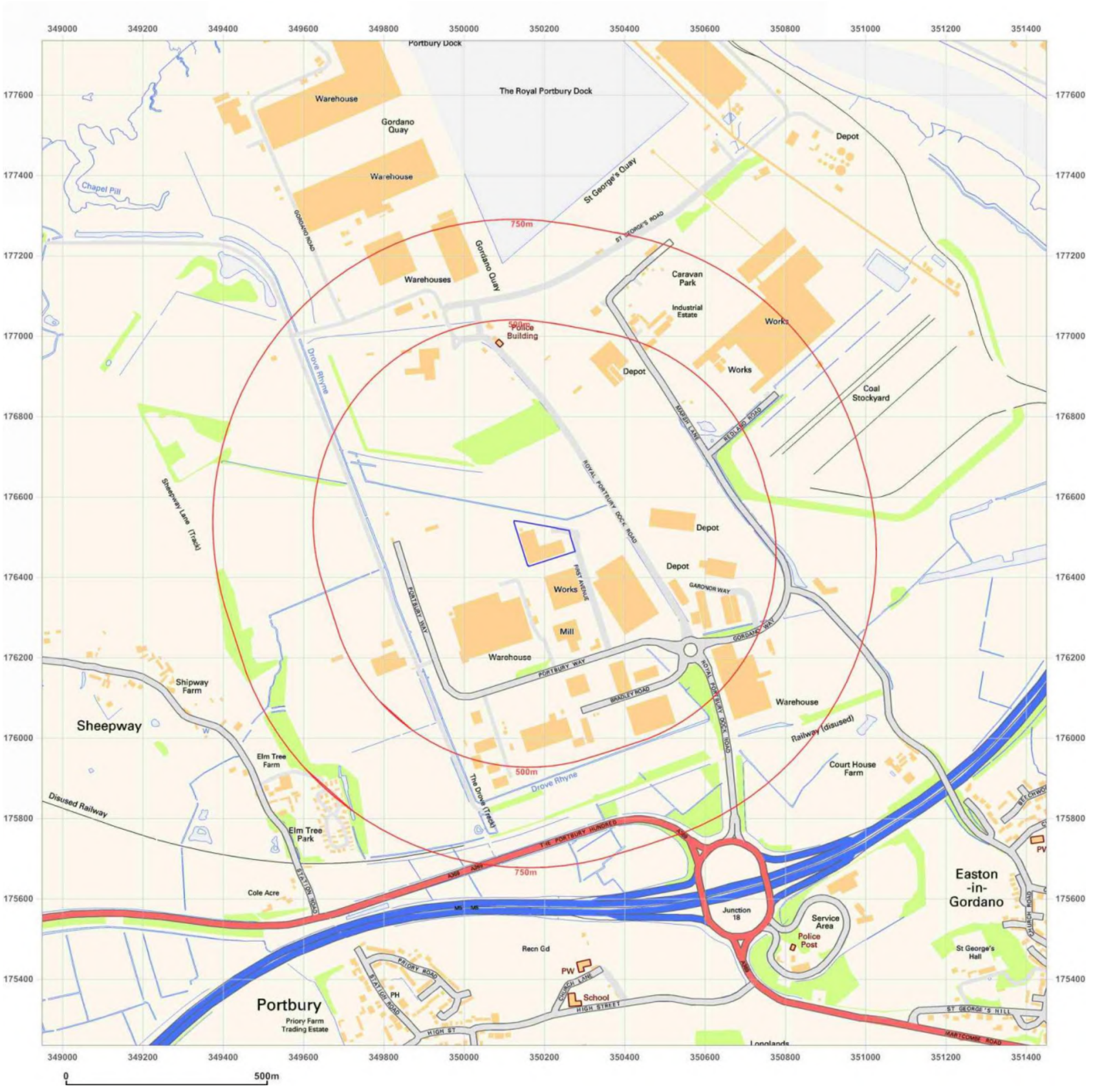

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Site Details:

AP Burt Site, First Avenue Industrial Estate,First Avenue,Portbury Docks, Bristol,BS20 7XS

Client Ref: EMS_495823_667160
Report Ref: EMS-495823_667160
Grid Ref: 350199, 176484

Map Name: National Grid
Map date: **2010**
Scale: 1:10,000
Printed at: 1:10,000

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2010

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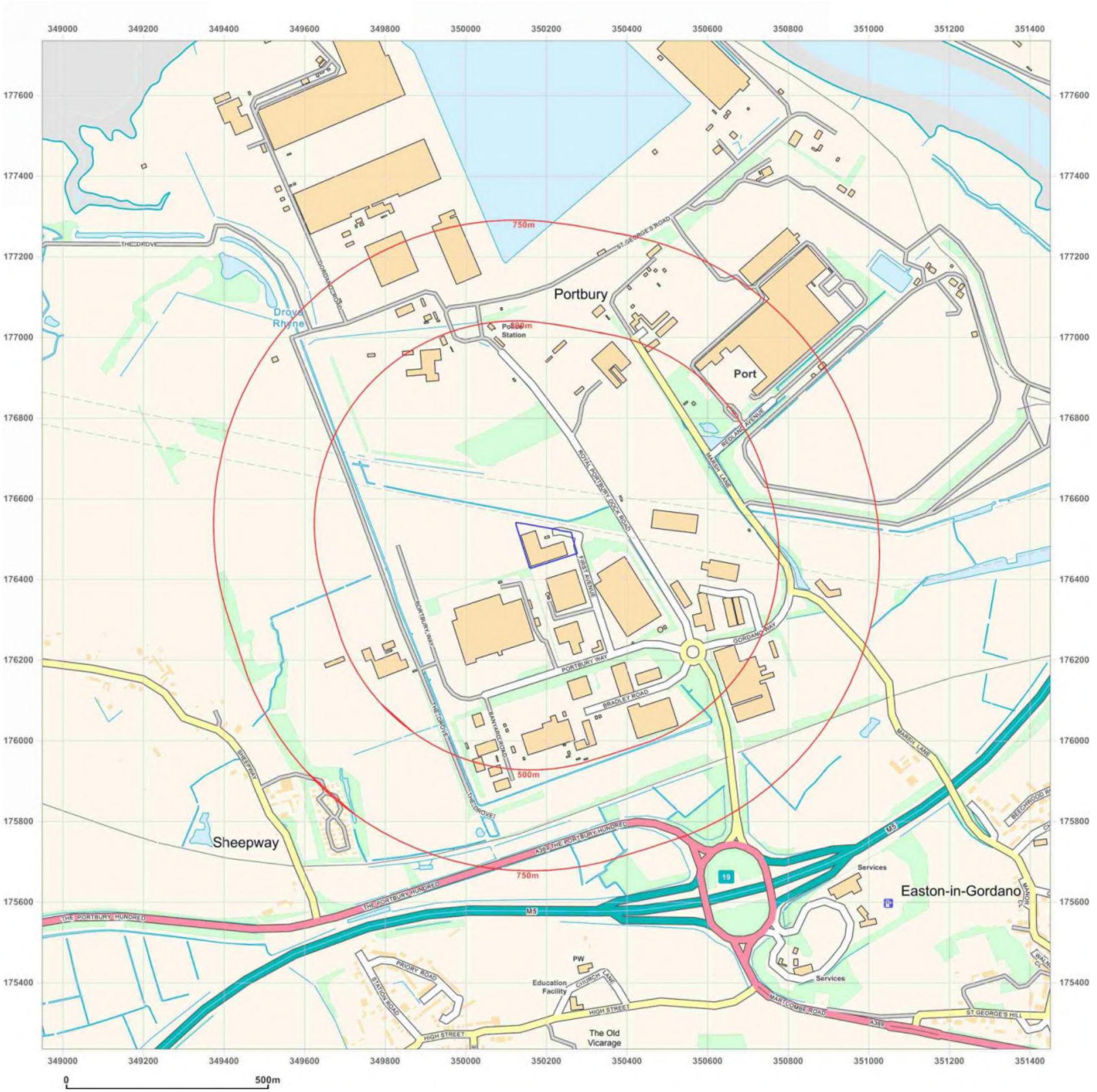

emapsite™

Site Details:

AP Burt Site, First Avenue Industrial Estate,First Avenue,Portbury Docks, Bristol,BS20 7XS

Client Ref: EMS_495823_667160
Report Ref: EMS-495823_667160
Grid Ref: 350199, 176484

Map Name: National Grid
Map date: 2014
Scale: 1:10,000
Printed at: 1:10,000

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2014

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APPENDIX 03

GroundSure GeoInsight & EnviroInsight Report

EmapSite

Masdar House, 1 Reading Road,
Eversley, RG27 0RP

Report Reference: EMS-495823_667161

Your Reference: EMS_495823_667161

Report Date 20 Aug 2018

Report Delivery Method: Email - pdf

Geo Insight

Address: AP Burt Site, First Avenue Industrial Estate, First Avenue, Portbury Docks, Bristol, BS20 7XS,

Dear Sir/ Madam,

Thank you for placing your order with Groundsure. Please find enclosed the **Groundsure Geo Insight** as requested.

If you would like further assistance regarding this report then please contact the emapsite customer services team on 0118 9736883 quoting the above report reference number.

Yours faithfully,

emapsite customer services team

Enc.
Groundsure Geo Insight

Geo Insight

Address:	**AP Burt Site, First Avenue Industrial Estate, First Avenue, Portbury Docks, Bristol, BS20 7XS,**
Date:	**20 Aug 2018**
Reference:	**EMS-495823_667161**
Client:	**EmapSite**

NW N NE

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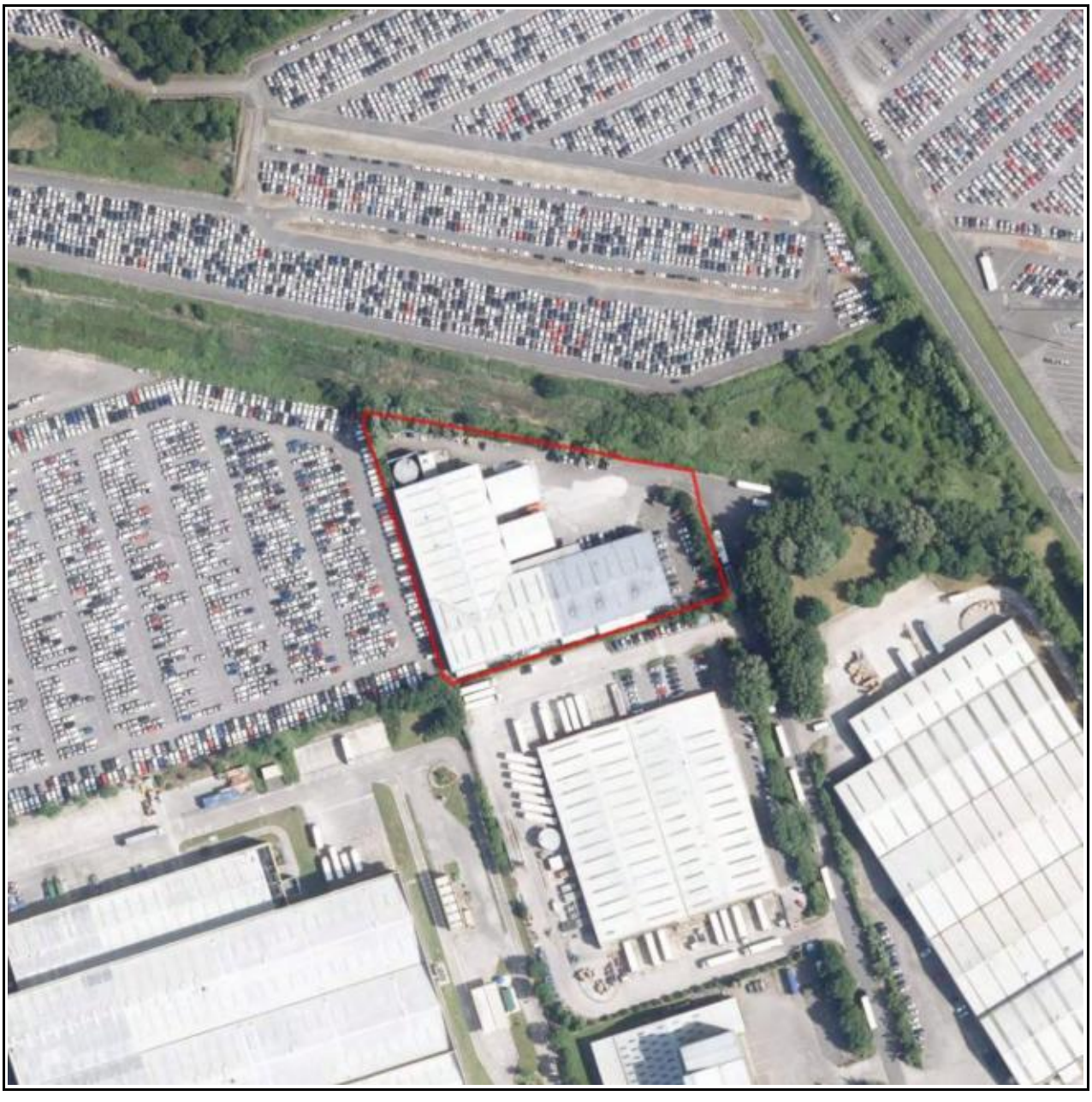


SW S SE

Aerial Photograph Capture date:	05-Oct-2016
Grid Reference:	350195,176487
Site Size:	1.09ha

Contents Page

Overview of Findings

The Groundsure Geo Insight provides high quality geo-environmental information that allows geo-environmental professionals and their clients to make informed decisions and be forewarned of potential ground instability problems that may affect the ground investigation, foundation design and possibly remediation options that could lead to possible additional costs.

The report is based on the BGS 1:50,000 and 1:10,000 Digital Geological Map of Great Britain, BGS Geosure data; BRITPITS database; Non-coal mining data and Borehole Records, Coal Authority data including brine extraction areas, PBA non-coal mining and natural cavities database, Johnson Poole and Bloomer mining data and Groundsure's unique database including historical surface ground and underground workings.

For further details on each dataset, please refer to each individual section in the report as listed. Where the database has been searched a numerical result will be recorded. Where the database has not been searched '-' will be recorded.

Section 1: Geology 1:10,000 Scale		
1.1 Artificial Ground	1.1 Is there any Artificial Ground/ Made Ground present beneath the study site at 1:10,000 scale?	Yes
1.2 Superficial Geology and Landslips	1.2.1 Is there any Superficial Ground/Drift Geology present beneath the study site at 1:10,000 scale?*	Yes
	1.2.2 Are there any records of landslip within 500m of the study site boundary at 1:10,000 scale?	No
1.3 Bedrock, Solid Geology and linear features	1.3.1 For records of Bedrock and Solid Geology beneath the study site* see the detailed findings section.	
	1.3.2 Are there any records of linear features within 500m of the study site boundary at 1:10,000 scale?	No

Section 2: Geology 1:50,000 Scale		
2.1 Artificial Ground	2.1.1 Is there any Artificial Ground/ Made Ground present beneath the study site?	Yes
	2.1.2 Are there any records relating to permeability of artificial ground within the study site*boundary?	Yes
2.2 Superficial Geology and Landslips	2.2.1 Is there any Superficial Ground/Drift Geology present beneath the study site?*	Yes
	2.2.2 Are there any records of permeability of superficial ground within 500m of the study site?	Yes
	2.2.3 Are there any records of landslip within 500m of the study site boundary?	No
	2.2.4 Are there any records relating to permeability of landslips within the study site* boundary?	No

Section 2: Geology 1:50,000 Scale

2.3 Bedrock, Solid Geology and linear features	2.3.1 For records of Bedrock and Solid Geology beneath the study site* see the detailed findings section.	
	2.3.2 Are there any records relating to permeability of bedrock ground within the study site boundary?	Yes
	2.3.3 Are there any records of linear features within 500m of the study site boundary?	No

Section 3: Radon

3. Radon	3.1Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level?	The property is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.
	3.2Radon Protection	No radon protective measures are necessary.

Section 4: Ground Workings	On-site	0-50m	51-250	251-500	501-1000
4.1 Historical Surface Ground Working Features from Small Scale Mapping	0	1	3	Not Searched	Not Searched
4.2 Historical Underground Workings from Small Scale Mapping	0	0	0	0	0
4.3 Current Ground Workings	0	0	0	0	0

Section 5: Mining, Extraction & Natural Cavities	On-site	0-50m	51-250	251-500	501-1000
5.1 Historical Mining	0	0	0	0	0
5.2 Coal Mining	0	0	0	0	0
5.3 Johnson Poole and Bloomer Mining Area	0	0	0	0	0
5.4 Non-Coal Mining*	0	0	0	0	0
5.5 Non–Coal Mining Cavities	0	0	0	0	0
5.5 Natural Cavities	0	0	0	0	0

Section 5: Mining, Extraction & Natural Cavities	On-site	0-50m	51-250	251-500	501-1000
5.6 Brine Extraction	0	0	0	0	0
5.7 Gypsum Extraction	0	0	0	0	0
5.8 Tin Mining	0	0	0	0	0
5.9 Clay Mining	0	0	0	0	0

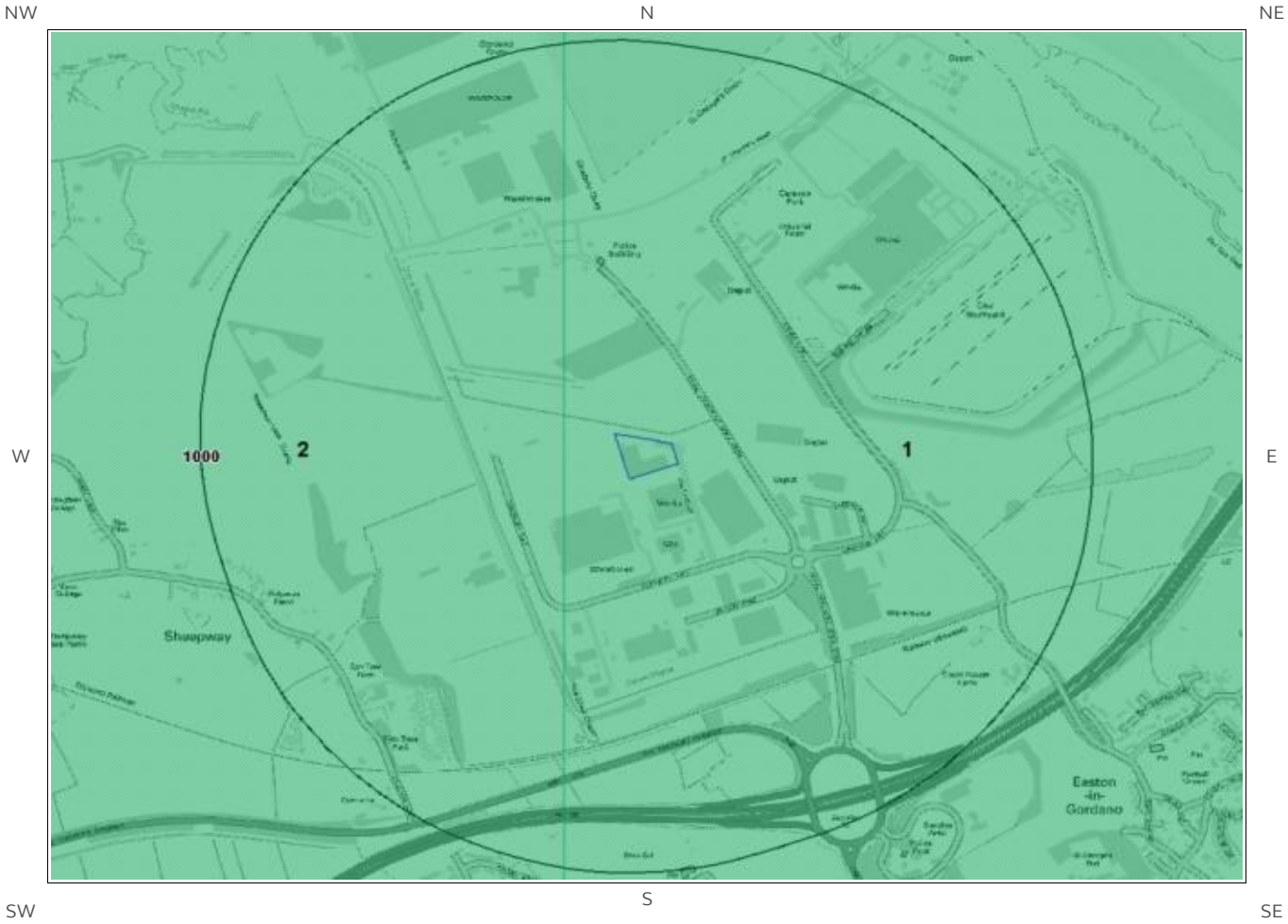
Section 6: Natural Ground Subsidence	On-site
6.1 Shrink-Swell Clay	Low
6.2 Landslides	Very Low
6.3 Ground Dissolution of Soluble Rocks	Negligible
6.4 Compressible Deposits	Moderate
6.5 Collapsible Deposits	Negligible
6.5 Running Sand	Moderate

Section 7: Borehole Records	On-site	0-50m	51-250
7 BGS Recorded Boreholes	0	1	8

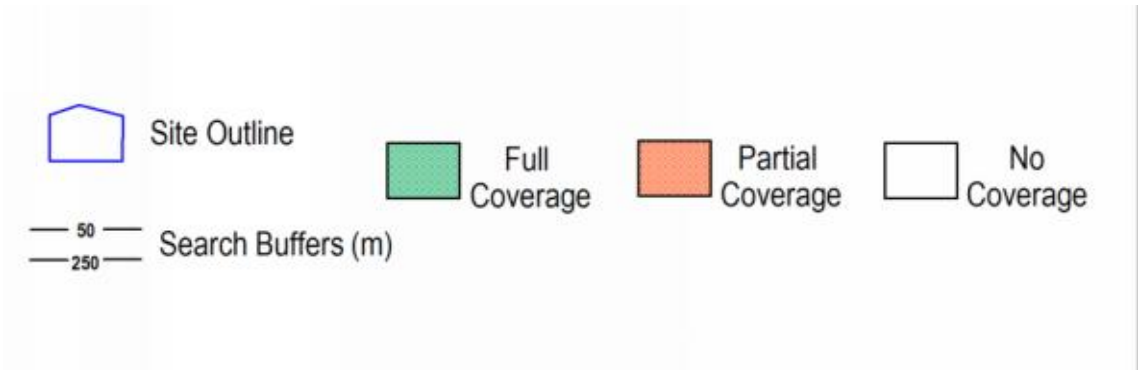
Section 8: Estimated Background Soil Chemistry	On-site	0-50m	51-250
8 Records of Background Soil Chemistry	2	0	0

Section 9: Railways and Tunnels	On-site	0-50m	51-250	250-500
9.1 Tunnels	0	0	0	Not Searched
9.2 Historical Railway and Tunnel Features	0	0	0	Not Searched
9.3 Historical Railways	0	0	0	Not Searched
9.4 Active Railways	0	0	0	Not Searched
9.5 Railway Projects	0	0	0	0

1:10,000 Scale Availability



1_10,000 Availability Legend



Availability of 1:10,000 Scale Geology Mapping

The following information represents the availability of the key components of the 1:10,000 scale geological data.

ID	Distance	Artificial Coverage	Superficial Coverage	Bedrock Coverage	Mass Movement Coverage
1	0.0	Some deposits are mapped	Full	Full	No coverage
2	123.0	Some deposits are mapped	Full	Full	No coverage
N3	1427.0	Some deposits are mapped	Full	Full	No coverage
N4	1436.0	Some deposits are mapped	Full	Full	Some deposits are mapped

Guidance: The 1:10,000 scale geological interpretation is the most detailed generally available from BGS and is the scale at which most geological surveying is carried out in the field. The database is presented as four types of geology (artificial, mass movement, superficial and bedrock), although not all themes are mapped or available on every map sheet. Therefore a coverage layer showing the availability of the four themes is presented above.

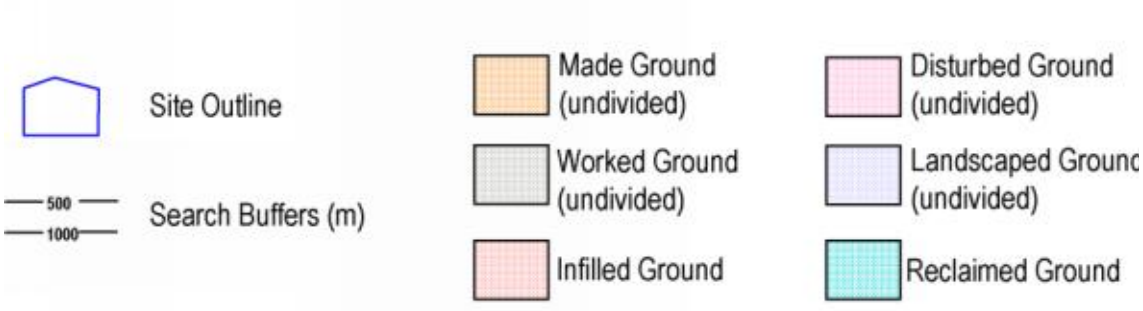
The definitions of coverage are as follows:

Geology	Full Coverage	Partial Coverage	No Coverage
Bedrock	The whole tile has been mapped	Some but not all the tile has been mapped	No coverage
Superficial	The whole tile has been mapped	Some but not all of the tile has been mapped	No coverage
Artificial	Some deposits are mapped on this tile	-	No deposits are mapped
Mass Movement	Some deposits are mapped on this tile	-	No coverage

1 Geology (1:10,000 scale).

1.1 Artificial Ground map (1:10,000 scale)

Artificial Ground Legend



1. Geology 1:10,000 scale

1.1 Artificial Ground

The following geological information represented on the mapping is derived from 1:10,000 scale BGS Geological mapping.

