

Berkeley Homes (East Thames) Limited

Royal Arsenal Riverside Linear Park

Preliminary Geoenvironmental and Geotechnical Assessment





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- 1 INTRODUCTION
- 1.1 Terms of Reference
- 1.1.1 Tweedie Evans Consulting Ltd (TEC) has been appointed by Berkley Homes (East Thames) Limited to undertake a preliminary geoenvironmental and geotechnical assessment of Royal Arsenal Riverside – Linear Park. All works were undertaken in accordance with our proposal letter dated 12 May 2017 and referenced CH.1508005.014_016.01.
- 1.2 Background
- 1.2.1 The site is situated within the wider Berkeley Homes (East Thames) Ltd Royal Arsenal Riverside development in Woolwich (Figure 1). The centre of the site is situated at approximate National Grid Reference 543605, 1791550 and covers an area of approximately 1.75 hectares. The nearest postcode is SE18 6BU.
- 1.2.2 The proposed development of the Royal Arsenal Riverside – Linear Park as a whole is understood to comprise redevelopment of the site for recreational purposes with open parkland and water features (Figure 2).
- 1.2.3 For illustrative purposes, the Linear Park development has been segregated into four separate zones (Figure 3).
- 1.2.4 Zone 1, Zone 3 and Zone 4 have previously been investigated by TEC in support of the redevelopment of Linear Park (Zone 1), Phase 18-19 (Zone 3) and Waterfront Park (Zone 4), as detailed within the following reports:
- Royal Arsenal Riverside – Linear Park (Zone 1) – Preliminary Geoenvironmental and Geotechnical Assessment. Prepared for Berkeley Homes (East Thames) Ltd by TEC. Report reference 1508005.005.01 dated May 2015;
 - Waterfront Park – Preliminary Geoenvironmental Assessment. Prepared for Berkeley Homes (East Thames) Ltd by TEC. Report reference 1508016.001.01 dated August 2015; and
 - Royal Arsenal Riverside – Phase 18 – 19 – Preliminary Geoenvironmental and Geotechnical Assessment. Prepared for Berkeley Homes (East Thames) Limited by TEC. Report reference 1508005.001.01 dated May 2016.
- 1.2.5 While Zone 2 has not previously been investigated by TEC, the wider Royal Arsenal Riverside development has been extensively investigated, as detailed within the following reports:
- Royal Arsenal Riverside – Phase 8 – Preliminary Geoenvironmental and Geotechnical Assessment. Prepared for Berkeley Homes (East Thames) Limited by TEC. Report reference 1508005.001.01 dated January 2016;
 - Royal Arsenal Riverside – Phase 9 - 11 – Preliminary Geoenvironmental Assessment. Prepared for Berkeley Homes (East Thames) Limited by TEC. Report reference 1508005.002.01 dated April 2016; and
 - The Warren, Woolwich Royal Arsenal – Geo-Environmental Risk Assessment prepared for Berkeley Homes by Scott Wilson Ltd as part of the URS Environmental Statement for the Waterfront Masterplan, Royal Arsenal. Report Reference D116539/LAND dated March 2008.

- 1.2.6 These reports have been used where relevant, within the current assessment to aid in the development of the outline conceptual model. It should be noted that it is assumed that the information contained within these reports may be relied upon for the current assessment. However, TEC holds no liability with regards to the validity or accuracy of third party information. Reference should be made to these documents for full details of the site conditions and risk appraisals.
- 1.2.7 The aim of these works is to summarise the works undertaken to date across the wider Royal Arsenal Riverside – Linear Park site to provide information on geoenvironmental and engineering conditions and constraints associated with the site with regard to the proposed development.
- 1.3 Scope of Works
- 1.3.1 The scope of work undertaken as part of this report is presented below:
- Preliminary Risk Assessment. This phase of assessment involves development of an initial site conceptual model, based on desk study research and a site reconnaissance survey, in order to establish whether or not there are potentially unacceptable risks.
 - Generic Quantitative Risk Assessment. This phase of assessment involves refinement of the site conceptual model developed as part of the Preliminary Risk Assessment based on the findings of an intrusive investigation. Generic assessment criteria and assumptions, if appropriate, are used to evaluate potentially unacceptable risks. Should unacceptable risks be identified, a feasible remediation options appraisal is provided and/or a Detailed Quantitative Risk Assessment is recommended. The purpose of the Detailed Quantitative Risk Assessment is to further refine the conceptual model and use more detailed site specific information and criteria to determine whether there are unacceptable risks.
 - Preliminary Geotechnical Assessment. General recommendations regarding likely engineering abnormalities are provided on the basis of the findings of an intrusive investigation, together with preliminary foundation design recommendations for the proposed development.
- 1.3.2 The above scope of work has been undertaken in accordance with current guidance such as CLR 11 'Model Procedures for the Management of Land Contamination' (Environment Agency, 2004), BS10175+A1 (2013) and, where appropriate NHBC and Eurocode 7.
- 1.3.3 The report is presented in the following format.
- Preliminary Risk Assessment:
 - Section 2 - Site Description
 - Section 3 - Site History
 - Section 4 - Environmental Setting
 - Section 5 - Outline Conceptual Model
 - Generic Quantitative Risk Assessment:
 - Section 6 - Intrusive Investigation
 - Section 7 - Encountered Ground Conditions
 - Section 8 - Contamination Characterisation
 - Section 9 - Refined Conceptual Model

- Preliminary Geotechnical Assessment:
Section 10 - Ground Engineering
- Section 11 - Conclusions and Recommendations

2 SITE DESCRIPTION

2.1 Site Location

2.1.1 The site is located within a predominantly residential and commercial area and is bounded by the following features (Table 2.1):

Table 2.1: Site Boundary Features

Direction from Site	Description
North	The northern boundary of the site is bounded by the River Thames.
East / north-east	The eastern boundary of the site is bounded by a number of development sites associated with the Royal Arsenal Riverside including Phases 6-8 and Phase 3.
South / south-west / West	The western boundary of the site is bounded by the A206 and a number of commercial buildings including a hotel and community centre.

2.2 Land Use and Site Condition

2.2.1 A site reconnaissance survey has been undertaken across the site on a number of occasions, the most recent of which was 05 December 2017. A summary of the observations is presented below.

Current Site Use

2.2.2 The site comprises an irregular shaped parcel of land. The northern section of the site (Zone One and Zone Two) was observed to be primarily laid to soft landscaping comprising grass, shrubs and semi-mature deciduous trees as well as a number of tarmacadam, concrete and granite set pathways. This area is currently used as open recreational land.

2.2.3 The southern section of the site (Zone Three and Zone Four) is noted to comprise a combination of soft landscaping, hardcore and concrete and tarmacadam hardstanding. Zone Three is currently utilised as a car park for the nearby hotel, while Zone Four comprises part of the construction site for the nearby Phase 3.

Site Topography

2.2.4 The site is noted to slope down from the south-east of the site to the north-west towards the River Thames. Available Ordnance mapping indicates the south-east corner of the site is situated at an approximate elevation of 10.6m Above Ordnance Datum (AOD), sloping down to an approximate elevation of 4.8mAOD in the north-west corner of the site.

Fuel Storage

2.2.5 A fuel bowser was observed in Zone Three during the intrusive works undertaken within this area in March 2016. This is understood to be a temporary storage facility. No fuel spillage was observed onsite associated with this feature.

2.2.6 No further evidence of fuel storage has been observed on site.

Hazardous Chemicals and Waste Materials Storage

2.2.7 No evidence of the storage of hazardous chemicals has been observed onsite during the site reconnaissance. Notwithstanding this, internal areas of existing buildings and containers were not inspected during the site reconnaissance and therefore, the potential for localised chemical storage cannot be discounted.

2.2.8 Waste materials storage was identified in a number of areas across the site, particularly within the hotel area (Zone Three). Waste materials within this area were generally associated with the construction works.

2.2.9 Across the rest of the site area, a number of domestic sized waste bins were observed. A large refuse skip was observed within the contractor's village in the southern section of Zone Three, although the contents of these bins was not verified during the site reconnaissance.

Asbestos Containing Materials

2.2.10 No evidence of asbestos containing materials (ACM) was observed onsite during the site reconnaissance. Notwithstanding this, given the potential age of the existing onsite buildings and previous development history, the potential for ACM to be present cannot be discounted.

Site Drainage

2.2.11 Service information provided for the site recorded the presence of a number of drains associated with the welfare facilities and offices within Zone Three as well as numerous drains within Zone One and Zone Two. In addition, a number of redundant drains and manholes were recorded within the hotel area car park situated within Zone Three.

2.2.12 No areas of standing water were observed across the site during the site reconnaissance or intrusive works.

Evidence of Potential Contamination

2.2.13 No visual or olfactory evidence of gross contamination was encountered onsite during the site reconnaissance.

- 3 SITE HISTORY
- 3.1 Introduction
- 3.1.1 Details of the site history have been obtained through the review of historical Ordnance Survey (OS) mapping. The mapping reviewed is contained within Appendix A.
- 3.1.2 It is not the purpose of this section to provide a comprehensive account of development history, but only to detail those factors that are or could be relevant to the potentially contaminative history of the site and surrounds and the development of an outline site conceptual model.
- 3.2 Site History
- 3.2.1 The following represents a summary of potentially significant features recorded within the site area (Table 3.1).

Table 3.1: Site Features

Site Features	OS Dates
Earliest available mapping (1850) indicates the site contained a number of residential properties within the central and southern of the site (Zone 2, 3 and 4), separated into two areas by Rope Yard orientated in a general north-west/south-east direction. Trinity Church is depicted in the south-east corner of the site.	1850 – 1940
From 1869, residential housing is depicted within the northern section of the site (Zone 1) along Nelson Street and Rodney Street. A bath and lecture hall is depicted in the southern part of this zone.	1869 – 1916
While Rope Yard is still depicted on mapping, the area to the east of this road is noted to comprise a car park. Holy Trinity Church is noted in the south-east corner of the site as well as a number of other buildings along the boundary with Beresford Street.	1940 – 1958
From 1957, Zone 1 in the northern part of the site is depicted containing a number of buildings associated with the adjacent works (power station from 1970), while the buildings within the southern section of the site (Zone 3 and 4) are noted to have been replaced by a car park.	1957 - 1970
Rope Yard is noted in the south-eastern section of the site. Buildings, including a garage builders yard, warehouse and factory, are noted in the central western section of the site. An electrical substation is depicted within northern extent of Zone 2.	1970 – 1987
Rope Yard and Trinity Church are no longer depicted on mapping. The garage is noted to be present in the central section of the site, although many other buildings are no longer depicted.	1991 – 1996

Site Features	OS Dates
Zone 1 in the northern section of the site is depicted to comprise vacant land. A number of buildings are depicted within Zone 2, 3 and 4, although no details with regards to these buildings has been presented on mapping.	1999 – 2017

3.3 Neighbouring History

3.3.1 The land uses within the immediate vicinity of the site have been considered. Based upon the reviewed map information the following potentially significant features have been identified (Table 3.2).

Table 3.2: Surrounding Features

Surrounding Features	OS Dates	Distance	Direction
Workshop; later works and power station	1869 – 1975	~5m	West
Gas Works	1869	~100m	East
Railway	1850 - 2017	~150m	South-west
Tramway	1896 – 1916 1896	Adjacent ~110m	South-west South-west
Timber Yard; later Coal wharf and wharf	1896 – 1916	~150m	East
Coal Wharf	1896	~100m	West
Smithy	1916	~100m	West
Tank	1958	~200m	West
Builder's Yard; later works	1970 - 1996	Adjacent	East
Works	1970 – 1996	Adjacent	East
Electrical substation	1987 – 1996 1988 – 1991	~50m ~150m	North-east West
Depot	1991 – 1996	~90m	South-west

3.3.2 Limited information regarding the area to the east of the site is depicted on available mapping. This is likely attributable to the military sensitivity of this area in the past.

4 ENVIRONMENTAL SETTING

4.1 Information Sources

4.1.1 Environmental information for the site has been obtained through review of a Envirocheck® report for the site. This report provides extensive information, obtained from regulatory and commercial sources, regarding the environmental setting of the site. The Envirocheck® report has been included within Appendix B.

4.2 Geology and Hydrogeology

Geology

4.2.1 The Envirocheck® report and published mapping indicates the following sequence at the site:

Table 4.1: Geological Setting

Geological Unit	Thickness	BGS Description
Superficial Deposits	Unknown	Sand and gravel with localised lenses of silt, clay or peat and organic material
Thanet Formation	0-30m	Glauconite-coated, nodular flint at base, overlain by pale yellow-brown, fine-grained sand that can be clayey and glauconitic. Rare calcareous or siliceous sandstones.
White Chalk Subgroup	Variable	Chalk with flints and discrete marl seams, nodular chalk, sponge-rich and flint seams throughout

4.2.2 The ground investigation undertaken by TEC on the Phase 8 site adjacent to the east and Phase 9-11 Site adjacent to the west of the site reported the following generalised ground profile:

Table 4.2: Generalised Ground Profile

Depth (mbgl)	Encountered Material
0.0 – 10.1	Made Ground: Slightly clayey silty gravelly sand / sandy gravel with lenses of ash. The made ground was generally underlain by below ground obstructions varying in depths, composition and thickness within the Phase 9-11 development.
0.8 – 3.0	Reworked Natural Ground (Phase 8 only): Slightly gravelly fine grained sand. Gravel of rounded chert.
6.8 – 7.8	Superficial Deposits (BH01 Phase 9-11 only): Very dense orange-brown locally light brown, slightly gravelly, slightly clayey, silty, fine to medium sand. Gravel comprised fine rounded sandstone and occasional chert.
1.1 – 15.2	Thanet Sand Formation: Medium dense becoming dense and very dense fine grained glauconitic sand.

Depth (mbgl)	Encountered Material
9.2 - >42.0	White Chalk Subgroup: Structureless chalk (north of site only) underlain by weak becoming moderately strong chalk with depth. Gravel and cobbles of flint observed throughout.

4.2.3 The BGS estimate soil chemistry on site is reported within the Envirocheck® as follows;

- Arsenic – 15-25mg/kg
- Cadmium - <1.8mg/kg
- Chromium – 60->180mg/kg
- Lead – 150-300mg/kg
- Nickel – 15-30mg/kg

4.2.4 It is noted that the estimated soil chemistry values are below the human health screening values for a residential site end use.

Ground Gas Generation

4.2.5 In accordance with current guidance (Wilson, Card and Haines (2009) and BS8576: 2013) the ground gas generation potential of the natural strata reported to underlie the site (i.e. Head Deposits and Thanet Formation) may be classified as very low with a very low level of risk for on site development and a negligible risk of lateral migration. Therefore, the natural ground reported to underlie the site is not considered a potential source of ground gas.

4.2.6 However, Plumsted Marshes has been recorded adjacent to the east/north-east in the 1962 OS mapping. The natural soil strata with a high degradable organic content which are likely to be associated with these marshes are likely to be classified as being very low to low with a low reported level of risk for on site development and a negligible reported risk of lateral migration. As a result, these marshes are not considered to be a significant source of ground gas generation with respect to migration to this site.

4.2.7 Notwithstanding this, made ground, where present, may provide a potential source of ground gas, subject to thickness and chemical composition.

4.2.8 The site is reported to be located within a lower probability Radon Affected Area as less than 1% of properties are above the Action Level. Therefore, it is reported that no radon protection measures are reported necessary in the construction of new dwelling or extensions.

Hydrogeology

4.2.9 The Envirocheck® report and Environment Agency information records the following hydrogeological setting of the site:

Table 4.3: Hydrogeological Setting

Geological Unit	Environment Agency Aquifer Designation	Environment Agency Aquifer Classification
White Chalk Subgroup	Principal Aquifer	Layers of rock or drift deposits that have high intergranular and/or fracture permeability - meaning they usually provide a high level of water storage. They may support water supply and/or river base flow on a strategic scale. In most cases, principal aquifers are aquifers previously designated as major aquifer.
Thanet Formation	Secondary A Aquifer	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.
Kempton Park Gravels	Secondary (Undifferentiated) Aquifer	Has been assigned in cases where it has not been possible to attribute either category A or B to a rock type. In most cases, this means that the layer in question has previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type.

- 4.2.10 The soils underlying the site are reported as having a high leaching potential (U). However, this designation is reported to be based on a worst case vulnerability classification.
- 4.2.11 Any potential onsite hydraulic gradient is considered likely to follow the general topography of the area and flow in a general northerly direction towards the River Thames.
- 4.2.12 A single groundwater abstraction license is reported within proximity to the site. This relates to the abstraction of water from the chalk for domestic use only.
- 4.2.13 There are no reported licensed discharge consents or Source Protection Zones (SPZ) within proximity to the site.
- 4.2.14 The site is reportedly situated within an area considered to have limited potential for groundwater flooding to occur.
- 4.2.15 Based upon the above information the geological and hydrogeological setting of the site is considered to be of Low to Moderate Sensitivity.

4.3 Hydrology

4.3.1 The River Thames is adjacent to the site along the northern boundary, although is not reported to be within an area classified by the Environment Agency as at risk from flooding.

4.3.2 A single discharge consent to surface water is reported in proximity to the site. This relates to the discharge of other matter-surface water into the River Thames approximately 185m west of the site.

4.3.3 There are no reported surface water abstraction licenses or reported pollution incidents to controlled waters within 250m of the site.

4.3.4 Given the above information, the hydrology of the site is considered to be of Low to Moderate Sensitivity.

4.4 Environmental Data

4.4.1 Additional environmental data from the Envirocheck® report for the site is summarised in Table 4.4.

Table 4.4: Additional Environmental Data Summary

Category	0-250m	250-500m	Details
Authorisations, Incidents and Registers			
Local Authority Pollution Prevention and Controls	1	2	~230m west – PG1/14 – Petrol filling station; ~290m south – PG6/46 – Dry cleaning; and ~365m south – PG6/36 – Dry cleaning.
Registered Radioactive Substances	0	3	3No. records ~275m south – Authorisation under S13 RSA for the disposal of radioactive waste
Water Industry Act Referrals	0	1	~265m south – Processes which result in the discharge of Special Category effluents.
Waste Management			
Landfills and/or other waste management sites	3	0	~25m south – Licensed waste management facility; and 2No. records ~40m south – Registered waste transfer site accepting equal to or greater than 10,000 tonnes and less than 25 tonnes per year;
Current Land Uses			

Category	0-250m	250-500m	Details
Potentially contaminative land uses	42	51	Including: ~20m east – car body repairs (inactive); ~30m southwest – commercial cleaning services (inactive); ~40m north – printers (inactive); ~50m west – freight forwarders (inactive); ~80m southwest – laundries and laundrettes (inactive); ~100m south – cleaning services (inactive); and ~125m south-east – dry cleaners (inactive)
Petrol and fuel sites	1	0	~230m west – Shell garage (obsolete).
Ecological Designated Areas			
Site of ecological value	1	0	The adjacent River Thames has been classified as a Marine Nature Reserve by Natural England.

4.5 Engineering Considerations

4.5.1 Engineering considerations identified from the Envirocheck® report for the site are summarised below:

Table 4.5: Engineering Considerations

Hazard	Hazard Potential					
	No Hazard	Negligible	Very Low	Low	Moderate	High
Collapsible ground	X		X			
Compressible ground	X				X	
Ground dissolution			X			
Landslide			X			
Running sand			X		X	
Shrink/swell clays			X		X	
Coal mining	X					
Non-coal mining	X					

4.6 Regulatory Consultations

4.6.1 The following regulatory consultation has been undertaken with respect to possible environmental issues and ground conditions on-site and in the surrounding area.

Environmental Health– The Royal Borough of Greenwich Council

4.6.2 Environmental Health at The Royal Borough of Greenwich Council was contacted with regards to any potential contaminated land issues on site and within the surrounding area. The information provided is presented in Appendix C. A summary of the response is provided below.

- The Council are not aware of any landfills, pollution incidents or private water supplies located near the site.
- The Council hold no record of Petroleum Hydrocarbon storage for the site.
- The Council report that historical mapping for the area indicates the site to be linked to previous industrial/manufacturing activity, including the former Royal Arsenal, which is reported to have been used for munitions manufacturing and testing along with associated industries. It is further reported that some areas of the site were contaminated by this activity.
- The site is reported to have historically contained a mixture of buildings and uses including residential buildings, rope works, warehouses, factories and garages.
- Previous investigations undertaken on and in proximity to the site (see Section 4.7) reportedly indicates contaminants of potential concern (CoPC) have included heavy metals, PAH, TPH and asbestos. In addition, munitions and compounds associated with explosives and UXO may also be present.
- It has been reported that there are no specific records of unexploded ordnance in the site area but that the Woolwich Arsenal site in general was heavily bombed during the Second World War.
- While no site specific reports regarding ground gas on site are available, the Council reports the potential for methane and carbon dioxide to be generated from alluvial deposits or any hydrocarbon impacted made ground.