Are there any records of Artificial/ Made Ground within 500m of the study site boundary at 1:10,000 scale? Yes

ID	Distance	Direction	LEX Code	Description	Rock Description
1	0.0	On Site	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
2	123.0	W	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
3	139.0	NW	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
4	234.0	NW	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
5	431.0	NE	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit

1.2 Superficial Deposits and Landslips map (1:10,000 scale)

Artificial Ground Legend

Site Outline

500
1000
Search Buffers (m)

1.2 Superficial Deposits and Landslips

The following geological information represented on the mapping is derived from 1:10,000 scale BGS Geological mapping

1.2.1 Superficial Deposits/ Drift Geology

Are there any records of Superficial Deposits/ Drift Geology within 500m of the study site boundary at 1:10,000 scale? Yes

ID	Distance (m)	Direction	LEX Code	Description	Rock Description
1	0.0	On Site	TFD-XCZ	Tidal Flat Deposits - Clay And Silt	Clay And Silt
2	123.0	W	TFD-XCZ	Tidal Flat Deposits - Clay And Silt	Clay And Silt
3	195.0	NE	HEAD-DMTN	Head - Diamicton	Diamicton
4	376.0	S	RTD1-XSV	River Terrace Deposits, 1 - Sand And Gravel	Sand And Gravel
5	495.0	N	RTD1-XSV	River Terrace Deposits, 1 - Sand And Gravel	Sand And Gravel

1.2.2 Landslip

Are there any records of Landslip within 500m of the study site boundary at 1:10,000 scale?

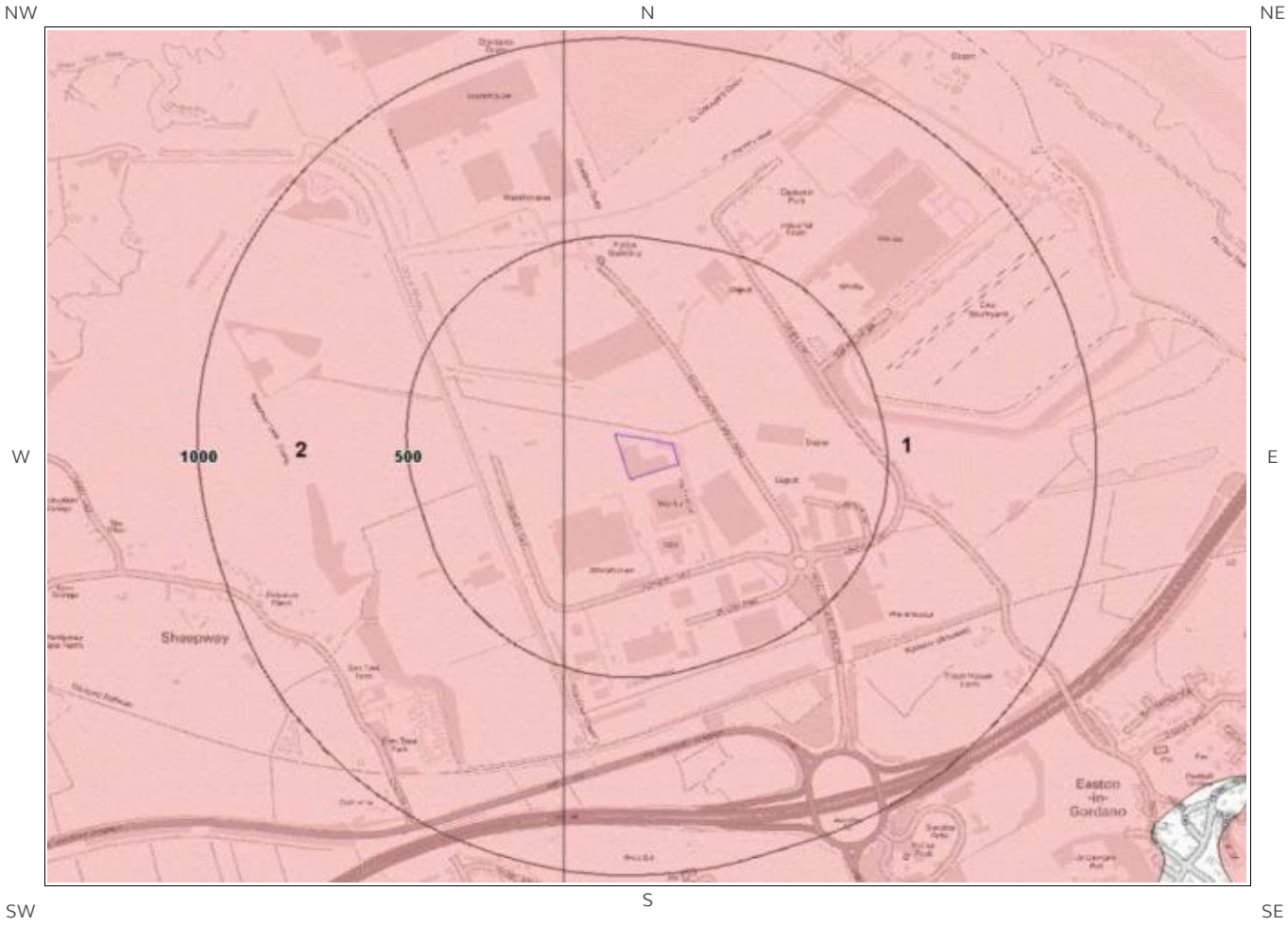
No

Database searched and no data found.

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of Great Britain at 1:10,000 scale

This Geology shows the main components as discrete layers, these are: Artificial / Made Ground, Superficial / Drift Geology and Landslips. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

1.3 Bedrock and linear features map (1:10,000 scale)



Bedrock and linear features Legend

Site Outline

500
1000
Search Buffers (m)

1.3 Bedrock and linear features

The following geological information represented on the mapping is derived from 1:10,000 scale BGS Geological mapping.

1.3.1 Bedrock/ Solid Geology

Records of Bedrock/Solid Geology within 500m of the study site boundary at 1:10,000 scale.

ID	Distance (m)	Direction	LEX Code	Description	Rock Age
1	0.0	On Site	MMG-MDST	Mercia Mudstone Group - Mudstone	Rhaetian Age - Early Triassic Epoch
2	123.0	W	MMG-MDST	Mercia Mudstone Group - Mudstone	Rhaetian Age - Early Triassic Epoch

1.3.2 Linear features

Are there any records of linear features within 500m of the study site boundary at 1:10,000 scale? No

Database searched and no data found at this scale.

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of great Britain at 1:10,000 scale.

This Geology shows the main components as discrete layers, these are: Bedrock/ Solid Geology and linear features such as faults. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

2 Geology 1:50,000 Scale

2.1 Artificial Ground map

Site Outline

500
1000
Search Buffers (m)

Made Ground (undivided)

Worked Ground (undivided)

Infilled Ground

Disturbed Ground (undivided)

Landscaped Ground (undivided)

Reclaimed Ground

2. Geology 1:50,000 scale

2.1 Artificial Ground

The following geological information represented on the mapping is derived from 1:50,000 scale BGS Geological mapping, Sheet No: 264

2.1.1 Artificial/ Made Ground

Are there any records of Artificial/ Made Ground within 500m of the study site boundary? Yes

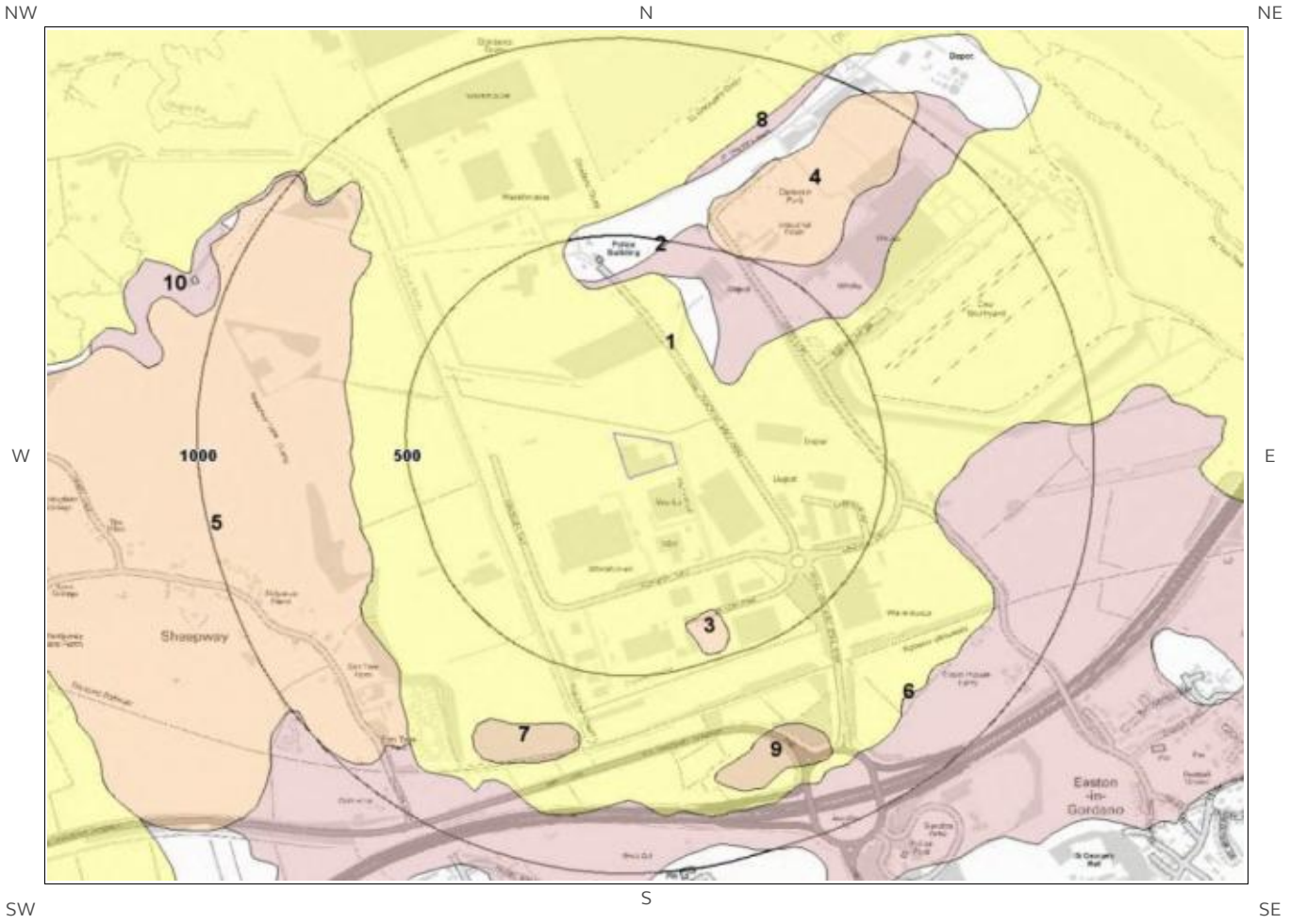
ID	Distance (m)	Direction	LEX Code	Description	Rock Description
1	0.0	On Site	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT
2	432.0	NE	WGR-VOID	WORKED GROUND (UNDIVIDED)	VOID

2.1.2 Permeability of Artificial Ground

Are there any records relating to permeability of artificial ground within the study site boundary? Yes

Distance (m)	Direction	Flow Type	Maximum Permeability	Minimum Permeability
0.0	On Site	Mixed	Very High	Low

2.2 Superficial Deposits and Landslips map (1:50,000 scale)



Site Outline

500
1000
Search Buffers (m)

2.2 Superficial Deposits and Landslips

2.2.1 Superficial Deposits/ Drift Geology

Are there any records of Superficial Deposits/ Drift Geology within 500m of the study site boundary? Yes

ID	Distance	Direction	LEX Code	Description	Rock Description
1	0.0	On Site	TFD-XCZ	TIDAL FLAT DEPOSITS	CLAY AND SILT
2	195.0	NE	HEAD-XCZSV	HEAD	CLAY, SILT, SAND AND GRAVEL
3	376.0	S	RTD1-XSV	RIVER TERRACE DEPOSITS, 1	SAND AND GRAVEL
4	495.0	N	RTD1-XSV	RIVER TERRACE DEPOSITS, 1	SAND AND GRAVEL

2.2.2 Permeability of Superficial Ground

Are there any records relating to permeability of superficial ground within the study site boundary? Yes

Distance (m)	Direction	Flow Type	Maximum Permeability	Minimum Permeability
0.0	On Site	Intergranular	Low	Very Low

2.2.3 Landslip

Are there any records of Landslip within 500m of the study site boundary? No

Database searched and no data found.

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of Great Britain at 1:50,000 scale.

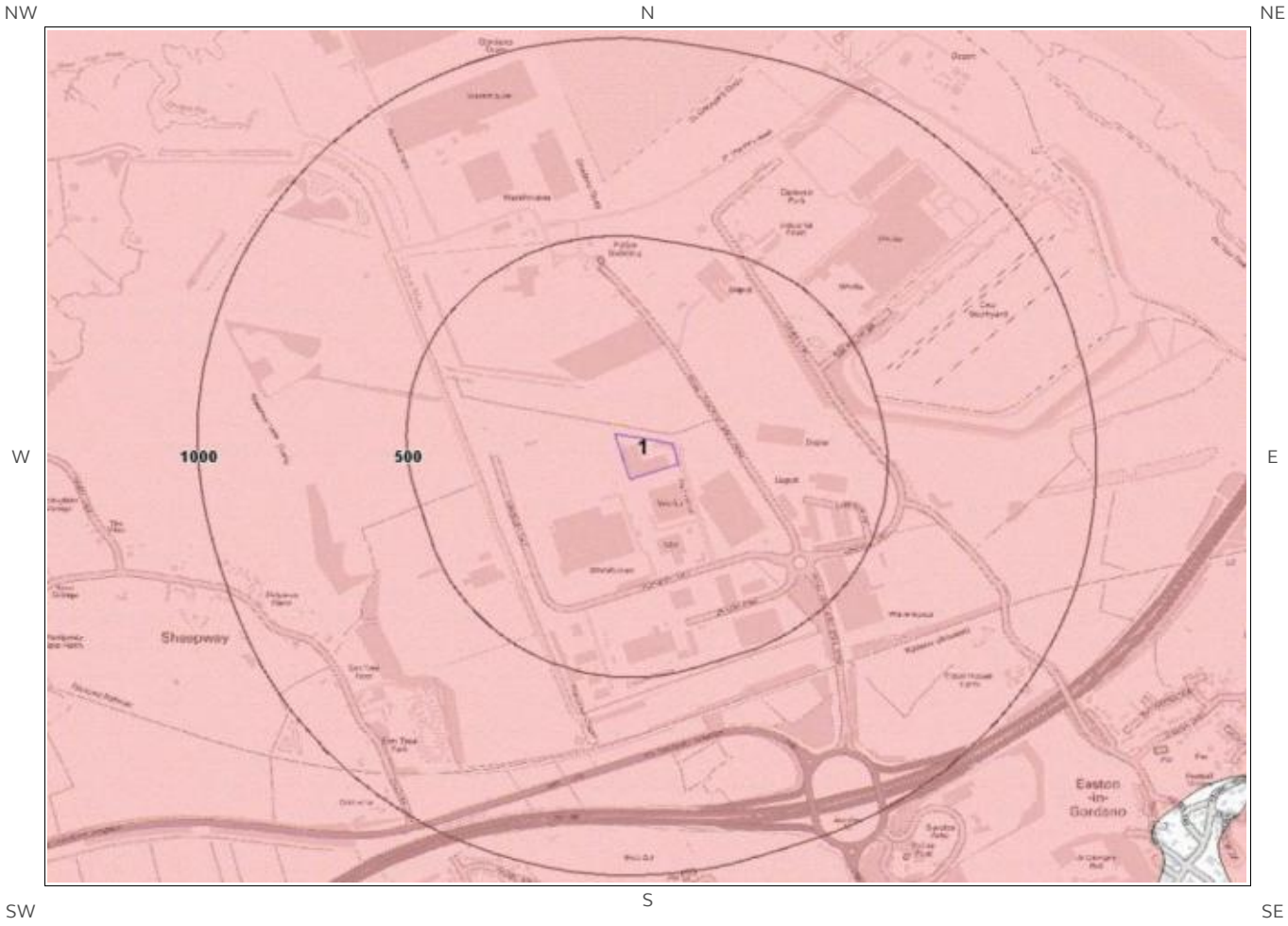
This Geology shows the main components as discrete layers, there are: Artificial/ Made Ground, Superficial/ Drift Geology and Landslips. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

2.2.4 Landslip Permeability

Are there any records relating to permeability of landslips within the study site boundary? No

Database searched and no data found.

2.3 Bedrock and linear features map (1:50,000 scale)



Site Outline

500
1000
Search Buffers (m)

2.3 Bedrock, Solid Geology & linear features

The following geological information represented on the mapping is derived from 1:50,000 scale BGS Geological mapping, Sheet No: 264

2.3.1 Bedrock/Solid Geology

Records of Bedrock/Solid Geology within 500m of the study site boundary:

ID	Distance	Direction	LEX Code	Rock Description	Rock Age
1	0.0	On Site	MMG-MDHA	MERCIA MUDSTONE GROUP - MUDSTONE AND HALITE-STONE	-

2.3.2 Permeability of Bedrock Ground

Are there any records relating to permeability of bedrock ground within the study site boundary? Yes

Distance	Direction	Flow Type	Maximum Permeability	Minimum Permeability
0.0	On Site	Fracture	Low	Low

2.3.3 Linear features

Are there any records of linear features within 500m of the study site boundary? No

Database searched and no data found.

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of Great Britain at 1:50,000 scale.

This Geology shows the main components as discrete layers, these are: Bedrock/Solid Geology and linear features such as faults. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nation wide coverage.

3 Radon Data

3.1 Radon Affected Areas

Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level? The property is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.

The radon data in this report is supplied by the BGS/Public Health England and is the definitive map of Radon Affected Areas in Great Britain and Northern Ireland. The dataset was created using long-term radon measurements in over 479,000 homes across Great Britain and 23,000 homes across Northern Ireland, combined with geological data. The dataset is considered accurate to 50m to allow for the margin of error in geological lines, and the findings of this report supercede any answer given in the less accurate Indicative Atlas of Radon in Great Britain, which simplifies the data to give the highest risk within any given 1km grid square. As such, the radon atlas is considered indicative, whereas the data given in this report is considered definitive.

3.2 Radon Protection

Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment? No radon protective measures are necessary.

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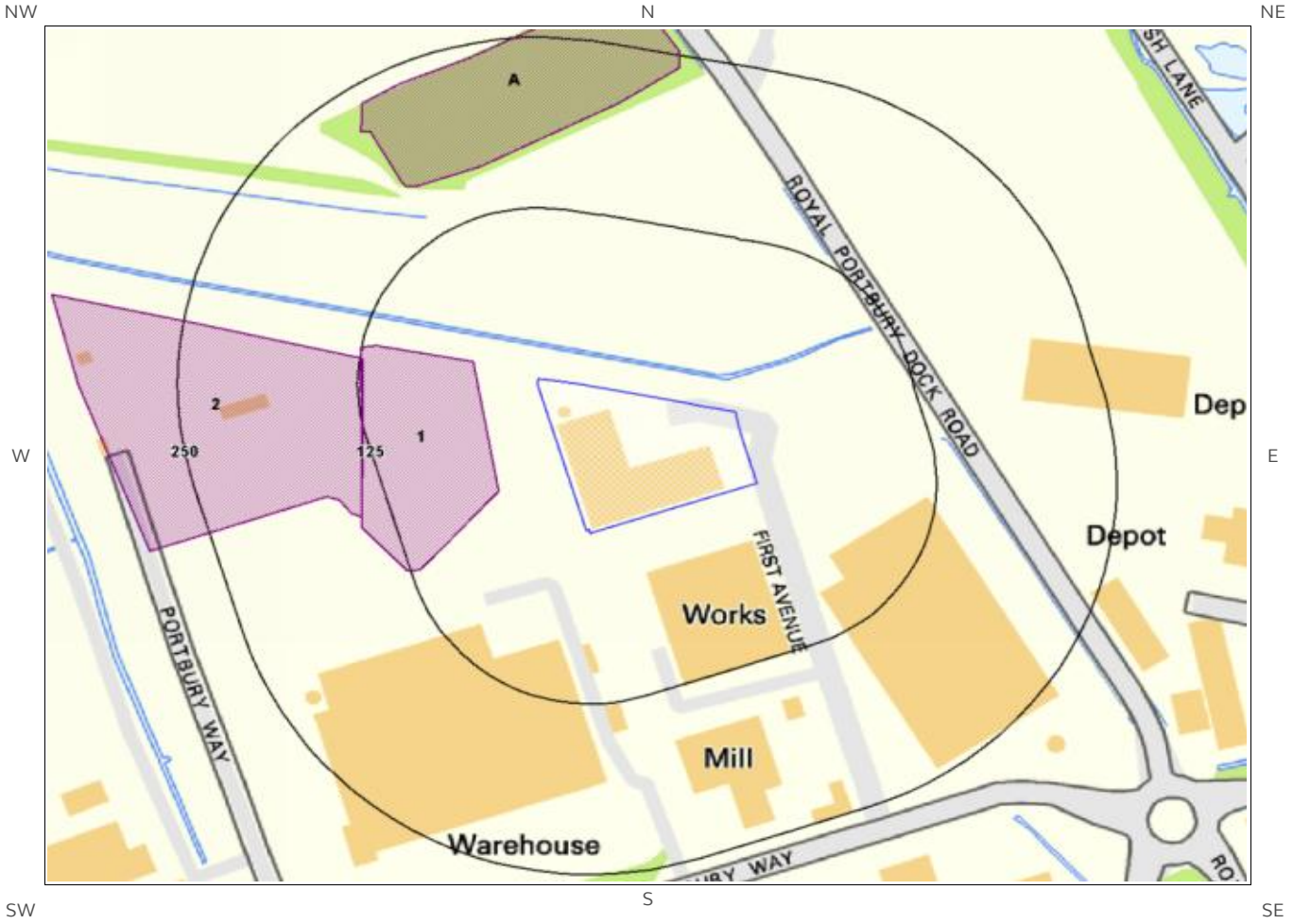
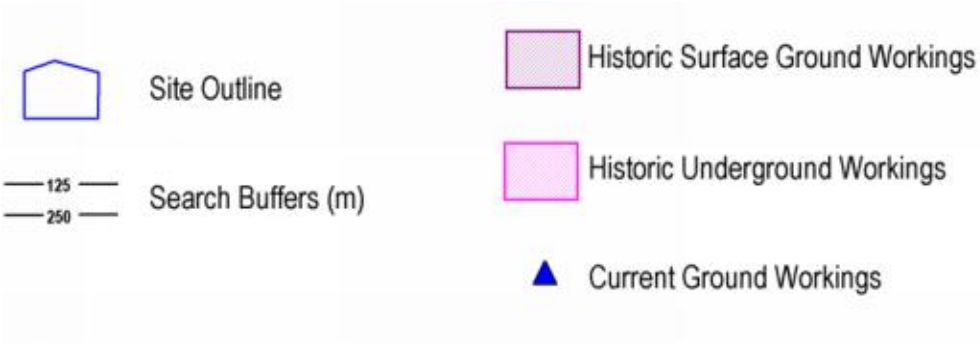
4 Ground Workings map



Ground Workings Legend



4 Ground Workings

4.1 Historical Surface Ground Working Features derived from Historical Mapping

This dataset is based on Groundsure's unique Historical Land Use Database derived from 1:10,560 and 1:10,000 scale historical mapping

Are there any Historical Surface Ground Working Features within 250m of the study site boundary? Yes

ID	Distance (m)	Direction	NGR	Use	Date
1	41.0	W	350048 176483	Refuse Heap	1979
2	121.0	W	349893 176508	Refuse Heap	1979
3A	160.0	N	350111 176756	Unspecified Pit	1991
4A	160.0	N	350111 176756	Unspecified Pit	1979

4.2 Historical Underground Working Features derived from Historical Mapping

This data is derived from the Groundsure unique Historical Land Use Database. It contains data derived from 1:10,000 and 1:10,560 historical Ordnance Survey Mapping and includes some natural topographical features (Shake Holes for example) as well as manmade features that may have implications for ground stability. Underground and mining features have been identified from surface features such as shafts. The distance that these extend underground is not shown.

Are there any Historical Underground Working Features within 1000m of the study site boundary? No

Database searched and no data found.

4.3 Current Ground Workings

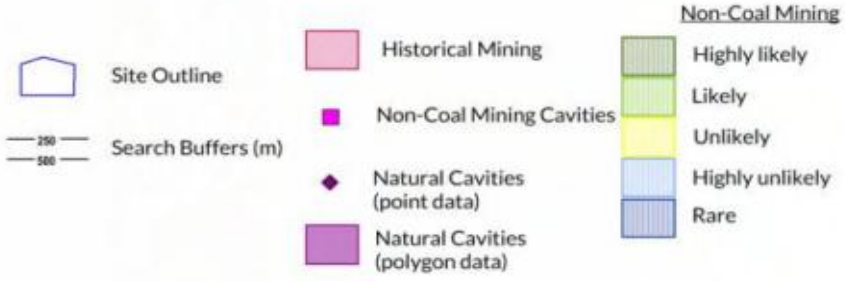
This dataset is derived from the BGS BRITPITS database covering active; inactive mines; quarries; oil wells; gas wells and mineral wharves; and rail deposits throughout the British Isles.

Are there any BGS Current Ground Workings within 1000m of the study site boundary? No

Database searched and no data found.

5 Mining, Extraction & Natural Cavities map

Mining, Extraction and Natural Cavities Legend



5 Mining, Extraction & Natural Cavities

5.1 Historical Mining

This dataset is derived from Groundsure unique Historical Land-use Database that are indicative of mining or extraction activities.

Are there any Historical Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

5.2 Coal Mining

This dataset provides information as to whether the study site lies within a known coal mining affected area as defined by the coal authority.

Are there any Coal Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

5.3 Johnson Poole and Bloomer

This dataset provides information as to whether the study site lies within an area where JPB hold information relating to mining.

Are there any JPB Mining areas within 1000m of the study site boundary? No

The following information provided by JPB is not represented on mapping: Database searched and no data found.

5.4 Non-Coal Mining

This dataset provides information as to whether the study site lies within an area which may have been subject to non-coal historic mining.

Are there any Non-Coal Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

5.5 Non-Coal Mining Cavities

This dataset provides information from the Peter Brett Associates (PBA) mining cavities database (compiled for the national study entitled "Review of mining instability in Great Britain, 1990" PBA has also continued adding to this database) on mineral extraction by mining.

Are there any Non-Coal Mining cavities within 1000m of the study site boundary? No

Database searched and no data found.

5.6 Natural Cavities

This dataset provides information based on the Peter Brett Associates natural cavities database. The dataset is made up of points and polygons. Where polygons are used these represent an area in which it is expected the cavities could be found. It does not indicate that cavities are present everywhere within the polygon, and caution should be used in the interpretation of this data.

Are there any Natural Cavities within 1000m of the study site boundary? No

Database searched and no data found.

5.7 Brine Extraction

This data provides information from the Coal Authority issued on behalf of the Cheshire Brine Subsidence Compensation Board.

Are there any Brine Extraction areas within 1000m of the study site boundary? No

Database searched and no data found.

5.8 Gypsum Extraction

This dataset provides information on Gypsum extraction from British Gypsum records.

Are there any Gypsum Extraction areas within 1000m of the study site boundary? No

Database searched and no data found.

5.9 Tin Mining

This dataset provides information on tin mining areas and is derived from tin mining records. This search is based upon postcode information to a sector level..

Are there any Tin Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

5.10 Clay Mining

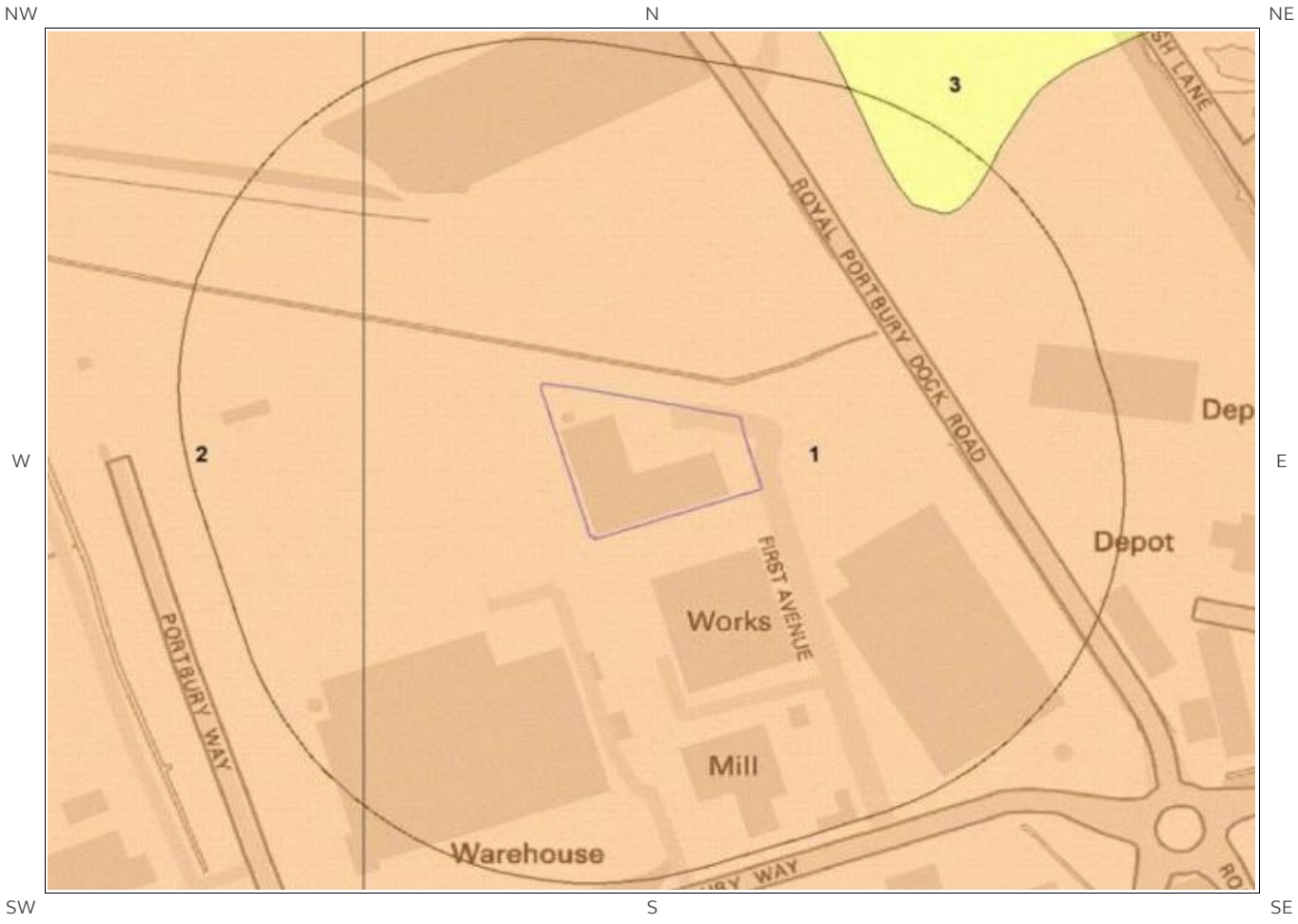
This dataset provides information on Kaolin and Ball Clay mining from relevant mining records.

Are there any Clay Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

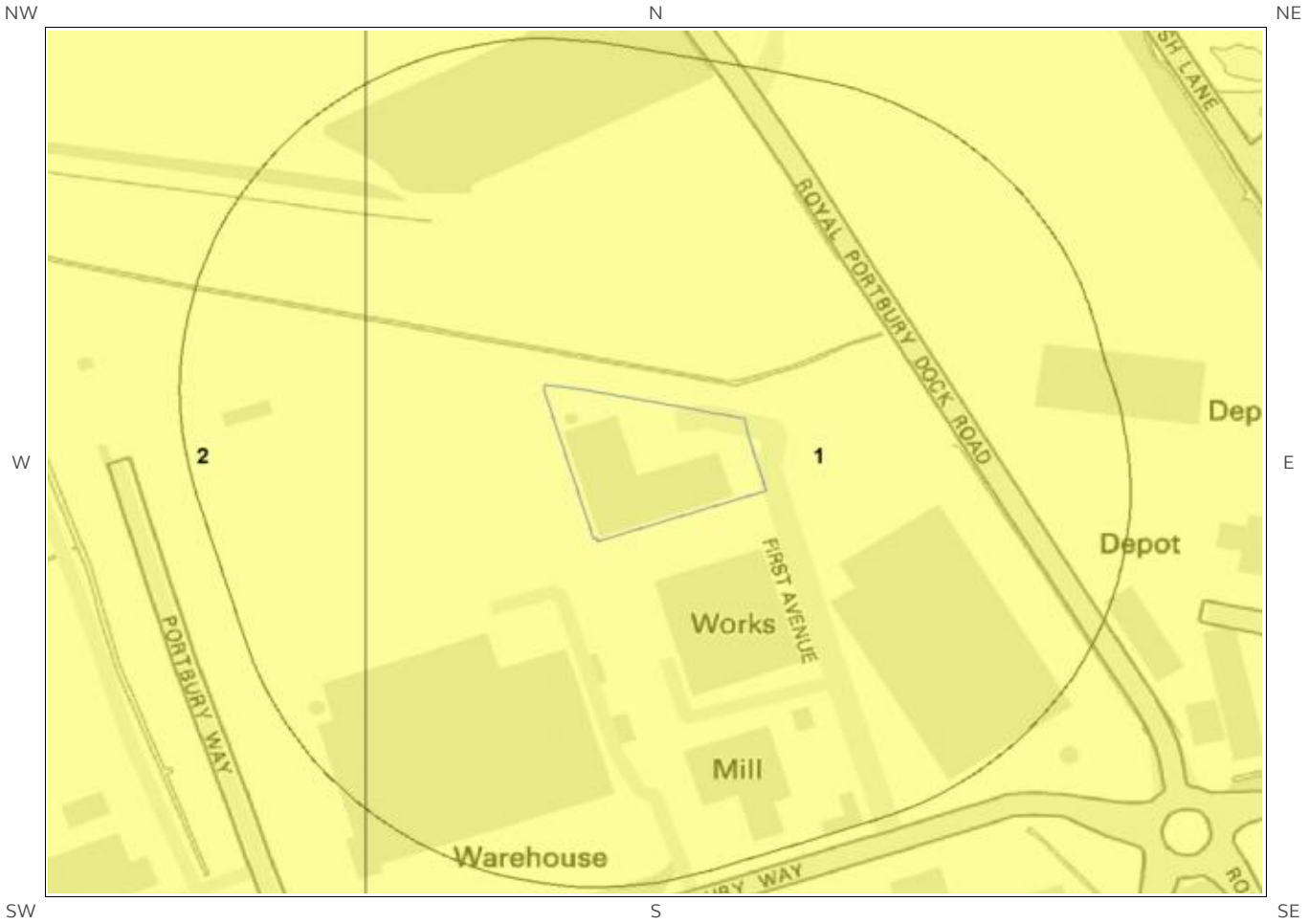
6 Natural Ground Subsidence

6.1 Shrink-Swell Clay map



Shrink Swell Clay Legend

6.2 Landslides map



Landslides Legend

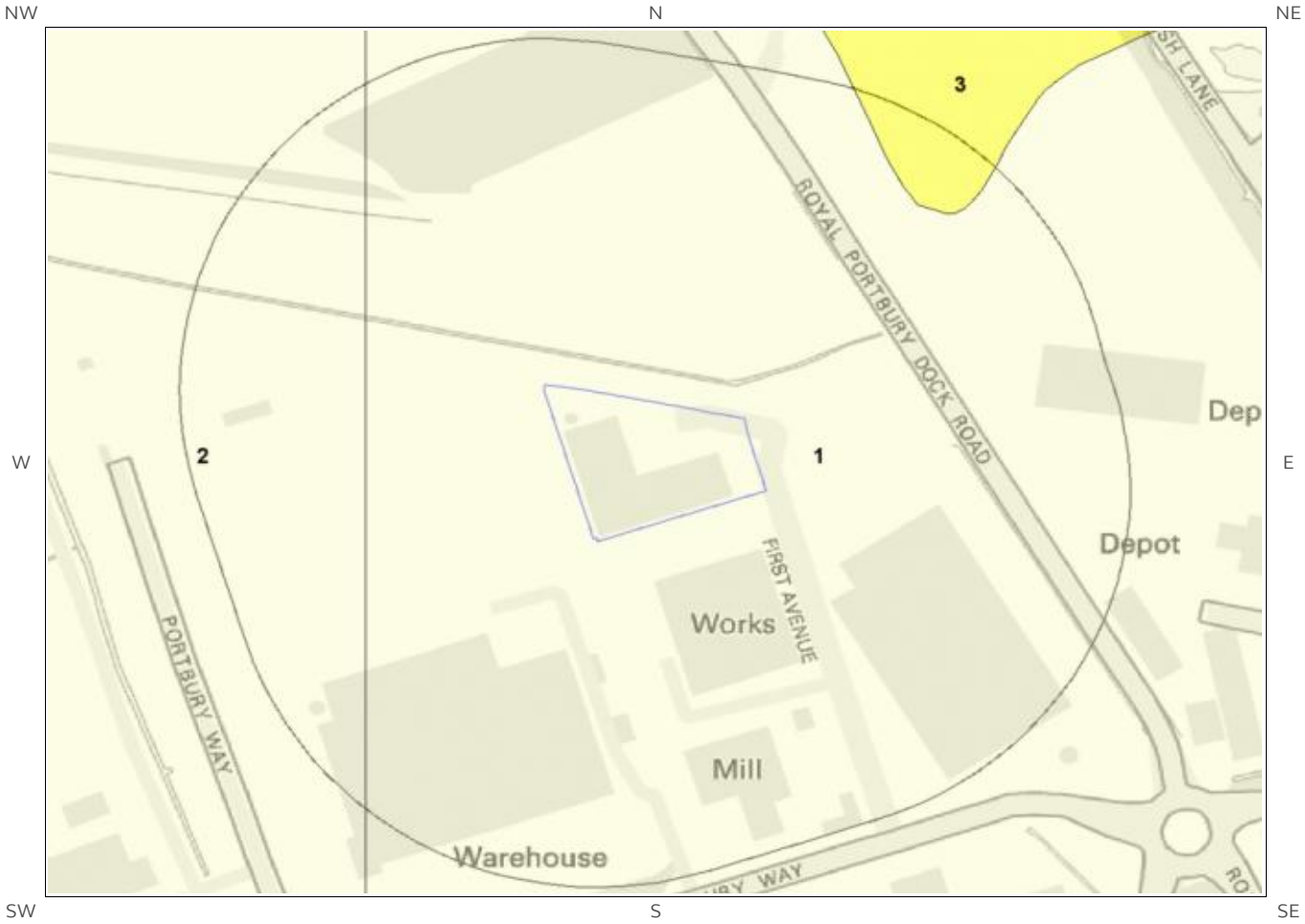
6.3 Ground Dissolution of Soluble Rocks map

Ground Dissolution Soluble Rocks Legend

6.4 Compressible Deposits map

Compressible Deposits Legend

6.5 Collapsible Deposits map



Collapsible Deposits Legend

6.6 Running Sand map

Running Sand Legend

Site Outline

125
250
Search Buffers (m)

No Data / Null
Negligible
Very Low

Low
Moderate
High

6 Natural Ground Subsidence

The National Ground Subsidence rating is obtained through the 6 natural ground stability hazard datasets, which are supplied by the British Geological Survey (BGS).

The following GeoSure data represented on the mapping is derived from the BGS Digital Geological map of Great Britain at 1:50,000 scale.

What is the maximum hazard rating of natural subsidence within the study site*[*] boundary? Moderate

6.1 Shrink-Swell Clays

The following Shrink Swell information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Low	Ground conditions predominantly medium plasticity. Do not plant trees with high soil moisture demands near to buildings. For new build, consideration should be given to advice published by the National House Building Council (NHBC) and the Building Research Establishment (BRE). There is a possible increase in construction cost to reduce potential shrink-swell problems. For existing property, there is a possible increase in insurance risk, especially during droughts or where vegetation with high moisture demands is present.

6.2 Landslides

The following Landslides information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.

* This includes an automatically generated 50m buffer zone around the site

6.3 Ground Dissolution of Soluble Rocks

The following Ground Dissolution information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	Soluble rocks are present, but unlikely to cause problems except under exceptional conditions. No special actions required to avoid problems due to soluble rocks. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with soluble rocks.

6.4 Compressible Deposits

The following Compressible Deposits information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Very low potential for compressible deposits to be present. No special actions required to avoid problems due to compressible deposits. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with compressible deposits.
2	0.0	On Site	Moderate	Significant potential for compressibility problems. Avoid large differential loadings of ground. Do not drain or de-water ground near the property without technical advice. For new build - consider possibility of compressible ground in ground investigation, construction and building design. Consider effects of groundwater changes. Extra construction costs are likely. For existing property - possible increase in insurance risk from compressibility, especially if water conditions or loading of the ground change significantly.

6.5 Collapsible Deposits

The following Collapsible Rocks information provided by the British Geological Survey:

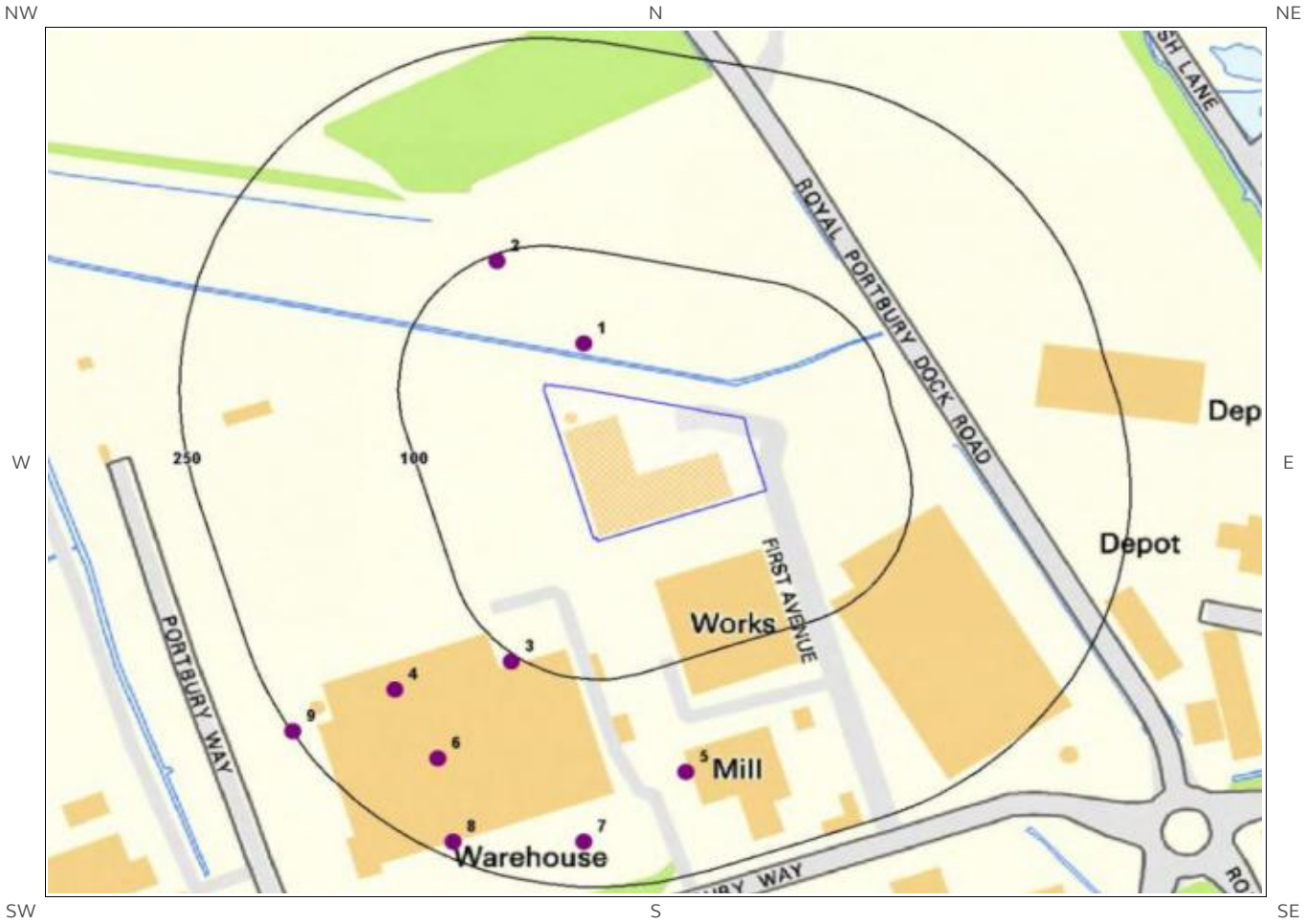
ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	No indicators for collapsible deposits identified. No actions required to avoid problems due to collapsible deposits. No special ground investigation required, or increased construction costs or increased financial risk due to potential problems with collapsible deposits.

6.6 Running Sands

The following Running Sands information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Moderate	Significant potential for running sand problems with relatively small changes in ground conditions. Avoid large amounts of water entering the ground (for example through pipe leakage or soak-aways). Do not dig (deep) holes into saturated ground near the property without technical advice. For new build - consider the consequences of soil and groundwater conditions during and after construction. For existing property - possible increase in insurance risk from running sand, for example, due to water leakage, high rainfall events or flooding.
2	0.0	On Site	Very Low	Very low potential for running sand problems if water table rises or if sandy strata are exposed to water. No special actions required, to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.

7 Borehole Records map



Borehole Records Legend

Site Outline

Borehole Locations

125
250
Search Buffers (m)

7 Borehole Records

The systematic analysis of data extracted from the BGS Borehole Records database provides the following information.

Records of boreholes within 250m of the study site boundary: 9

ID	Distance (m)	Direction	NGR	BGS Reference	Drilled Length	Borehole Name
1	33.0	N	350150 176570	ST57NW275	19.0	MARSH LANE PORTBURY 7
2	95.0	N	350090 176630	ST57NW163	-1.0	EASTON IN GORDANO TP.G11
3	106.0	SW	350100 176340	ST57NW153	16.0	ASDA RDC5 BRISTOL 3
4	175.0	SW	350020 176320	ST57NW152	14.0	ASDA RDC5 BRISTOL 2
5	178.0	S	350220 176260	ST57NW277	18.0	MARSH LANE PORTBURY 9
6	192.0	SW	350050 176270	ST57NW156	16.0	ASDA RDC5 BRISTOL 7
7	218.0	S	350150 176210	ST57NW155	16.0	ASDA RDC5 BRISTOL 6
8	239.0	SW	350060 176210	ST57NW154	16.0	ASDA RDC5 BRISTOL 5
9	250.0	SW	349950 176290	ST47NE25	15.0	ASDA RDC5 BRISTOL 1A

The borehole records are available using the hyperlinks below: Please note that if the donor of the borehole record has requested the information be held as commercial-in-confidence, the additional data will be held separately by the BGS and a formal request must be made for its release.

#1: scans.bgs.ac.uk/sobi_scans/boreholes/388420
#3: scans.bgs.ac.uk/sobi_scans/boreholes/388298
#4: scans.bgs.ac.uk/sobi_scans/boreholes/388297
#5: scans.bgs.ac.uk/sobi_scans/boreholes/388422
#6: scans.bgs.ac.uk/sobi_scans/boreholes/388301
#7: scans.bgs.ac.uk/sobi_scans/boreholes/388300
#8: scans.bgs.ac.uk/sobi_scans/boreholes/388299
#9: scans.bgs.ac.uk/sobi_scans/boreholes/386557

8 Estimated Background Soil Chemistry

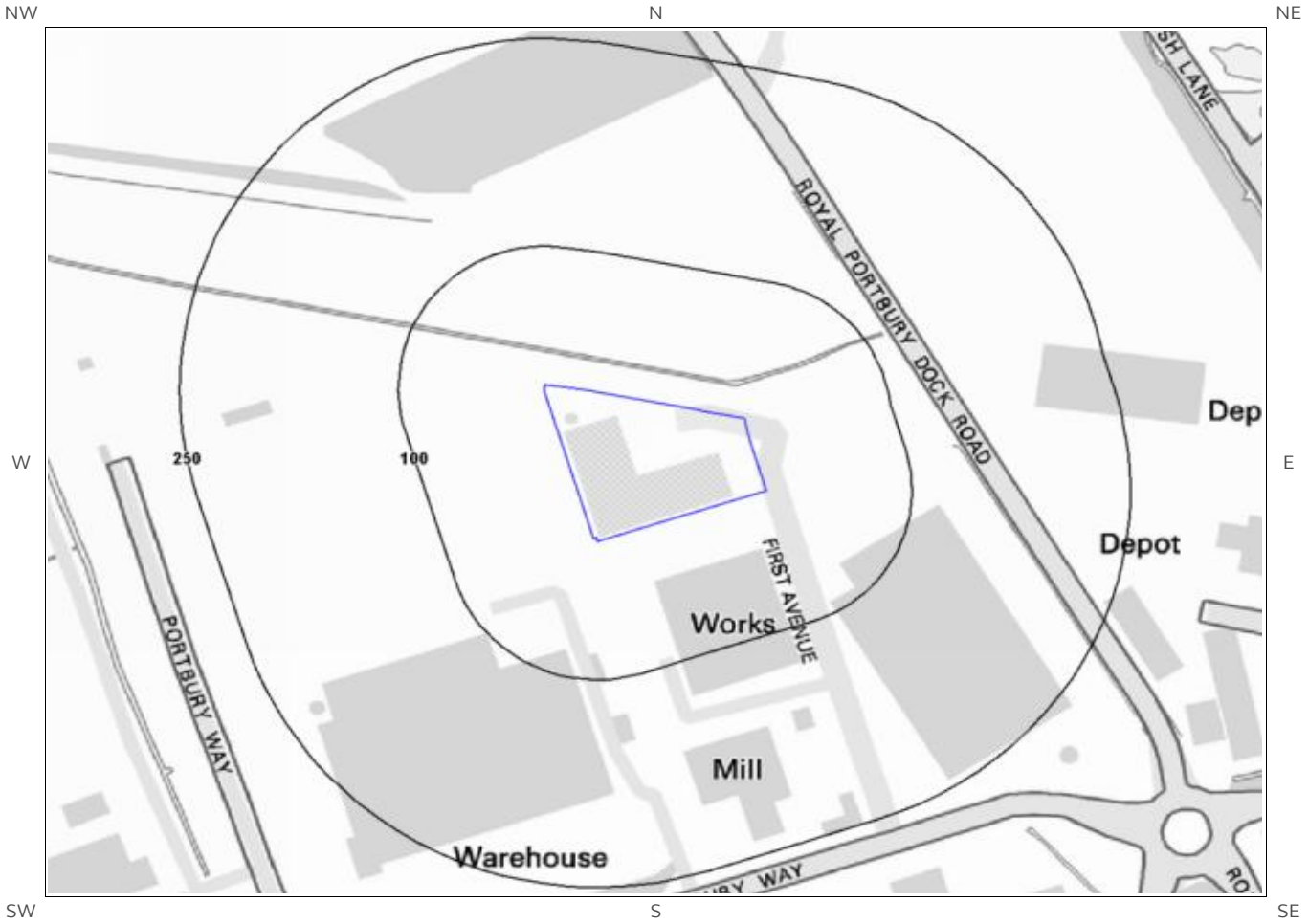
Records of background estimated soil chemistry within 250m of the study site boundary: 2

For further information on how this data is calculated and limitations upon its use, please see the Groundsure Geo Insight User Guide, available on request.