Building Control – Royal Borough of Greenwich Council

4.6.3 Building Control was contacted with regards to any potential foundation and ground condition issues on site and within the surrounding area. The information provided is presented in Appendix C. The A summary of the response is provided below:

- The site is part of a former Ministry of Defence plot and as a result, there is little information regarding the area available. Notwithstanding this, it has been reported that the construction to the north/north-east (Phase 6) experienced some delays due to the presence of archaeological features including foundations of buildings, cobbled streets and layers of arsenic, which may impact upon the subject site.

4.7 Previous Site Report Summary

4.7.1 Parts of the general Royal Arsenal Riverside development have been extensively investigated in the past. The following reports have been used to obtain pertinent environmental and geotechnical information associated with the proposed

development area. Reference should be made to the original documents for full details. It should be noted that it is assumed that the information contained within this report may be relied upon for the current assessment; however, Tweedie Evans Consulting Limited cannot be held responsible for the accuracy or validity of any third party information.

Phase II Geo-Environmental Site Investigation – Royal Arsenal Woolwich Phase III. Prepared for Berkeley Urban Renaissance Ltd by Resource & Environmental Consultants Ltd. Report No. 80114 dated December 2011

Introduction

- 4.7.2 The Phase 3 site area is situated to the north/north-east of the Linear Park site area. REM undertook intrusive works comprising 2No. cable percussive boreholes to a maximum depth of 20.45mbgl and 6No. window sample boreholes to a maximum depth of 4.45mbgl to aid in the development of this area.

Reported Ground Conditions

- 4.7.3 Made ground was reported across the site to a maximum observed depth of 1.9mbgl and was generally recorded to comprise tarmacadam hardstanding underlain by gravelly sand. The gravel component was reported to include brick, concrete, clinker, ash and metal.
- 4.7.4 This, in turn, was reported to be underlain by superficial deposits of gravel at depths of between 0.9mbgl and 3.1mbgl. This material was reported to comprise medium dense gravelly fine to medium sand with fine to medium gravel of angular to sub-angular flint.
- 4.7.5 The Thanet Formation, was reported to comprise very dense brown to orangish brown silty dense fine to medium sand from encountered depths of between 1.9mbgl and 15.8mbgl with a thin (approximately 0.2m) band of Bull Head Deposits recorded as grey slightly gravelly fine to medium sand reported directly beneath the Thanet Formation.
- 4.7.6 Chalk was reportedly encountered on site in two locations at a depth of 16.0mbgl. While REC have described this material as Structureless (Dm) Grade chalk, the available SPT for these logs report SPT 'N' values of between 24 and 37, suggesting the material to be of a more competent nature than logged.

Groundwater

- 4.7.7 Groundwater strikes were reportedly encountered within the two cable percussive boreholes at depths of 10.0mbgl and 11.0mbgl. Subsequent monitoring of these boreholes reported the groundwater levels to rise to depths of between 6.3mbgl and 7.91mbgl.

Contamination

- 4.7.8 A number of exceedances of the screening criteria used by REC were reported for several determinants within the made ground when considering a residential site end use. These included the following:
- Arsenic (Max. 47mg/kg);
 - Lead (Max. 2100mg/kg);
 - Mercury (Max. 22mg/kg);

- Nickel (Max. 210mg/kg);
- Copper (Max. 24000mg/kg);
- Zinc (Max. 3800mg/kg);
- Benzo(a)anthracene (Max. 14mg/kg);
- Benzo(b/k)fluoranthene (Max. 19mg/kg);
- Benzo(a)pyrene (Max. 12mg/kg);
- Benzo(ghi)perylene (Max. 6.3mg/kg); and
- TPH C21-35 Aromatic (Max. 1500mg/kg).

4.7.9 In addition, based on TEC's review of the results, PCB concentrations above the limit of detection were also recorded.

Ground Gas

4.7.10 An addendum report produced in conjunction with the Geo-Environmental Report (Ref 80114) reported a low risk from ground gas due to the absence of landfills in proximity and made ground considered to have low generation rates.

Validation Sampling Report – Teardrop Site, Woolwich. Prepared for Wooldridge Ecotec Ltd by Subadra. Report No. IN07659CL011 dated December 2007

4.7.11 Subadra reportedly undertook sampling of soil recovered for the sides and bases of excavations associated with tanks from the former garage, understood to be located within the central section of the site.

4.7.12 26No. samples were reportedly collected and scheduled for banded Total Petroleum Hydrocarbons (TPH) at a UKAS accredited laboratory.

4.7.13 Of the 26No samples scheduled, elevated TPH concentrations were recorded within 23No samples. A summary of which is presented below:

TPH	Maximum recorded concentration (mg/kg)	Minimum recorded concentration (mg/kg)	Current SSV for a residential site end use	No of Exceedances
C8 – C10	816	<1	27	3
>C10 – C12	177	<1	130	1
>C12 – C16	201	<1	1100	0
>C16 – C21	154	<1	65000	0
>C21 – C35	118	<1	65000	0

4.7.14 It is noted that when comparing the reported concentrations with the current SSVs for a residential site end use without homegrown produce, a number of exceedances are reported for the lower banded TPH concentrations i.e. C8 – C12.

4.8 General Summary

4.8.1 Given the above Environmental Setting and the general land use for the area, discussed in Section 2, this site is considered to be of Low to Moderate Overall Environment Sensitivity.

- 5 OUTLINE CONCEPTUAL MODEL
- 5.1 Introduction
- 5.1.1 The assessment of potential risk associated with any identified contamination is based upon the identification and evaluation of Significant Pollutant Linkages.
- 5.1.2 A Significant Pollutant Linkage exists on a site only if three conditions are satisfied. These conditions are:
- The presence of substances (potential contaminants / pollutants) that may cause harm (a Source)
 - The presence of a target which may be harmed e.g. site residents, groundwater (a Receptor)
 - A linkage between the Source and the Receptor e.g. ingestion of soil, inhalation of vapour (a Pathway)
- 5.1.3 In each case, the existence of a pollutant linkage requires that not only does both a Source and a Receptor have to exist but that a demonstrable Pathway also exists. Therefore, the presence of measurable concentrations of contaminants within the ground or groundwater environment does not automatically imply that a contamination problem exists on site.
- 5.1.4 The nature and importance of both pathways and receptors, which are relevant to a particular site, will vary according to the actual or intended use of the site, its characteristics and its surroundings.
- 5.1.5 This process of the identification of Pollutant Linkages has been applied below to assess the potential risks associated with the site.
- 5.2 Hazard Identification
- 5.2.1 Potentially contaminative current and historic processes have been identified on and within the vicinity of the site and are presented in Table 5.1.

Table 5.1: Identified Potential Hazards

Potential Hazard/Source	Location	Details
Made Ground	Onsite	Given the development history of the site and the adjacent sites and intrusive works undertaken by TEC in proximity to the site, the presence of made ground of unknown thickness and composition cannot be discounted. Made ground, if present, may provide a potential source of ground gas generation subject to thickness and composition.
Potentially contaminative historic processes	On site	A number of potentially historic contaminative processes have been identified on site including a power station, garage, building yard and numerous works.

Potential Hazard/Source	Location	Details
Potentially contaminative current and historic processes	Off site	A number of other potentially contaminative historic processes (including gas works and coal yard) have been reported in proximity, which may provide a potential source of significant contamination. Furthermore, elevated contaminant concentrations have been recorded in the surrounding area.

5.3 Potential Receptors and Pathways

5.3.1 Potential receptors identified as part of this preliminary risk assessment are:

- Current/future site users;
- Construction workers;
- Ecological Receptors; and
- Controlled waters (Principal / Secondary Aquifer and River Thames)

5.3.2 Potential contaminant pathways relating to the identified receptors and contaminants of concern include:

- Dermal contact – contact with soil, dust or water;
- Ingestion - ingestion of soil, dust or water;
- Inhalation – inhalation of soil, dust or vapours;
- Vertical migration – e.g. seepage of contaminants at the ground surface (i.e. leakage/spillage of hydrocarbons) through cracks in hardstanding and/or leaching of contaminants within the unsaturated zone resulting in vertical contaminant migration; and
- Horizontal migration – e.g. lateral migration of contaminants within the saturated zone and along preferential pathways such as drainage pipe bedding.

5.4 Hazard Assessment and Risk Estimation

5.4.1 Potential significant pollutant linkages identified as part of this preliminary risk assessment are summarised in the Outline Site Conceptual Model presented in Table 5.2. References to risk estimations are made in accordance with the methodology presented in CIRIA publication C552 (2001) titled 'Contaminated Land Risk Assessment: A Guide to Good Practice' and summarised in Appendix D.

Table 5.2: Outline Conceptual Model (Hazard Assessment and Risk Estimation)

Potential Hazard/ Source	Potential Receptor	Potential Pathway to Receptors	Associated Hazard	Scale of Impact	Potential Consequence of Source-Receptor Linkage	Potential Likelihood for Significant Source-Receptor Linkage	Risk Classification
Made Ground – on site	Current and future site users and construction workers	Exposure to potential contaminants through ingestion, inhalation and dermal contact.	Risk of harm to human health	Local	Medium	Likely: The presence of made ground of unknown thickness and chemical composition cannot be discounted. Therefore, the risk to human health from made ground cannot be discounted at this stage.	Moderate Risk
	Future site end users and proposed development	Migration, ingress and inhalation of ground gasses.	Risk of harm to human health	Local	Medium to Severe	Low Likelihood to Likely: Made ground, if present, may provide a potential source of ground gas subject to thickness and composition.	Moderate Risk
	Controlled waters	Migration of potential contaminants along vertical and horizontal pathways and infiltration of water through the unsaturated zone	Risk to controlled waters (Secondary and Principal Aquifer and River Thames)	Local to Regional	Medium	Low Likelihood to Likely: Given potential for made ground across the site and the reported presence of underlying Principal and Secondary Aquifers; as well as the presence of the adjacent River Thames, the risk to controlled waters from potential leachable contaminants within the made ground cannot be discounted at this stage.	Low to Moderate Risk
Potentially contaminative current and historic processes – on site	Future site end users, construction and proposed development	Potential presence and migration of residual contamination	Risk of harm to human health and controlled waters	Local	Medium	Likely: A number of potentially contaminative historic processes have been recorded on site including a power station, garage, builder’s yard and works. Therefore, the potential for localised contamination cannot be fully discounted at this stage.	Low to Moderate Risk
	Controlled waters	Migration of potential contaminants along vertical and horizontal pathways and infiltration of water through the unsaturated zone	Risk to controlled waters (Secondary and Principal Aquifer and River Thames)	Local to Regional	Medium	Low Likelihood to Likely: Given the granular nature of the underlying ground materials, and the reported underlying Secondary and Principal Aquifers and adjacent River Thames, the potential for a residual risk to controlled waters cannot be fully discounted at this stage.	Low to Moderate Risk
Potentially contaminative current and historic processes – off site	Current and future site users	Exposure to potential contaminants through ingestion, inhalation and dermal contact. Migration, ingress and inhalation of ground gasses	Risk of harm to human health	Local	Medium to severe	Low Likelihood to Likely: Potentially contaminative current and historic processes have been recorded in proximity to the site (e.g. former gas works and coal yard). Therefore, potential on site migration of contaminants / ground gas from these potential off site sources cannot be fully discounted at this stage.	Low to Moderate Risk

Potential Hazard/ Source	Potential Receptor	Potential Pathway to Receptors	Associated Hazard	Scale of Impact	Potential Consequence of Source-Receptor Linkage	Potential Likelihood for Significant Source-Receptor Linkage	Risk Classification
	Controlled waters	Migration of potential contaminants along vertical and horizontal pathways and infiltration of water through the unsaturated zone	Risk to controlled waters (Secondary and Principal Aquifer and River Thames)	Local to Regional	Medium	Low Likelihood: Given the granular nature of the underlying Thanet Formation, the potential for onsite migration of contaminants from offsite sources cannot be discounted.	Low to Moderate Risk

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- 6 INTRUSIVE INVESTIGATION
- 6.1 Background
- 6.1.1 The ground investigation undertaken was designed to provide specific information regarding site conditions in support of the proposed site development.
- 6.1.2 In particular, the investigation was designed to provide further information on:
- Ground conditions to aid with the design of the development; and
 - The potential significant pollutant linkages identified as part of the Preliminary Risk Assessment.
- 6.1.3 All site works were undertaken in accordance with BS5930:2015, BS10175+A1 (2013) and, where appropriate, Eurocode 7. Works were supervised by a suitably experienced geoenvironmental consultant from TEC.
- 6.2 Methodology
- 6.2.1 The Royal Arsenal Riverside – Linear Park site has been subject to a number of phases of investigation by TEC, across the 4No. zones presented in Figure 3 and detailed below.
- 6.2.2 Exploratory hole locations (Figure 4) were advanced to allow for the characterisation of underlying ground and groundwater conditions and for the collection of near surface and deeper ground materials for geochemical and geotechnical analysis.
- 6.2.3 Detailed descriptions of encountered ground conditions are shown on exploratory hole logs presented in Appendix E.
- Zone One – March / April 2016
- 6.2.4 Intrusive works were undertaken in Zone One between 21 – 22 March and 05 April 2016 and comprised the advancement of 12No trial pits using a 3t mini digger and 14t excavator to a maximum depth of 4.9mbgl.
- Zone Two – December 2017
- 6.2.5 Intrusive works were undertaken in Zone Two on 05 December 2017 and comprised the advancement of 4No. trial pits to a maximum depth of 3.2mbgl using a JCB 3CX.
- Zone Three – March 2016
- 6.2.6 Intrusive works were undertaken in Zone Three between 03 March and 09 March 2016 and comprised the advancement of a single cable percussive borehole to a depth of 21.5mbgl.
- 6.2.7 In addition, 9No. dynamic sample boreholes were advanced to a maximum depth of 5.0mbgl to allow for the characterisation of underlying ground materials. Combined ground gas and groundwater monitoring wells were installed in a number of excavated boreholes to allow for a preliminary assessment of potential ground gas and groundwater issues at the site.
- 6.2.8 Exploratory hole locations were limited in areas of the site due to the presence of existing buildings, high voltage cables and access restrictions due to construction works being undertaken on the site and the time of the investigation. The presence

of the hotel structure prevented further investigation within the area assumed to relate to the garage reported by Subadra.

Zone Four – June 2015

6.2.9 Exploratory works were undertaken on 11th June 2015 and comprised the excavation of 3No. trial pits to a maximum depth of 3.2mbgl using a JCB 3CX.

6.3 Field Testing

6.3.1 A MiniRAE Lite (10.6eV UV lamp) photo-ionisation detected (PID) was used on site to screen soil samples for the presence of total volatile organic compounds (VOC's), prior to laboratory testing. The corresponding results are presented on the exploratory hole logs.

6.3.2 Standard Penetration Tests (SPTs) were undertaken at regular intervals between 1.0mbgl and 21.5mbgl within the cable percussive boreholes and 1.0mbgl and 5.0mbgl within dynamic sample boreholes advanced within Zone Three to determine an indicative strength profile of the underlying materials.

6.4 Chemical Testing

6.4.1 Laboratory testing was scheduled on the basis of the findings of previous investigation works and field observations.

6.4.2 Representative soil samples were collected and chemically tested at i2 Analytical Ltd, a UKAS/MCERTS accredited laboratory, for a selection of the following parameters:

Soils (Totals and Leachate)

- Heavy metals (arsenic, chromium, cadmium, copper, lead, selenium, zinc, barium, mercury, nickel, beryllium, vanadium and water soluble boron);
- Phenol (monohydric), cyanide (total), water soluble sulphate, sulphide, total organic carbon, pH;
- Speciated Polycyclic Aromatic Hydrocarbons (PAHs);
- Total Petroleum Hydrocarbons (TPH); and
- Asbestos Fibre Screen.

Waters (Zone Three Only)

- Heavy metals (arsenic, chromium, cadmium, copper, lead, selenium, zinc, barium, mercury, nickel, beryllium, vanadium and water soluble boron);
- Phenol (monohydric), cyanide (total), water soluble sulphate, sulphide, total organic carbon, pH;
- Speciated Polycyclic Aromatic Hydrocarbons (PAHs); and
- Total Petroleum Hydrocarbons (TPH);

6.4.3 Geochemical certificates of analysis are presented in Appendix F.

6.5 Geotechnical Testing

6.5.1 Selected soil samples were submitted for geotechnical analysis at K4 Soils Laboratory. Laboratory testing was scheduled upon the basis of field observations for a selection of the following:

- Particle Size Distribution;
- Compaction;
- Shear Strength (direct shear); and
- Sulphate / pH tests.

6.5.2 Soil geotechnical certificates of analysis are presented in Appendix G.

6.6 General Sampling

6.6.1 Soil samples were collected directly into pre-labelled sample containers. During the course of the sampling care was taken to minimise head space of the sample containers. Once filled sample containers were placed within cool boxes containing ice packs to maintain as cool a temperature as possible, nominally 4°C.

6.6.2 Samples were collected by courier for delivery to the selected laboratories. All samples were accompanied by detailed chain of custody sheets.

7 ENCOUNTERED GROUND CONDITIONS

7.1 Introduction

7.1.1 A summary of encountered ground conditions for the site is provided below.

Made Ground

7.1.2 Made ground was noted across the site area to depths in excess of 4.9mbgl (TP09 – Zone One) and while often variable in nature, the made ground was generally observed to comprise slightly clayey, slightly silty sandy gravel or gravelly sand. Gravel was observed to include red brick, concrete, black carbonaceous material, ceramic fragments, clay smoking pipe fragments, bone fragments, plastic and glass.

7.1.3 Numerous below ground obstructions, primarily of brick construction were encountered within Zone Four, while tarmacadam hardstanding associated with the former car park within Zone Two was encountered at depths of between 0.7mbgl and 1.2mbgl within all exploratory locations.

7.1.4 Potential pulverised fuel ash (PFA) was observed within TP02 (Zone One) and TP01 (Zone Four).

Natural Ground

7.1.5 The natural ground was observed within a number of locations across the site from a depth of 1.3mbgl.

7.1.6 Within Zone Three and Zone four, the made ground was observed to be underlain by medium dense to dense gravelly sand or sandy gravel of chert, considered to be associated with the Kempton Park Gravel.

7.1.7 Within Zone One and Zone Two the made ground as well as the Kempton Park Gravel within Zone Three and Zone Four, was observed to be underlain by medium dense to very dense fine grained glauconitic sand associated with the Thanet Sand Formation.

7.1.8 A deep cable percussive borehole advanced within Zone Three recorded the presence of sandy gravel of chert at a depth of 15.0mbgl to 16.2mbgl associated with the Bullhead Beds, which in turn was observed to be underlain by the White Chalk Subgroup.

7.2 Generalised Ground Profile

7.2.1 The general ground profile encountered at the site is summarised in Table 7.1.

Table 7.1: Generalised Ground Profile

Depth (mbgl)	Encountered Material
0 – 2.6/>4.9	Made Ground: Variable slightly clayey, slightly silty sandy gravel of red brick, concrete, chert, black carbonaceous material, ceramic, clay smoking pipe fragments and bone fragments underlain by light brown to greyish brown and orange fine to medium sand with occasional gravel of chert and red brick.
1.3 – >1.9/3.6	Kempton Park Gravel (Zone Three and Four only): Medium dense to very dense gravelly sand / sandy gravel of chert.

Depth (mbgl)	Encountered Material
2.6 – 15.0	Thanet Sand Formation: Medium dense to very dense fine grained glauconitic sand.
15.0 – 16.2	Bullhead Bed: Sandy gravel of chert.
16.2 - >21.5	White Chalk Subgroup: Weak low to medium density chalk with gravel and cobbles of flint.

7.3 Groundwater and Perched Water

7.3.1 Minor groundwater ingress was encountered within WS06 (Zone Three) at a depth of 2.5mbgl. The main groundwater body was encountered within BH01a (Zone Three) only, at a depth of 10.4mbgl.

7.3.2 Following completion of the site works, groundwater monitoring and sampling was undertaken within BH01 within the Zone Three area of the site. The results of the monitoring are presented in Table 7.2.

Table 7.2: Groundwater Levels

Location	Date	Groundwater Levels (mbgl)	Strata
BH01a	31/03/2016	10.29	Thanet Sand
	15/04/2016	10.32	
	20/04/2016	10.15	

7.4 Contamination Summary

7.4.1 Olfactory evidence of hydrocarbon contamination was recorded within WS04 (Zone Three), noted to be in proximity of the former garage, from a depth of 0.8mbgl. Field screening of total Volatile Organic Compounds (VOC's) using a photo-ionisation detector (PID) recorded concentrations of up to 68.2ppm within this material. Notwithstanding this, laboratory analysis of this material reported the lighter banded TPH concentrations considered to be associated with petroleum (i.e. C5 – C10) as below laboratory limit of detection, while elevated concentrations of heavier ended TPH (i.e. C12 – C35) were all reported below the current screening values considered appropriate for the proposed site end use.

7.4.2 Visual evidence of potential ACM (cement sheeting fragments) was observed within TP01 and TP03 advanced within Zone Four. In addition, potential pulverised fuel ash (PFA) was encountered within TP01 (Zone Four) at depths between 0.9-1.0mbgl.

7.4.3 No further significant visual or olfactory evidence of contamination was recorded during the intrusive investigations undertaken across the site area. All further field screening of total VOCs using the PID recorded concentrations of 0.0ppm within screened soil samples, i.e. below the limit of detection of the instrument.

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- 8 CONTAMINATION CHARACTERISATION
- 8.1 Legislation
- 8.1.1 Contaminated Land is defined in Part IIA of the Environmental Protection Act (1990) as:
- 8.1.2 "Any land which appears to the Local Authority in whose area it is situated to be in such a condition, by reasons of substances in, on or under the land that:
- Significant harm is being caused or there is a significant possibility of such harm being caused;
- or
- *significant pollution of controlled waters is being caused or there is a significant possibility of such pollution being caused."
- *Section 86 of the Water Act 2003 amends section 78A of Environmental Protection Act 1990 for Controlled Waters.
- 8.2 Generic Quantitative Risk Assessment
- Human Health Screening
- 8.2.1 Current legislation and guidance on the assessment of contaminated land promotes a tiered risk approach (CLR 11). The generic quantitative risk assessment comprises a screening of identified contaminants against generic guideline values that are appropriate to the site setting and the receptors concerned. For risks to human health the basis for these generic guideline values are the methodologies set out by the Environment Agency's Contaminated Land Exposure Assessment (CLEA) guidelines.
- 8.2.2 The following regulatory and industry guidance has been utilised for the selection of Generic Assessment Criteria utilised as part of the GQRA. The order of the guidance listed is in terms of hierarchy for selection of GACs (where the land uses and parameters are considered most applicable).
1. Category 4 Screen Levels (C4SLs) – DEFRA (2014)
 2. Soil Guidance Values (SGVs) – Environment Agency (2009)
 3. Suitable For Use Levels (S4ULs) – LQM/CIEH (2015)
 4. EIC/AGS/CL:AIRE GAC (2009)
- 8.2.3 The C4SLs for arsenic, cadmium, chromium (VI) and lead have been utilised as part of the GQRA. Benzene and benzo(a)pyrene C4SLs have not been utilised as part of the Tier 1 screening as they are based upon 6% soil organic matter (SOM) as opposed to 1% SOM utilised by LQM/CIEH (2015).
- 8.2.4 SGVs have been utilised, where appropriate, for dioxins, furans and dioxin-like PCBs; nickel; inorganic mercury and selenium (Public Open Space 1 SGV used for proposed recreational end use). SGVs for organic compounds are not utilised as they are derived using a 6% soil organic matter as opposed to 1% SOM utilised by LQM/CIEH (2015).
- 8.2.5 In the absence of a published UK derived GAC for cyanide, the GQRA for total cyanide is based upon comparison of recorded values against the Dutch Intervention Value for free cyanide (VROM 2000).

8.2.6 S4ULs and EIC/AGS/CL:AIRE GACs are adopted for the remaining potential contaminants using the hierarchy noted above.

8.2.7 The purpose of the site investigation was to provide information to establish the suitability of the site for a recreational site end use. Therefore, the standard land use for the site, for use in the generic assessment, has been defined as "Public Open Space 1" in accordance with current guidance.

Controlled Waters Screening

8.2.8 Risks to controlled waters have been assessed following current Environment Agency guidance such as "Remedial Targets Methodology – Hydrogeological Risk Assessment for Land Contamination". This guidance describes a tiered approach to the assessment and, if necessary, derivation of clean up targets for soils and groundwater with the emphasis on the protection of controlled waters.

8.2.9 In accordance with Environment Agency guidance, a Level 1 soil (leachability) and Level 2 groundwater generic screening assessment has been undertaken, based on the findings of the sampling undertaken as part of this phase of works, to identify the contaminants of concern that may pose a risk to controlled waters. This assessment has been undertaken by the comparison of soil leachate and groundwater contaminant concentrations with criteria applicable to the long term protection of water quality.

8.2.10 Based on our conceptual understanding, the nearest significant controlled water receptor is considered to be the underlying Principal Aquifer and adjacent River Thames. Therefore, analytical results have been assessed against Environment Agency EQSs for surface waters as presented within H1 Annex D1: Assessment of Hazardous Pollutants within Surface Water Discharges V2.0 (October 2014).

8.3 Soil Analysis - Human Health

8.3.1 Soil samples were collected and analysed from made ground materials.

8.3.2 Current regulatory guidance for the statistical assessment of environmental data within a contaminated land context is detailed within the CIEH and CL:AIRE joint publication titled 'Guidance on Comparing Soil Concentration Data with a Critical Concentration' (2008). However, as judgemental sampling has been undertaken, statistical assessment as detailed in CL:AIRE (2008) has not been carried out as part of this assessment. Therefore, to identify Contaminants of Potential Concern (COPC) as part of this preliminary assessment, the analytical results for the ground materials sampled have been assessed by the screening of individual analyses against the relevant Tier 1 Site Screening Values (SSVs) adopted.

8.3.3 For generic assessment purposes, SSVs have been conservatively selected, where appropriate, based upon a sandy soil and Soil Organic Matter (SOM) of 1%.

Made Ground

8.3.4 26No. samples of made ground have been scheduled for analysis from the site. The results obtained from made ground are summarised in Table 8.1 below:

Table 8.1: Soil Analysis Summary

Contaminant	Max (mg/kg)	Min (mg/kg)	SSV ¹ (mg/kg)	No. of Tests	No. of Exceedances
Arsenic	29	4.6	79 ⁽¹⁾	26	0

Contaminant	Max (mg/kg)	Min (mg/kg)	SSV ¹ (mg/kg)	No. of Tests	No. of Exceedances
Boron	3.3	<0.2	21000 ⁽³⁾	26	0
Cadmium	0.4	<0.2	220 ⁽¹⁾	26	0
Chromium (total)	31	9.2	1500 ⁽³⁾	26	0
Chromium (VI)	<1.2	<1.2	21 ⁽¹⁾	26	0
Copper	330	20	12000 ⁽³⁾	26	0
Lead	330	16	630 ⁽¹⁾	26	0
Mercury	1.5	<0.3	170 ^(2,6)	26	0
Nickel	44	8.3	230 ⁽³⁾	26	0
Selenium	<1.0	<1.0	1100 ⁽³⁾	26	0
Zinc	280	17	81000 ⁽³⁾	26	0
Beryllium	1.6	<0.06	2.2 ⁽³⁾	26	0
Vanadium	69	18	2000 ⁽³⁾	26	0
Barium	220	27	-	26	-
Cyanide (Total)	<1	<1	20 ⁽⁵⁾	26	0
Total Phenol (Monohydric)	<1.0	<1.0	440 ⁽³⁾	26	0
Water Soluble Sulphate (SO ₄) – g/l			-	26	-
Sulphide			-	26	-
Naphthalene	0.71	<0.05	4900 ⁽³⁾	26	0
Acenaphthylene	1.5	<0.05	15000 ⁽³⁾	26	0
Acenaphthene	0.6	<0.05	15000 ⁽³⁾	26	0
Fluorene	0.86	<0.05	9900 ⁽³⁾	26	0
Phenanthrene	11	<0.05	3100 ⁽³⁾	26	0
Anthracene	2.6	<0.05	74000 ⁽³⁾	26	0
Fluoranthene	14	<0.05	3100 ⁽³⁾	26	0
Pyrene	12	<0.05	7400 ⁽³⁾	26	0
Benzo(a)anthracene	5.4	<0.05	29 ⁽³⁾	26	0
Chrysene	5.0	<0.05	57 ⁽³⁾	26	0
Benzo(b)fluoranthene	6.2	<0.05	7.1 ⁽³⁾	26	0
Benzo(k)fluoranthene	2.3	<0.05	190 ⁽³⁾	26	0
Benzo(a)pyrene	4.6	<0.05	5.7 ⁽³⁾	26	0
Indeno(1,2,3-cd)pyrene	2.7	<0.05	82 ⁽³⁾	26	0
Dibenz(a,h)anthracene	0.53	<0.05	0.57 ⁽³⁾	26	0
Benzo(g,h,i)perylene	3.0	<0.05	640 ⁽³⁾	26	0
Total PAH	71.8	<0.8	-	26	-
Benzene	<1	<1	72 ⁽³⁾	26	0
Toluene	<1	<1	56000 ⁽³⁾	26	0
Ethylbenzene	<1	<1	24000 ⁽³⁾	26	0
p & m-xylene	<1	<1	41000 ⁽³⁾	26	0
o-xylene	<1	<1	41000 ⁽³⁾	26	0
MTBE	<1	<1	-	26	-
TPH Aliphatic C5-C6	0.1	<0.001	570000 ⁽³⁾	26	0
TPH Aliphatic C6-C8	0.1	<0.001	600000 ⁽³⁾	26	0
TPH Aliphatic C8-C10	0.1	<0.001	13000 ⁽³⁾	26	0
TPH Aliphatic C10-C12	12	<1	13000 ⁽³⁾	26	0
TPH Aliphatic C12-C16	26	<2	13000 ⁽³⁾	26	0
TPH Aliphatic C16-C21	45	<8	250000 ⁽³⁾	26	0
TPH Aliphatic C21-C35	310	<8		26	0
TPH Aromatic C5-C7	0.1	<0.001	56000 ⁽³⁾	26	0
TPH Aromatic C7-C8	0.1	<0.001	56000 ⁽³⁾	26	0

Contaminant	Max (mg/kg)	Min (mg/kg)	SSV ¹ (mg/kg)	No. of Tests	No. of Exceedances
TPH Aromatic C8-C10	0.1	<0.001	5000 ⁽³⁾	26	0
TPH Aromatic C10-C12	2.9	<1	5000 ⁽³⁾	26	0
TPH Aromatic C12-C16	10	<2	5100 ⁽³⁾	26	0
TPH Aromatic C16-C21	45	<10	3800 ⁽³⁾	26	0
TPH Aromatic C21-C35	270	<10	3800 ⁽³⁾	26	0

Notes:

- 1 DEFRA C4SLs (2014) based on "Public Open Space 1" end use
- 2 Environment Agency SGVs (2009) based on "Public Open Space 1" end use
- 3 LQM/CIEH S4ULs (2015) based on "Public Open Space 1" end use
- 4 CL:AIRE, AGS & EIS (2009) based on "Public Open Space 1" end use
- 5 Dutch Intervention Value for free cyanide (VROM 2000)
- 6 Reported as Laboratory Limit of Detection (LOD)

8.3.5 No exceedances of the Tier 1 SSVs for a recreational site end use (Public Open Space 1) has been recorded within sampled made ground materials. In addition, PCBs were reported as below laboratory limit of detection within all sampled materials.

8.3.6 Furthermore, while elevated Total Volatile Organic Carbons (VOCs) were reported within WS04 (max. 68.2ppm) within Zone 3, laboratory analysis of this material reported no exceedances of the relevant Tier 1 SSVs.

8.3.7 Notwithstanding this, an asbestos screen undertaken on all sampled made ground recorded asbestos as present within all 4No. zones, as detailed below:

Zone	Location	Depth (mbgl)	Asbestos type
One	TP01	0.2-0.4	Chrysotile – Loose Fibres
		0.8-1.0	Chrysotile – Insulation Lagging
	TP02	0.2-0.4	Chrysotile – Loose Fibres
		0.8-1.0	Chrysotile – Loose Fibres
	TP04	0.5-0.7	Chrysotile and Amosite - Loose Fibres
TP07	0.5-0.6	Amosite – Loose Fibres	
Two	TH03	0.85	Amosite – Loose Fibres and Fibrous Debris
Three	WS03	0.3-0.4	Chrysotile and Amosite - Loose Fibres
	WS04	0.1-0.2	Amosite – Loose Fibres
	WS08	0.4-0.5	Chrysotile – Loose Fibres
Four	TP01	0.2-0.2	Amosite and Crocidolite – Insulation Lagging
	TP02	0.4-0.65	Chrysotile – Loose Fibres
	TP03	0.65-0.7	Chrysotile and Amosite - Insulation Lagging

8.3.8 All remaining samples recorded asbestos as 'not-detected'.

8.4 Soil Analysis - Controlled Waters (Leachability)

8.4.1 6No. samples obtained from the made ground were scheduled for leachability analysis. A comparison of results with Tier 1 SSVs are shown below in Table 8.2.

Table 8.2: Made Ground Leachability Analysis

Contaminant	Max (µg/l)	Min (µg/l)	SSV ⁽¹⁾ (µg/l)	No. of Exceedances
Arsenic	13	1.7	50	0
Boron	48	10	2000	0
Cadmium	<0.08	<0.08	0.15 ⁽⁵⁾	0

Contaminant	Max (µg/l)	Min (µg/l)	SSV ⁽¹⁾ (µg/l)	No. of Exceedances
Chromium	3.4	<0.4	3.4	0
Copper	28	1.9	10	2
Lead	19	<1.0	7.2	3
Mercury	<0.5	<0.5	0.05	0
Nickel	8.8	<0.3	20	0
Selenium	<4.0	<4.0	10 ⁽³⁾	0
Zinc	12	<0.4	75 ⁽⁵⁾	0
Beryllium	<0.2	<0.2	-	0
Vanadium	34	<1.7	20	2
Barium	170	16	-	-
Cyanide (Total)	<10	<10	1	0
Total Phenol (Monohydric)	<10	<10	7.7	0
Sulphate as SO ₄	62100	3130	400000	0
Sulphide	<5.0	<5.0	-	-
pH	8.9	7.7	-	-
Naphthalene	<0.01 ⁽⁴⁾	<0.01 ⁽⁴⁾	2.4	0
Acenaphthylene	<0.01 ⁽⁴⁾	<0.01 ⁽⁴⁾	-	-
Acenaphthene	<0.01 ⁽⁴⁾	<0.01 ⁽⁴⁾	-	-
Fluorene	<0.01 ⁽⁴⁾	<0.01 ⁽⁴⁾	-	-
Phenanthrene	<0.01 ⁽⁴⁾	<0.01 ⁽⁴⁾	-	-
Anthracene	<0.01 ⁽⁴⁾	<0.01 ⁽⁴⁾	0.1	0
Fluoranthene	<0.01 ⁽⁴⁾	<0.01 ⁽⁴⁾	0.1	0
Pyrene	<0.01 ⁽⁴⁾	<0.01 ⁽⁴⁾	-	-
Benzo(a)anthracene	<0.01 ⁽⁴⁾	<0.01 ⁽⁴⁾	-	-
Chrysene	<0.01 ⁽⁴⁾	<0.01 ⁽⁴⁾	-	-
Benzo(b)fluoranthene	<0.01 ⁽⁴⁾	<0.01 ⁽⁴⁾	0.03	0
Benzo(k)fluoranthene	<0.01 ⁽⁴⁾	<0.01 ⁽⁴⁾		0
Benzo(a)pyrene	<0.01 ⁽⁴⁾	<0.01 ⁽⁴⁾	0.05	0
Indeno(1,2,3-cd)pyrene	<0.01 ⁽⁴⁾	<0.01 ⁽⁴⁾	0.002	0
Benzo(g,h,i)perylene	<0.01 ⁽⁴⁾	<0.01 ⁽⁴⁾		0
Dibenz(a,h)anthracene	<0.01 ⁽⁴⁾	<0.01 ⁽⁴⁾	-	-
Total PAH	<0.2 ⁽⁴⁾	<0.2 ⁽⁴⁾	-	-

Notes:

- 1 SSV based upon Environment Agency EQS for Surface Waters (H1 Annex D1: Assessment of Hazardous Pollutants within Surface Water Discharges V2.0 (October 2014)), unless otherwise stated
- 2 Groundwater Threshold Values from The Water Framework Directive (England and Wales) Directions (2010)
- 3 The Water Supply (Water Quality) Regulations 2010
- 4 Laboratory Limit of Detection
- 5 Based upon a water hardness of between 100 to 250mg CaCO₃/l

8.4.2

While all analysed materials reported concentrations of leachable PAH below laboratory limit of detection, a number of elevated leachable concentrations of heavy metals have been recorded within samples of the made ground, in relation to the current SSV for the site. These are detailed below:

- Copper – TP02 at 0.8-1.0mbgl (11µg/l) and WS08 at 0.4-0.5mbgl (28µg/l);
- Lead – TP02 at 0.8-1.0mbgl (18µg/l), WS08 at 0.4-0.5mbgl (15µg/l) and WS06 at 0.8-1.0mbgl (19µg/l); and
- Vanadium – TP04 at 0.5-0.7mbgl (27µg/l) and WS08 at 0.4-0.5mbgl (34µg/l).

8.5 Controlled Waters - Groundwater Analysis

8.5.1 Groundwater samples were taken from a single location. Certificates of analysis are contained in Appendix F with results being summarised below in Table 8.3.

Table 8.3: Groundwater Analysis Summary

Contaminant	BH01a (µg/l)	SSV (µg/l) ⁽¹⁾	No. of Exceedances
Arsenic	9.97	199	0
Boron	160	750	0
Cadmium	<0.02	1.1	0
Chromium (III)	<5.0	27.6	0
Chromium (VI)	<0.2	-	-
Copper	<0.5	57.8	0
Lead	0.2	39.8	0
Mercury	0.17	0.75	0
Nickel	9.9	116	0
Selenium	0.9	10 ⁽²⁾	0
Zinc	2.2	414	0
Beryllium	0.1	-	-
Vanadium	0.2	-	-
Barium	43	-	-
Cyanide (Total)	<10	50 ⁽²⁾	0
Total Phenol (Monohydric)	<10	82.8	0
Sulphate (as SO4)	444000	500000 ⁽⁴⁾	0
Sulphide	<5.0	-	-
pH	7.2	-	-
Naphthalene	<0.01	13.2	0
Acenaphthylene	<0.01	-	-
Acenaphthene	<0.01	-	-
Fluorene	<0.01	-	-
Phenanthrene	<0.01	-	-
Anthracene	<0.01	0.55	0
Fluoranthene	<0.01	0.6	0
Pyrene	<0.01	-	-
Benzo(a)anthracene	<0.01	-	-
Chrysene	<0.01	-	-
Benzo(b)fluoranthene	<0.01	-	-
Benzo(k)fluoranthene	<0.01	-	-
Benzo(a)pyrene	<0.01	0.075	0
Indeno(1,2,3-cd)pyrene	<0.01	-	-
Dibenz(a,h)anthracene	<0.01	-	-
Benzo(g,h,i)perylene	<0.01	-	-
Benzene	<1.0	55.2	0
Toluene	<1.0	276	0
Ethylbenzene	<1.0	300 ⁽³⁾	0
p & m-xylene	<1.0	166	0
o-xylene	<1.0	-	-
MTBE	<1.0	-	-
TPH Aliphatic C5-C6	<10	15000 ⁽³⁾	0
TPH Aliphatic C6-C8	<10	15000 ⁽³⁾	0
TPH Aliphatic C8-C10	<10	300 ⁽³⁾	0

Contaminant	BH01a (µg/l)	SSV (µg/l) ⁽¹⁾	No. of Exceedances
TPH Aliphatic C10-C12	<10	300 ⁽³⁾	0
TPH Aliphatic C12-C16	<10	300 ⁽³⁾	0
TPH Aliphatic C16-C21	<10	-	-
TPH Aliphatic C21-C35	<10	-	-
TPH Aromatic C5-C7	<10	50 ⁽³⁾	0
TPH Aromatic C7-C8	<10	276 ⁽³⁾	0
TPH Aromatic C8-C10	<10	-	-
TPH Aromatic C10-C12	<10	100 ⁽³⁾	0
TPH Aromatic C12-C16	<10	100 ⁽³⁾	0
TPH Aromatic C16-C21	<10	90 ⁽³⁾	0
TPH Aromatic C21-C35	<10	90 ⁽³⁾	0

Notes:

- 1 SSV based upon Groundwater Threshold Values from The Water Framework Directive (England and Wales) Directions (2010), unless otherwise stated.
- 2 The Water Supply (Water Quality) Regulations 2010
- 3 WHO Guideline Values for petroleum products in drinking water
- 4 WHO Guideline Values for sulphate in drinking water – based on the value at which an increasing likelihood of complaints reportedly arise from a noticeable taste
- 5 Laboratory Limit of Detection

8.5.2

No exceedances of the relevant screening values have been recorded within the groundwater sampled from the site. Furthermore, all concentrations of PAH and TPH have been recorded as below laboratory limit of detection (<LOD).