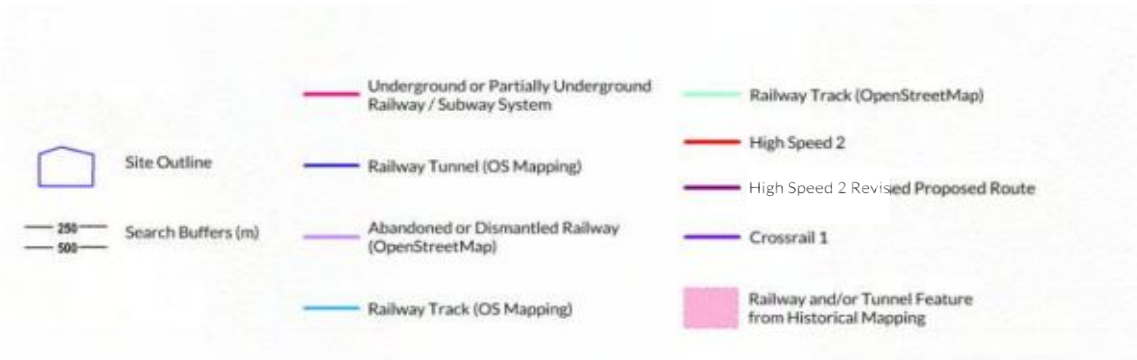
Distance (m)	Direction	Sample Type	Arsenic (As)	Cadmium (Cd)	Chromium (Cr)	Nickel (Ni)	Lead (Pb)
0.0	On Site	Sediment	15 - 25 mg/kg	2.2 - 3.0 mg/kg	90 - 120 mg/kg	15 - 30 mg/kg	300 - 600 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	2.2 - 3.0 mg/kg	90 - 120 mg/kg	15 - 30 mg/kg	100 - 200 mg/kg

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

9 Railways and Tunnels map



Railways and Tunnels Legend



9 Railways and Tunnels

9.1 Tunnels

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

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

Database searched and no data found.

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

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

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

Database searched and no data found.

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

9.2 Historical Railway and Tunnel Features

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

Have any historical railway or tunnel features been identified within the study site boundary?	No
Have any historical railway or tunnel features been identified within 250m of the study site boundary?	No

Database searched and no data found.

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

9.3 Historical Railways

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

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

Database searched and no data found.

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

9.4 Active Railways

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

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

Database searched and no data found.

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

9.5 Railway Projects

These datasets provide information on the location of large scale railway projects High Speed 2 and Crossrail 1 .

Is the study site within 5km of the route of the High Speed 2 rail project?	No
Is the study site within 500m of the route of the Crossrail 1 rail project?	No

Further information on proximity to these routes, the project construction status and associated works can be obtained through the purchase of a Groundsure HS2 and Crossrail 1 Report.

The route data has been digitised from publicly available maps by Groundsure. The route as provided relates to the Crossrail 1 project only, and does not include any details of the Crossrail 2 project, as final details of the route for Crossrail 2 are still under consultation.

Please note that this assessment takes account of both the original Phase 2b proposed route and the amended route proposed in 2016. As the Phase 2b route is still under consultation, Groundsure are providing information on both options until the final route is formally confirmed. Practitioners should take account of this uncertainty when advising clients.

Contact Details

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British Geological Survey Enquiries

Kingsley Dunham Centre
Keyworth, Nottingham NG12 5GG
Tel: 0115 936 3143.
Fax: 0115 936 3276.
Email:**enquiries@bgs.ac.uk**
Web:**www.bgs.ac.uk**
BGS Geological Hazards Reports and general geological enquiries

British Gypsum

British Gypsum Ltd
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Leicestershire
LE12 6HX

The Coal Authority

200 Lichfield Lane
Mansfield
Notts NG18 4RG
Tel: 0345 7626 848
DX 716176 Mansfield 5
www.coal.gov.uk

Public Health England

Public information access office
Public Health England, Wellington House
133-155 Waterloo Road, London, SE1 8UG
https://www.gov.uk/government/organisations/public-health-england
Email: **enquiries@phe.gov.uk**
Main switchboard: 020 7654 8000

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Standard Terms and Conditions

Groundsure's Terms and Conditions can be viewed online at this link:
https://www.groundsure.com/terms-and-conditions-may25-2018

EmapSite

Masdar House, 1 Reading Road,
Eversley, RG27 0RP

Groundsure Reference:	EMS-495823_667162
Your Reference:	EMS_495823_667162
Report Date	20 Aug 2018
Report Delivery Method:	Email - pdf

Enviro Insight

Address: AP Burt Site, First Avenue Industrial Estate, First Avenue, Portbury Docks, Bristol, BS20 7XS,

Dear Sir/ Madam,

Thank you for placing your order with Groundsure. Please find enclosed the **Groundsure Enviro Insight** as requested.

If you would like further assistance regarding this report then please contact the emapsite customer services team on 0118 9736883 quoting the above report reference number.

Yours faithfully,

emapsite customer services team

Enc.
Groundsure Enviroinsight

Enviro Insight

Address:	**AP Burt Site, First Avenue Industrial Estate, First Avenue, Portbury Docks, Bristol, BS20 7XS,**
Date:	**20 Aug 2018**
Reference:	**EMS-495823_667162**
Client:	**EmapSite**

NW N NE

W E

SW S SE

Aerial Photograph Capture date: 05-Oct-2016
Grid Reference: 350195,176487
Site Size: 1.09ha

Report Reference: EMS-495823_667162
Client Reference: EMS_495823_667162

Contents Page

Overview of Findings

For further details on each dataset, please refer to each individual section in the main report as listed. Where the database has been searched a numerical result will be recorded. Where the database has not been searched '-' will be recorded.

Section 1: Historical Industrial Sites	On-site	0-50	51-250	251-500
1.1 Potentially Contaminative Uses identified from 1:10,000 scale mapping	1	1	5	4
1.2 Additional Information – Historical Tank Database	1	4	19	13
1.3 Additional Information – Historical Energy Features Database	0	0	13	8
1.4 Additional Information – Historical Petrol and Fuel Site Database	0	0	0	0
1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database	0	0	0	0
1.6 Historical military sites	0	0	0	0
1.7 Potentially Infilled Land	0	1	3	5

Section 2: Environmental Permits, Incidents and Registers	On-site	0-50m	51-250	251-500
2.1 Industrial Sites Holding Environmental Permits and/or Authorisations				
2.1.1 Records of historic IPC Authorisations	0	0	0	0
2.1.2 Records of Part A(1) and IPPC Authorised Activities	0	0	8	0
2.1.3 Records of Red List Discharge Consents	0	0	0	0
2.1.4 Records of List 1 Dangerous Substances Inventory sites	0	0	0	0
2.1.5 Records of List 2 Dangerous Substances Inventory sites	0	0	0	0
2.1.6 Records of Part A(2) and Part B Activities and Enforcements	1	0	2	4
2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations	0	0	0	0
2.1.8 Records of Licensed Discharge Consents	0	0	6	17
2.1.9 Records of Water Industry Referrals	0	0	0	0
2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site	0	0	0	1
2.2 Records of COMAH and NIHHS sites	1	0	0	1
2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents				
2.3.1 National Incidents Recording System, List 2	0	0	0	4
2.3.2 National Incidents Recording System, List 1	0	0	0	0
2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990	0	0	0	0

Section 3: Landfill and Other Waste Sites	On-site	0-50m	51-250	251-500	501-1000	1000-1500
3.1 Landfill Sites						
3.1.1 Environment Agency/Natural Resources Wales Registered Landfill Sites	0	0	0	0	0	Not searched
3.1.2 Environment Agency/Natural Resources Wales Historic Landfill Sites	0	1	1	0	2	1
3.1.3 BGS/DoE Landfill Site Survey	0	0	0	0	0	0
3.1.4 Records of Landfills in Local Authority and Historical Mapping Records	0	0	0	0	0	0
3.2 Landfill and Other Waste Sites Findings						
3.2.1 Operational and Non-Operational Waste Treatment, Transfer and Disposal Sites	0	0	0	0	Not searched	Not searched
3.2.2 Environment Agency/Natural Resources Wales Licensed Waste Sites	0	0	0	4	0	0

Section 4: Current Land Use	On-site	0-50m	51-250	251-500
4.1 Current Industrial Sites Data	1	1	16	Not searched
4.2 Records of Petrol and Fuel Sites	0	0	0	0
4.3 National Grid Underground Electricity Cables	0	0	0	0
4.4 National Grid Gas Transmission Pipelines	0	0	0	0

Section 5: Geology	
5.1 Records of Artificial Ground and Made Ground present beneath the study site	Identified
5.2 Records of Superficial Ground and Drift Geology present beneath the study site	Identified
5.3 For records of Bedrock and Solid Geology beneath the study site see the detailed findings section.	

Section 6: Hydrogeology and Hydrology	0-500m
6.1 Records of Strata Classification in the Superficial Geology within 500m of the study site	Identified
6.2 Records of Strata Classification in the Bedrock Geology within 500m of the study site	Identified

	On-site	0-50m	51-250	251-500	501-1000	1000-2000
6.3 Groundwater Abstraction Licences (within 2000m of the study site)	0	0	0	8	0	2
6.4 Surface Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	0
6.5 Potable Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	0
6.6 Source Protection Zones (within 500m of the study site)	0	0	0	0	Not searched	Not searched
6.7 Source Protection Zones within Confined Aquifer	0	0	0	0	Not searched	Not searched
6.8 Groundwater Vulnerability and Soil Leaching Potential (within 500m of the study site)	0	0	#250GWV #	#500GWV #	Not searched	Not searched

Section 6: Hydrogeology and Hydrology

	0-500m					
	On-site	0-50m	51-250	251-500	501-1000	1000-1500
6.9 Environment Agency/Natural Resources Wales information on river quality within 1500m of the study site	No	No	No	No	No	No
6.10 Ordnance Survey MasterMap Water Network entries within 500m of the site	0	2	12	134	Not searched	Not searched
6.11 Surface water features within 250m of the study site	No	Yes	Yes	Not searched	Not searched	Not searched

Section 7: Flooding

7.1 Enviroment Agency Zone 2 floodplains within 250m of the study site	Identified
7.2 Environment Agency/Natural Resources Wales Zone 3 floodplains within 250m of the study site	Identified
7.3 Risk of flooding from Rivers and the Sea (RoFRaS) rating for the study site	Very Low
7.4 Flood Defences within 250m of the study site	None identified
7.5 Areas benefiting from Flood Defences within 250m of the study site	Identified
7.6 Areas used for Flood Storage within 250m of the study site	None identified
7.7 Maximum BGS Groundwater Flooding susceptibility within 50m of the study site	Potential at Surface
7.8 BGS confidence rating for the Groundwater Flooding susceptibility areas	Moderate

Section 8: Designated Environmentally Sensitive Sites

	On-site	0-50m	51-250	251-500	501-1000	1000-2000
8.1 Records of Sites of Special Scientific Interest (SSSI)	0	0	0	0	0	6
8.2 Records of National Nature Reserves (NNR)	0	0	0	0	0	0
8.3 Records of Special Areas of Conservation (SAC)	0	0	0	0	0	4
8.4 Records of Special Protection Areas (SPA)	0	0	0	0	0	6
8.5 Records of Ramsar sites	0	0	0	0	0	6
8.6 Records of Ancient Woodlands	0	0	0	0	0	5
8.7 Records of Local Nature Reserves (LNR)	0	0	0	0	0	10
8.8 Records of World Heritage Sites	0	0	0	0	0	0
8.9 Records of Environmentally Sensitive Areas	0	0	0	0	0	0

Section 8: Designated Environmentally Sensitive Sites	On-site	0-50m	51-250	251-500	501-1000	1000-2000
8.10 Records of Areas of Outstanding Natural Beauty (AONB)	0	0	0	0	0	0
8.11 Records of National Parks	0	0	0	0	0	0
8.12 Records of Nitrate Sensitive Areas	0	0	0	0	0	0
8.13 Records of Nitrate Vulnerable Zones	0	0	0	0	0	0
8.14 Records of Green Belt land	0	0	0	0	2	0

Section 9: Natural Hazards

9.1 Maximum risk of natural ground subsidence	Moderate
9.1.1 Maximum Shrink-Swell hazard rating identified on the study site	Low
9.1.2 Maximum Landslides hazard rating identified on the study site	Very Low
9.1.3 Maximum Soluble Rocks hazard rating identified on the study site	Negligible
9.1.4 Maximum Compressible Ground hazard rating identified on the study site	Moderate
9.1.5 Maximum Collapsible Rocks hazard rating identified on the study site	Negligible
9.1.6 Maximum Running Sand hazard rating identified on the study site	Moderate
9.2 Radon	
9.2.1 Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level?	The site is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.
9.2.2 Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment?	No radon protective measures are necessary.

Section 10: Mining

10.1 Coal mining areas within 75m of the study site	None identified
10.2 Non-Coal Mining areas within 50m of the study site boundary	None identified
10.3 Brine affected areas within 75m of the study site	None identified

Using this report

The following report is designed by Environmental Consultants for Environmental Professionals bringing together the most up-to-date market leading environmental data. This report is provided under and subject to the Terms & Conditions agreed between Groundsure and the Client. The document contains the following sections:

1. Historical Industrial Sites

Provides information on past land uses that may pose a risk to the study site in terms of potential contamination from activities or processes. Potentially Infilled Land features are also included. This search is conducted using radii of up to 500m.

2. Environmental Permits, Incidents and Registers

Provides information on Regulated Industrial Activities and Pollution Incidents as recorded by Regulatory Authorities, and sites determined as Contaminated Land. This search is conducted using radii up to 500m.

3. Landfills and Other Waste Sites

Provides information on landfills and other waste sites that may pose a risk to the study site. This search is conducted using radii up to 1500m.

4. Current Land Uses

Provides information on current land uses that may pose a risk to the study site in terms of potential contamination from activities or processes. These searches are conducted using radii of up to 500m. This includes information on potentially contaminative industrial sites, petrol stations and fuel sites as well as high pressure gas pipelines and underground electricity transmission lines.

5. Geology

Provides information on artificial and superficial deposits and bedrock beneath the study site.

6. Hydrogeology and Hydrology

Provides information on productive strata within the bedrock and superficial geological layers, abstraction licences, Source Protection Zones (SPZs) and river quality. These searches are conducted using radii of up to 2000m.

7. Flooding

Provides information on river and coastal flooding, flood defences, flood storage areas and groundwater flood areas. This search is conducted using radii of up to 250m.

8. Designated Environmentally Sensitive Sites

Provides information on the Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR), Special Areas of Conservation (SAC), Special Protection Areas (SPA), Ramsar sites, Local Nature Reserves (LNR), Areas of Outstanding Natural Beauty (AONB), National Parks (NP), Environmentally Sensitive Areas, Nitrate Sensitive Areas, Nitrate Vulnerable Zones and World Heritage Sites and Scheduled Ancient Woodland. These searches are conducted using radii of up to 2000m.

9. Natural Hazards

Provides information on a range of natural hazards that may pose a risk to the study site. These factors include natural ground subsidence and radon..

10. Mining

Provides information on areas of coal and non-coal mining and brine affected areas.

11. Contacts

This section of the report provides contact points for statutory bodies and data providers that may be able to provide further information on issues raised within this report. Alternatively, Groundsure provide a free Technical Helpline (08444 159000) for further information and guidance.

Note: Maps

Only certain features are placed on the maps within the report. All features represented on maps found within this search are given an identification number. This number identifies the feature on the mapping and correlates it to the additional information provided below. This identification number precedes all other information and takes the following format -Id: 1, Id: 2, etc. Where numerous features on the same map are in such close proximity that the numbers would obscure each other a letter identifier is used instead to represent the features. (e.g. Three features which overlap may be given the identifier “A” on the map and would be identified separately as features 1A, 3A, 10A on the data tables provided).

Where a feature is reported in the data tables to a distance greater than the map area, it is noted in the data table as “Not Shown”.

All distances given in this report are in Metres (m). Directions are given as compass headings such as N: North, E: East, NE: North East from the nearest point of the study site boundary.

1. Historical Land Use

NW N NE

W E

SW S SE

Site Outline

250
500 Search Buffers (m)

Historical 1:10,000 and 1:10,560 scale mapping

Industrial Land Use

Potentially Infilled Land

Historical 1:2,500, 1:1,250 and 1:500 scale mapping

Energy Features

Petrol Stations

Historical military sites

Tanks

Garages

1. Historical Industrial Sites

1.1 Potentially Contaminative Uses identified from 1:10,000 scale Mapping

The systematic analysis of data extracted from standard 1:10,560 and 1:10,000 scale historical maps provides the following information:

Records of sites with a potentially contaminative past land use within 500m of the search boundary: 11

ID	Distance [m]	Direction	Use	Date
1	0	On Site	Unspecified Depot	1991
2O	41	W	Refuse Heap	1979
3P	121	W	Refuse Heap	1979
4	155	S	Unspecified Works	1991
5A	160	N	Unspecified Pit	1991
6A	160	N	Unspecified Pit	1979
7	179	E	Unspecified Depot	1991
8	416	SE	Unspecified Warehouse	1991
9B	464	E	Refuse Heap	1979
10B	464	E	Refuse Heap	1991
11Q	491	N	Unspecified Wharf	1921

1.2 Additional Information – Historical Tank Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical tanks within 500m of the search boundary: 37

ID	Distance (m)	Direction	Use	Date
12	0	On Site	Unspecified Tank	1997
13C	40	S	Unspecified Tank	1989
14C	41	S	Unspecified Tank	1991
15C	42	S	Unspecified Tank	1997
16C	42	S	Unspecified Tank	1994
17D	70	S	Unspecified Tank	1989
18D	71	S	Unspecified Tank	1997
19D	71	S	Unspecified Tank	1994
20D	71	S	Unspecified Tank	1991
21E	135	N	Unspecified Tank	1989
22E	135	N	Unspecified Tank	1989
23E	135	N	Unspecified Tank	1984

24E	136	N	Unspecified Tank	1978
25F	215	S	Tanks	1989
26F	215	S	Tanks	1989
27F	217	S	Tanks	1997
28F	217	S	Tanks	1994
29F	217	S	Tanks	1991
30G	219	SW	Unspecified Tank	1997
31G	219	SW	Unspecified Tank	1995
32G	219	SW	Unspecified Tank	1995
33G	219	SW	Unspecified Tank	1992
34G	221	SW	Unspecified Tank	1990
35G	221	SW	Unspecified Tank	1990
36H	324	N	Unspecified Tank	1997
37H	324	N	Unspecified Tank	1994
38H	324	N	Unspecified Tank	1989
39H	324	N	Unspecified Tank	1989
40H	324	N	Unspecified Tank	1984
41H	325	N	Unspecified Tank	1991
42	414	S	Unspecified Tank	1997
43I	424	NE	Unspecified Tank	1997
44I	424	NE	Unspecified Tank	1994
45J	451	N	Unspecified Tank	1989
46J	451	N	Unspecified Tank	1989
47J	451	N	Unspecified Tank	1984
48J	451	N	Unspecified Tank	1978

1.3 Additional Information – Historical Energy Features Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical energy features within 500m of the search boundary: 21

ID	Distance (m)	Direction	Use	Date
49K	77	SW	Electricity Substation	1997
50K	77	SW	Electricity Substation	1994
51K	78	SW	Electricity Substation	1989
52K	78	SW	Electricity Substation	1991
53D	82	S	Electricity Substation	1989
54D	82	S	Electricity Substation	1997
55D	82	S	Electricity Substation	1994
56D	83	S	Electricity Substation	1991
57L	200	S	Electricity Substation	1989
58L	200	S	Electricity Substation	1989

59L	201	S	Electricity Substation	1997
60L	201	S	Electricity Substation	1994
61L	201	S	Electricity Substation	1991
62M	379	E	Electricity Substation	1997
63M	379	E	Electricity Substation	1994
64M	381	E	Electricity Substation	1991
65N	408	SE	Gas Governor	1994
66N	408	SE	Gas Governor	1991
67I	421	NE	Gas Governor	1997
68I	421	NE	Gas Governor	1994
69I	421	NE	Gas Governor	1991

1.4 Additional Information – Historical Petrol and Fuel Site Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical petrol stations and fuel sites within 500m of the search boundary: 0

Database searched and no data found.

1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical garage and motor vehicle repair sites within 500m of the search boundary: 0

Database searched and no data found.

1.6 Historical military sites

Certain military installations were not noted on historic mapping for security reasons. Whilst not all military land is necessarily of concern, Groundsure has researched and digitised a number of Ordnance Factories and other military industrial features (e.g. Ordnance Depots, Munitions Testing Grounds) which may be of contaminative concern. This research was drawn from a number of different sources, and should not be regarded as a definitive or exhaustive database of potentially contaminative military installations. The boundaries of sites within this database have been estimated from the best evidence available to Groundsure at the time of compilation.

Records of historical military sites within 500m of the search boundary: 0

Database searched and no data found.

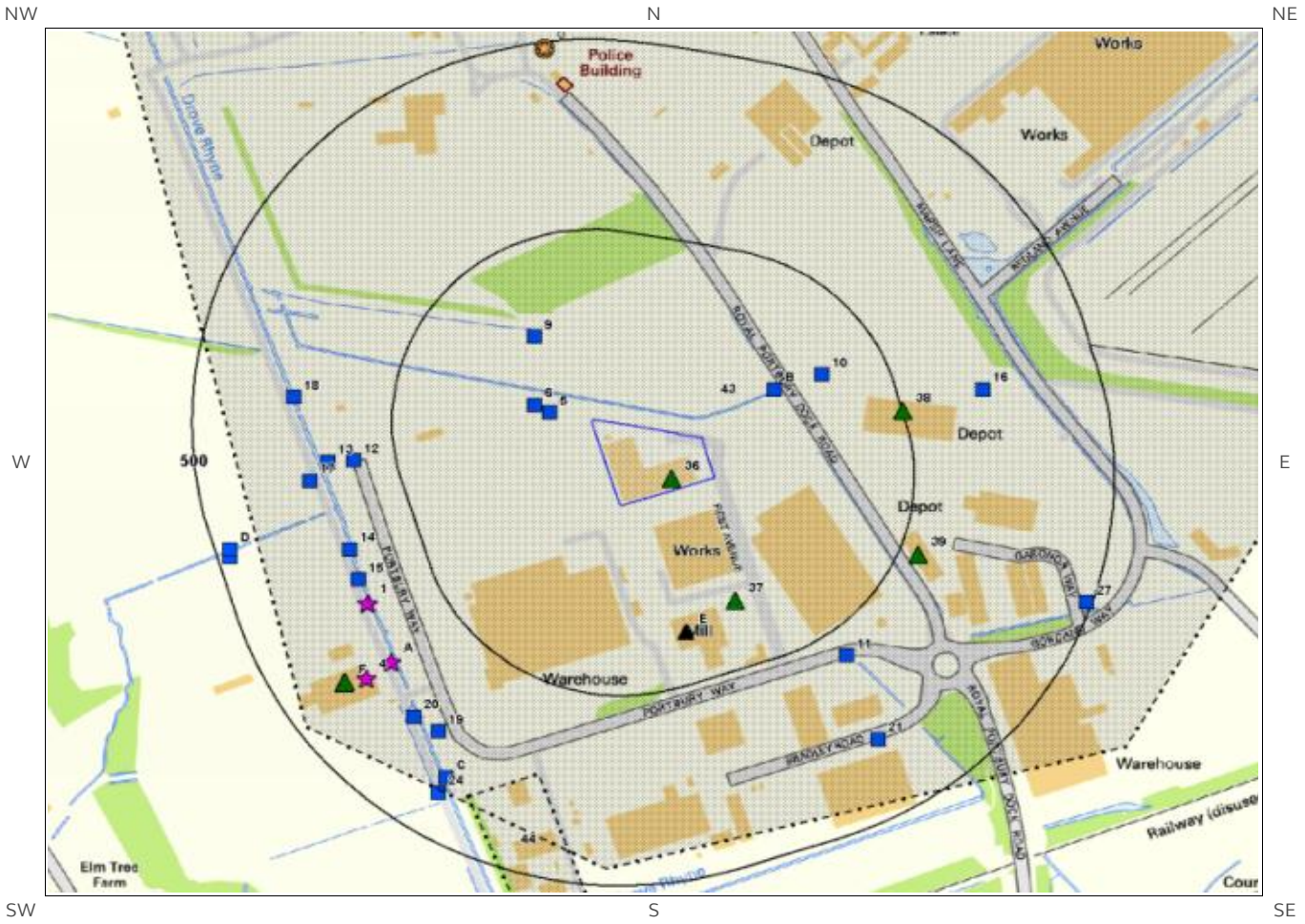
1.7 Potentially Infilled Land

Records of Potentially Infilled Features from 1:10,000 scale mapping within 500m of the study site: 9

The following Historical Potentially Infilled Features derived from the Historical Mapping information is provided by Groundsure:

ID	Distance(m)	Direction	Use	Date
70O	41	W	Refuse Heap	1979
71P	121	W	Refuse Heap	1979
72A	160	N	Unspecified Pit	1979
73A	160	N	Unspecified Pit	1991
74	365	N	Pond	1912
75	456	SE	Pond	1920
76B	464	E	Refuse Heap	1979
77B	464	E	Refuse Heap	1991
78Q	491	N	Unspecified Wharf	1921

2. Environmental Permits, Incidents and Registers Map



Site Outline

250
500
Search Buffers (m)

Recorded Pollution Incident

Dangerous Substances (List 1)

Dangerous Substances (List 2)

Water Industry Referrals

Licenced Discharge Consents

Red List Discharge Consents

RAS 3 & 4 Authorisations

Part A(1) Authorised Processes and Historic IPC Authorisations

Part A(2) and Part B Authorised Processes

COMAH / NIHHS Sites

Sites Determined as Contaminated Land

Hazardous Substance Consents and Enforcements

2. Environmental Permits, Incidents and Registers

2.1 Industrial Sites Holding Licences and/or Authorisations

Searches of information provided by the Environment Agency/Natural Resources Wales and Local Authorities reveal the following information:

2.1.1 Records of historic IPC Authorisations within 500m of the study site:

0

Database searched and no data found.