9 REFINED CONCEPTUAL MODEL

9.1 Introduction

9.1.1 The Preliminary Risk Assessment undertaken as part of this report identified the presence of potential significant pollutant linkages associated with the site and surrounds. Therefore, in accordance with the approach recommended in CLR11, additional information was collected about the site and its surroundings as part of a Generic Quantitative Risk Assessment. Based upon this additional information, the site conceptual model has been refined and pollutant linkages confirmed for evaluation where considered necessary.

9.2 Hazard Identification

9.2.1 Potential sources of contamination have been identified on and within the vicinity of the site and are presented in Table 9.1.

Table 9.1: Identified Hazards

Identified Hazard/Source	Location	Details
Made Ground	On site	Made ground was encountered across the site to a maximum observed depth of >4.9mbgl (TPO9 Zone 1). Limited visual and olfactory evidence of potential hydrocarbon contamination was recorded in a single location (WS04 – Zone 3 at 0.8-1.0mbgl). However, determinands tested were below SSVs for a public open space end use within all sampled materials. Notwithstanding this, laboratory analysis of representative samples of made ground recorded the widespread presence of asbestos (Chrysotile, Amosite and Crocidolite fibres, lagging and fibrous debris) across the site area.
Potentially contaminative current and historic processes	On and Off site	Potentially contaminative current and historic land uses (including former gas works, power station, coal yard) have been identified on and in proximity to the development site. Wide spread presence of asbestos fibres is likely to be a result of these former land uses.

9.3 Identified Potential Receptors and Pathways

9.3.1 Potential receptors identified as part of the generic risk assessment are:

- Current/future site users;
- Construction workers; and
- Controlled waters (Principal / Secondary Aquifer and River Thames)

9.3.2 Potential contaminant pathways identified as part of the generic risk assessment include:

- Dermal contact – contact with soil, dust or water;
- Ingestion - ingestion of soil, dust or water;
- Inhalation – inhalation of soil, dust or vapours;
- Vertical migration – e.g. seepage of contaminants at the ground surface (i.e. leakage/spillage of hydrocarbons) through cracks in hardstanding and/or leaching of contaminants within the unsaturated zone resulting in vertical contaminant migration; and
- Horizontal migration – e.g. lateral migration of contaminants within the saturated zone and along preferential pathways such as drainage pipe bedding.

9.4 Hazard Assessment and Risk Estimation

- 9.4.1 Potential significant pollutant linkages identified following completion of the intrusive works are summarised in the Refined Site Conceptual Model presented in Table 9.2.

Table 9.2: Refined Conceptual Model (Hazard Assessment and Risk Estimation)

Identified Hazard/ Source	Identified Receptor	Potential Pathway to Receptors	Associated Hazard	Scale of Impact	Potential Consequence of Source-Receptor Linkage	Potential Likelihood for Significant Source-Receptor Linkage	Risk Classification
Made Ground	Future site end users and construction workers	Exposure to potential contaminants through ingestion, inhalation and dermal contact	Risk of harm to human health	Local	Medium	Likely: Where made ground remains in soft landscaping areas after finished site levels have been achieved, exposure to asbestos cannot be discounted.	Moderate Risk
	Controlled Waters	Infiltration of water through the unsaturated zone resulting in leaching of contaminants and potential vertical and horizontal migration along preferential pathways	Risk to Principal and Secondary Aquifer and River Thames	Local to regional	Medium	Unlikely: Whilst marginally elevated leachable contaminant concentrations of a number of heavy metals have been recorded on site, given the absence of gross contamination within the shallow made ground and the depth to groundwater (>10mbgl), the risk to controlled waters is considered to be low.	Low Risk
	Future site end users and proposed development	Migration, ingress and inhalation of ground gasses.	Risk of harm to human health	Local	Medium to Severe	Unlikely: Based upon the observed thickness and composition, the made ground encountered on site would not be considered a potential source of significant ground gas generation.	Low Risk
Potentially Contaminative Land Uses – Onsite	Future site end users and construction workers	Exposure to potential contaminants through ingestion, inhalation and dermal contact	Risk of harm to human health	Local	Medium	Likely: The presence of asbestos has been identified on site. Given the granular nature of the associated fill materials it cannot be discounted that fibres may have the potential for release if disturbed.	Moderate Risk
	Controlled Waters	Infiltration of water through the unsaturated zone resulting in leaching of contaminants and potential vertical and horizontal migration along preferential pathways	Risk to Principal and Secondary Aquifer and River Thames	Local to regional	Medium	Unlikely: The nature of the contaminants recorded are unlikely to represent a significant risk to controlled waters.	Low Risk
Potentially Contaminative Land Uses - Offsite	Future site end users, construction workers and controlled waters	Potential on-site contaminant migration from potential off-site sources	Risk of harm to human health and controlled waters	Local	Medium	Unlikely: Potentially contaminative current and historic land uses have been identified in proximity to the development site. Notwithstanding this, laboratory test results, field test data and visual/olfactory observations during the intrusive investigation suggest no potential on-site contaminant migration.	Low Risk

10 GROUND ENGINEERING

10.1 Proposed Development

10.1.1 The proposed development is understood to comprise the redevelopment of the site for recreational purposes including open parkland and water features. Notwithstanding this, final details pertaining to the proposed development have not been provided at this stage.

10.2 Ground Conditions

10.2.1 The general ground profile encountered at the site is summarised in Table 10.1 below.

Table 10.1: Generalised Ground Profile

Depth (mbgl)	Encountered Material
0 – 2.6/>4.9	Made Ground: Variable slightly clayey, slightly silty sandy gravel of red brick, concrete, chert, black carbonaceous material, ceramic, clay smoking pipe fragments and bone fragments underlain by light brown to greyish brown and orange fine to medium sand with occasional gravel of chert and red brick.
1.3 – >1.9/3.6	Kempton Park Gravel (Zone Three and Four only): Medium dense to very dense gravelly sand / sandy gravel of chert.
2.6 – 15.0	Thanet Sand Formation: Medium dense to very dense fine grained glauconitic sand.
15.0 – 16.2	Bullhead Bed: Sandy gravel of chert.
16.2 - >21.5	White Chalk Subgroup: Weak low to medium density chalk with gravel and cobbles of flint.

10.2.2 Geotechnical test results are discussed below. Geotechnical laboratory test certificates are provided in Appendix G with in-situ tests being presented on the exploratory hole logs.

10.2.3 The results of these analyses are presented in Table 10.2 below. Please note, no geotechnical testing was undertaken within Zone Four of the site.

Table 10.2: Summary of Laboratory Test Results - Natural Strata

Test	Number of Tests	Range of Results	
Particle Size Distribution (%)	Made Ground	6	See Below
	Kempton Park Gravel	2	See Below
	Thanet Sand	3	See Below
Maximum Dry Density (kN/m ³)	Made Ground	5	1.61 – 1.99
	Thanet Sand	1	1.55
Optimum Moisture Content (%)	Made Ground	5	10 – 19
	Thanet Sand	1	19

Test		Number of Tests	Range of Results
Shear Strength ϕ' (degrees) c' (kN/m ²)	Kempton Park Gravel	1	35 12
	Thanet Sand	2	37 5.3
pH Value	Made Ground	8	7.5 – 8.7
	Natural	5	7.22 – 7.42
SO ₄ (g/l in soil)	Made Ground	8	0.011 – 1.4
	Natural	5	0.21 – 0.57

10.2.4 Particle Size Distribution (PSD) analysis indicated as dug materials of the made ground from the site to generally comprise slightly silty/clayey gravelly sand or sandy gravel with a fines component of between 4.1% and 15.6% recorded, a gravel component of between 1.3% and 64.2% and a sand component of between 26.5% and 94.7%.

10.2.5 PSD analysis undertaken on 2No. samples of the encountered Kempton Park Gravel reported the materials to generally comprise sandy gravel or gravelly sand, with a fines component of between 1.4% and 5.5%, a sand component of 16.5% and 93.7% and a gravel component of 0.8% and 82.1%. PSD testing undertaken on 3No. samples of the underlying Thanet Sand recorded the underlying materials to comprise slightly gravelly, slightly silty/clayey sand with a gravel component of between 0.0% and 4.4%, a fines component of between 5.3% and 11.3% and a sand component of between 88.7% and 93.3% recorded.

10.2.6 A summary of the PSD results is present below.

Table 10.3: Summary of Laboratory Particle Size Distribution Analysis

Sample ID	Percentage by Mass passing			
	125mm	63mm	2mm	63 μ m
Made Ground – Zone One				
TP05 (2.4m)	100	100	99	4
TP09 (3.6m)	100	100	81	16
TP07 (3.3m)	100	100	90	14
Natural Ground - Zone One				
TP05 (3.3m)	100	100	96	5
Made Ground – Zone Two				
TH01 (0.7m)	100	100	53	15
TH02 (1.6m)	100	100	39	9
TH04 (1.5mbgl)	100	100	36	9

Sample ID	Percentage by Mass passing			
	125mm	63mm	2mm	63µm
Natural Ground - Zone Three				
BH01a (2.2m)	100	100	18	1
BH01a (3.5m)	100	100	99	6
BH01a (8.0m)	100	100	100	6

- 10.2.7 Compaction tests were undertaken on samples of the encountered made ground materials and gave optimum moisture contents of 10% to 19% and Maximum Dry Densities of between 1.61kN/m² and 1.99kN/m². Testing undertaken on a single sample of the natural ground materials reported an optimum moisture content of 19% and Maximum Dry Density of 1.55kN/m².
- 10.2.8 Two direct shear strength tests were undertaken on samples of the granular natural ground recovered from the Thanet Formation and recorded shear strength parameters of $\phi' = 35^\circ$ and 37° and $c' = 5.3\text{kPa}$ and 12kN/m^2 . Further, based on correlations between Standard Penetration Test (SPT) results proposed by Schmertmann (1975) for cohesionless soils, a lower bound internal friction angle, ϕ' , of $>45^\circ$ may be derived.
- 10.2.9 The geotechnical testing included the analysis for water soluble sulphate and pH testing within both the made ground and natural ground. The results indicate sulphate concentrations of between 0.011g/l and 1.4g/l and pH values of between 7.5 and 8.7 within the made ground and sulphate concentrations of between 0.21g/l and 0.57g/l and pH values of between 7.22 and 7.47.
- 10.3 General Engineering Recommendations
- Ground Conditions
- 10.3.1 Made ground was noted across the site area to depths in excess of 4.9mbgl (TP09 – Zone One) and while often variable in nature, the made ground was generally observed to comprise slightly clayey, slightly silty sandy gravel or gravelly sand.
- 10.3.2 Gravel was observed to include red brick, concrete, black carbonaceous material, ceramic fragments, clay smoking pipe fragments, bone fragments, plastic and glass.
- 10.3.3 Numerous below ground obstructions, primarily of brick construction were encountered within Zone Four, while tarmacadam hardstanding associated with the former car park within Zone Two was encountered at depths of between 0.7mbgl and 1.2mbgl within all exploratory locations.
- 10.3.4 Furthermore, potential pulverised fuel ash (PFA) was observed within TP02 (Zone One) and TP01 (Zone Four).
- 10.3.5 The natural ground was observed within a number of locations across the site from a depth of 1.3mbgl.
- 10.3.6 Within Zone Three and Zone four, the made ground was observed to be underlain by medium dense to dense gravelly sand or sandy gravel of chert, considered to be associated with the Kempton Park Gravel.

- 10.3.7 Within Zone One and Zone Two the made ground as well as the Kempton Park Gravel within Zone Three and Zone Four, was observed to be underlain by medium dense to very dense fine grained glauconitic sand associated with the Thanet Sand Formation.
- 10.3.8 A deep cable percussive borehole advanced within Zone Three recorded the presence of sandy gravel of chert at a depth of 15.0mbgl to 16.2mbgl associated with the Bullhead Beds, which in turn was observed to be underlain by the White Chalk Subgroup.
- 10.4 Preliminary Foundation Design
- 10.4.1 Details regarding the proposed development have not been provided for this assessment. Notwithstanding this, additional investigation is likely to be required for foundation design should structures sensitive to total or differential settlement be proposed to confirm founding requirements.

10.5 Earthworks

Materials Acceptability

- 10.5.1 Acceptability for re-use is assessed on the basis of the DoT Specification for Highway Works (SHW) Volume 1 Series 600 Table 6/1 "Acceptable Earthworks Material: Classification and Compaction Requirements" which details the properties of each materials type. Table 6/2 "Grading Requirements for Acceptable Earthworks Materials" of this document details the range of particle size distribution required for each material class.
- 10.5.2 Based on this, the following preliminary assessment of acceptability of the 'as-dug' materials has been made:

Table 10.4: – Preliminary Earthworks Classifications

Strata Details	Table 6/1 Class
Made Ground	1B, 2A and 2B
Natural Ground	1B

- 10.5.3 PSD testing undertaken from made ground materials indicates the percentage passing 63µm sieve ranges between 4% and 16%, indicating the encountered made ground materials may be classified as 1B, 2A and 2B. PSD testing from natural ground materials indicates the percentage passing 63µm sieve ranges between 1% and 6%, indicating the encountered made ground materials may be classified as 1B.
- 10.5.4 It should be noted that compaction tests were undertaken on samples of both the made ground and the encountered underlying natural materials and gave optimum moisture contents (OMC) of 10% to 19% for the made ground and 19% for the natural ground materials. Natural moisture content testing undertaken during the geochemical and geotechnical testing of the made ground reported values between 7.7% and 26%, noted to be generally lower than that of the OMC, indicating the materials will require the addition of water prior to use, while the recorded moisture contents of the natural materials was recorded as 11.5%, again generally lower to the OMC, indicating the materials will require the addition of water prior to use.
- 10.5.5 Notwithstanding this, a made ground sample collected from TH04 at 1.5mbgl (Zone Two) recorded an OMC of 10% and NMC of 9.6%, which may require drying prior to use.

- 10.5.6 The above classification should be considered as preliminary only. Landscaping works are likely to involve a significant volume of material movement and it is therefore recommended that additional targeted investigation be undertaken when design proposals have been finalised so that an appropriate Material Management Plan including suitability for re-use can be prepared. Furthermore, while in engineering terms the encountered underlying materials may be acceptable for re-use, given the presence of asbestos within made ground materials encountered onsite, the re-use of this material will require appropriate management and assessment under a waste license or CL:AIRE Code of Practice.

Excavations

- 10.5.7 Groundwater ingress to excavations is unlikely to be a significant issue within excavations. Notwithstanding this, minor dewatering works may be required during excavation and formation works, particularly if left open for any period of time.
- 10.5.8 Consideration should be given to the utilisation of appropriate temporary works, particularly where any groundwater ingress is encountered.

Earthworks Placement

- 10.5.9 Fill materials should be appropriately characterised as part of a Material Management Plan and shall be placed in accordance with Series 600, Specification for Highway Works.
- 10.5.10 Whenever fill is to be placed against the face of a natural slope (or sloping earthworks) the face shall be benched immediately before placing the subsequent fill in order to ensure suitable compaction.
- 10.6 Protection of Buried Concrete
- 10.6.1 In accordance with BRE Special Digest 1, both the made ground and natural ground sampled yielded an Aggressive Chemical Environment Class (ACEC) of between AC-1 and AC-2 requiring a Design Sulphate Class DS-2.

-
- 11 CONCLUSIONS & RECOMMENDATIONS
- 11.1 Conclusions
- 11.1.1 Tweedie Evans Consulting Ltd (TEC) has been appointed by Berkley Homes (East Thames) Limited to undertake a preliminary geoenvironmental and geotechnical assessment of Royal Arsenal Riverside – Linear Park. All works were undertaken in accordance with our proposal letter dated 12 May 2017 and referenced CH.1508005.014_016.01.
- 11.1.2 The site is situated within the wider Berkeley Homes (East Thames) Ltd Royal Arsenal Riverside development in Woolwich. The centre of the site is situated at approximate National Grid Reference 543605, 1791550 and covers an area of approximately 1.75 hectares. The nearest postcode is SE18 6BU.
- 11.1.3 The proposed development of the Royal Arsenal Riverside – Linear Park as a whole is understood to comprise redevelopment of the site for recreational purposes with open parkland and water features.
- 11.1.4 The environmental sensitivity of the site is considered to low to moderate, due primarily to the presence of the underlying Secondary and Principal Aquifers and the close proximity of the River Thames.
- 11.1.5 The site has been subject to a number of phases of intrusive investigation by TEC between June 2015 and December 2017. The intrusive works undertaken recorded the presence of made to depths in excess of 4.9mbgl.
- 11.1.6 Laboratory analysis of representative samples of the encountered made ground recorded no exceedances of the Tier 1 SSVs for a Public Open Space 1 site end use, considered appropriate for the proposed site end use. Notwithstanding this, an asbestos screen undertaken on samples recorded the widespread presence of asbestos fibres and lagging.
- 11.1.7 While localised olfactory evidence of potential hydrocarbon contamination was recorded within Zone Three, only marginally elevated concentrations of Volatile Organic Compounds (VOC's) were recorded (maximum 68.2ppm) during screening with a photo-ionisation detector. In addition, laboratory analysis of this material reported the lower banded TPH concentrations considered to be associated with petroleum (i.e. C5 – C10) as below laboratory limit of detection, while elevated concentrations of heavier ended TPH (i.e. C12 – C35) were all reported below the current screening values considered appropriate for the proposed site end use.
- 11.1.8 Furthermore, while marginally elevated leachable contaminant concentrations of a number of heavy metals have been recorded on site, given the absence of gross contamination within the shallow made ground and the depth to groundwater (>10mbgl), the risk to controlled waters is considered to be low.
- 11.1.9 Therefore, based upon our current conceptual understanding of the site and the proposed end use, the main potential Significant Pollutant Linkages identified are considered to be:
- Human health (including construction workers and future site end users) – exposure to asbestos fibres through the inhalation pathway

Identification of Feasible Remediation Options

- 11.1.10 Significant risks identified within the conceptual model can be mitigated through the breaking of the significant pollution linkage by the removal of at least the source, receptor or pathway. Within reference to the site's conceptual models the following preliminary remediation approach has been prepared. This preliminary remediation approach may need to be presented in more detail within a Remediation Strategy, the content of which may require agreement in writing of the Regulatory Authorities prior to commencing any remediation on site.

Human Health

- 11.1.11 Where soft landscaping is proposed and where made ground remains after finished site levels have been achieved, exposure to potential contaminants cannot be discounted. Given the recorded presence of asbestos fibres and fragments, including lagging, within the made ground at the site, a suitable engineered cover system would be required in such areas where made ground remains after any site clearance works are completed.
- 11.1.12 The presence of hardstanding associated with the remaining site areas (i.e. pathways, water features etc) would also mitigate against the potential risks to site end users from the identified contamination within the made ground materials on site.
- 11.1.13 Given the presence of asbestos across the site, good brownfield practises should be adopted by construction workers to mitigate against the identified potential risks.
- 11.1.14 Should water supply pipes be placed within the made ground encountered at the site, due consideration would need to be given to the UK Water Industry Research Ltd (UKWIR) guidance.
- 11.1.15 Based on our conceptual understanding of the site to-date, it would be anticipated that similar ground conditions exist across the site area. However, should significant thicknesses of made ground be encountered, or visual or olfactory evidence of potentially significant contamination be identified during the development works, further investigation and assessment may be required.

11.2 Ground Engineering

Preliminary Design Recommendations

- 11.2.1 Details regarding the proposed development have not been provided for this assessment. Notwithstanding this, additional investigation is likely to be required for foundation design should structures sensitive to total or differential settlement be proposed to confirm founding requirements.

Materials Acceptability

- 11.2.2 Acceptability for re-use is assessed on the basis of the DoT Specification for Highway Works (SHW) Volume 1 Series 600 Table 6/1 "Acceptable Earthworks Material: Classification and Compaction Requirements" which details the properties of each materials type. Table 6/2 "Grading Requirements for Acceptable Earthworks Materials" of this document details the range of particle size distribution required for each material class.
- 11.2.3 PSD testing undertaken from made ground materials indicates the percentage passing 63µm sieve ranges between 4% and 16%, indicating the encountered made ground materials may be classified as 1A, 2A and 2B. PSD testing from natural ground

materials indicates the percentage passing 63µm sieve ranges between 1% and 6%, indicating the encountered made ground materials may be classified as 1A.

- 11.2.4 It should be noted that compaction tests were undertaken on samples of both the made ground and the encountered underlying natural materials and gave optimum moisture contents (OMC) of 10% to 19% for the made ground and 19% for the natural ground materials. Natural moisture content testing undertaken during the geochemical and geotechnical testing of the made ground reported values between 7.7% and 26%, noted to be generally lower than that of the OMC, indicating the materials will require the addition of water prior to use, while the recorded moisture contents of the natural materials was recorded as 11.5%, again generally lower to the OMC, indicating the materials will require the addition of water prior to use.
- 11.2.5 Notwithstanding this, a made ground sample collected from TH04 at 1.5mbgl (Zone Two) recorded an OMC of 10% and NMC of 9.6%, which may require drying prior to use.
- 11.2.6 The above classification should be considered as preliminary only. Landscaping works are likely to involve a significant volume of material movement and it is therefore recommended that additional targeted investigation be undertaken when design proposals have been finalised so that an appropriate Material Management Plan including suitability for re-use can be prepared. Furthermore, while in engineering terms the encountered underlying materials may be acceptable for re-use, given the presence of asbestos within made ground materials encountered onsite, the re-use of this material will require appropriate management and assessment under a waste license or CL:AIRE Code of Practice.

Excavations.

- 11.2.7 Groundwater ingress to excavations is unlikely to be a significant issue within excavations. Notwithstanding this, minor dewatering works may be required during excavation and formation works, particularly if left open for any period of time.
- 11.2.8 Consideration should be given to the utilisation of appropriate temporary works, particularly where any groundwater ingress is encountered.

Earthworks Placement

- 11.2.9 Fill materials should be appropriately characterised as part of a Material Management Plan and shall be placed in accordance with Series 600, Specification for Highway Works.
- 11.2.10 Whenever fill is to be placed against the face of a natural slope (or sloping earthworks) the face shall be benched immediately before placing the subsequent fill in order to ensure suitable compaction.

Protection of Buried Concrete

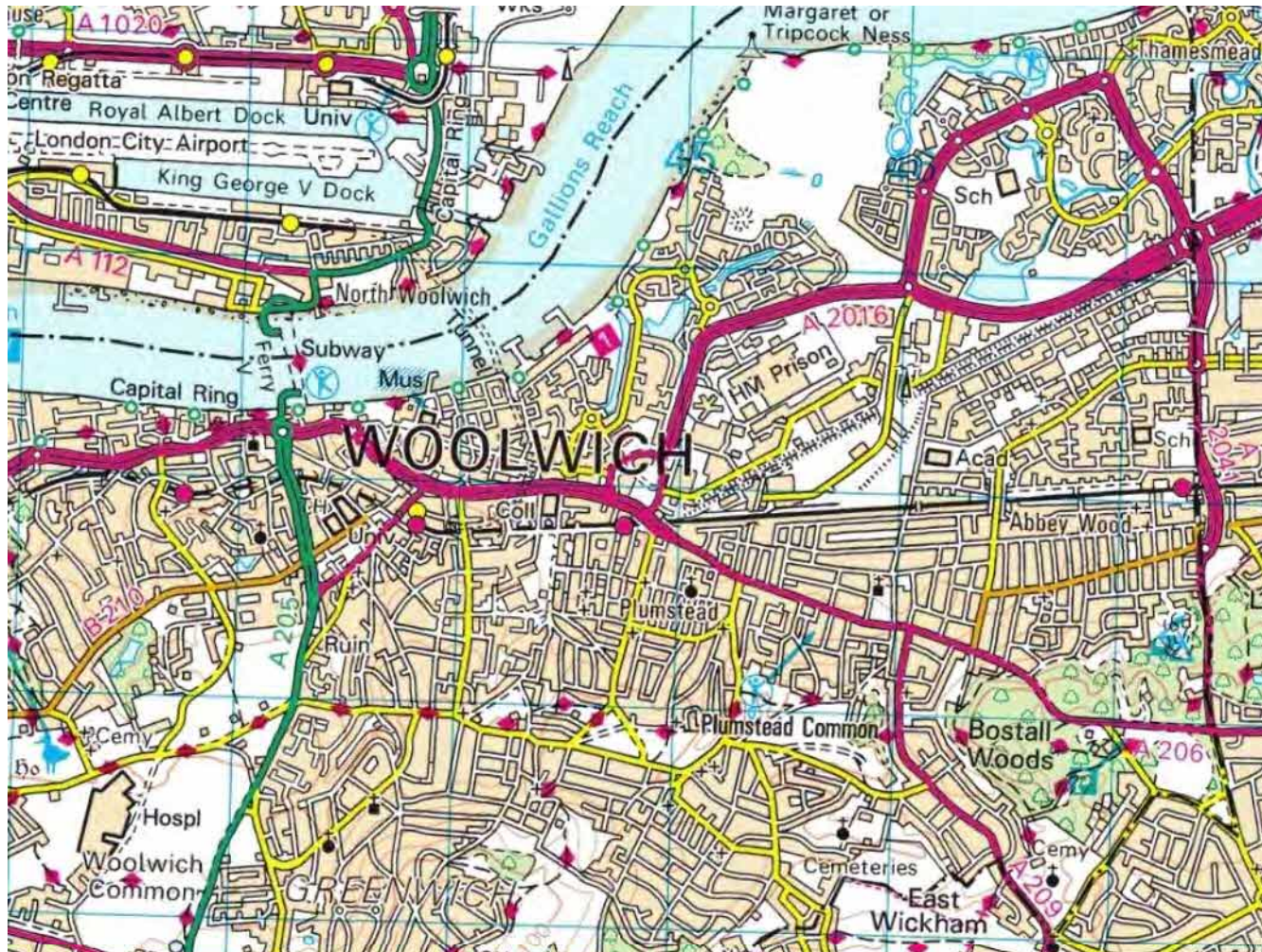
- 11.2.11 In accordance with BRE Special Digest 1, both the made ground and natural ground sampled yielded an Aggressive Chemical Environment Class (ACEC) of between AC-1 and AC-2 requiring a Design Sulphate Class DS-2.

TWEEDIE EVANS CONSULTING LIMITED

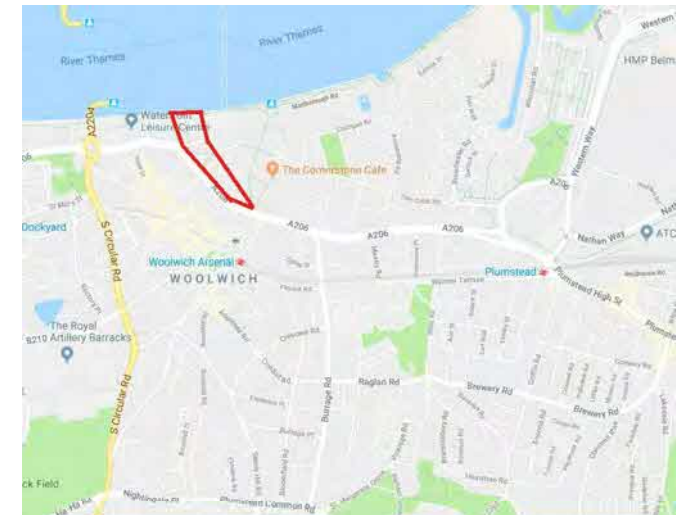
BIBLIOGRAPHY

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FIGURES



Approximate Site Location: 



TEC
Tweedie Evans Consulting
35a
Somerset
BAE

Site Name:
Royal Arsenal Riverside - Linear Park

Drawing Name
Site Location Plan

Client
Berkeley Homes (East Thames) Limited

Project No:
15 000 119

Figure No:
1

Date:
February 2018

Scale:
NTS



Red Line Boundary of Proposed Linear Park

Extract of Illustrative Waterfront Masterplan - Proposed Waterfront Park Plan

	TEC Consulting 35a Somerset BA5 2L	Site Name: Royal Arsenal Riverside - Linear Park	Scale: NTS
Drawing Name: Proposed Development Plan	Project No: 23 000 11	Berkeley Homes (East Thames) Limited	Date: February 2018
Figure No: 1			



Extract of Illustrative Waterfront Masterplan - Proposed Waterfront Park Plan

			Site Name: Royal Arsenal Riverside - Linear Park	Scale: NTS
Drawing Name: Linear Park - TEC Zone Designator	Client: Berkeley Homes (East Thames) Limited	Project No: 23 000 11	Date: February 2018	Figure No: 1



- ☒ TEC trial pit location - Zone 1 March / April 2016
- ☒ TEC trial pit location - Zone 2 December 2017
- ⊗ TEC Dynamic sample borehole location - Zone 3 March 2016
- ⊗ TEC Dynamic sample borehole with install location - Zone 3 March 2016
- ⊗ TEC Cable percussive borehole location - Zone 3 March 2016
- ☒ TEC trial pit location - Zone 4 June 2015

Extract of Illustrative Waterfront Masterplan - Proposed Waterfront Park Plan

	TWEEDIE EVANS CONSULTING 35a Somerset BA5 2LJ Email: info@tecon.co.uk www.tecon.co.uk	Site Name: Royal Arsenal Riverside - Linear Park	Scale: NTS
Drawing Name: Exploratory Hole Location	Berkeley Homes (East Thames) Limited	Project No: 23 000 J11	Date: February 2018 Figure No: 4

APPENDIX A
Historical Maps

543400

543600

543800

179400

179400

179200

179200

179000

179000



TWEEDIE EVANS CONSULTING

Kent

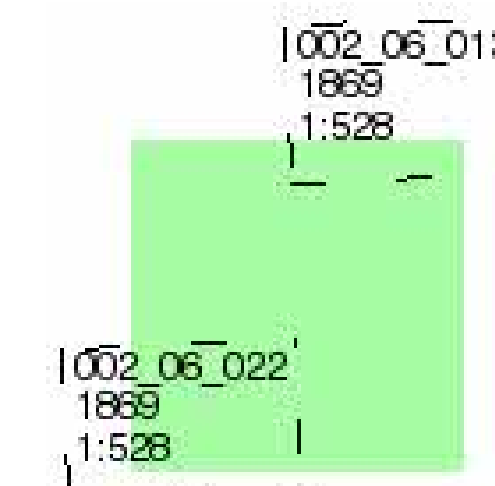
Published 1869

Source map scale - 1:528

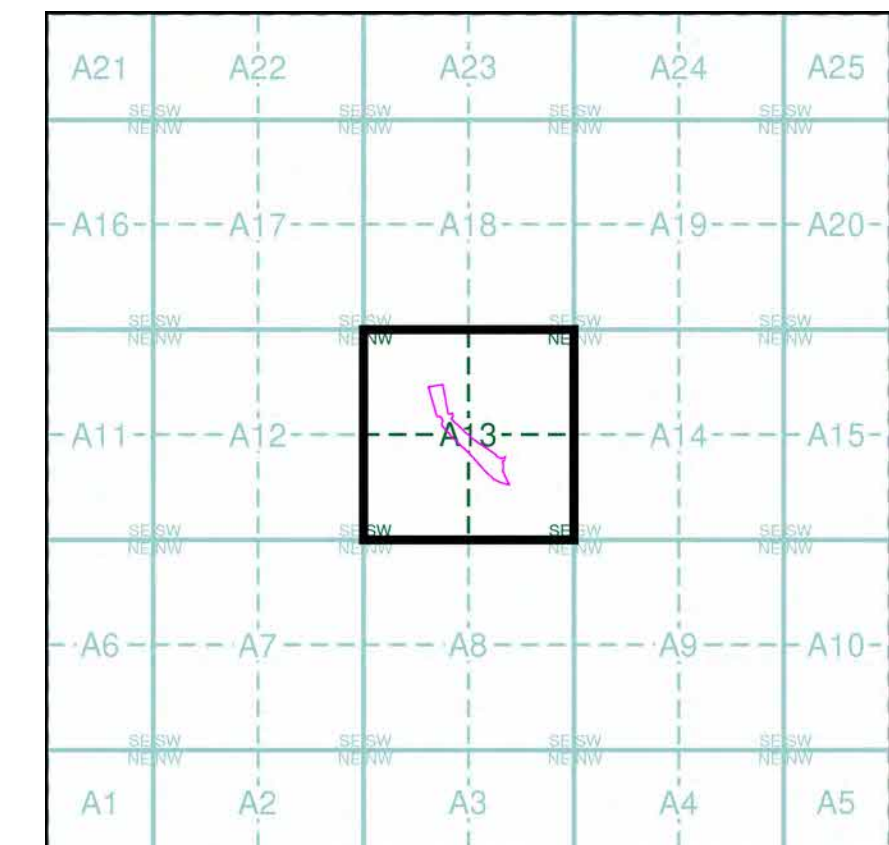
The 1:528 scale Ordnance Survey mapping was adopted in 1850 as an alternative to the 1:1056 scale, that had been deemed to be inadequate for sanitary planning, which had come very much to the fore following the passing of the Public Health Act of 1948. Around 29 towns in England and Wales were surveyed at this scale, the bulk of which were undertaken between 1850 and 1855. These were predominantly towns that were outside the areas being surveyed at 1:10,560 or 1:2500 scale. As well as showing the details characteristic of the later 1:500 plans, they show features of sanitary interest such as privies, taps, cow houses, cess pits, brew and bake houses and cart sheds and stables.

Please note: Due to the partial coverage of Historical Town Plans, it is possible that not all segments within an order will contain mapping. Only the segments that have Town Plan coverage will be generated.

Map Name(s) and Date(s)



Historical Town Plan - Segment A13



Order Details

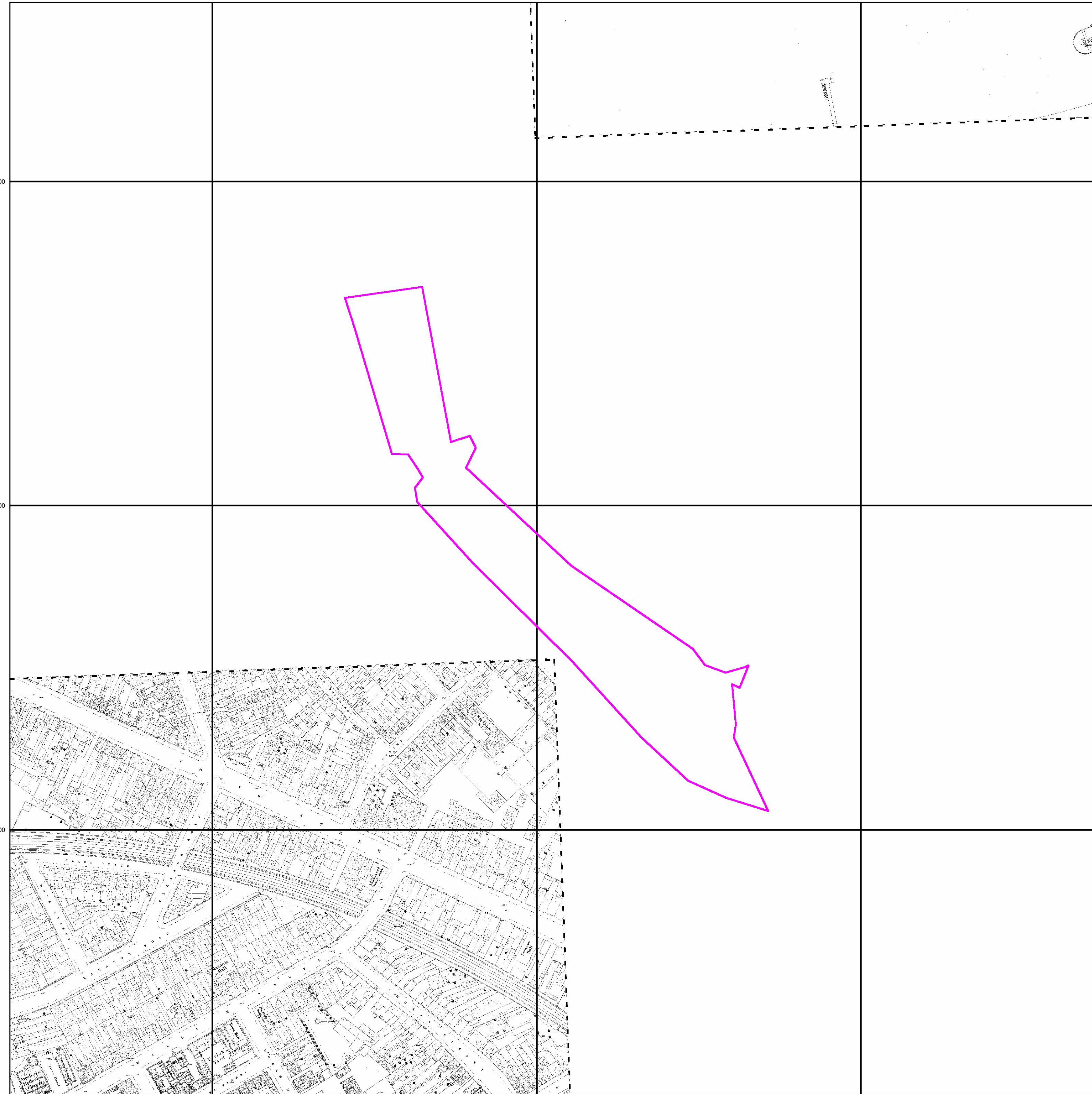
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Customer Ref: 1508005.014
National Grid Reference: 543620, 179170
Slice: A
Site Area (Ha): 1.75
Search Buffer (m): 0

Site Details

Linear Park, Woolwich, Greenwich



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





TWEEDIE EVANS CONSULTING

Kent

Published 1895

Source map scale - 1:528

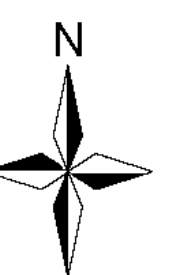
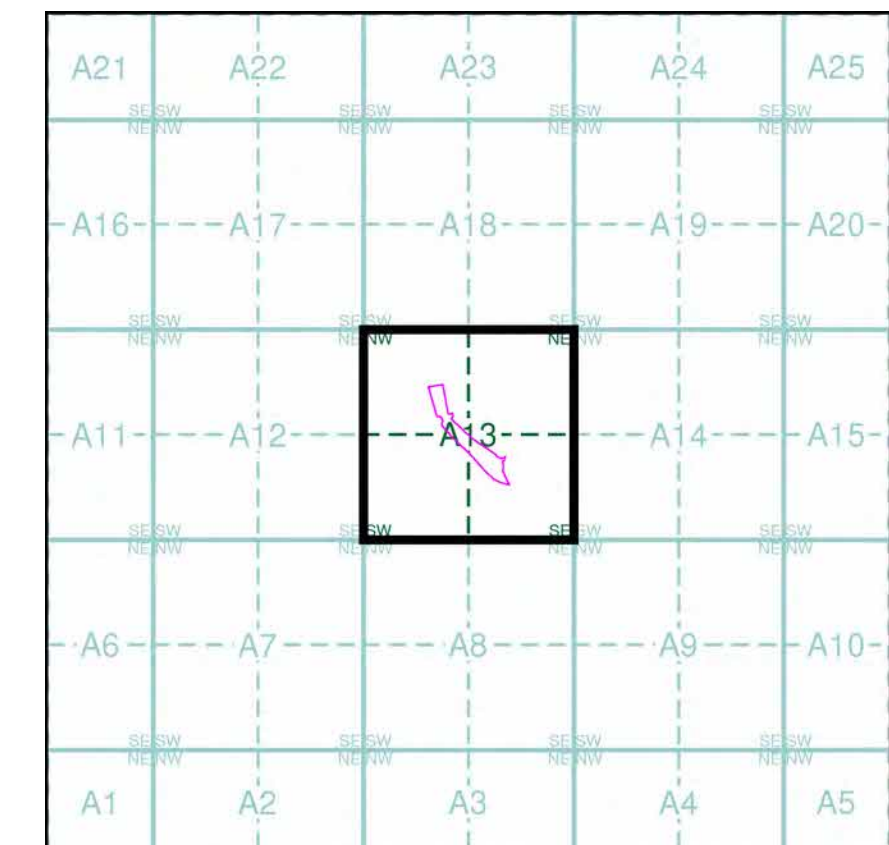
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Map Name(s) and Date(s)