2.1.2 Records of Part A(1) and IPPC Authorised Activities within 500m of the study site:

8

The following Part A(1) and IPPC Authorised Activities are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details	
46E	184	S	350240 176260	Operator: Bocm Pauls Ltd Installation Name: Bocm Pauls Ltd Process: ANIMAL VEGETABLE AND FOOD; TREATING ETC VEGETABLE RAW MATERIALS FOR FOOD >300T/D	Permit Number: PP3131LN Original Permit Number: JP3738SW EPR Reference: - Issue Date: 22/6/2006 Effective Date: 22/6/2006 00:00:00 Last date noted as effective: 2018-03-01 Status: Superceded
47E	184	S	350240 176260	Operator: Forfarmers Uk Limited Installation Name: Bocm Pauls - Portbury Process: ASSOCIATED PROCESS	Permit Number: UP3239AS Original Permit Number: JP3738SW EPR Reference: - Issue Date: 26/3/2015 Effective Date: 26/3/2015 00:00:00 Last date noted as effective: 2018-03-01 Status: Superceded
48E	184	S	350240 176260	Operator: Forfarmers Uk Limited Installation Name: Portbury Mill - Epr/jp3738sw Process: ANIMAL VEGETABLE AND FOOD; TREATING ETC VEGETABLE RAW MATERIALS FOR FOOD >300T/D	Permit Number: HP3232YQ Original Permit Number: JP3738SW EPR Reference: - Issue Date: 9/5/2017 Effective Date: 9/5/2017 00:00:00 Last date noted as effective: 2018-03-01 Status: Effective
49E	184	S	350240 176260	Operator: Forfarmers Uk Limited Installation Name: Bocm Pauls - Portbury Process: ANIMAL VEGETABLE AND FOOD; TREATING ETC VEGETABLE RAW MATERIALS FOR FOOD >300T/D	Permit Number: UP3239AS Original Permit Number: JP3738SW EPR Reference: - Issue Date: 26/3/2015 Effective Date: 26/3/2015 00:00:00 Last date noted as effective: 2018-03-

ID	Distance (m)	Direction	NGR	Details	
					01 Status: Superceded
50E	184	S	350240 176260	Operator: Bocm Pauls Ltd Installation Name: Bocm Pauls Ltd Process: ASSOCIATED PROCESS	Permit Number: JP3738SW Original Permit Number: JP3738SW EPR Reference: - Issue Date: 5/9/2005 Effective Date: 5/9/2005 00:00:00 Last date noted as effective: 2018-03-01 Status: Superceded
51E	184	S	350240 176260	Operator: Bocm Pauls Ltd Installation Name: Bocm Pauls Ltd Process: ANIMAL VEGETABLE AND FOOD; TREATING ETC VEGETABLE RAW MATERIALS FOR FOOD >300T/D	Permit Number: JP3738SW Original Permit Number: JP3738SW EPR Reference: - Issue Date: 5/9/2005 Effective Date: 5/9/2005 00:00:00 Last date noted as effective: 2018-03-01 Status: Superceded
52E	184	S	350240 176260	Operator: Bocm Pauls Ltd Installation Name: Bocm Pauls Ltd Process: ASSOCIATED PROCESS	Permit Number: PP3131LN Original Permit Number: JP3738SW EPR Reference: - Issue Date: 22/6/2006 Effective Date: 22/6/2006 00:00:00 Last date noted as effective: 2018-03-01 Status: Superceded
53E	184	S	350240 176260	Operator: Forfarmers Uk Limited Installation Name: Portbury Mill - Epr/jp3738sw Process: ASSOCIATED PROCESS	Permit Number: HP3232YQ Original Permit Number: JP3738SW EPR Reference: - Issue Date: 9/5/2017 Effective Date: 9/5/2017 00:00:00 Last date noted as effective: 2018-03-01 Status: Effective

2.1.3 Records of Red List Discharge Consents (potentially harmful discharges to controlled waters) within 500m of the study site:

0

Database searched and no data found.

2.1.4 Records of List 1 Dangerous Substances Inventory Sites within 500m of the study site:

0

Database searched and no data found.

2.1.5 Records of List 2 Dangerous Substance Inventory Sites within 500m of the study site:

0

Database searched and no data found.

2.1.6 Records of Part A(2) and Part B Activities and Enforcements within 500m of the study site:

7

The following Part A(2) and Part B Activities are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details	
36	0	On Site	350222 176461	Address: Wiltshire Ltd, Royal Portbury Dock, BS20 7WP Process: Solvent Emissions Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified
37	165	S	350301 176300	Address: Christies Panels, Weston Super Mare, Somerset, BS23 4NY Process: Combustion & Incineration Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified
38	250	E	350511 176550	Address: Paragon Vehicle Services, Royal Portbury Dock, BS20 9XN Process: Respraying of Road Vehicles Status: Current Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified
39	275	E	350530 176361	Address: Finning (UK) Ltd, Units 1-3 Garonor Way, Gordano 19, Portbury Process: Waste Oil Burner <0.4 MW Status: New legislation applies Permit Type: Part B	Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified
40F	417	SW	349814 176193	Address: Seaking Automotive Toyota Import Centre, Royal Portbury Dock, BS20 7XN Process: Petrol Vapour Recovery Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcement Notice Date of Enforcement: No Enforcement Notice Comment: No Enforcement Notice
41F	418	SW	349813 176192	Address: Walon 2 Process: Respraying of Road Vehicles Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified
42F	418	SW	349813 176192	Address: Walon Ltd, Royal Portbury Dock Road, Portbury, Bristol, BS20 7XN Process: Respraying of Road Vehicles Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified

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2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations:

0

Database searched and no data found.

2.1.8 Records of Licensed Discharge Consents within 500m of the study site:

23

The following Licensed Discharge Consents records are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details	
5	54	W	350070 176550	Address: PLOT 28 PORTBURY WAY, ROYAL PORTBURY DOCK, BRISTOL, . Effluent Type: TRADE DISCHARGES - SITE DRAINAGE Permit Number: 100310 Permit Version: 1	Receiving Water: TRIBUTARY OF DROVE RHYNE Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY Issue date: 11/07/1997 Effective Date: 11-Jul-1997 Revocation Date: -
6	76	W	350050 176560	Address: PLOTS 38 AND 39, WEST DOCK ROAD, ROYAL PORTBURY DOCK, BRISTOL Effluent Type: TRADE DISCHARGES - SITE DRAINAGE Permit Number: 013394 Permit Version: 1	Receiving Water: DROVE RHYNE Status: NEW CONSENT, BY APPLICATION (WRA 91, SECTION 113 & SCHED 12) Issue date: 03/04/1996 Effective Date: 28-Mar-1996 Revocation Date: -
7B	110	NE	350350 176580	Address: CAR TERMINAL (E41), PORTBURY WAY, ROYAL PORTBURY DOCK, PORTBURY, BRISTOL Effluent Type: TRADE DISCHARGES - PROCESS EFFLUENT - WATER COMPANY (WTW) Permit Number: 013418 Permit Version: 1	Receiving Water: UN-NAMED WATERCOURSE Status: NEW CONSENT, BY APPLICATION (WRA 91, SECTION 113 & SCHED 12) Issue date: 08/07/1996 Effective Date: 25-Jun-1996 Revocation Date: -
8B	110	NE	350350 176580	Address: CAR TERMINAL (E41), PORTBURY WAY, ROYAL PORTBURY DOCK, PORTBURY, BRISTOL Effluent Type: TRADE DISCHARGES - PROCESS EFFLUENT - WATER COMPANY (WTW) Permit Number: 013418 Permit Version: 1	Receiving Water: UN-NAMED WATERCOURSE Status: NEW CONSENT, BY APPLICATION (WRA 91, SECTION 113 & SCHED 12) Issue date: 08/07/1996 Effective Date: 25-Jun-1996 Revocation Date: -
9	131	NW	350050 176650	Address: PLOTS 38 AND 39, WEST DOCK ROAD, ROYAL PORTBURY DOCK, BRISTOL Effluent Type: TRADE DISCHARGES - SITE DRAINAGE Permit Number: 013393 Permit Version: 1	Receiving Water: TRIB OF DROVE RHYNE Status: NEW CONSENT, BY APPLICATION (WRA 91, SECTION 113 & SCHED 12) Issue date: 03/04/1996 Effective Date: 28-Mar-1996 Revocation Date: -
10	171	NE	350410 176600	Address: PROTON CARS (UK) LIMITED, PDI SITE, WESTERN INTERCEPTOR, MARSH LANE, ROYAL PORTBURY DOCK, PILL, BRISTOL, AVON Effluent Type: TRADE DISCHARGES - SITE DRAINAGE Permit Number: 072035 Permit Version: 1	Receiving Water: UN-NAMED TRIB PORTBURY DITCH Status: NEW CONSENT, BY APPLICATION (WRA 91, SECTION 113 & SCHED 12) Issue date: 02/03/1993 Effective Date: 19-Feb-1993 Revocation Date: -
11	287	SE	350440 176230	Address: 1ST AVENUE, PORTBURY, BRISTOL, ., BS20 7XF Effluent Type: TRADE DISCHARGES - SITE	Receiving Water: A TRIB OF THE DROVE RHYNE Status: SURRENDERED UNDER EPR 2010

ID	Distance (m)	Direction	NGR	Details	
				DRAINAGE Permit Number: 101397 Permit Version: 1	Issue date: 17/01/2001 Effective Date: 11-Jan-2001 Revocation Date: 18/05/2013
12	302	W	349825 176487	Address: THE MITSUBISHI IMPORT CENTRE, PLOT 40, ROYAL PORTBURY DOCK, PORTBURY, BRISTOL, BS20 7XQ Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: EPRDB3798VV Permit Version: 2	Receiving Water: DROVE RHYNE Status: VARIED UNDER EPR 2010 Issue date: 21/03/2016 Effective Date: 26-Jul-2017 Revocation Date: -
13	335	W	349792 176485	Address: THE MITSUBISHI IMPORT CENTRE, PLOT 40, ROYAL PORTBURY DOCK, PORTBURY, BRISTOL, BS20 7XQ Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: EPRDB3798VV Permit Version: 1	Receiving Water: DROVE RHYNE Status: NEW ISSUED UNDER EPR 2010 Issue date: 21/03/2016 Effective Date: 21-Mar-2016 Revocation Date: 25/07/2017
14	339	W	349820 176370	Address: PLOT 28 PORTBURY WAY, ROYAL PORTBURY DOCK, BRISTOL, . Effluent Type: TRADE DISCHARGES - SITE DRAINAGE Permit Number: 100305 Permit Version: 1	Receiving Water: THE DROVE RHYNE Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY Issue date: 11/07/1987 Effective Date: 11-Jul-1997 Revocation Date: -
15	342	W	349830 176330	Address: PLOTS 29, 30, 31 DROVE ROAD, ROYAL PORTBURY DOCK, AVONMOUTH, BRISTOL, AVON Effluent Type: TRADE DISCHARGES - SITE DRAINAGE Permit Number: 012583 Permit Version: 1	Receiving Water: DROVE RHYNE Status: NEW CONSENT, BY APPLICATION (WRA 91, SECTION 113 & SCHED 12) Issue date: 01/12/1994 Effective Date: 25-Nov-1994 Revocation Date: -
16	354	E	350610 176580	Address: PROTON CARS (UK) LIMITED, PDI SITE, WESTERN INTERCEPTOR, MARSH LANE, ROYAL PORTBURY DOCK, PILL, BRISTOL, AVON Effluent Type: TRADE DISCHARGES - SITE DRAINAGE Permit Number: 072034 Permit Version: 1	Receiving Water: UN-NAMED TRIB PORTBURY DITCH Status: NEW CONSENT, BY APPLICATION (WRA 91, SECTION 113 & SCHED 12) Issue date: 02/03/1993 Effective Date: 19-Feb-1993 Revocation Date: -
17	361	W	349770 176460	Address: CAR TERMINAL (E41), PORTBURY WAY, ROYAL PORTBURY DOCK, PORTBURY, BRISTOL Effluent Type: TRADE DISCHARGES - SITE DRAINAGE Permit Number: 072135 Permit Version: 1	Receiving Water: DROVE RHYNE Status: NEW CONSENT, BY APPLICATION (WRA 91, SECTION 113 & SCHED 12) Issue date: 13/11/1992 Effective Date: 11-Nov-1992 Revocation Date: -
18	374	W	349750 176570	Address: CAR TERMINAL (E41), PORTBURY WAY, ROYAL PORTBURY DOCK, PORTBURY, BRISTOL Effluent Type: TRADE DISCHARGES - SITE DRAINAGE Permit Number: 072136 Permit Version: 1	Receiving Water: DROVE RHYNE Status: NEW CONSENT, BY APPLICATION (WRA 91, SECTION 113 & SCHED 12) Issue date: 13/11/1992 Effective Date: 11-Nov-1992 Revocation Date: -
19	376	SW	349930 176130	Address: PORTBURY DROVE PUMPING STATION, PORTBURY WAY, ROYAL PORTBURY DOCK, PORTBURY, BRISTOL, BS20 7XN Effluent Type: SEWAGE DISCHARGES - PUMPING STATION - WATER COMPANY Permit Number: 070828 Permit Version: 1	Receiving Water: PORTBURY DROVE RHYNE Status: TEMPORARY CONSENTS (WATER ACT 1989, SECTION 113) Issue date: 07/12/1989 Effective Date: 31-Oct-1989 Revocation Date: 27/09/2010
20	380	SW	349900 176150	Address: PLOTS 29, 30, 31 DROVE ROAD, ROYAL PORTBURY DOCK, AVONMOUTH,	Receiving Water: DROVE RHYNE Status: NEW CONSENT, BY APPLICATION

ID	Distance (m)	Direction	NGR	Details	
				BRISTOL, AVON Effluent Type: TRADE DISCHARGES - SITE DRAINAGE Permit Number: 012582 Permit Version: 1	(WRA 91, SECTION 113 & SCHED 12) Issue date: 01/12/1994 Effective Date: 25-Nov-1994 Revocation Date: -
21	401	SE	350480 176120	Address: FREEMANS WAREHOUSE, PLOT 1710, PORTBURY WAY, ROYAL PORTBURY DOCK, AVONMOUTH Effluent Type: TRADE DISCHARGES - SITE DRAINAGE Permit Number: 013089 Permit Version: 1	Receiving Water: DROVE RHYNE Status: SURRENDERED UNDER EPR 2010 Issue date: 16/02/1996 Effective Date: 03-Feb-1996 Revocation Date: 23/06/2016
22C	419	SW	349940 176070	Address: PORTBURY DROVE PUMPING STATION, PORTBURY WAY, ROYAL PORTBURY DOCK, PORTBURY, BRISTOL, BS20 7XN Effluent Type: SEWAGE DISCHARGES - PUMPING STATION - WATER COMPANY Permit Number: 070828 Permit Version: 3	Receiving Water: PORTBURY DROVE RHYNE Status: VARIED UNDER EPR 2010 Issue date: 29/04/2016 Effective Date: 29-Apr-2016 Revocation Date: -
23C	419	SW	349940 176070	Address: PORTBURY DROVE PUMPING STATION, PORTBURY WAY, ROYAL PORTBURY DOCK, PORTBURY, BRISTOL, BS20 7XN Effluent Type: SEWAGE DISCHARGES - PUMPING STATION - WATER COMPANY Permit Number: 070828 Permit Version: 2	Receiving Water: PORTBURY DROVE RHYNE Status: VARIED UNDER EPR 2010 Issue date: 28/09/2010 Effective Date: 28-Sep-2010 Revocation Date: 28/04/2016
24	442	SW	349930 176050	Address: PLOT 1780, PORTBURY WEST, ROYAL PORTBURY DOCK, BRISTOL Effluent Type: TRADE DISCHARGES - PROCESS EFFLUENT - WATER COMPANY (WTW) Permit Number: 012706 Permit Version: 1	Receiving Water: DROVE RHYNE Status: REVOKED (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV Issue date: 14/09/1995 Effective Date: 06-Sep-1995 Revocation Date: 13/08/2008
25D	482	W	349670 176370	Address: TOYOTA OPTIONS, DROVE ROAD, ROYAL PORTBURY DOCK, BRISTOL, . Effluent Type: TRADE DISCHARGES - SITE DRAINAGE Permit Number: 100698 Permit Version: 1	Receiving Water: TRIB OF THE DROVE RHYNE Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY Issue date: 23/12/1998 Effective Date: 15-Oct-1998 Revocation Date: -
26D	485	W	349670 176360	Address: TOYOTA OPTIONS, DROVE ROAD, ROYAL PORTBURY DOCK, BRISTOL, . Effluent Type: TRADE DISCHARGES - SITE DRAINAGE Permit Number: 100698 Permit Version: 1	Receiving Water: TRIB OF THE DROVE RHYNE Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY Issue date: 23/12/1998 Effective Date: 15-Oct-1998 Revocation Date: -
27	493	E	350740 176300	Address: LANE GROUP PLC, REGIONAL FREIGHT CENTRE, PORTBURY, BRISTOL, AVON, BS20 9XX Effluent Type: TRADE DISCHARGES - SITE DRAINAGE Permit Number: 013255 Permit Version: 1	Receiving Water: RIVER AVON Status: NEW CONSENT, BY APPLICATION (WRA 91, SECTION 113 & SCHED 12) Issue date: 26/01/1996 Effective Date: 26-Jan-1996 Revocation Date: -

2.1.9 Records of Water Industry Referrals (potentially harmful discharges to the public sewer) within 500m of the study site:

0

Database searched and no data found.

2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site:

1

The following records are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	Application Reference Number	NGR	Application Status	Application Date	Address	Details	Details of Enforcement Action
54G	492	N	No Details	350062 177029	Approved	No Details	First Corporate Shipping Ltd, Port and Harbour of Bristol, Bristol, England,	No Details	Enforcement: No Enforcements Notified Date of Enforcement: No Details Comment: No Details

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2.2 Dangerous or Hazardous Sites

Records of COMAH & NIHHS sites within 500m of the study site: 2

The following COMAH & NIHHS Authorisation records provided by the Health and Safety Executive are represented as polygons or buffered points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	Company	Address	Operational Status	Tier
43	0	On Site	Agriculture Bulk Services Ltd	Agriculture Bulk Services Ltd, Royal Portbury Dock, Portbury, BS20 7XL	Historical NIHHS Site	-
44	368	S	A-Gas (UK) Limited	A-Gas (UK) Limited, Portbury West, Barnyard Road, Portbury West, Bristol, North Somerset, BS20 7XH	Current COMAH Site	COMAH Lower Tier Operator

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2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents

2.3.1 Records of National Incidents Recording System, List 2 within 500m of the study site:

4

The following NIRS List 2 records are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details	
1	342	W	349841 176299	Incident Date: 21-Aug-2003 Incident Identification: 183920 Pollutant: Pollutant Not Identified Pollutant Description: Not Identified	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
2A	353	SW	349871 176222	Incident Date: 28-Feb-2003 Incident Identification: 140031 Pollutant: Contaminated Water Pollutant Description: Other Contaminated Water	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
3A	353	SW	349871 176222	Incident Date: 28-Feb-2003 Incident Identification: 140031 Pollutant: Contaminated Water Pollutant Description: Other Contaminated Water	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
4	391	SW	349840 176200	Incident Date: 24-Apr-2001 Incident Identification: 3341 Pollutant: Organic Chemicals/Products Pollutant Description: Hydrocarbons	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)

2.3.2 Records of National Incidents Recording System, List 1 within 500m of the study site:

0

Database searched and no data found.

2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990

Records of sites determined as contaminated land under Section 78R of the Environmental Protection Act 1990 are there within 500m of the study site 0

Database searched and no data found.

3. Landfill and Other Waste Sites Map

Site Outline

250 — 500 — Search Buffers (m)

EA/NRW Active Landfill

EA/NRW Historic Landfill

BGS / DoE Survey Landfill

Historic and Planned Waste Sites

EA/NRW Licensed Waste Site

Local Authority/Historical Mapping Landfill Records

3. Landfill and Other Waste Sites

3.1 Landfill Sites

3.1.1 Records from Environment Agency/Natural Resources Wales landfill data within 1000m of the study site:

0

Database searched and no data found.

3.1.2 Records of Environment Agency/Natural Resources Wales historic landfill sites within 1500m of the study site:

5

The following landfill records are represented as either points or polygons on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Details	
1	47	W		Site Address: Future Development Area Royal Portbury Dock, Bristol Waste Licence: Yes Site Reference: L/WG/T/124 Waste Type: Inert, Industrial Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: 11-May-1982 Licence Surrendered: 02-Nov-1992 Licence Holder Address: St Andrews Road, Avonmouth, Bristol Operator: - Licence Holder: Port of Bristol Authority First Recorded: 11-May-1982 Last Recorded: 09-Mar-1987
2	124	SE		Site Address: Royal Portbury Dock, Proposed Development Area Adjacent to Dock Road, Bristol, Avon Waste Licence: Yes Site Reference: S/WG/T/6 Waste Type: Inert Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: 11-May-1978 Licence Surrendered: Licence Holder Address: - Operator: - Licence Holder: - First Recorded: - Last Recorded: 31-Jul-1969
3	665	SW		Site Address: Elm Tree Farm, Portbury Waste Licence: Yes Site Reference: L/WG/T/52B Waste Type: Inert Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: 27-Apr-1979 Licence Surrendered: 29-Feb-1988 Licence Holder Address: Elm Tree Farm, Portbury, Bristol Operator: - Licence Holder: D B and R M Sedgewick First Recorded: 31-Dec-1975 Last Recorded: 31-Dec-1982
Not shown	702	S		Site Address: Priory Farm, Portbury, Bristol Waste Licence: Yes Site Reference: L/WG/T/189 Waste Type: Inert, Industrial, Commercial, Household Environmental Permitting Regulations	Licence Issue: 01-Oct-1987 Licence Surrendered: 28-Sep-1992 Licence Holder Address: Great Western House, Station Approach, Taunton, Somerset Operator: - Licence Holder: Haul Waste Limited

ID	Distance (m)	Direction	NGR	Details	
				(Waste) Reference: -	First Recorded: 31-Dec-1987 Last Recorded: 31-Mar-1991
Not shown	1297	N		Site Address: Land adjoining Royal Portbury Dock, Portbury, Bristol Waste Licence: Yes Site Reference: L/WG/T/181 Waste Type: Inert, Industrial, Household, Special Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: 23-Oct-1986 Licence Surrendered: 02-Nov-1992 Licence Holder Address: St Andrews Road, Avonmouth, Bristol Operator: - Licence Holder: Port Of Bristol First Recorded: 23-Oct-1986 Last Recorded: 02-Nov-1992

3.1.3 Records of BGS/DoE non-operational landfill sites within 1500m of the study site:

0

Database searched and no data found.

3.1.4 Records of Landfills from Local Authority and Historical Mapping Records within 1500m of the study site:

0

Database searched and no data found.

3.2 Other Waste Sites

3.2.1 Records of waste treatment, transfer or disposal sites within 500m of the study site:

0

Database searched and no data found.

3.2.2 Records of Environment Agency/Natural Resources Wales licensed waste sites within 1500m of the study site:

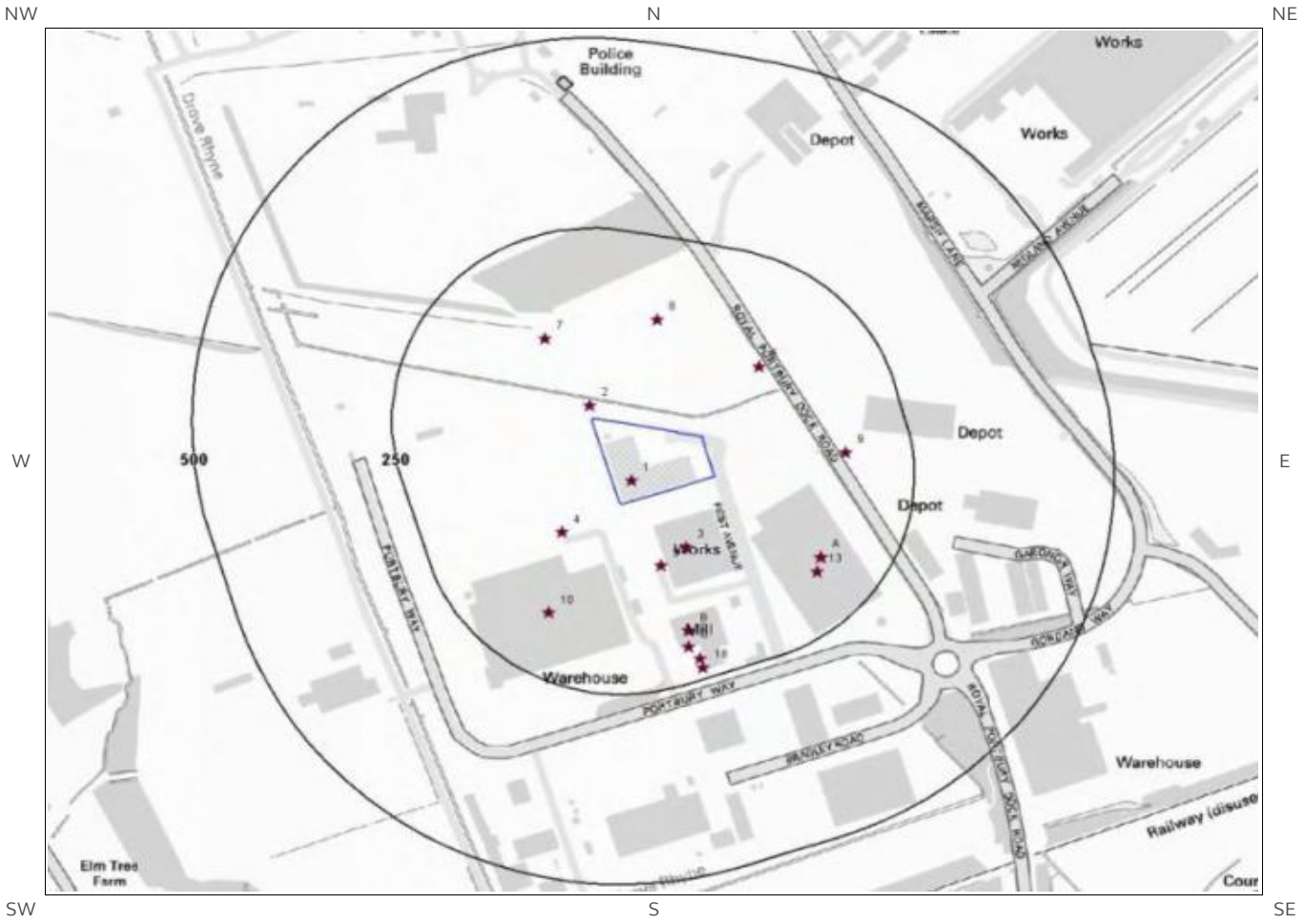
4

The following waste treatment, transfer or disposal sites records are represented as points on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Details	
6A	490	S	350050 175950	Site Address: A - Gas (U K) Ltd, Banyard Road, Portbury West, Bristol, Avon, BS20 7XH Type: Physical Treatment Facility Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: AGA002 EPR reference: EA/EPR/BP3390FS/V004	Issue Date: 18/07/2005 Effective Date: - Modified: 24/08/2012 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: A - Gas (U K) Ltd

ID	Distance (m)	Direction	NGR	Details	
				Operator: A - Gas (U K) Ltd Waste Management licence No: 26163 Annual Tonnage: 135.0	Correspondence Address: -
7A	490	S	350050 175950	Site Address: A - Gas Waste Refrigerant Recovery Facility, Banyard Road, Portbury West, Bristol, Avon, BS20 7XH Type: Physical Treatment Facility Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: AGA002 EPR reference: EA/EPR/BP3390FS/V003 Operator: A - Gas (U K) Ltd Waste Management licence No: 26163 Annual Tonnage: 135.0	Issue Date: 18/07/2005 Effective Date: - Modified: 26/04/2012 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: A - Gas Waste U K Ltd Correspondence Address: -
8A	490	S	350050 175950	Site Address: Banyard Road, Portbury West, Bristol, BS20 7XH Type: Physical Treatment Facility Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: AGA002 EPR reference: - Operator: A-gas (U K) Ltd Waste Management licence No: 26163 Annual Tonnage: 0.0	Issue Date: 18/07/2005 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: A-gas Waste Refrigerent Recovery Facility Correspondence Address: Banyard Road, Portbury West, Bristol, BS20 7XH
9A	490	S	350050 175950	Site Address: A - Gas (U K) Ltd, Banyard Road, Portbury West, Bristol, Avon, BS20 7XH Type: Physical Treatment Facility Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: AGA002 EPR reference: EA/EPR/BP3390FS/V006 Operator: A - Gas (U K) Limited Waste Management licence No: 26163 Annual Tonnage: 11500.0	Issue Date: 18/07/2005 Effective Date: - Modified: 30/08/2016 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: A - Gas (U K) Ltd Correspondence Address: -

4. Current Land Use Map



Site Outline

Search Buffers (m)

Current Industrial Sites

Petrol & Fuel Sites

Electricity Transmission Cables

Gas Transmission Pipelines

4. Current Land Uses

4.1 Current Industrial Data

Records of potentially contaminative industrial sites within 250m of the study site: 18

The following records are represented as points on the Current Land Uses map.