002_06_017	002_06_018
1895	1895
1:528	1:528
	002_06_023
	1895
	1:528

Historical Town Plan - Segment A13



Order Details

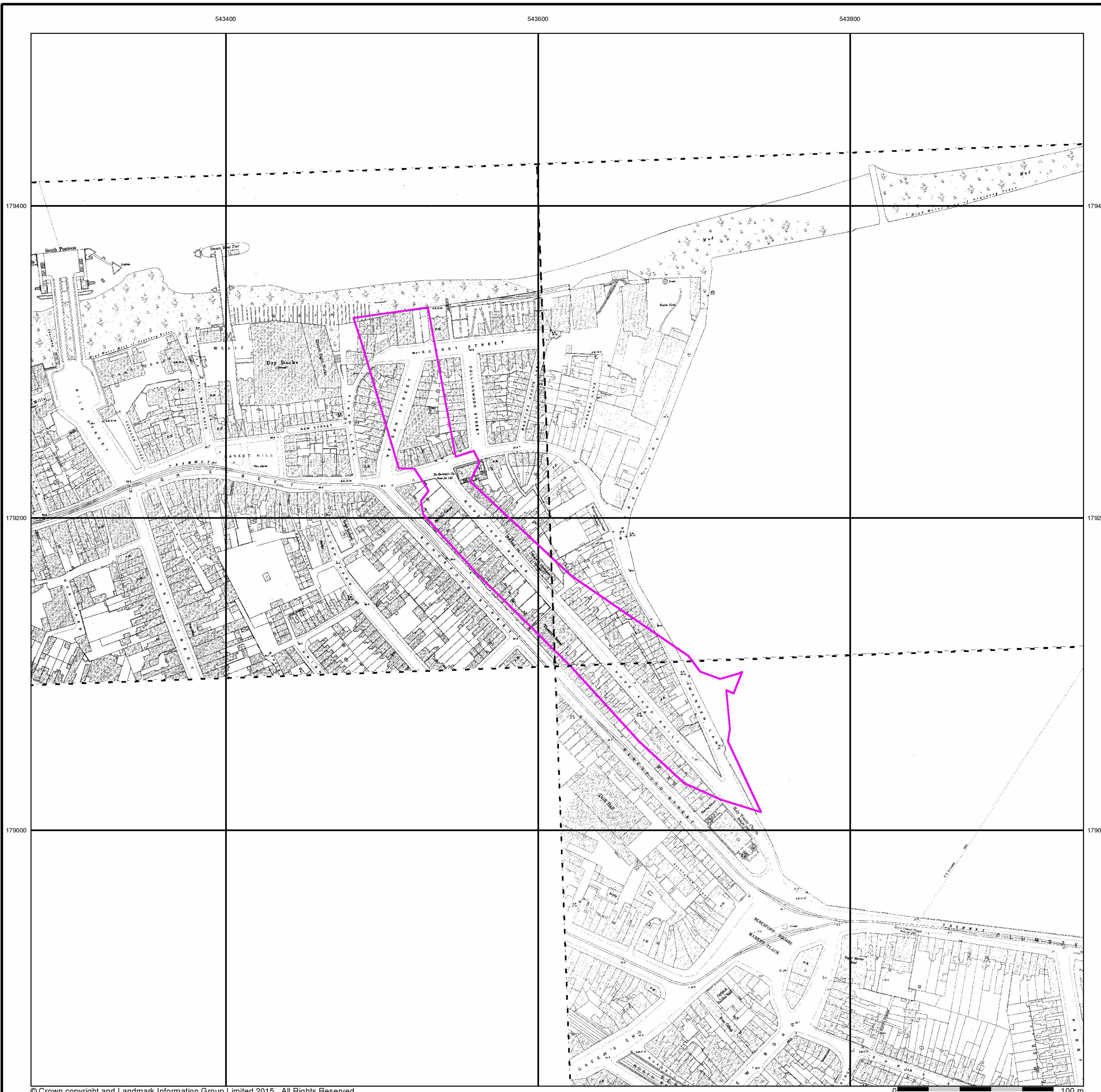
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 Slice: A
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 Search Buffer (m): 0

Site Details

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TWEEDIE EVANS CONSULTING

London

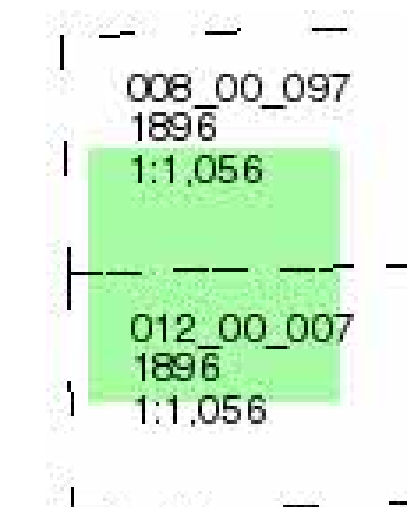
Published 1896

Source map scale - 1:1,056

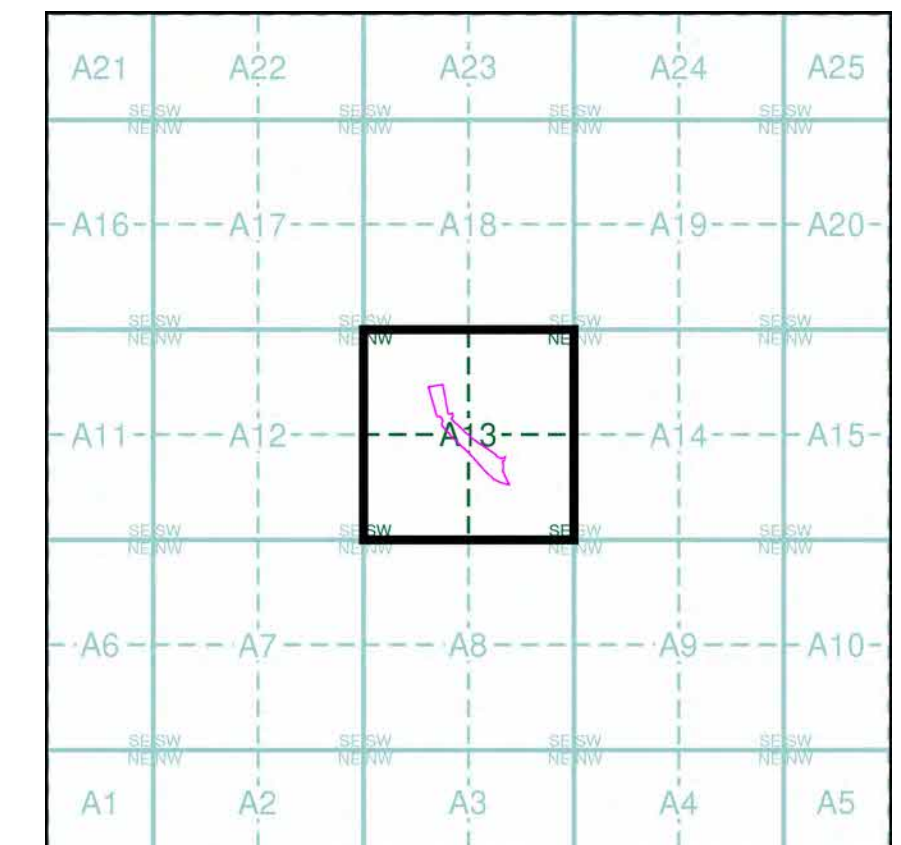
The 1:1056 scale of Ordnance Survey mapping was adopted from Ireland in 1848 and was used to survey towns with a population of over 4000, plus county towns of lesser population, in those counties mapped at the six-inch scale in 1841-55. The scale was the largest scale at which London was mapped by the Ordnance Survey and a 'skeleton' survey of the capital, showing little more than streets, street names, frontages and altitudes, was undertaken between 1848 and 1850. The majority of the 1:1056 surveys were later replaced by 1:500 surveys; although almost all the remainder were revised at this scale, sometimes more than once before 1895. The type of detail shown on the 1:1056 scale is broadly similar to that on 1:500; the apparent omission of minor details such as sewer access points and street lights may be as much a reflection of the generally earlier date of these plans, as of the specification of the map.

Please note: Due to the partial coverage of Historical Town Plans, it is possible that not all segments within an order will contain mapping. Only the segments that have Town Plan coverage will be generated.

Map Name(s) and Date(s)



Historical Town Plan - Segment A13



Order Details

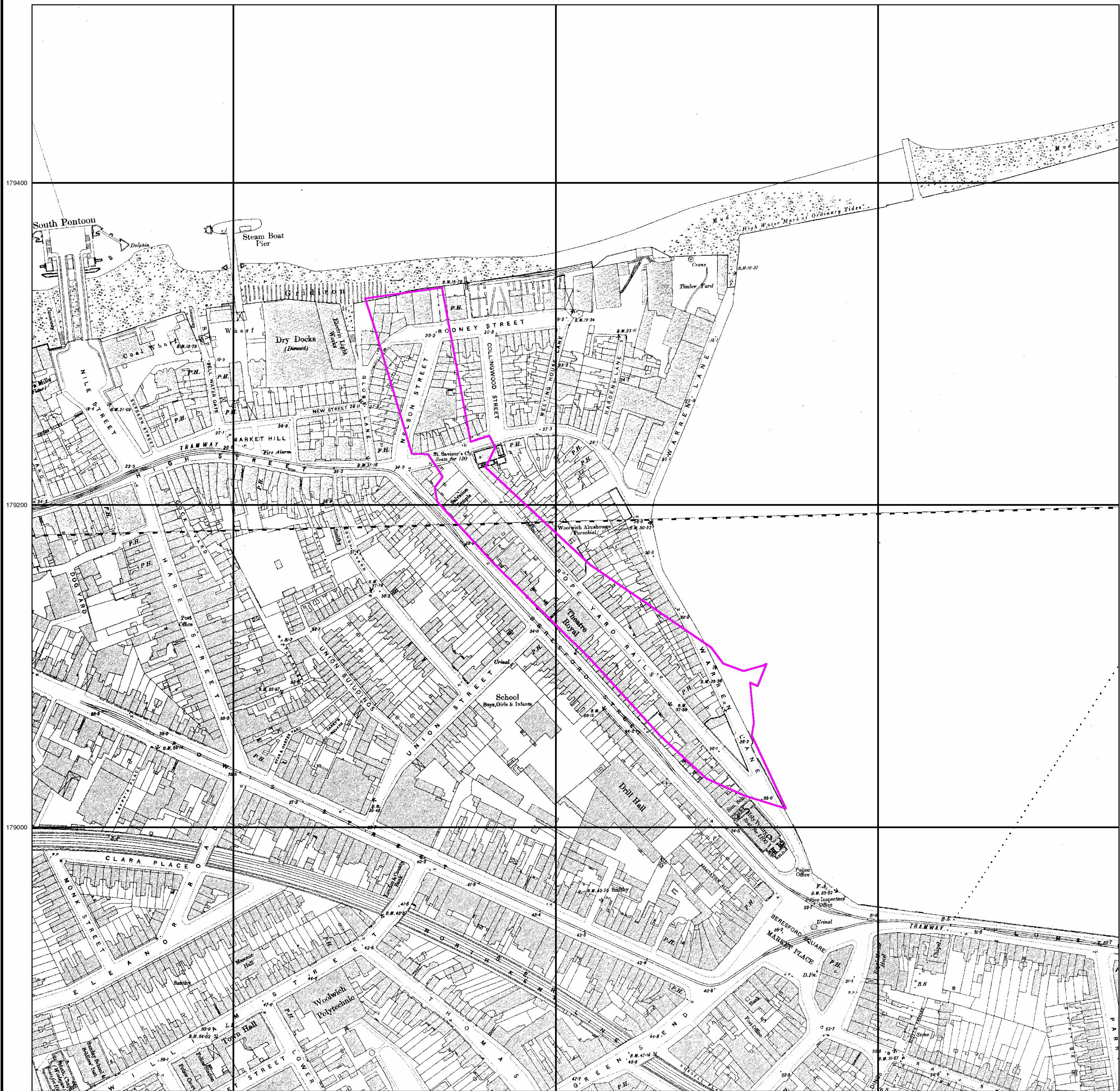
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Slice: A
Site Area (Ha): 1.75
Search Buffer (m): 0

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543400

543600

543800



TWEEDIE EVANS CONSULTING

London

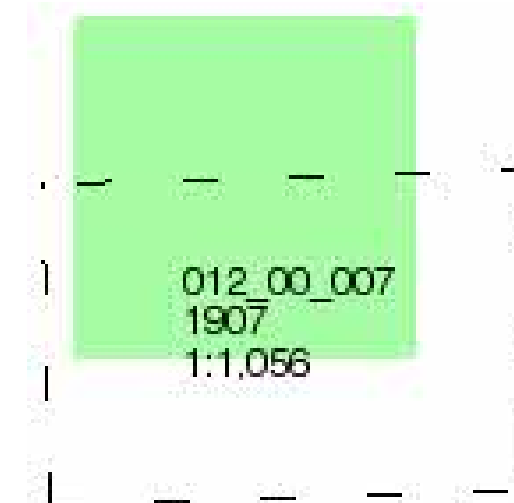
Published 1907

Source map scale - 1:1,056

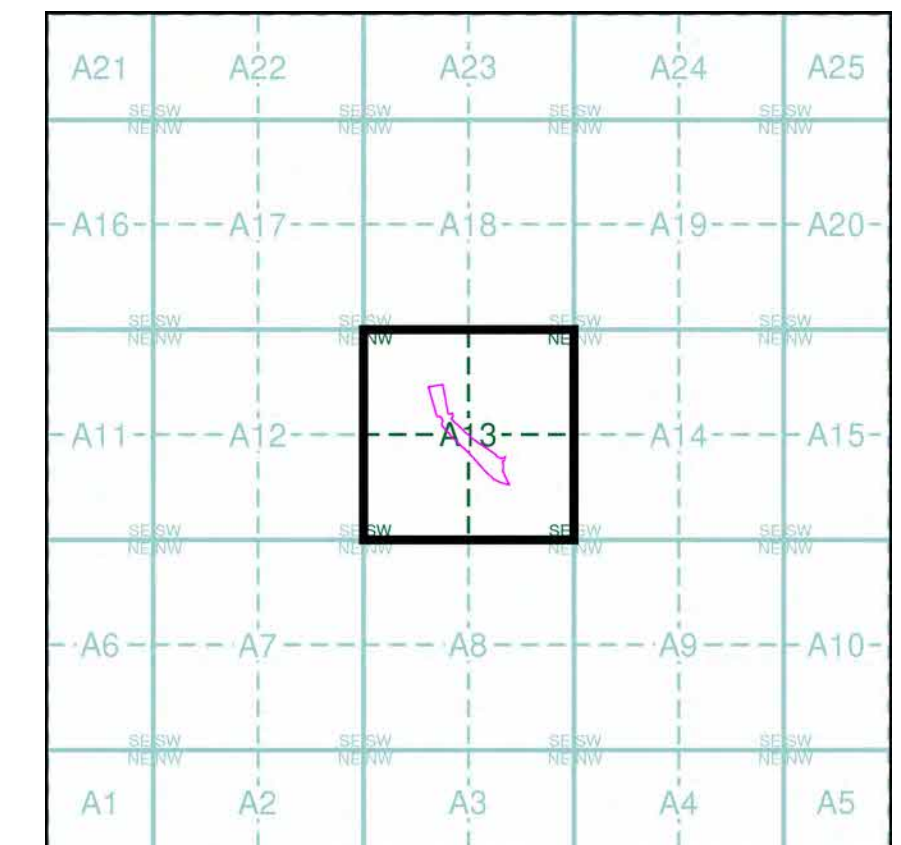
The 1:1056 scale of Ordnance Survey mapping was adopted from Ireland in 1848 and was used to survey towns with a population of over 4000, plus county towns of lesser population, in those counties mapped at the six-inch scale in 1841-55. The scale was the largest scale at which London was mapped by the Ordnance Survey and a 'skeleton' survey of the capital, showing little more than streets, street names, frontages and altitudes, was undertaken between 1848 and 1850. The majority of the 1:1056 surveys were later replaced by 1:500 surveys; although almost all the remainder were revised at this scale, sometimes more than once before 1895. The type of detail shown on the 1:1056 scale is broadly similar to that on 1:500; the apparent omission of minor details such as sewer access points and street lights may be as much a reflection of the generally earlier date of these plans, as of the specification of the map.

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Map Name(s) and Date(s)



Historical Town Plan - Segment A13



Order Details

Order Number: 149792684_1_1
Customer Ref: 1508005.014
National Grid Reference: 543620, 179170
Slice: A
Site Area (Ha): 1.75
Search Buffer (m): 0

Site Details

Linear Park, Woolwich, Greenwich



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Web: www.envirocheck.co.uk

179400

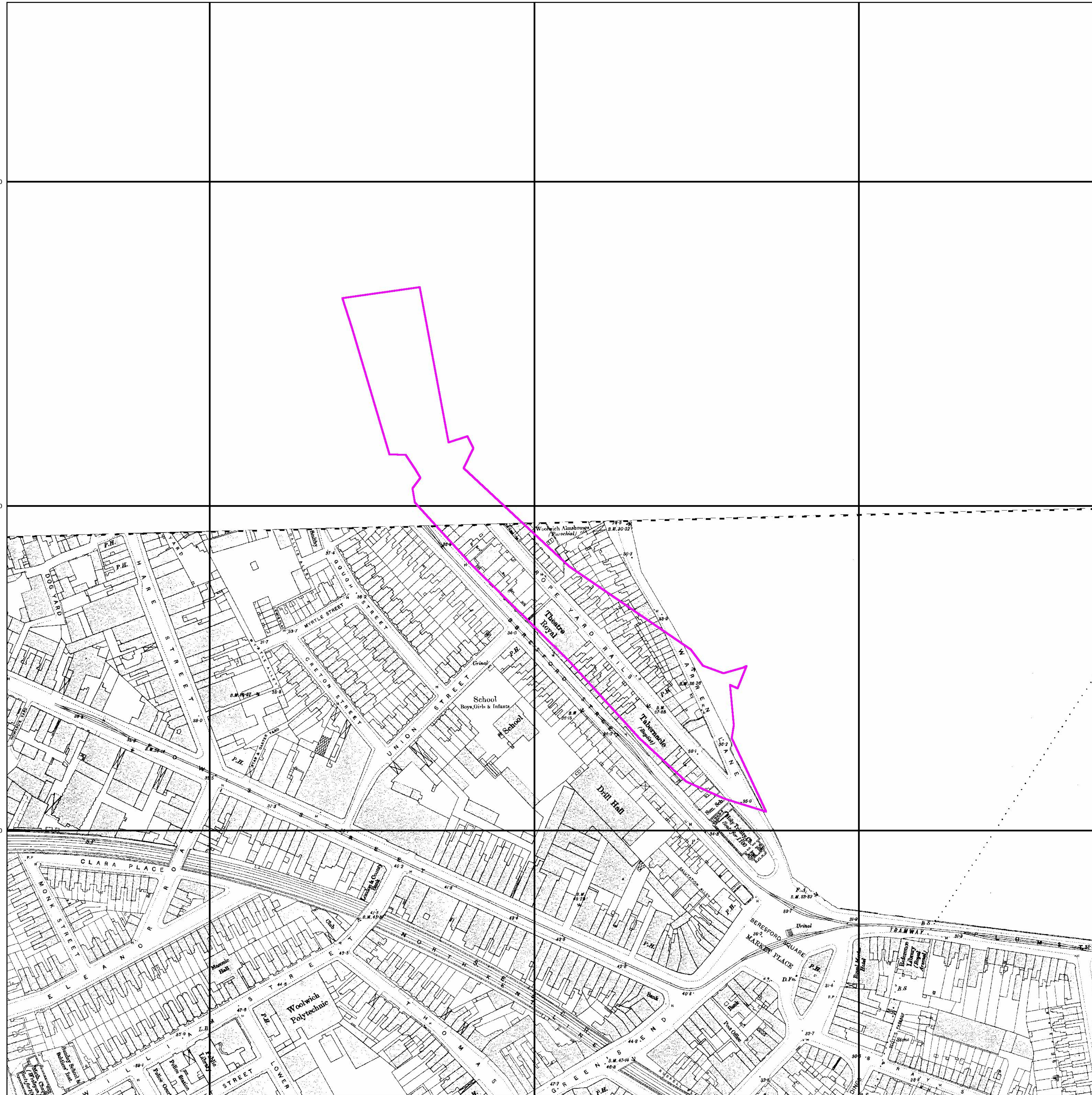
179400

179200

179200

179000

179000





TWEEDIE EVANS CONSULTING
London

Published 1850

Source map scale - 1:5,280

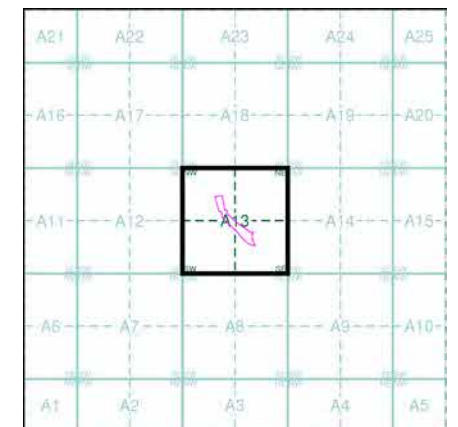
The historical town plans shown derive from Ordnance Survey mapping from the early to mid 1850s. The 1:2640 scale was introduced in the early 1850s, to survey districts covered by the Local Boards of Health and for a map of the Osborne Estate of Queen Victoria. The general style is similar to that of the early 1:2500s published shortly afterwards. 1:5280 scale was surveyed shortly afterwards in the mid 1850s as general purpose mapping with a standard of content similar to the more contemporary 1:10,560 mapping. The scale was also used for a reduction of the 1:1056 'skeleton survey' of London that was undertaken between 1848 and 1850.