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
1	0	On Site	Works	350172 176460	BS20	Unspecified Works Or Factories	Industrial Features
2	18	N	Pylon	350119 176559	BS20	Electrical Features	Infrastructure and Facilities
3	77	S	Works	350239 176372	BS20	Unspecified Works Or Factories	Industrial Features
4	81	SW	Electricity Sub Station	350085 176392	BS20	Electrical Features	Infrastructure and Facilities
5	91	S	Electricity Sub Station	350208 176348	BS20	Electrical Features	Infrastructure and Facilities
6	117	NE	Pylon	350331 176610	BS20	Electrical Features	Infrastructure and Facilities
7	122	NW	Pylon	350063 176647	BS20	Electrical Features	Infrastructure and Facilities
8	142	N	Depot	350204 176672	BS20	Container and Storage	Transport, Storage and Delivery
9	167	E	Pylon	350439 176497	BS20	Electrical Features	Infrastructure and Facilities
10	168	SW	Warehouse	350068 176286	BS20	Container and Storage	Transport, Storage and Delivery
11A	169	SE	Pullman	350408 176359	Garonor Way, Royal Portbury Dock, Portbury, Bristol, BS20 7XE	Vehicle Repair, Testing and Servicing	Repair and Servicing
12A	169	SE	D S Smith Packaging	350408 176359	First Avenue, Royal Portbury Dock, Portbury, Bristol, BS20 7XR	Packaging	Industrial Products
13	178	SE	Works	350403 176340	BS20	Unspecified Works Or Factories	Industrial Features
14B	183	S	For Farmers	350242 176262	First Avenue, Royal Portbury Dock, Portbury, Bristol, BS20 7XS	Animal Feeds, Pet Foods, Hay and Straw	Foodstuffs
15B	183	S	B O C M Pauls Ltd	350242 176262	First Avenue, Royal Portbury Dock, Portbury, Bristol, BS20 7XS	Animal Feeds, Pet Foods, Hay and Straw	Foodstuffs
16C	203	S	Electricity Sub Station	350243 176241	BS20	Electrical Features	Infrastructure and Facilities
17C	222	S	Tank	350257 176226	BS20	Tanks (Generic)	Industrial Features
18	234	S	Tank	350261 176214	BS20	Tanks (Generic)	Industrial Features

4.2 Petrol and Fuel Sites

Records of petrol or fuel sites within 500m of the study site: 0

Database searched and no data found.

4.3 National Grid High Voltage Underground Electricity Transmission Cables

This dataset identifies the high voltage electricity transmission lines running between generating power plants and electricity substations. The dataset does not include the electricity distribution network (smaller, lower voltage cables distributing power from substations to the local user network). This information has been extracted from databases held by National Grid and is provided for information only with no guarantee as to its completeness or accuracy. National Grid do not offer any warranty as to the accuracy of the available data and are excluded from any liability for any such inaccuracies or errors.

Records of National Grid high voltage underground electricity transmission cables within 500m of the study site: 0

Database searched and no data found.

4.4 National Grid High Pressure Gas Transmission Pipelines

This dataset identifies high-pressure, large diameter pipelines which carry gas between gas terminals, power stations, compressors and storage facilities. The dataset does not include the Local Transmission System (LTS) which supplies gas directly into homes and businesses. This information has been extracted from databases held by National Grid and is provided for information only with no guarantee as to its completeness or accuracy. National Grid do not offer any warranty as to the accuracy of the available data and are excluded from any liability for any such inaccuracies or errors.

Records of National Grid high pressure gas transmission pipelines within 500m of the study site: 0

Database searched and no data found.

5. Geology

5.1 Artificial Ground and Made Ground

The database has been searched on site, including a 50m buffer.

Lex Code	Description	Rock Type
MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT

5.2 Superficial Ground and Drift Geology

The database has been searched on site, including a 50m buffer.

Lex Code	Description	Rock Type
TFD-XCZ	TIDAL FLAT DEPOSITS	CLAY AND SILT

5.3 Bedrock and Solid Geology

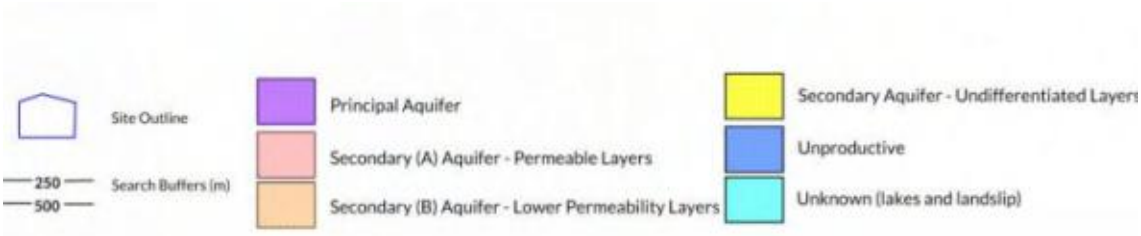
The database has been searched on site, including a 50m buffer.

Lex Code	Description	Rock Type
MMG-MDHA	MERCIA MUDSTONE GROUP	MUDSTONE AND HALITE-STONE

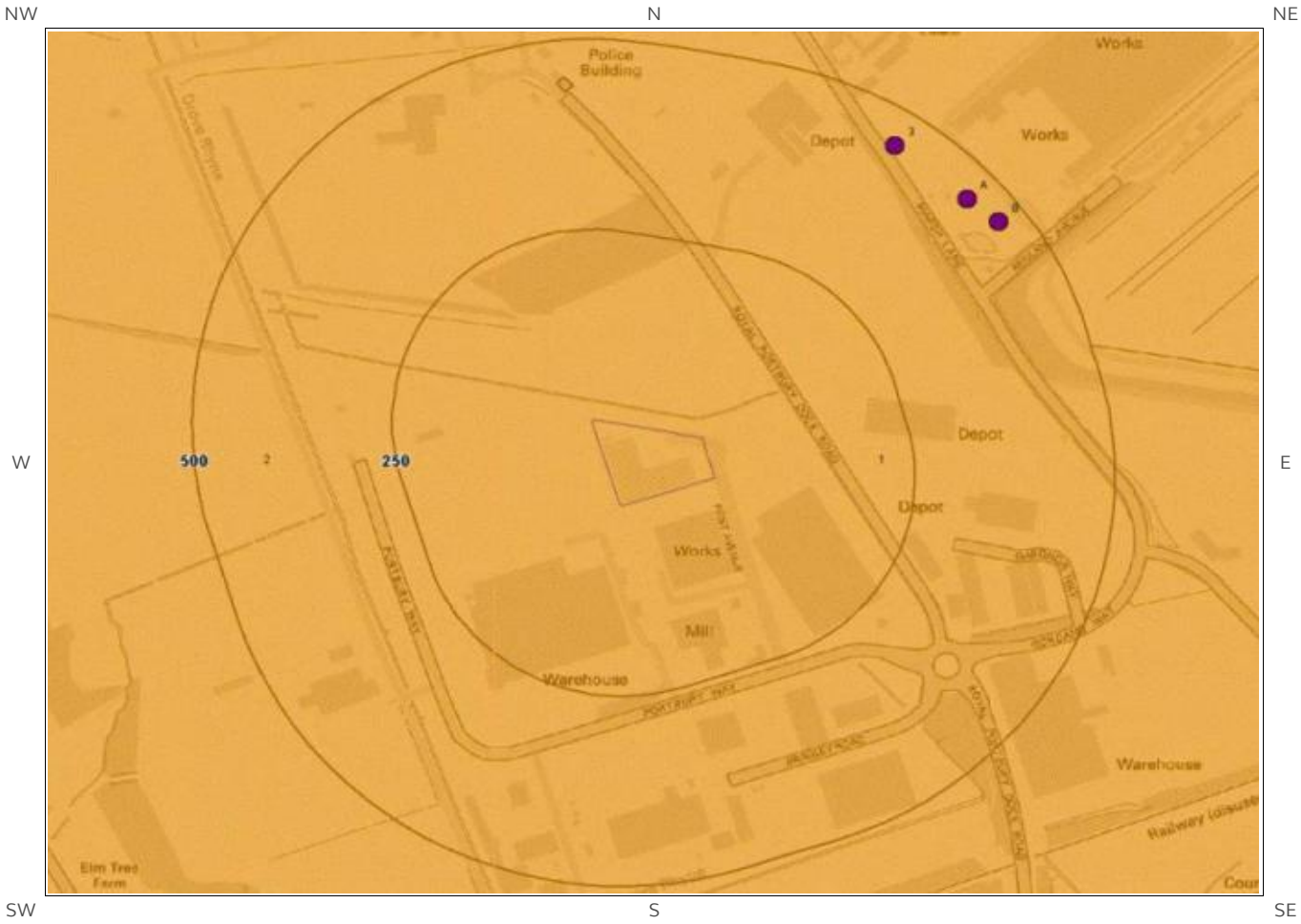
(Derived from the BGS 1:50,000 Digital Geological Map of Great Britain)

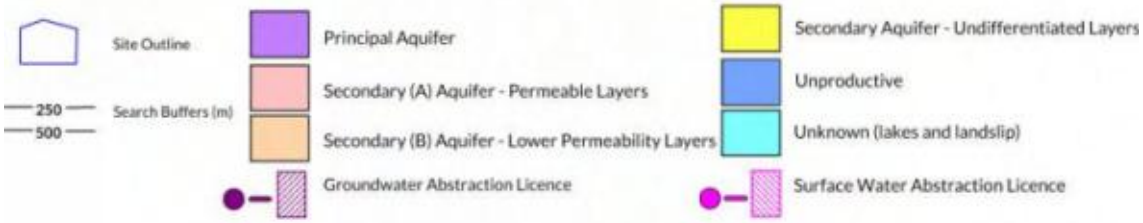
6 Hydrogeology and Hydrology

6a. Aquifer Within Superficial Geology

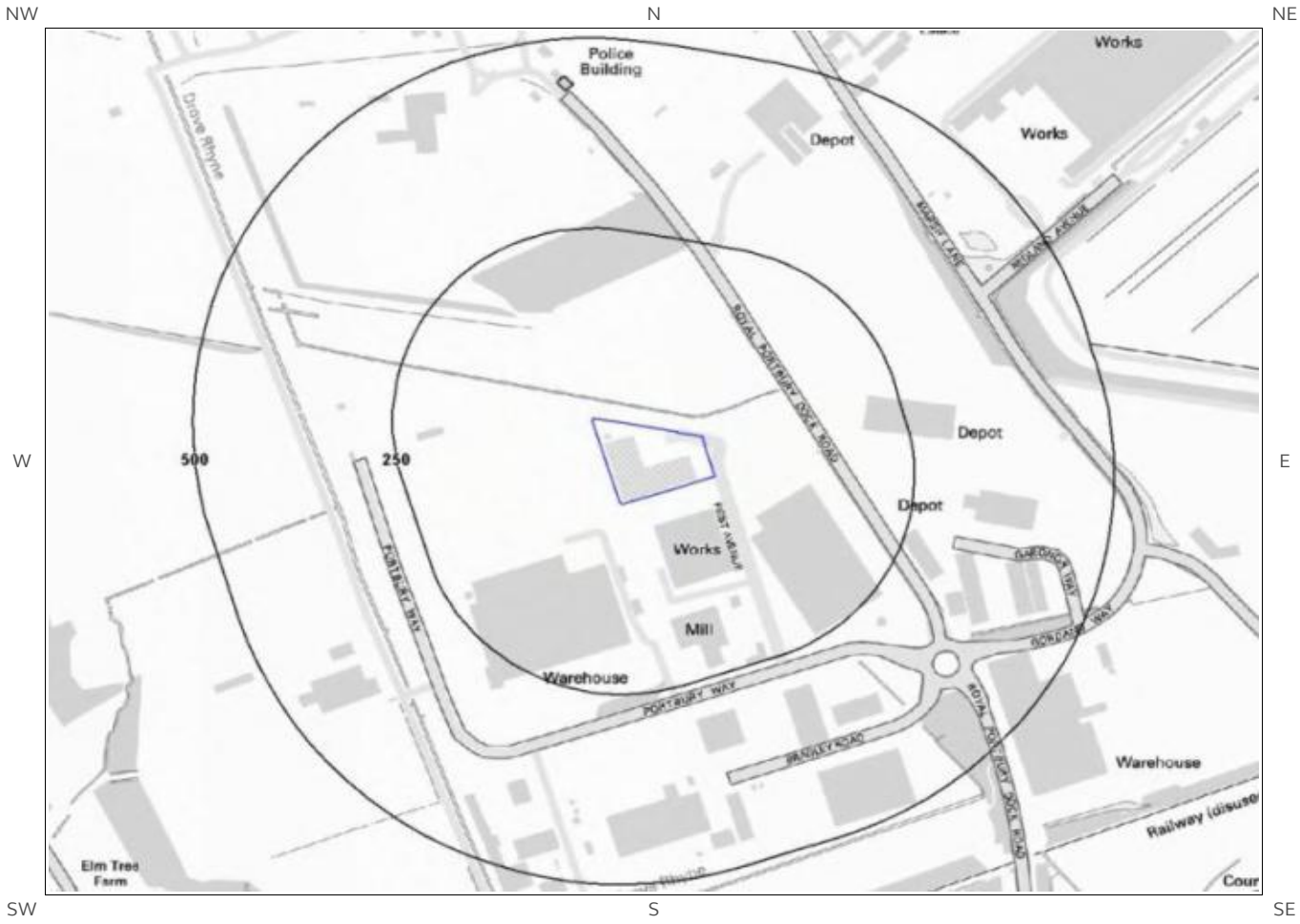


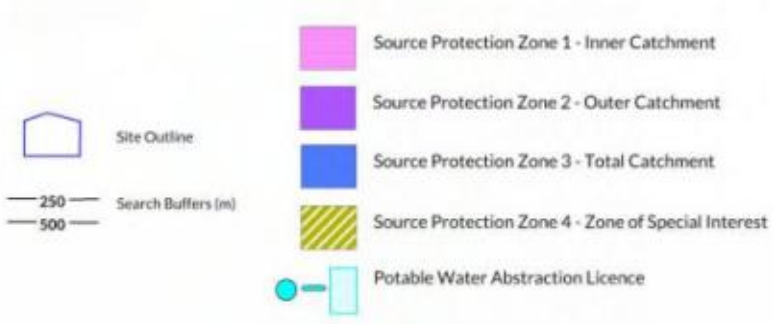
6b. Aquifer Within Bedrock Geology and Abstraction Licences



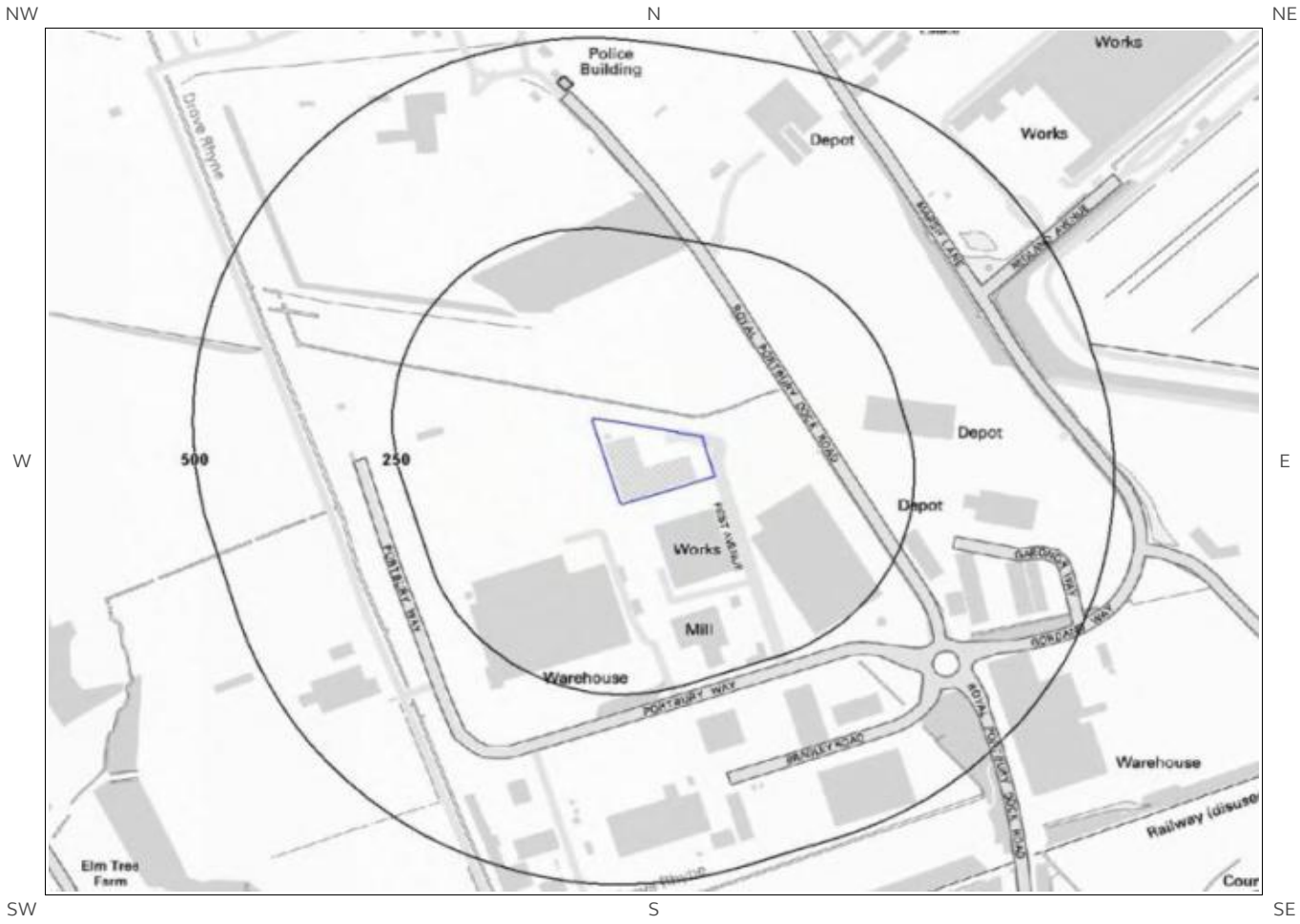


6c. Hydrogeology – Source Protection Zones and Potable Water Abstraction Licences





6d. Hydrogeology – Source Protection Zones within confined aquifer



6e. Hydrology – Watercourse Network and River Quality

NW N NE

W E

SW S SE

6.Hydrogeology and Hydrology

6.1 Aquifer within Superficial Deposits

Records of strata classification within the superficial geology at or in proximity to the property Yes

From 1 April 2010, the Environment Agency/Natural Resources Wales's Groundwater Protection Policy has been using aquifer designations consistent with the Water Framework Directive. For further details on the designation and interpretation of this information, please refer to the Groundsure Enviro Insight User Guide.

The following aquifer records are shown on the Aquifer within Superficial Geology Map (6a):

ID	Distance (m)	Direction	Designation	Description
9	0	On Site	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow
10	123	W	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow
4	195	NE	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
1	376	S	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	495	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

6.2 Aquifer within Bedrock Deposits

Records of strata classification within the bedrock geology at or in proximity to the property Yes

From 1 April 2010, the Environment Agency/Natural Resources Wales's Groundwater Protection Policy has been using aquifer designations consistent with the Water Framework Directive. For further details on the designation and interpretation of this information, please refer to the Groundsure Enviro Insight User Guide.

The following aquifer records are shown on the Aquifer within Bedrock Geology Map (6b):

ID	Distance (m)	Direction	Designation	Description
1	0	On Site	Secondary B	Predominantly lower permeability layers which may store/yield limited amounts of groundwater due to localised features such as fissures, thin permeablehorizons and weathering. These are generally the water-bearing parts of the former non-aquifers
2	123	W	Secondary B	Predominantly lower permeability layers which may store/yield limited amounts of groundwater due to localised features such as fissures, thin permeablehorizons and weathering. These are generally the water-bearing parts of the former non-aquifers

6.3 Groundwater Abstraction Licences

Groundwater Abstraction Licences within 2000m of the study site — Identified

The following Abstraction Licences records are represented as points, lines and regions on the Aquifer within Bedrock Geology Map (6b):

ID	Distance (m)	Direction	NGR	Details	
3	452	NE	350500 176900	Status: Historical Licence No: 16/52/016/G/029 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - Fresh Point: Woodspring Data Type: Point Name: La Farge Plasterboard Ltd	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: N75 Original Start Date: 7/6/1992 Expiry Date: - Issue No: 100 Version Start Date: 7/2/1995 Version End Date:
4A	455	NE	350590 176830	Status: Active Licence No: 16/52/016/G/029 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: Ground Water - Fresh Point: Lafarge Borehole "a" Data Type: Point Name: Etex Building Performance Limited	Annual Volume (m^3): 230000 Max Daily Volume (m^3): 660 Original Application No: NPS/WR/025211 Original Start Date: 7/6/1992 Expiry Date: - Issue No: 102 Version Start Date: 9/1/2017 Version End Date:
5A	455	NE	350590 176830	Status: Historical Licence No: 16/52/016/G/029 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - Fresh Point: Lafarge Borehole ""a"" Data Type: Point Name: Lafarge Plasterboard Ltd	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: N75 Original Start Date: 7/6/1992 Expiry Date: - Issue No: 100 Version Start Date: 1/1/1999 Version End Date:
6A	455	NE	350590 176830	Status: Historical Licence No: 16/52/016/G/029 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - Fresh Point: "lafarge Borehole ""a""" Data Type: Point Name: Lafarge Plasterboard Ltd	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: N75 Original Start Date: 7/6/1992 Expiry Date: - Issue No: 100 Version Start Date: 1/1/1999 Version End Date:
7B	466	NE	350630 176800	Status: Active Licence No: 16/52/016/G/029 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: Ground Water - Fresh Point: Lafarge Borehole "b" Data Type: Point Name: Etex Building Performance Limited	Annual Volume (m^3): 230000 Max Daily Volume (m^3): 660 Original Application No: NPS/WR/025211 Original Start Date: 7/6/1992 Expiry Date: - Issue No: 102 Version Start Date: 9/1/2017 Version End Date:
8B	466	NE	350630 176800	Status: Historical Licence No: 16/52/016/G/029 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - Fresh Point: "lafarge Borehole ""b""" Data Type: Point Name: Lafarge Plasterboard Ltd	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: N75 Original Start Date: 7/6/1992 Expiry Date: - Issue No: 100 Version Start Date: 1/1/1999 Version End Date:

ID	Distance (m)	Direction	NGR	Details	
9B	466	NE	350630 176800	Status: Historical Licence No: 16/52/016/G/029 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - Fresh Point: Borehole Two At Lafarge Plaster Board Data Type: Point Name: La Farge Plasterboard Ltd	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: N75 Original Start Date: 7/6/1992 Expiry Date: - Issue No: 100 Version Start Date: 7/2/1995 Version End Date:
10B	466	NE	350630 176800	Status: Historical Licence No: 16/52/016/G/029 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - Fresh Point: Lafarge Borehole ""b"" Data Type: Point Name: Lafarge Plasterboard Ltd	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: N75 Original Start Date: 7/6/1992 Expiry Date: - Issue No: 100 Version Start Date: 1/1/1999 Version End Date:
Not shown	1027	SE	350830 175600	Status: Historical Licence No: 16/52/016/G/028 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - Fresh Point: "borehole, Easton-in-gordano" Data Type: Point Name: Welcome Break Group Ltd	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: 16/52/016/G/028 Original Start Date: 31/5/1991 Expiry Date: - Issue No: 100 Version Start Date: 3/9/1998 Version End Date:
Not shown	1027	SE	350830 175600	Status: Active Licence No: 16/52/016/G/028 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: Ground Water - Fresh Point: Borehole, Easton-in-gordano Data Type: Point Name: Welcome Break Group Ltd	Annual Volume (m^3): 35040 Max Daily Volume (m^3): 96 Original Application No: 16/52/016/G/028 Original Start Date: 31/5/1991 Expiry Date: - Issue No: 100 Version Start Date: 3/9/1998 Version End Date:

6.4 Surface Water Abstraction Licences

Surface Water Abstraction Licences within 2000m of the study site — None identified

Database searched and no data found.

6.5 Potable Water Abstraction Licences

Potable Water Abstraction Licences within 2000m of the study site — None identified

Database searched and no data found.

6.6 Source Protection Zones

Source Protection Zones within 500m of the study site — None identified

Database searched and no data found.

6.7 Source Protection Zones within Confined Aquifer

Source Protection Zones within the Confined Aquifer within 500m of the study site — None identified

Historically, Source Protection Zone maps have been focused on regulation of activities which occur at or near the ground surface, such as prevention of point source pollution and bacterial contamination of water supplies. Sources in confined aquifers were often considered to be protected from these surface pressures due to the presence of a low permeability confining layer (e.g. glacial till, clay). The increased interest in subsurface activities such as onshore oil and gas exploration, ground source heating and cooling requires protection zones for confined sources to be marked on SPZ maps where this has not already been done.

Database searched and no data found.

6.8 Groundwater Vulnerability and Soil Leaching Potential

Environment Agency/Natural Resources Wales information on groundwater vulnerability and soil leaching potential within 500m of the study site — Identified

Distance (m)	Direction	Classification	Soil Vulnerability Category	Description
239	NE	Minor Aquifer/Intermediate Leaching Potential	I1	Soils which can possibly transmit a wide range of pollutants.

6.9 River Quality

Environment Agency/Natural Resources Wales information on river quality within 1500m of the study site — None identified

6.9.1 Biological Quality:

Database searched and no data found.

6.9.2 Chemical Quality:

Database searched and no data found.

6.10 Ordnance Survey MasterMap Water Network

Ordnance Survey MasterMap Water Network entries within 500m of the study site

This watercourse information is provided by Ordnance Survey MasterMap Water Network. The data provides a detailed centre line following the curve of the waterway precisely, so all distances provided in the report should be understood as measurements to the centreline rather than a measurement to the nearest point of the watercourse. Underground watercourses are inferred from entry and exit points so caution is advised in using these to indicate precise locations of underground watercourses when planning site investigation and development.

The following Ordnance Survey MasterMap Water Network records are represented on the Hydrology Map (6e):

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
1	24 N	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 2.2
11	24 N	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 2.2
2	132 E	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
3	132 NE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
12	132 E	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
13	132 NE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
4	143 NW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
14	143 NW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
5	168 N	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: Underground Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
15	168	-	Inland river not influenced	Catchment Area: Somerset Streams North

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
	N	Alternative Name: -	by normal tidal action.	Relationship to Ground Level: Underground Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
6	183 N	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
16	183 N	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
7	213 E	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
17	213 E	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
8	303 SE	Drove Rhyne Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 2.1
18	303 SE	Drove Rhyne Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 2.1
9	309 SE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
19	309 SE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
10	326 N	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
Not shown	326 N	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
11	336 W	Drove Rhyne Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 3.6
21	336 W	Drove Rhyne Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 3.6
12	337 W	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 3.6
13	337 W	Drove Rhyne Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 3.6
22	337	-	Inland river not influenced	Catchment Area: Somerset Streams North

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
	W	Alternative Name: -	by normal tidal action.	Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 3.6
23	337 W	Drove Rhyne Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 3.6
14	339 W	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: Underground Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
24	339 W	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: Underground Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
15	342 W	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: Underground Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
25	342 W	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: Underground Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
16	353 W	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 1.8
26	353 W	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 1.8
17	359 SW	Drove Rhyne Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: Underground Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
27	359 SW	Drove Rhyne Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: Underground Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
18	362 W	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 3.0
Not shown	362 W	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 3.0
19	366 SW	Drove Rhyne Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 3.0
29	366 SW	Drove Rhyne Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 3.0
20	368 SW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 3.1
21	368	Drove Rhyne	Inland river not influenced	Catchment Area: Somerset Streams North

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
	SW	Alternative Name: -	by normal tidal action.	Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 3.0
Not shown	368 SW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 3.1
Not shown	368 SW	Drove Rhyne Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 3.0
22	375 W	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: Underground Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
Not shown	375 W	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: Underground Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
23	378 NE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 3.8
33	378 NE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 3.8
24	380 N	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
Not shown	380 N	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
25	381 NE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 2.7
26	381 SE	Drove Rhyne Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: Underground Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
27	381 W	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 2.4
28	381 SE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 2.3
35	381 NE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 2.7
Not shown	381 SE	Drove Rhyne Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: Underground Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
Not	381	-	Inland river not influenced	Catchment Area: Somerset Streams North

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
shown	W	Alternative Name: -	by normal tidal action.	Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 2.4
38	381 SE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 2.3
29	383 NE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 2.7
39	383 NE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 2.7
30	384 NW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: Underground Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
Not shown	384 NW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: Underground Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
31	385 SW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: Not provided Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
Not shown	385 SW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: Not provided Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
32	389 SW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 2.2
Not shown	389 SW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 2.2
33	392 W	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 3.1
Not shown	392 W	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 3.1
34	400 NE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 7.7
44	400 NE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 7.7
35	406 NE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 2.8
Not	406	-	Inland river not influenced	Catchment Area: Somerset Streams North

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
shown	NE	Alternative Name: -	by normal tidal action.	Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 2.8
36	408 NW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
37	408 NE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 11.7
38	408 NE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 12.2
Not shown	408 NW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
47	408 NE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 11.7
48	408 NE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 12.2
39	409 W	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 3.8
Not shown	409 W	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 3.8
40	410 N	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
Not shown	410 N	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
41	411 W	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 3.1
42	411 W	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 3.1
Not shown	411 W	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 3.1
Not shown	411 W	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 3.1
43	417	-	Inland river not influenced	Catchment Area: Somerset Streams North

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
	W	Alternative Name: -	by normal tidal action.	Relationship to Ground Level: Underground Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
Not shown	417 W	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: Underground Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
44	418 SE	Drove Rhyne Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 3.0
Not shown	418 SE	Drove Rhyne Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 3.0
45	422 W	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 2.8
Not shown	422 W	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 2.8
46	427 NW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 2.8
Not shown	427 NW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 2.8
47	430 NE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 6.0
Not shown	430 NE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 6.0
48	431 W	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: Underground Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
49	431 E	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: Underground Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
Not shown	431 W	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: Underground Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
Not shown	431 E	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: Underground Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
50	436 E	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 2.6
Not	436	-	Inland river not influenced	Catchment Area: Somerset Streams North

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
shown	E	Alternative Name: -	by normal tidal action.	Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 2.6
51	439 W	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
Not shown	439 W	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
52	440 N	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
Not shown	440 N	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
53	441 W	Drove Rhyne Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 2.8
54	441 E	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: - Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 2.6
55	441 E	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 2.6
Not shown	441 W	Drove Rhyne Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 2.8
Not shown	441 E	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: - Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 2.6
Not shown	441 E	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 2.6
56	442 SE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 3.0
57	442 SE	Drove Rhyne Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 3.0
Not shown	442 SE	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 3.0
Not shown	442 SE	Drove Rhyne Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 3.0
58	446	-	Inland river not influenced	Catchment Area: Somerset Streams North

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
	W	Alternative Name: -	by normal tidal action.	Relationship to Ground Level: Underground Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
Not shown	446 W	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: Underground Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
59	447 W	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: Underground Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
60	447 E	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 2.5
Not shown	447 W	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: Underground Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
Not shown	447 E	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 2.5
61	449 SW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 4.0
62	449 E	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 2.2
Not shown	449 SW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 4.0
Not shown	449 E	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 2.2
63	450 SW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 1.3
Not shown	450 SW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 1.3
64	451 W	Drove Rhyne Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 2.6
65	451 W	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
Not shown	451 W	Drove Rhyne Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 2.6
Not	451	-	Inland river not influenced	Catchment Area: Somerset Streams North

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
shown	W	Alternative Name: -	by normal tidal action.	Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
66	452 SW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
Not shown	452 SW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
67	454 W	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 2.5
Not shown	454 W	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 2.5
68	459 W	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 3.4
Not shown	459 W	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 3.4
69	463 SW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: Underground Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
Not shown	463 SW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: Underground Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
70	464 W	Drove Rhyne Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
Not shown	464 W	Drove Rhyne Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
71	465 W	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 3.4
72	465 W	Drove Rhyne Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 3.4
Not shown	465 W	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 3.4
Not shown	465 W	Drove Rhyne Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): 3.4
73	466	-	Inland river not influenced	Catchment Area: Somerset Streams North

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
	W	Alternative Name: -	by normal tidal action.	Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
Not shown	466 W	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
74	467 SW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided
Not shown	467 SW	- Alternative Name: -	Inland river not influenced by normal tidal action.	Catchment Area: Somerset Streams North Relationship to Ground Level: On ground surface Permanence: Unclassified. Average Width in Watercourse Section (m): Not Provided

6.11 Surface Water Features

Surface water features within 250m of the study site Identified

The following surface water records are not represented on mapping:

Distance (m)	Direction
23	N
132	E
132	NE
143	NW
183	N

7a. Environment Agency/Natural Resources Wales Flood Map for Planning (from rivers and the sea)

Site Outline

100
250
Search Buffers (m)

Zone 2 Floodplain

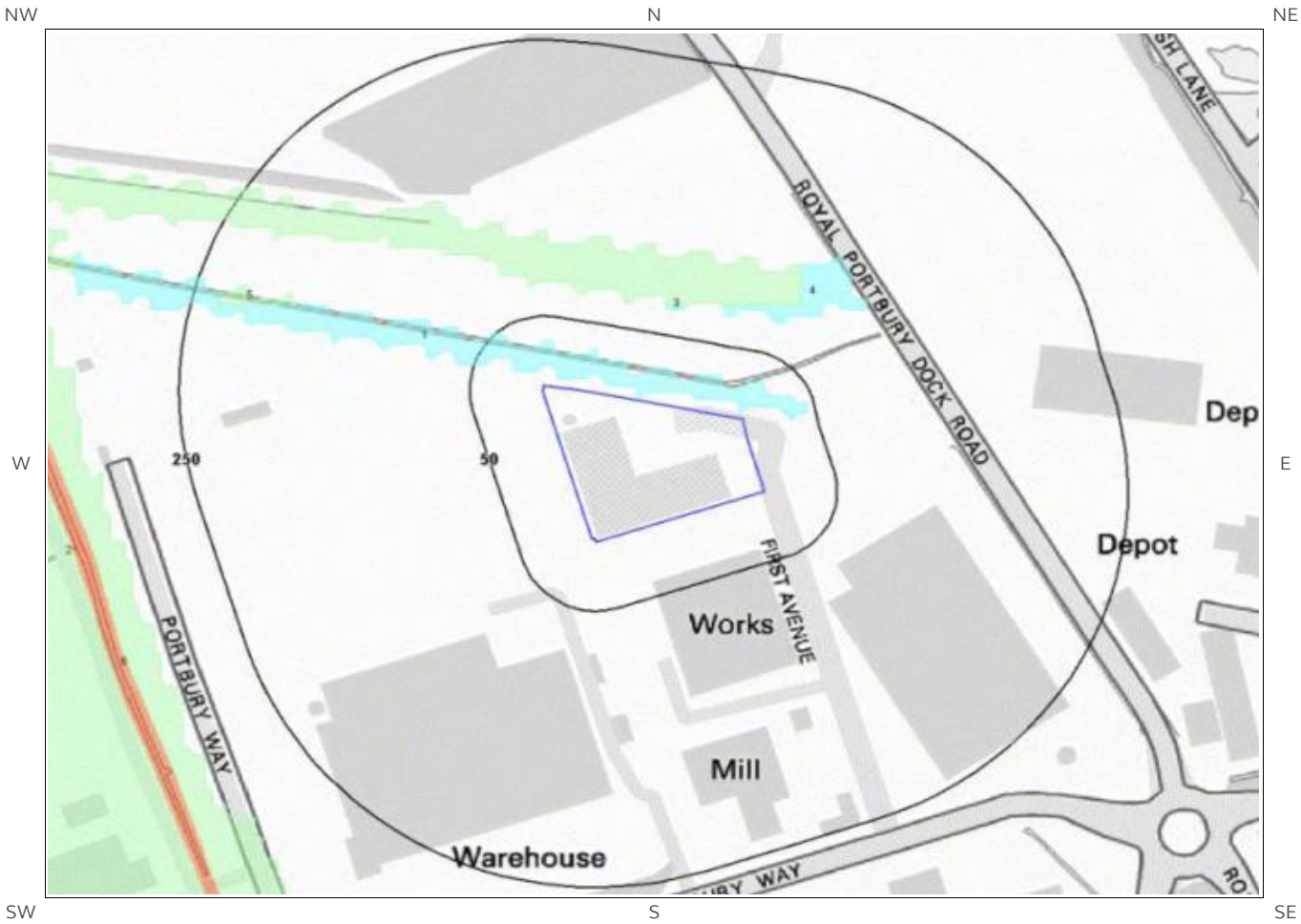
Zone 3 Floodplain

Flood Defences

Area used for Flood Storage

Area Benefiting from Flood Defences

7b. Environment Agency/Natural Resources Wales Risk of Flooding from Rivers and the Sea (RoFRaS) Map



Site Outline

100
250
Search Buffers (m)

RoFRaS Rating

- Very Low
- Low
- Medium
- High

7 Flooding

7.1 River and Coastal Zone 2 Flooding

Environment Agency/Natural Resources Wales Zone 2 floodplain within 250m — Identified

Environment Agency/Natural Resources Wales Zone 2 floodplains estimate the annual probability of flooding as between 1 in 1000 (0.1%) and 1 in 100 (1%) from rivers and between 1 in 1000 (0.1%) and 1 in 200 (0.5%) from the sea. Any relevant data is represented on Map 7a – Flood Map for Planning:

ID	Distance (m)	Direction	Update	Type
1	1	N	29-May-2018	Zone 2 - (Fluvial /Tidal Models)

7.2 River and Coastal Zone 3 Flooding

Environment Agency/Natural Resources Wales Zone 3 floodplain within 250m — Identified

Zone 3 shows the extent of a river flood with a 1 in 100 (1%) or greater chance of occurring in any year or a sea flood with a 1 in 200 (0.5%) or greater chance of occurring in any year. Any relevant data is represented on Map 7a – Flood Map for Planning.

ID	Distance (m)	Direction	Update	Type
1	85	N	30-May-2018	Zone 3 - (Fluvial Models)

7.3 Risk of Flooding from Rivers and the Sea (RoFRaS) Flood Rating

Highest risk of flooding onsite — Very Low

The Environment Agency/Natural Resources Wales RoFRaS database provides an indication of river and coastal flood risk at a national level on a 50m grid with the flood rating at the centre of the grid calculated and given above. The data considers the probability that the flood defences will overtop or breach by considering their location, type, condition and standard of protection.

RoFRaS data for the study site indicates the property is in an area with a Very Low (less than 1 in 1000) chance of flooding in any given year.

Any relevant data within 250m is represented on the RoFRaS Flood map. Data to 50m is reported in the table below.

ID	Distance (m)	Direction	RoFRas flood Risk
1	1.0	N	Low

7.4 Flood Defences

Flood Defences within 250m of the study site — None identified

Database searched and no data found.

7.5 Areas benefiting from Flood Defences

Areas benefiting from Flood Defences within 250m of the study site — Identified

7.6 Areas benefiting from Flood Storage

Areas used for Flood Storage within 250m of the study site — None identified

7.7 Groundwater Flooding Susceptibility Areas

7.7.1 British Geological Survey groundwater flooding susceptibility areas within 50m of the boundary of the study site — Identified

Clearwater Flooding or Superficial Deposits Flooding — Superficial Deposits Flooding

Notes: Groundwater flooding may either be associated with shallow unconsolidated sedimentary aquifers which overlie unproductive aquifers (Superficial Deposits Flooding), or with unconfined aquifers (Clearwater Flooding).

7.7.2 Highest susceptibility to groundwater flooding in the search area based on the underlying geological conditions

Potential at Surface

Where potential for groundwater flooding to occur at surface is indicated, this means that given the geological conditions in the area groundwater flooding hazard should be considered in all land-use planning decisions. It is recommended that other relevant information e.g. records of previous incidence of groundwater flooding, rainfall, property type, and land drainage information be investigated in order to establish relative, but not absolute, risk of groundwater flooding.

7.8 Groundwater Flooding Confidence Areas

British Geological Survey confidence rating in this result — Moderate

Notes: Groundwater flooding is defined as the emergence of groundwater at the ground surface or the rising of groundwater into man-made ground under conditions where the normal range of groundwater levels is exceeded.

The confidence rating is on a threefold scale - Low, Moderate and High. This provides a relative indication of the BGS confidence in the accuracy of the susceptibility result for groundwater flooding. This is based on the amount and precision of the information used in the assessment. In areas with a relatively lower level of confidence the susceptibility result should be treated with more caution. In other areas with higher levels of confidence the susceptibility result can be used with more confidence.

8. Designated Environmentally Sensitive Sites Map

8. Designated Environmentally Sensitive Sites

Designated Environmentally Sensitive Sites within 2000m of the study site — Identified

8.1 Records of Sites of Special Scientific Interest (SSSI) within 2000m of the study site:

6

The following Site of Special Scientific Interest (SSSI) records provided by Natural England/Natural Resources Wales are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	SSSI Name	Data Source
11	1078	NW	Severn Estuary	Natural England
12	1279	NE	Severn Estuary	Natural England
13E	1417	NE	Severn Estuary	Natural England
14	1478	NW	Severn Estuary	Natural England
Not shown	1678	N	Severn Estuary	Natural England
Not shown	1747	N	Severn Estuary	Natural England

8.2 Records of National Nature Reserves (NNR) within 2000m of the study site:

0

Database searched and no data found.

8.3 Records of Special Areas of Conservation (SAC) within 2000m of the study site:

4

The following Special Area of Conservation (SAC) records provided by Natural England/Natural Resources Wales are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	SAC Name	Data Source
1A	1078	NW	Severn Estuary (England)	Natural Resources Wales
2A	1078	NW	Severn Estuary	Natural England
3B	1279	NE	Severn Estuary (England)	Natural Resources Wales
4B	1279	NE	Severn Estuary	Natural England

8.4 Records of Special Protection Areas (SPA) within 2000m of the study site:

6

The following Special Protection Area (SPA) records provided by Natural England/Natural Resources Wales are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	SPA Name	Data Source
5C	1078	NW	Severn Estuary (England)	Natural England
6C	1078	NW	Severn Estuary	Natural England
7D	1279	NE	Severn Estuary	Natural England
8D	1279	NE	Severn Estuary (England)	Natural England
9E	1416	NE	Severn Estuary	Natural England
10E	1417	NE	Severn Estuary (England)	Natural England

8.5 Records of Ramsar sites within 2000m of the study site:

6

The following Ramsar records provided by Natural England/Natural Resources Wales are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	Ramsar Site Name	Ramsar Site Status	Data Source
17C	1078	NW	Severn Estuary	Listed	Natural England
18C	1078	NW	Severn Estuary (England)	Listed	Natural Resources Wales
19D	1279	NE	Severn Estuary	Listed	Natural England
20D	1279	NE	Severn Estuary (England)	Listed	Natural Resources Wales
21E	1417	NE	Severn Estuary	Listed	Natural England
22E	1417	NE	Severn Estuary (England)	Listed	Natural Resources Wales

8.6 Records of Ancient Woodland within 2000m of the study site:

5

The following records of Designated Ancient Woodland provided by Natural England/Natural Resources Wales are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	Ancient Woodland Name	Data Source
Not shown	1228	S	UNKNOWN	Ancient Replanted Woodland
Not shown	1396	S	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1635	SE	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1675	S	UNKNOWN	Ancient Replanted Woodland
Not shown	1677	SE	UNKNOWN	Ancient and Semi-Natural Woodland

8.7 Records of Local Nature Reserves (LNR) within 2000m of the study site:

10

The following Local Nature Reserve (LNR) records provided by Natural England/Natural Resources Wales are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	LNR Name	Data Source
Not shown	1229	SE	St George's Flower Bank	Natural England
Not shown	1297	SE	St George's Flower Bank	Natural England
Not shown	1425	SE	St George's Flower Bank	Natural England
Not shown	1433	SE	St George's Flower Bank	Natural England
Not shown	1637	SE	St George's Flower Bank	Natural England
Not shown	1690	SE	St George's Flower Bank	Natural England
Not shown	1760	SE	St George's Flower Bank	Natural England
Not shown	1761	SE	St George's Flower Bank	Natural England
Not shown	1790	SE	St George's Flower Bank	Natural England
Not shown	1876	SE	St George's Flower Bank	Natural England

8.8 Records of World Heritage Sites within 2000m of the study site:

0

Database searched and no data found.

8.9 Records of Environmentally Sensitive Areas within 2000m of the study site:

0

Database searched and no data found.

8.10 Records of Areas of Outstanding Natural Beauty (AONB) within 2000m of the study site:

0

Database searched and no data found.

8.11 Records of National Parks (NP) within 2000m of the study site:

0

Database searched and no data found.

8.12 Records of Nitrate Sensitive Areas within 2000m of the study site:

0

Database searched and no data found.

8.13 Records of Nitrate Vulnerable Zones within 2000m of the study site:

0

Database searched and no data found.

8.14 Records of Green Belt land within 2000m of the study site:

2

Green Belt data contains Ordnance Survey data © Crown copyright and database right [2015].

ID	Distance	Direction	Green Belt Name	Local Authority Name

38	614	S	Bristol and Bath Greenbelt	North Somerset
39	690	SW	Bristol and Bath Greenbelt	North Somerset

9. Natural Hazards Findings

9.1 Detailed BGS GeoSure Data

BGS GeoSure Data has been searched to 50m. The data is included in tabular format. If you require further information on geology and ground stability, please obtain a Groundsure Geo Insight, available from our website. The following information has been found:

9.1.1 Shrink Swell

Maximum Shrink-Swell* hazard rating identified on the study site — Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Ground conditions predominantly medium plasticity. Do not plant trees with high soil moisture demands near to buildings. For new build, consideration should be given to advice published by the National House Building Council (NHBC) and the Building Research Establishment (BRE). There is a possible increase in construction cost to reduce potential shrink-swell problems. For existing property, there is a possible increase in insurance risk, especially during droughts or where vegetation with high moisture demands is present.

9.1.2 Landslides

Maximum Landslide* hazard rating identified on the study site — Very Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.

9.1.3 Soluble Rocks

Maximum Soluble Rocks* hazard rating identified on the study site — Negligible

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Soluble rocks are present, but unlikely to cause problems except under exceptional conditions. No special actions required to avoid problems due to soluble rocks. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with soluble rocks.

* This indicates an automatically generated 50m buffer and site.

9.1.4 Compressible Ground

Maximum Compressible Ground* hazard rating identified on the study site — Moderate

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Significant potential for compressibility problems. Avoid large differential loadings of ground. Do not drain or de-water ground near the property without technical advice. For new build consider possibility of compressible ground in ground investigation, construction and building design. Consider effects of groundwater changes. Extra construction costs are likely. For existing property possible increase in insurance risk from compressibility, especially if water conditions or loading of the ground change significantly.

9.1.5 Collapsible Rocks

Maximum Collapsible Rocks* hazard rating identified on the study site — Negligible

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
No indicators for collapsible deposits identified. No actions required to avoid problems due to collapsible deposits. No special ground investigation required, or increased construction costs or increased financial risk due to potential problems with collapsible deposits.

9.1.6 Running Sand

Maximum Running Sand** hazard rating identified on the study site — Moderate

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Significant potential for running sand problems with relatively small changes in ground conditions. Avoid large amounts of water entering the ground (for example through pipe leakage or soak-aways). Do not dig (deep) holes into saturated ground near the property without technical advice. For new build consider the consequences of soil and groundwater conditions during and after construction. For existing property possible increase in insurance risk from running sand, for example, due to water leakage, high rainfall events or flooding.

* This indicates an automatically generated 50m buffer and site.

9.2 Radon

9.2.1 Radon Affected Areas

Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level? The site is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.

The radon data in this report is supplied by the BGS/Public Health England and is the definitive map of Radon Affected Areas in Great Britain and Northern Ireland. The dataset was created using long-term radon measurements in over 479,000 homes across Great Britain and 23,000 homes across Northern Ireland, combined with geological data. The dataset is considered accurate to 50m to allow for the margin of error in geological lines, and the findings of this report supercede any answer given in the less accurate Indicative Atlas of Radon in Great Britain, which simplifies the data to give the highest risk within any given 1km grid square. As such, the radon atlas is considered indicative, whereas the data given in this report is considered definitive.

9.2.2 Radon Protection

Is the property in an area where Radon Protection are required for new properties or extensions to existing
ones as described in publication BR211 by the Building Research Establishment? No radon protective measures are necessary.

10. Mining

10.1 Coal Mining

Coal mining areas within 75m of the study site — None identified

Database searched and no data found.

10.2 Non-Coal Mining

Non-Coal Mining areas within 50m of the study site boundary — None identified

Database searched and no data found.

10.3 Brine Affected Areas

Brine affected areas within 75m of the study site — None identified
Guidance: No Guidance Required.