Please note: Due to the partial coverage of Historical Town Plans, it is possible that not all segments within an order will contain mapping. Only the segments that have Town Plan coverage will be generated.

Map Name(s) and Date(s)

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1850
1:5,280
012_00_000_NE
1850
1:5,280

Historical Town Plan - Segment A13



Order Details

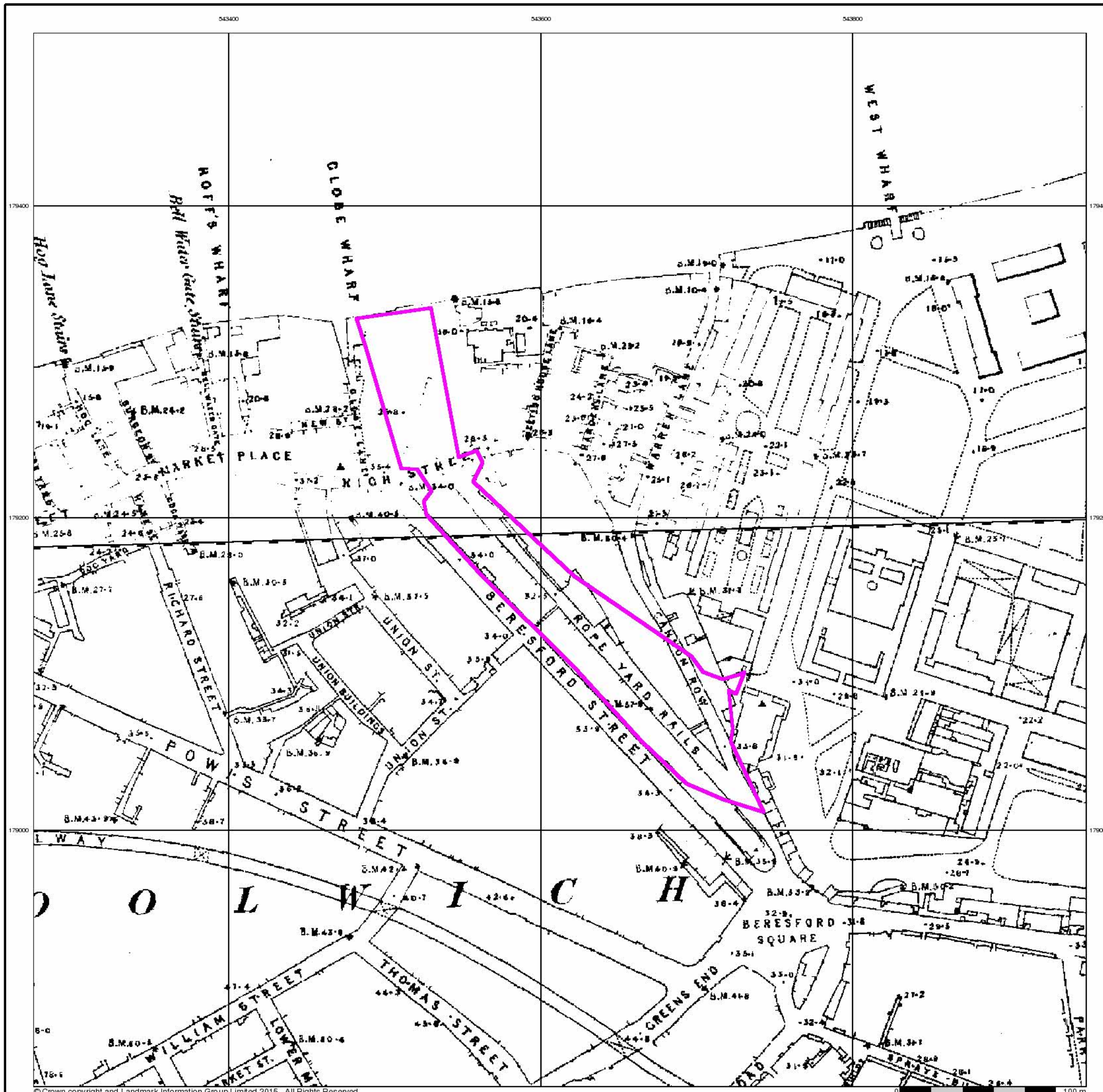
Order Number: 149792684_1_1
 Customer Ref: 1508005.014
 National Grid Reference: 543620, 179170
 Slice: A
 Site Area (Ha): 1.75
 Search Buffer (m): 0

Site Details

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Historical Mapping Legends

Ordnance Survey County Series and Ordnance Survey Plan 1:2,500

Quarry **Gravel Pit** **Sand Pit**
Clay Pit **Shingle** **Refuse Heap**
Sloping Masonry **Flat Rock**
Marsh **Reeds** **Osiers**
Rough Pasture **Furze** **Wood**
Mixed Wood **Brushwood** **Orchard**
Fir **Ford** **Stepping Stones**
Ferry **Waterfall** **Lock**
Trig. Station **Altitude at Trig. Station**
B.M. 325.9 **Bench Mark** **Surface Level**
Arrow denotes flow of water **Antiquities (site of)**
Cutting **Embankment**
Railway crossing Road **Level Crossing** **Road crossing Railway**
Railway crossing River or Canal **Road over single stream** **Road over River or Canal**
County Boundary (Geographical)
County & Civil Parish Boundary
Administrative County & Civil Parish Boundary
County Borough Boundary (England)
County Burgh Boundary (Scotland)
Co. Boro. Bdy.
Co. Burgh Bdy.
BP BS Boundary Post or Stone **P.C.B** Police Call Box
B.R. Bridle Road **P** Pump
E.P Electricity Pylon **S.P** Signal Post
F.B. Foot Bridge **SL** Sluice
F.P. Foot Path **Sp.** Spring
G.P Guide Post or Board **T.C.B** Telephone Call Box
M.S Mile Stone **Tr.** Trough
M.P M.R Mooring Post or Ring **W** Well

Ordnance Survey Plan, Additional SIMs and Supply of Unpublished Survey Information 1:2,500 and 1:1,250

Inactive Quarry, Chalk Pit or Clay Pit **Active Quarry, Chalk Pit or Clay Pit**
Rock **Boulders**
Cliff **Slopes** **Top**
Roofed Building **Glazed Roof Building**
Sloping Masonry **Archway**
Non-Coniferous Tree (surveyed) **Coniferous Tree (surveyed)**
Non-Coniferous Trees (not surveyed) **Coniferous Trees (not surveyed)**
Orchard Tree **Scrub** **Bracken**
Coppice, Osier **Reeds** **Marsh, Saltings**
Rough Grassland **Heath** **Culvert**
Direction of water flow **Bench Mark** **Antiquity (site of)**
Cave Entrance **Triangulation Station** **Electricity Pylon**
Electricity Transmission Line
County Boundary (Geographical)
County & Civil Parish Boundary
Civil Parish Boundary
Admin. County or County Bor. Boundary
London Borough Boundary
Symbol marking point where boundary mereing changes
BH Beer House **P** Pillar, Pole or Post
BP, BS Boundary Post or Stone **PO** Post Office
Cn, C Capstan, Crane **PC** Public Convenience
Chy Chimney **PH** Public House
D Fn Drinking Fountain **Pp** Pump
EI P Electricity Pillar or Post **SB, S Br** Signal Box or Bridge
FAP Fire Alarm Pillar **SP, SL** Signal Post or Light
FB Foot Bridge **Spr** Spring
GP Guide Post **Tk** Tank or Track
H Hydrant or Hydraulic **TCB** Telephone Call Box
LC Level Crossing **TCP** Telephone Call Post
MH Manhole **Tr** Trough
MP Mile Post or Mooring Post **Wr Pt, Wr T** Water Point, Water Tap
MS Mile Stone **W** Well
NTL Normal Tidal Limit **Wd Pp** Wind Pump

Large-Scale National Grid Data 1:2,500 and 1:1,250

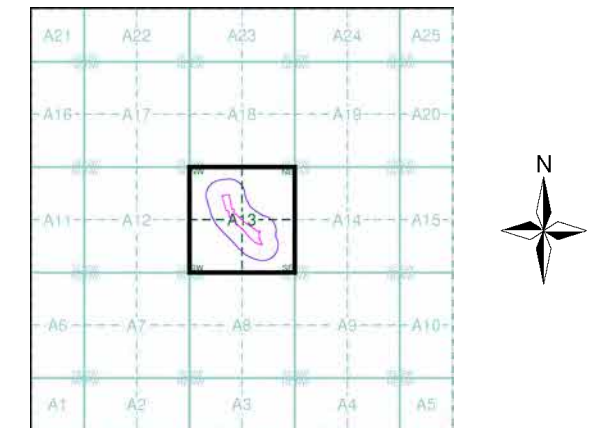
Cliff **Slopes** **Top**
Rock **Rock (scattered)**
Boulders **Boulders (scattered)**
Positioned Boulder **Scree**
Non-Coniferous Tree (surveyed) **Coniferous Tree (surveyed)**
Non-Coniferous Trees (not surveyed) **Coniferous Trees (not surveyed)**
Orchard Tree **Scrub** **Bracken**
Coppice, Osier **Reeds** **Marsh, Saltings**
Rough Grassland **Heath** **Culvert**
Direction of water flow **Triangulation Station** **Antiquity (site of)**
Electricity Transmission Line **Electricity Pylon**
B.M. 231.60m **Bench Mark** **Buildings with Building Seed**
Roofed Building **Glazed Roof Building**
Civil parish/community boundary
District boundary
County boundary
Boundary post/stone
Boundary mereing symbol (note: these always appear in opposed pairs or groups of three)
Bks Barracks **P** Pillar, Pole or Post
Bty Battery **PO** Post Office
Cemy Cemetery **PC** Public Convenience
Chy Chimney **Pp** Pump
Cis Cistern **Ppg Sta** Pumping Station
Dismtd Rly Dismantled Railway **PW** Place of Worship
EI Gen Sta Electricity Generating Station **Sewage Ppg Sta** Sewage Pumping Station
EI P Electricity Pole, Pillar **SB, S Br** Signal Box or Bridge
EI Sub Sta Electricity Sub Station **SP, SL** Signal Post or Light
FB Filter Bed **Spr** Spring
Fn / D Fn Fountain / Drinking Ftn. **Tk** Tank or Track
Gas Gov Gas Valve Compound **Tr** Trough
GVC Gas Governor **Wd Pp** Wind Pump
GP Guide Post **Wr Pt, Wr T** Water Point, Water Tap
MH Manhole **Wks** Works (building or area)
MP, MS Mile Post or Mile Stone **W** Well



TWEEDIE EVANS CONSULTING
Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Essex	1:2,500	1864	2
London	1:2,500	1869	3
Kent	1:2,500	1895	4
London	1:2,500	1896	5
Essex	1:2,500	1916	6
London	1:2,500	1916	7
Ordnance Survey Plan	1:1,250	1957	8
Additional SIMs	1:1,250	1957 - 1988	9
Ordnance Survey Plan	1:2,500	1958	10
Ordnance Survey Plan	1:1,250	1970 - 1971	11
Supply of Unpublished Survey Information	1:1,250	1973 - 1975	12
Additional SIMs	1:1,250	1977 - 1987	13
Additional SIMs	1:1,250	1986 - 1987	14
Ordnance Survey Plan	1:1,250	1988	15
Large-Scale National Grid Data	1:1,250	1991	16
Large-Scale National Grid Data	1:1,250	1992	17
Large-Scale National Grid Data	1:1,250	1996	18
Historical Aerial Photography	1:2,500	1999	19

Historical Map - Segment A13



Order Details

Order Number: 149792684_1_1
 Customer Ref: 1508005.014
 National Grid Reference: 543620, 179170
 Slice: A
 Site Area (Ha): 1.75
 Search Buffer (m): 100

Site Details

Linear Park, Woolwich, Greenwich



Tel: 0844 844 9952
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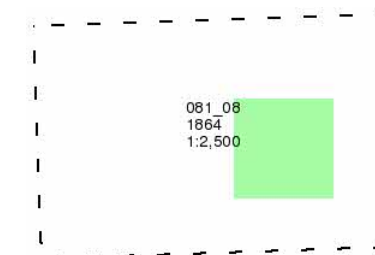
TWEEDIE EVANS CONSULTING
Essex

Published 1864

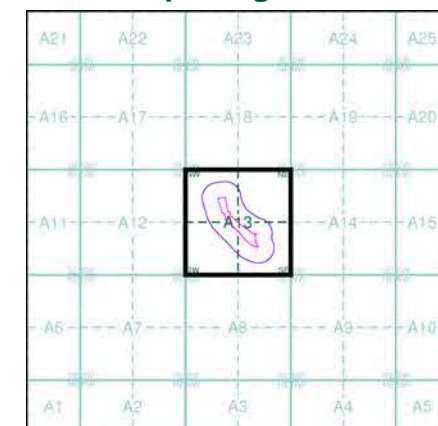
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

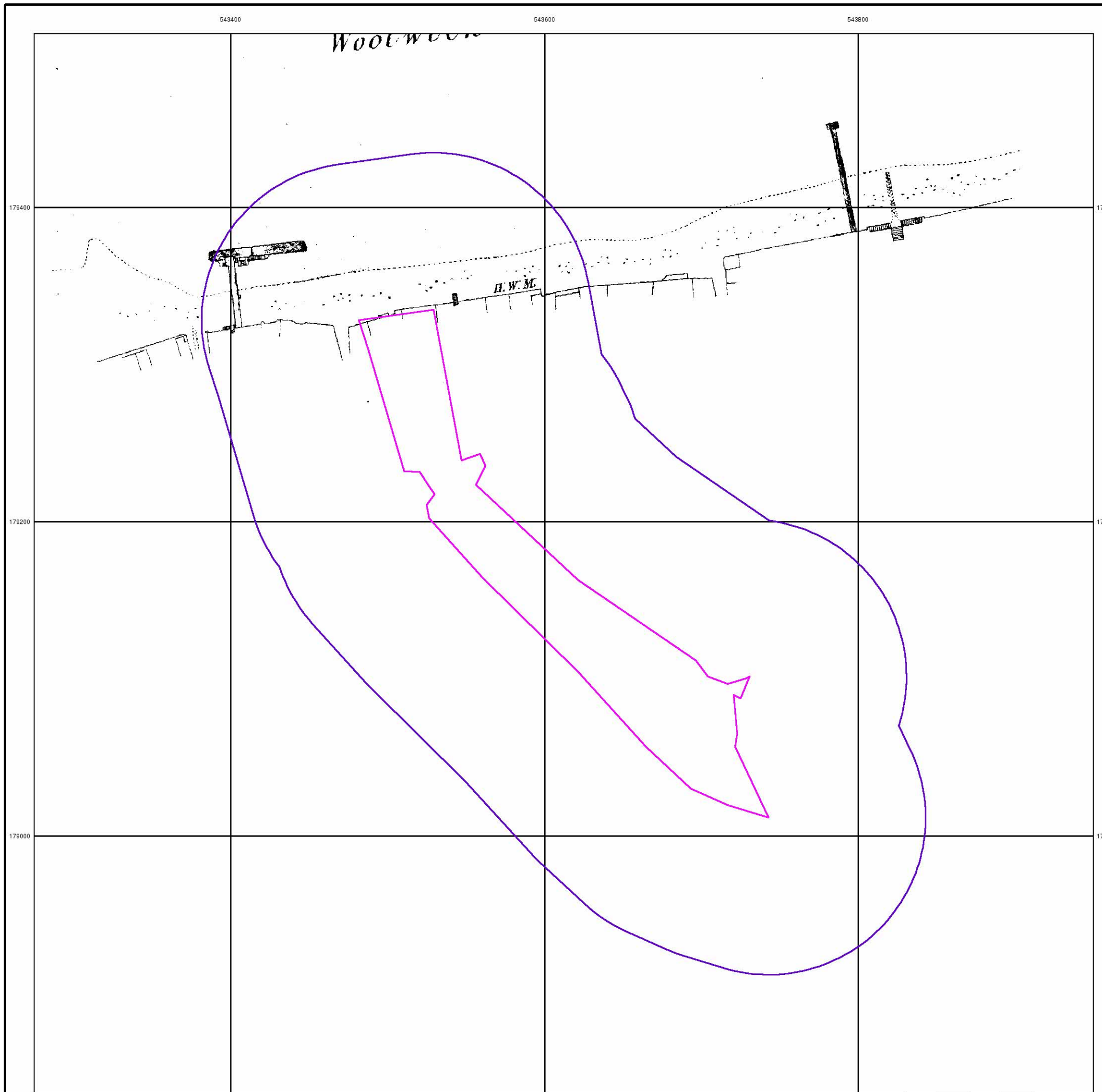
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TWEEDIE EVANS CONSULTING
London

Published 1869

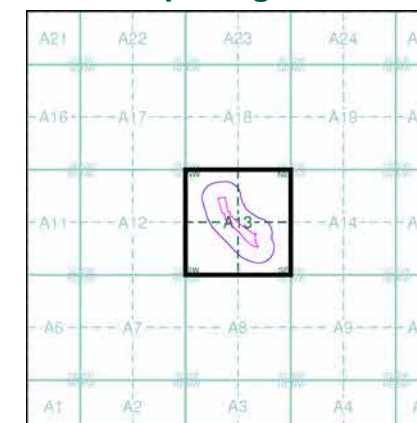
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The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)

049 00
1869
1:2,500
060 00
1869
1:2,500

Historical Map - Segment A13



Order Details

Order Number: 149792684_1_1
 Customer Ref: 1508005.014
 National Grid Reference: 543620, 179170
 Slice: A
 Site Area (Ha): 1.75
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TWEEDIE EVANS CONSULTING

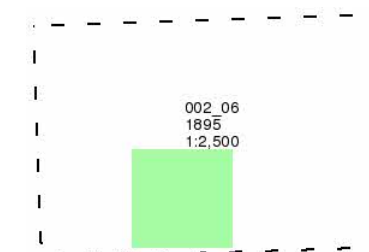
Kent

Published 1895

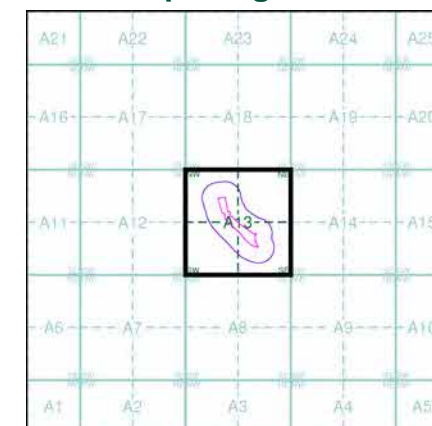
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