Contact Details

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sales@emapsite.com

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Fax: 0115 936 3276.
Email:
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BGS Geological Hazards Reports and general geological enquiries:
enquiries@bgs.ac.uk

Environment Agency
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Web: **www.environment-agency.gov.uk**
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Public information access office
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www.coal.gov.uk

Ordnance Survey
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Tel: 08456 050505

Local Authority
Authority: North Somerset Council
Phone: 01934 888 888
Web: http://www.n-somerset.gov.uk/
Address: Town Hall, Walliscote Grove Road, Weston-super-Mare,

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Virginia Villas, High Street, Hartley Witney,
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Standard Terms and Conditions

Groundsure's Terms and Conditions can be viewed online at this link:

https://www.groundsure.com/terms-and-conditions-may25-2018

APPENDIX 04

BGS Logs

TERRESEARCH LIMITED

BOREHOLE NO. 7

ST57NW/275.

Contract Name PORTBURY

Report No. S.963/16

Ground Level + 21.7

Diameter of Boring 6" and NX

Water Struck 15' 0"

Method Shell/auger and Rotary Diamond

Standing Water Level 6' 0"

Start 3.10.66 Finish 11.10.66

REMARKS: 1 hour CHISELLING IN MARL AT 35 ft.

GR 5015.7657.

Description of Strata	Thickness	Depth	Reduced Level	Disturbed Samples	Undisturbed Samples and Insitu Tests
		0' 6"	+ 21.2	0' 6" J1643	
Topsoil	0' 6"			2' 6" J1644	
Grey mottled silty clay	5' 6"				3' 6" U1645
		6' 0"	+ 15.7		
Firm light grey mottled sandy clay	5' 0"			7' 6" J1646	8' 6" U1647
		11' 0"	+ 10.7	10' 6" J1648	11' 0" U1649
Stiff red marl	24' 0"			14' 6" J1650	16' 0" U1651
				18' 6" J1652	21' 0" U1653
				23' 0" J1654	26' 0" U1655
				28' 6" J1656	30' 0" U1657
				32' 6" J1658	33' 6" U1659
		35' 0"	- 13.3	W1660	
DIAMOND CORE DRILLING Firm red sandy clay	1' 0"			Core Length / Recovery % / Remarks	
		36' 0"	- 14.3	1' 0" — 100 — Water return lost	
Red clay	1' 8"	37' 8"	- 16.0	1' 8" 100	
Red and grey marl	0' 9"	38' 7"	- 16.8	0' 7" 78	
Fine red sand	2' 3"			2' 0" 89	
Red marl	0' 4"	40' 10"	- 19.1	0' 3" 75	
Red clay	0' 5"	41' 2"	- 19.4	0' 3" 50	Water return lost
Red marl	0' 6"	41' 8"	- 19.9	0' 4½" 75	Water return lost
Red clay with layers of marl	0' 9"	42' 2"	- 20.4	0' 7½" 83	No water return
Grey MARL	0' 7"	42' 11"	- 21.2	0' 6" 86	No water return
Red and grey marl with clay	2' 0"	43' 6"	- 21.8	1' 3" 63	No water return
Red sandy clay	2' 0"	45' 6"	- 23.8	1' 2" 59	
		47' 6"	- 25.8		
TOTALS				continued.....	

TERRESEARCH LIMITED

ST57NW/275

BOREHOLE NO. 7 (continued)

Contract Name PORTBURY

Report No. S.963/16

Ground Level + 21.7

Diameter of Boring 6" and NX

Water Struck 15' 0"

Method Shell/auger and Rotary Diamond

Standing Water Level 6' 0"

Start 3.10.66 Finish 11.10.66

REMARKS:

Description of Strata	Thickness	Depth	Reduced Level	Disturbed Samples: Core length	Disturbed Samples: Recovery %	Undisturbed Samples and Insitu Tests: Remarks
DIAMOND CORE DRILLING						
Red clay	2' 0"	49' 6"	- 27.8	0' 9"	37	Drill string down very fast
Broken grey sandy marl	4' 0"	53' 6"	- 31.8	1' 0"	25	Drill string again went down very fast
Red clay with layers of marl	2' 0"	55' 6"	- 33.8	1' 3"	63	Heavy sandy red wash
Red and grey clay with some marl	2' 0"	57' 6"	- 35.8	1' 6"	75	
Red and grey clay with some marl	2' 6"	60' 0"	- 38.3	1' 7"	63	
Red and grey clay with some marl		62' 0"	- 40.3	1' 3"	63	
Bottom of borehole		18m.				
TOTALS	62' 0"	62' 0"				

ST5NW/152-156

PRELIMINARY

BOREHOLE NO. 2

Sheet 1 of 2

Equipment & Methods
Cable tool boring, 150 mm diameter, from ground level to base.

Location No. 7390/32
Location ST5NW/152 5002 7632
ASDA, RODS, BRISTOL
GROUND LEVEL 10.5 AOD App.

Carried out for
ASDA STORES

Ground Level: 0.00 m A.O.D.
Coordinates:
Date: 13.04.88

Description	Reduced Level	Legend	Depth (Thick)	Samples/Tests: Depth	Sample Type	Sample No.	Test	Field Rec
	0.00			0.50 - 0.70	U			45 blows for 0.20m.No rec:
				1.25 - 1.70			C N=9	2/3/3/2/2/2
Firm dark brown and grey CLAY, in parts sandy, with much angular to sub rounded fine to coarse gravel, including brick, and with some cobbles. [MADE GROUND]			(4.12)	2.00 - 2.45	U	1		15 Blows
				2.50	D	2		
				2.75 - 3.20	D	3	S N=11	1/2/2/3/3/3
				3.50 - 3.95	U	4		12 Blows
				4.00	D	5		
	-4.12		4.12					
stiff becoming soft with some orange brown very silty pockets. Weathered Mair.				4.25 - 4.70	D	6	S N=10	2/2/2/3/3/2
with some orange brown very silty pockets. Weathered Mair.				5.00 - 5.45	U	7		7 Blows
Soft grey becoming dark grey organic CLAY.			(3.08)	5.50	D	8		
				5.80 - 6.25	D	9	S N=7	1/1/2/1/2/2
				6.50 - 6.95	U	10		42 Blows
with much subrounded fine to coarse gravel.				7.00	D	11		
	-7.20		7.20					
[Soft] red brown sandy CLAY with much gravel.				7.30 - 7.75			C N=11	1/2/2/3/3/3
				7.50	D	12		
				8.00 - 8.45	D	13	S N=15	2/3/3/4/5/3
Meadium dense orange brown very sandy subrounded fine to coarse GRAVEL			(2.80)					
				8.75 - 9.20	D	14	S N=12	2/2/2/4/3/3
				9.50 - 9.95	D	15	S N=19	2/3/5/5/4/5
	-10.00		10.00					

Remarks
Borehole back filled on completion.

Logged DJH
Scale 1:50
Fig

Notes:
Materials are described in accordance with Appendices. For explanation of symbols and abbreviations see Fig. 1.
All depths and reduced levels in metres. Thicknesses given in brackets in depth column.

(c) Soil Mechanics

Equipment & Methods: Cable tool boring, 150 mm diameter, from ground level to base.	Location No.: 7390/32 Location: ST57NW/153 5010 7634 ASDA, RDCS, BRISTOL GROUND LEVEL 10.5 AOD APP.	
Carried out for: ASDA STORES	Ground Level: 0.00 m A.O.D.	Coordinates: Date: 30.03.88 to 31.03.88

Description	Reduced Level	Legend	Depth (Thick)	Samples/Tests: Depth	Sample Type	Sample No.	Test	Field Rec.
	0.00							
				0.50 - 0.95	U	1		14 Blows
				1.00	D	2		
				1.25 - 1.70			S N=5	1/2/1/1/1/2
				1.25 - 1.70	B	3		No recovery
				1.80	W	4		
				2.00 - 2.45	U			7 Blows
Firm becoming very soft dark grey and brown CLAY in parts with much angular to suorounded gravel, with some oil contamination				2.00 - 2.70	B	5		No recovery
			(5.20)					
				2.75 - 3.20	D	6	S N=1	1/0/0/1/0/0
				3.40 - 3.85	D	7	S N=2	1/0/0/1/1/0
				4.20 - 4.65	U	8		5 Blows
				4.70	D	9		
with some organic contamination.								
	-5.20		5.20	5.00 - 5.45	U	10		16 Blows
				5.50	D	11		
firm with some orange very silty pockets. (weathered mass)				5.75 - 6.20	D	12	S N=8	1/2/2/2/2/2
				6.50 - 6.95	U	13		5 Blows
				7.00	D	14		
Soft becoming very soft grey organic CLAY, with occasional rootlets				7.25 - 7.70	D	15	S N=1	1/0/0/0/1/0
			(4.80)					
				8.20 - 8.65	U	16		4 Blows
				8.70	D	17		
				9.00 - 9.45	B	18	S N=0	1/0/0/0/0/0 no recovery
	-10.00		10.00	9.80 - 10.25	U	19		

Remarks

Logged DGH

Scale 1:50

Fig

Notes:
Materials are described in accordance with Appendices. For explanation of symbols and abbreviations see Fig. 1.
All depths and reduced levels in metres. Thicknesses given in brackets in depth column.

(c) Soil Mechanics

PRELIMINARY

Sheet 2 of 2

Equipment & Methods: As sheet 1

Location no. 7390/32

Location: ASDA, RDCS, BRISTOL

ST57 NW/153

Carried out for: ASDA STORES

Ground Level:

Coordinates: As sheet 1

Date:

Description	Reduced Level	Legend	Depth (Thick)	Samples/Tests: Depth	Sample Type	Sample No.	Test	Field Record
				9.00 - 10.25	U	19		42 Blows
				10.30	D	20		
				10.50 - 10.95	D	21	S N=29	4/4/6/7/7/9
in parts with many angular to subrounded lithorelics (indicates reworking of the clay).				11.50 - 11.95	D	22	S N=37	4/5/7/8/10/12
Firm becoming very stiff red brown slightly fine sandy friable CLAY.			(6.00 pen)	12.50 - 12.95	D	23	S N=40	5/5/7/9/12/14
				13.50 - 13.95	D	24	S N=44	9/11/17/22/18/1
				14.50 - 14.90	D	25	S 85	16/28/35/50 for 70mm
				15.50 - 15.88	D	26	S 104	11/17/26/32/46
BOREHOLE ENDS AT 16.00 m.	-16.00		16.00					

Water Level Observations During Boring

Date	Time	Depth of Hole (m)	Depth of Casing (m)	Depth to Water (m)	Remarks
1988					
30.03	0900	1.80	1.25	1.80	
30.03	0930	1.80	1.25	0.36	30 mins standing
31.03	0800	5.00	4.20	4.80	start of shift
31.03	0830	6.50	5.70	DRY	
31.03	0900	7.00	5.70	7.00	
31.03	0920	7.00	5.70	6.70	
31.03	1100	9.00	8.80	DRY	
31.03	1200	11.20	10.30	11.20	
31.03	1220	11.20	10.30	8.90	20 mins standing

Remarks

Borehole backfilled on completion.

Logged by: DBH

Scale: 1:50

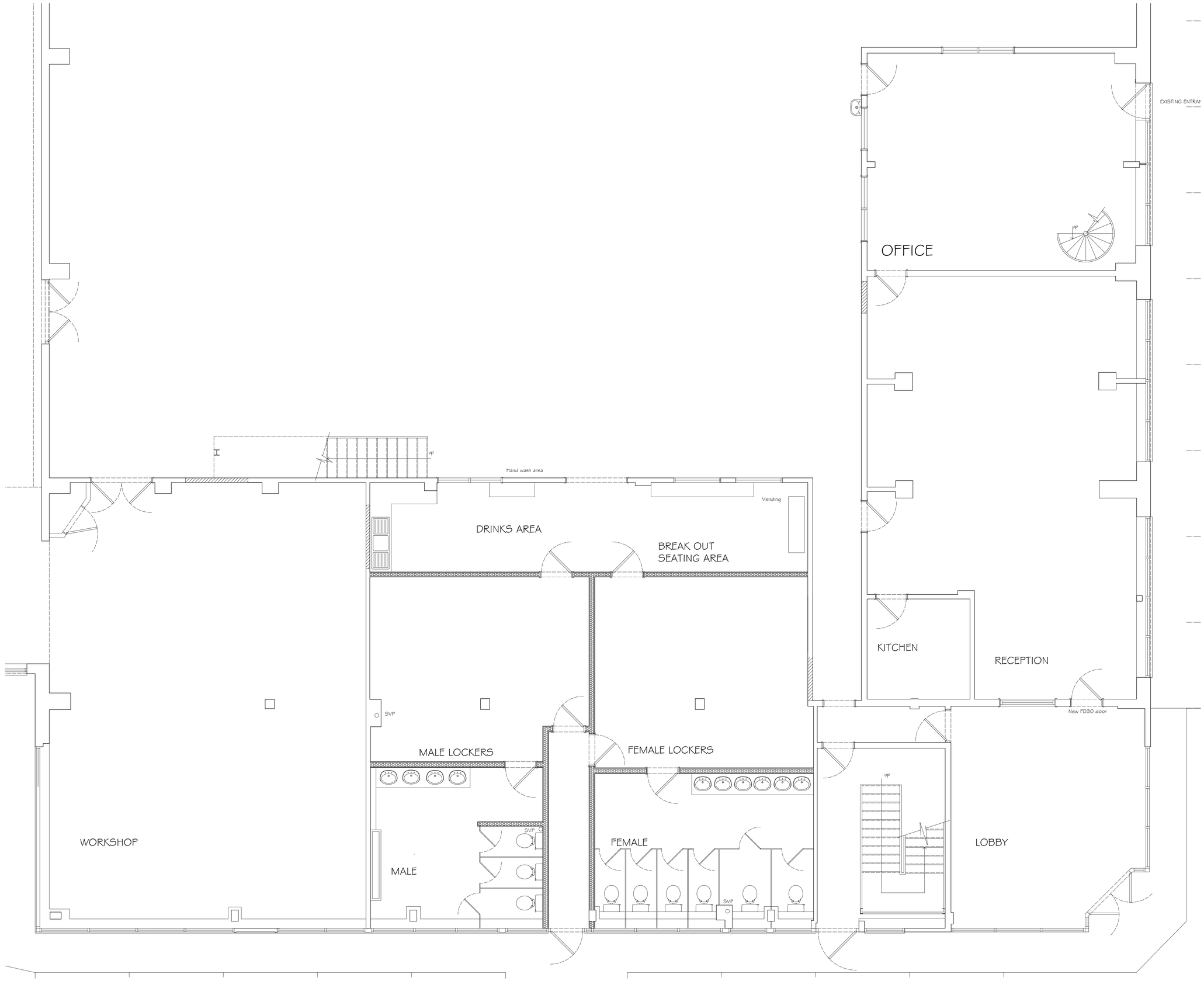
Fig.

Notes:

Materials are described in accordance with Appendices. For explanation of symbols and abbreviations see Fig. 1.
All depths and reduced levels in metres. Thicknesses given in brackets in depth column.

APPENDIX 05

Site Plans



Notes:

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Tel: 0117 923 9585

Client
A P BURT & Sons Ltd.

Job Title
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North Somerset
BS20 7XP

Drawing Title
GROUND FLOOR OFFICES
AS BUILT

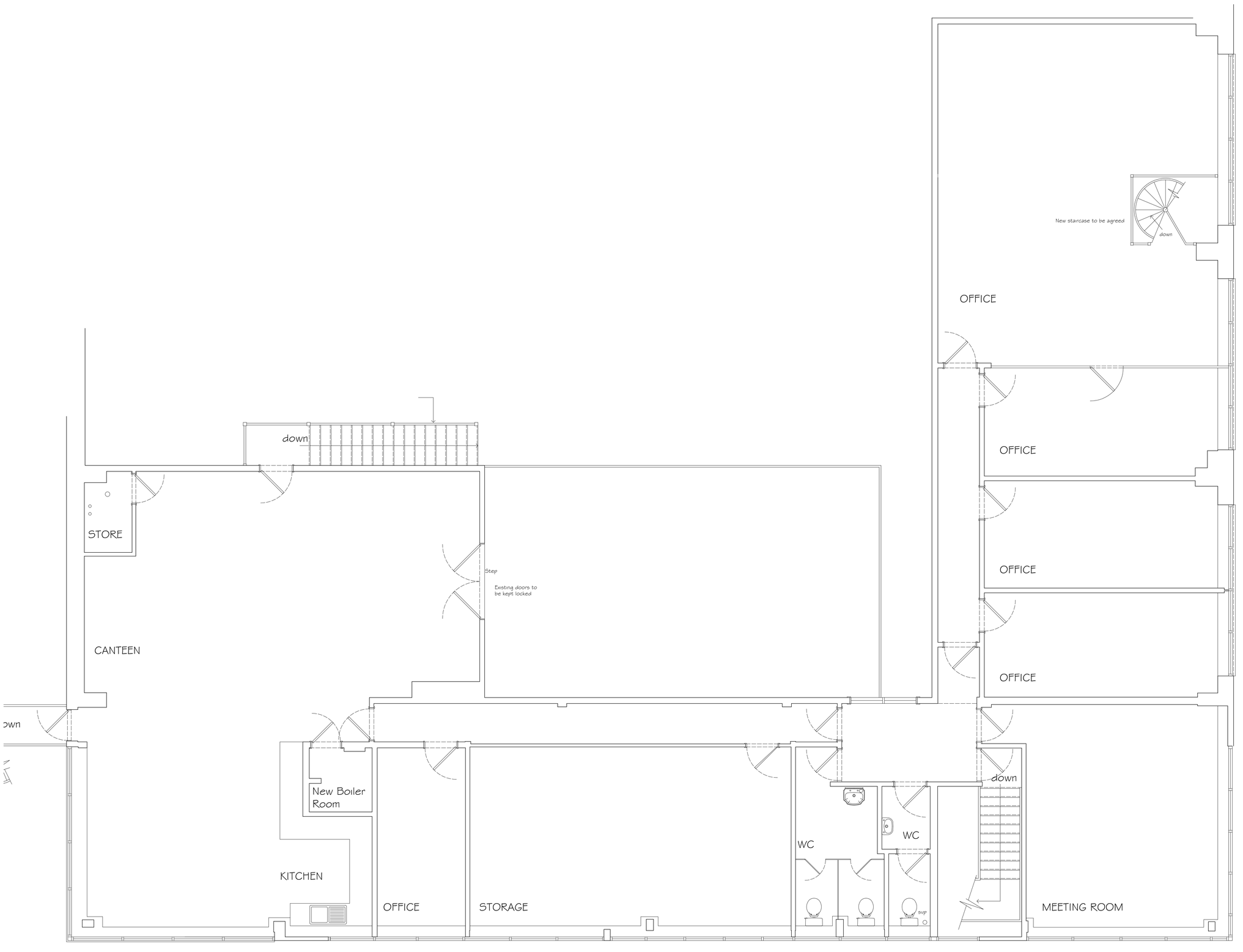
Scale
1:50 @ A1

Date
July 2014

Drawn by
A R Reed

Drg. No.
1050/07

Rev.



Notes:

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Drawing Title

FIRST FLOOR OFFICES
AS BUILT

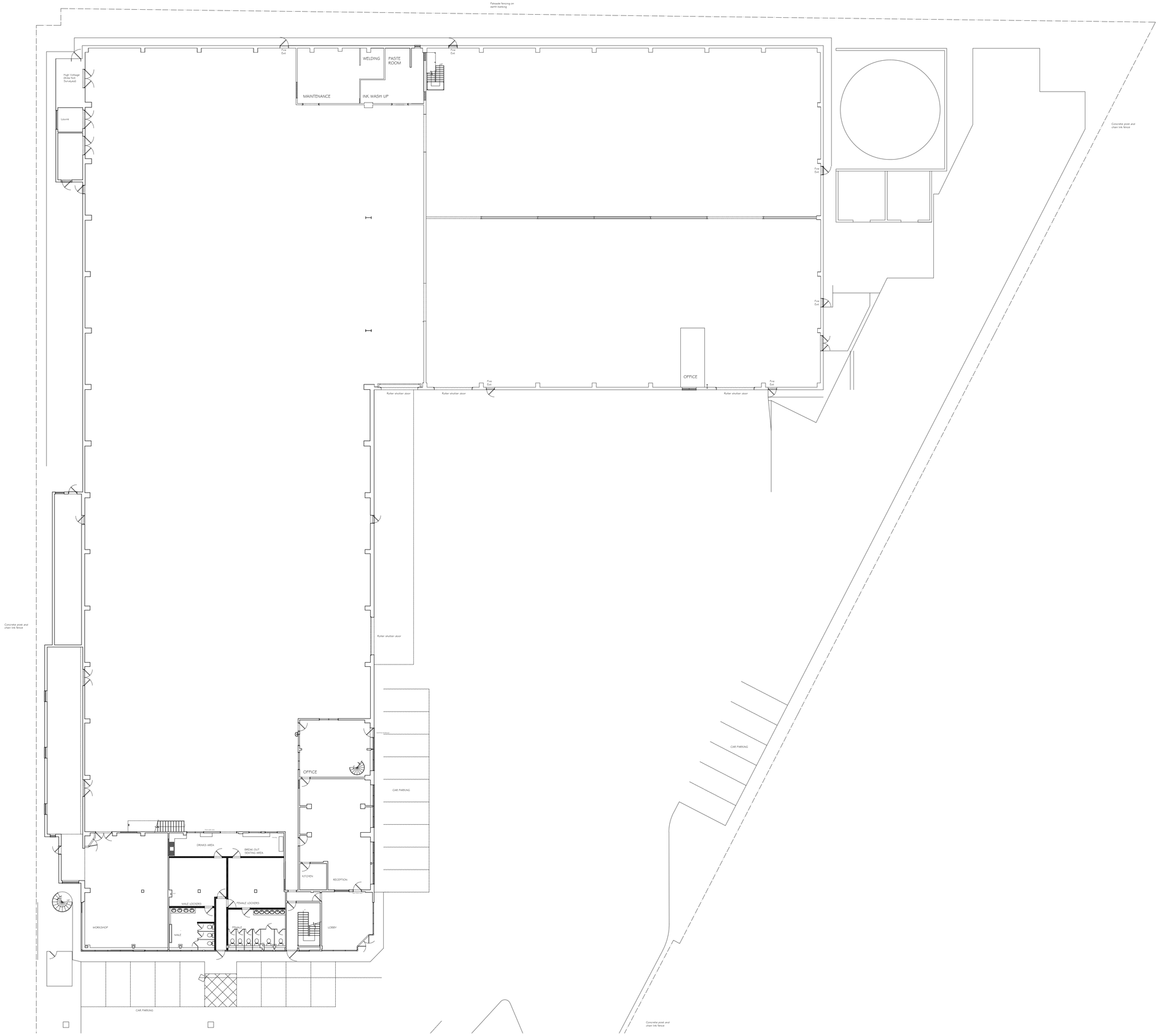
Scale 1:50 @ A1

Date July 2014

Drawn by A R Reed

Drg. No. 1050/08

Rev.



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Drawing Title
GROUND FLOOR PLAN
AS BUILT

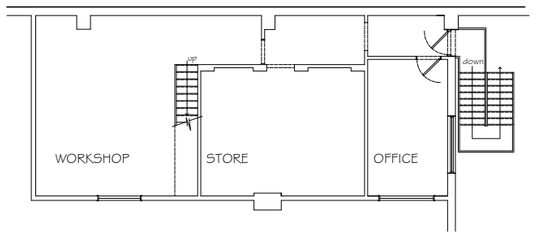
Scale 1:200 @ A1

Date July 2014

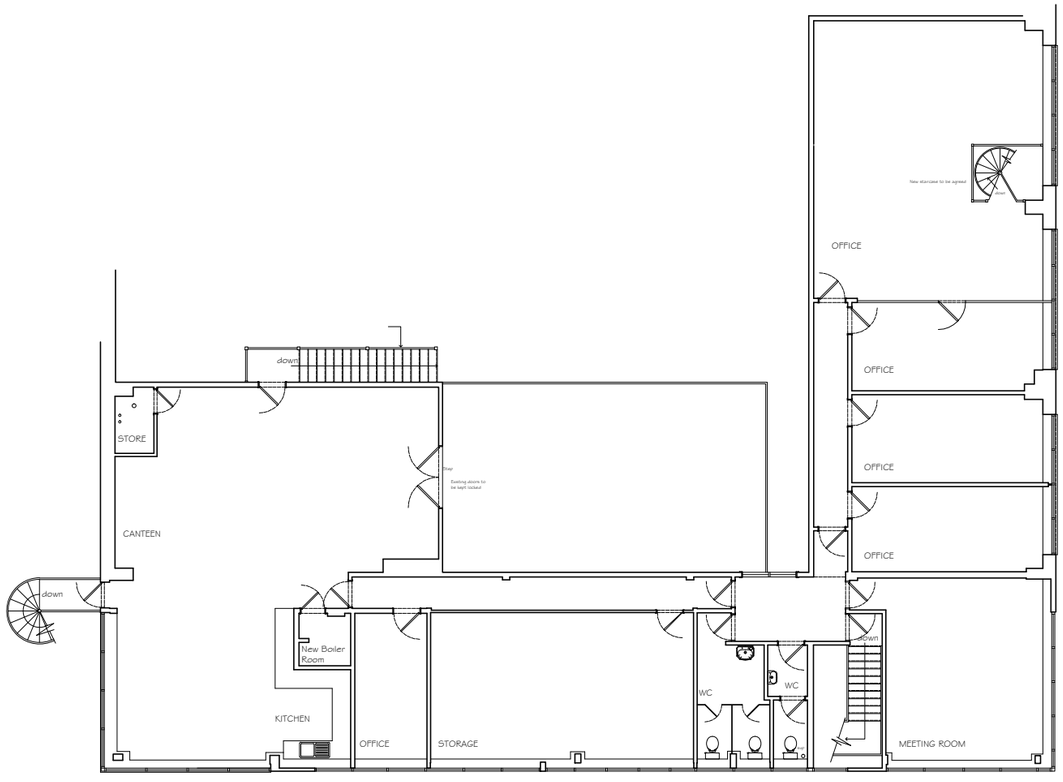
Drawn by A R Reed

Drg. No. 1050/09

Rev.



FIRST FLOOR - REAR



FIRST FLOOR - OFFICES

Notes:

job no. 3435/01	scale 1:200 @ A3
drawing no. 1050/10	revision
drawn A R Reed	date July 2014

project address
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