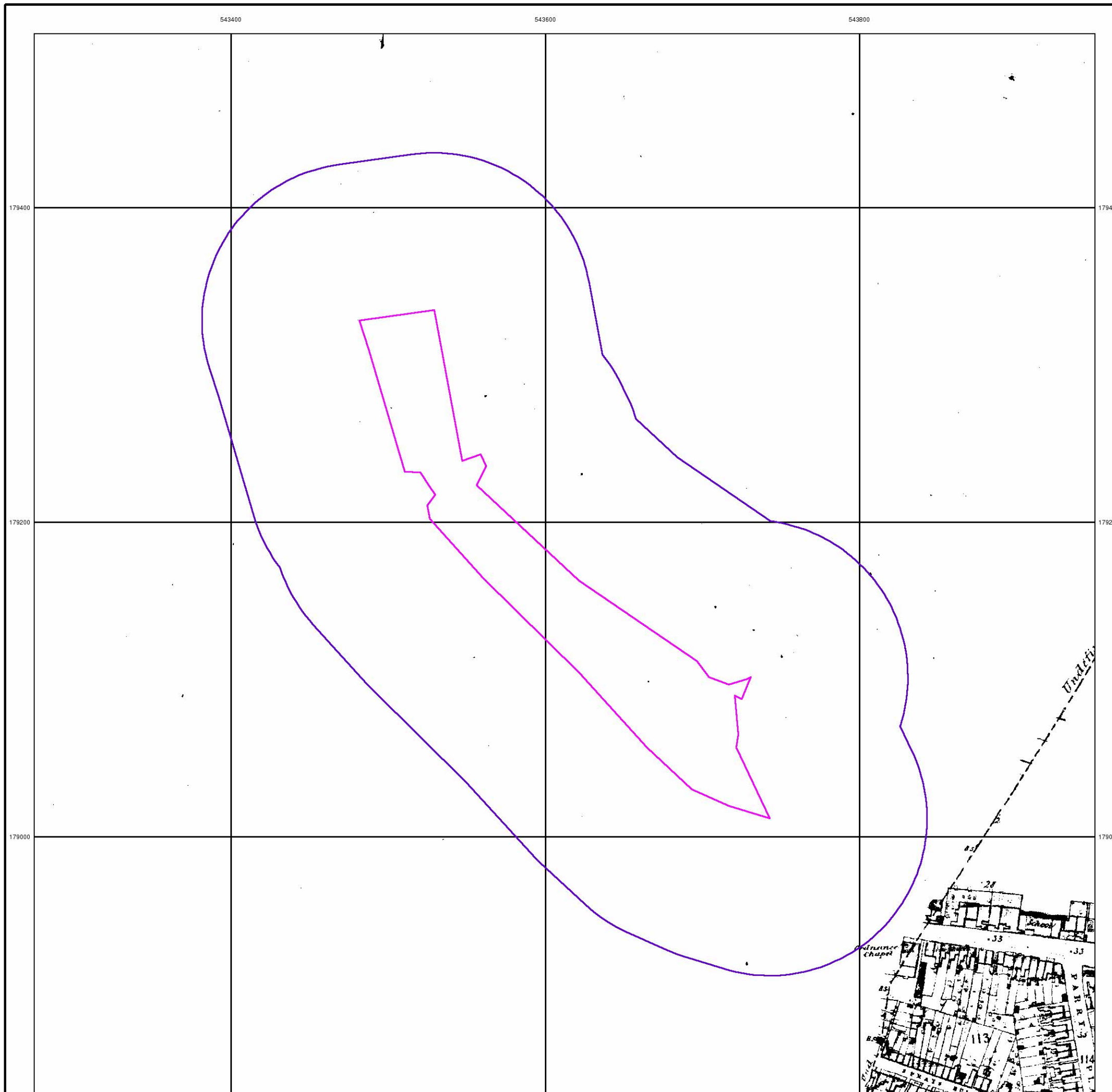
Order Number: 149792684_1_1
Customer Ref: 1508005.014
National Grid Reference: 543620, 179170
Slice: A
Site Area (Ha): 1.75
Search Buffer (m): 100

Site Details

Linear Park, Woolwich, Greenwich



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





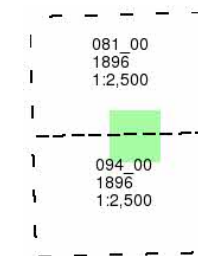
TWEEDIE EVANS CONSULTING
London

Published 1896

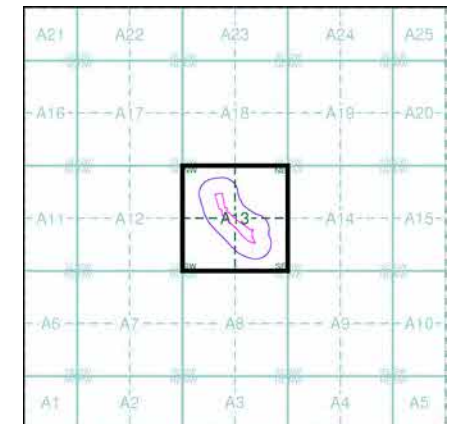
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

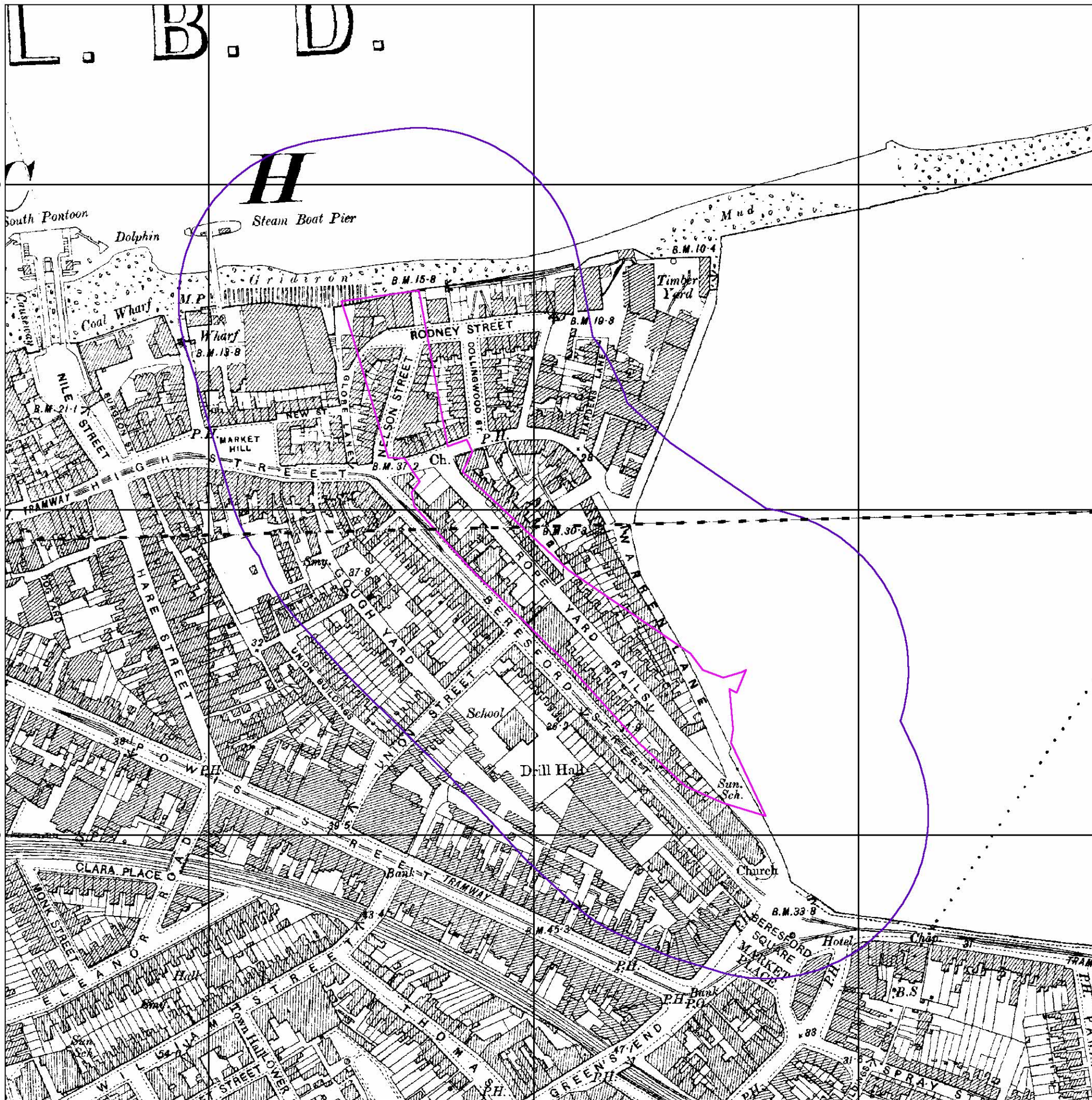
Order Number: 149792684_1_1
Customer Ref: 1508005.014
National Grid Reference: 543620, 179170
Slice: A
Site Area (Ha): 1.75
Search Buffer (m): 100

Site Details

Linear Park, Woolwich, Greenwich



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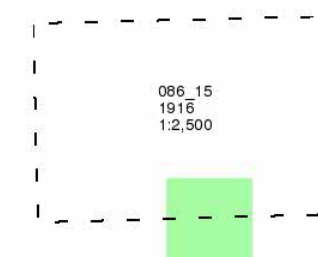
TWEEDIE EVANS CONSULTING
Essex

Published 1916

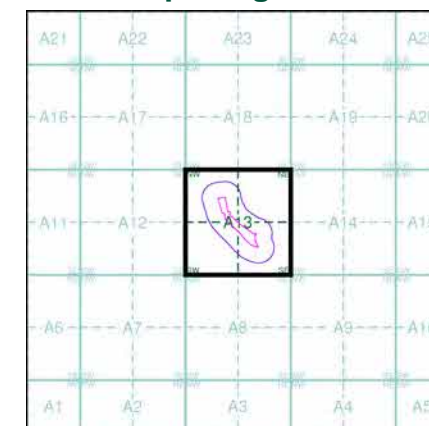
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number: 149792684_1_1
Customer Ref: 1508005.014
National Grid Reference: 543620, 179170
Slice: A
Site Area (Ha): 1.75
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Site Details

Linear Park, Woolwich, Greenwich



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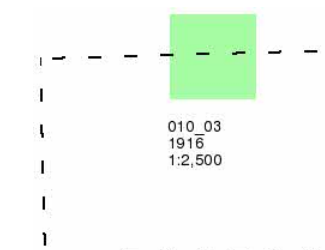
TWEEDIE EVANS CONSULTING
London

Published 1916

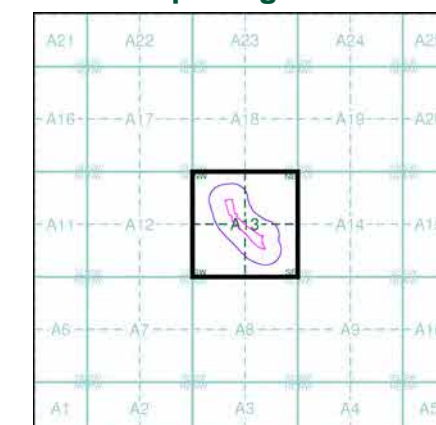
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

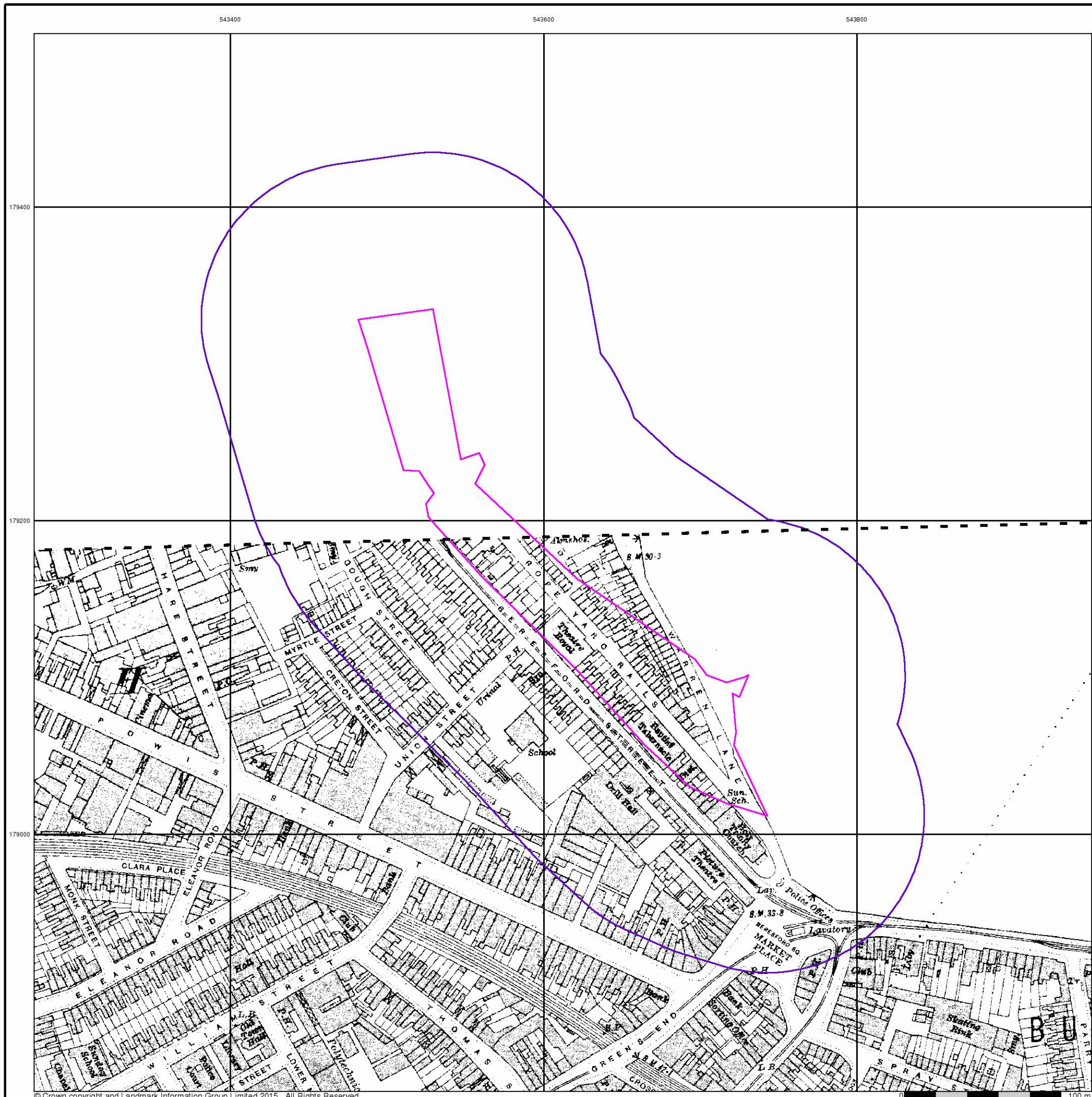
Order Number: 149792684_1_1
Customer Ref: 1508005.014
National Grid Reference: 543620, 179170
Slice: A
Site Area (Ha): 1.75
Search Buffer (m): 100

Site Details

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TWEEDIE EVANS CONSULTING
Ordnance Survey Plan

Published 1957

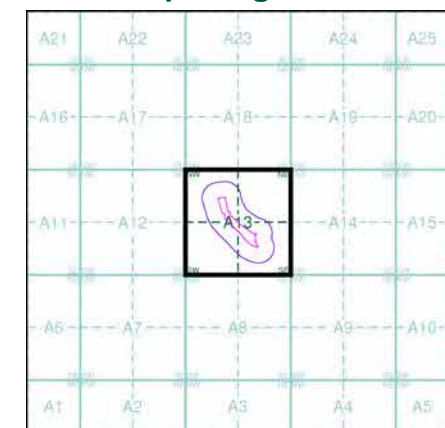
Source map scale - 1:1,250

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)

Q4379NW	Q4379NE
1957	1957
1:1,250	1:1,250
Q4379SW	Q4379SE
1957	1957
1:1,250	1:1,250
Q4378NW	Q4378NE
1957	1957
1:1,250	1:1,250

Historical Map - Segment A13



Order Details

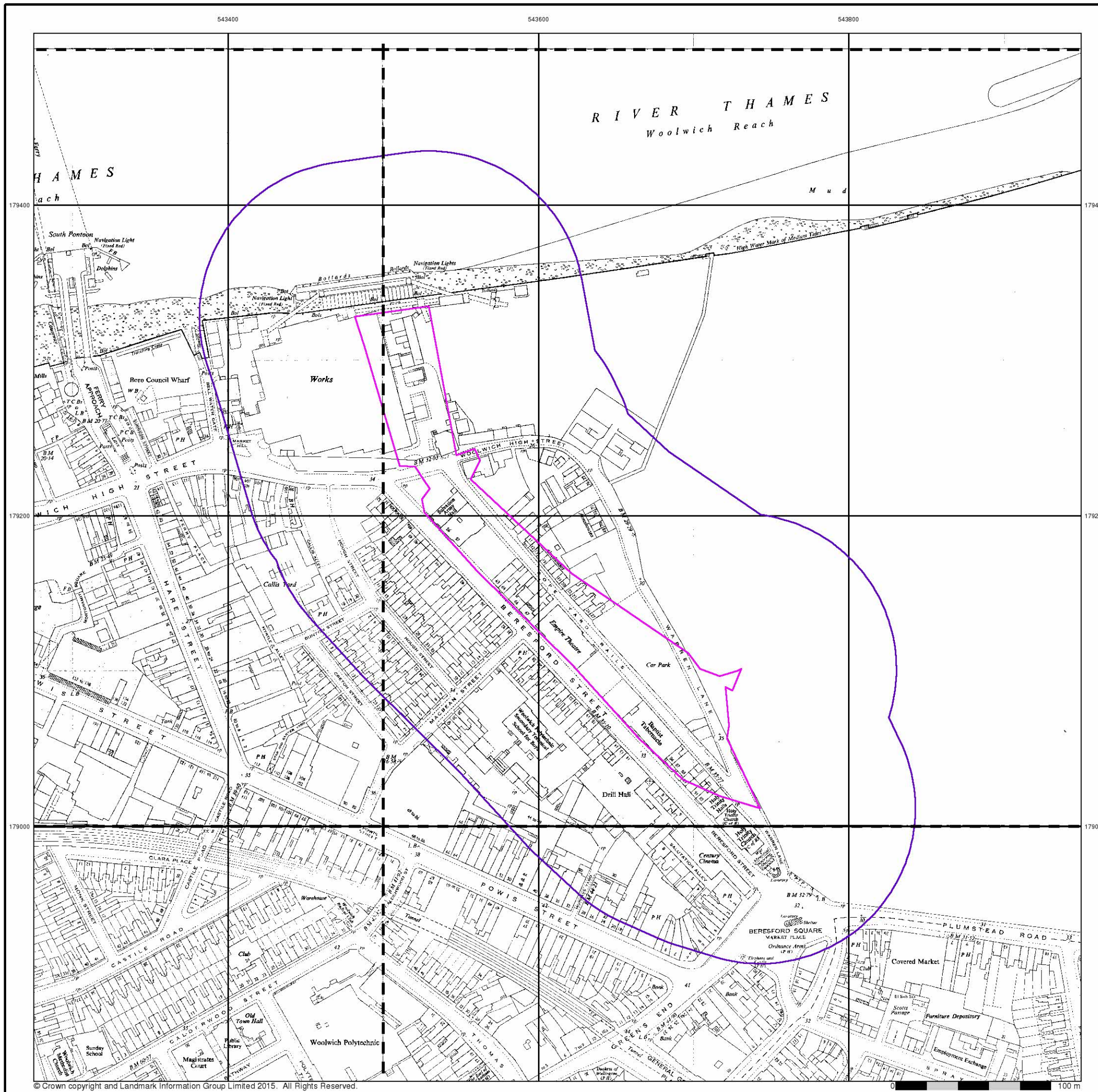
Order Number: 149792684_1_1
 Customer Ref: 1508005.014
 National Grid Reference: 543620, 179170
 Slice: A
 Site Area (Ha): 1.75
 Search Buffer (m): 100

Site Details

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TWEEDIE EVANS CONSULTING

Additional SIMs

Published 1957 - 1988

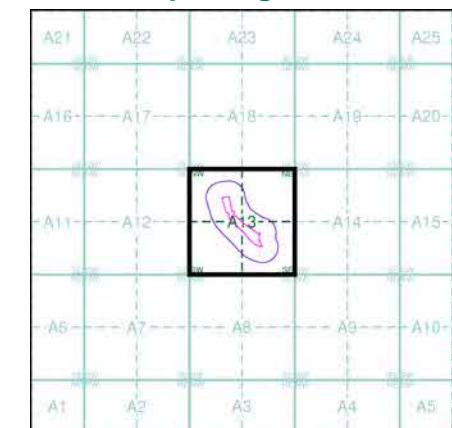
Source map scale - 1:1,250

The SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)

Q4379NW	Q4379NE
1984	1983
1:1,250	1:1,250
Q4379SW	Q4379SE
1988	1957
1:1,250	1:1,250
Q4378NW	Q4378NE
1957	1977
1:1,250	1:1,250

Historical Map - Segment A13



Order Details

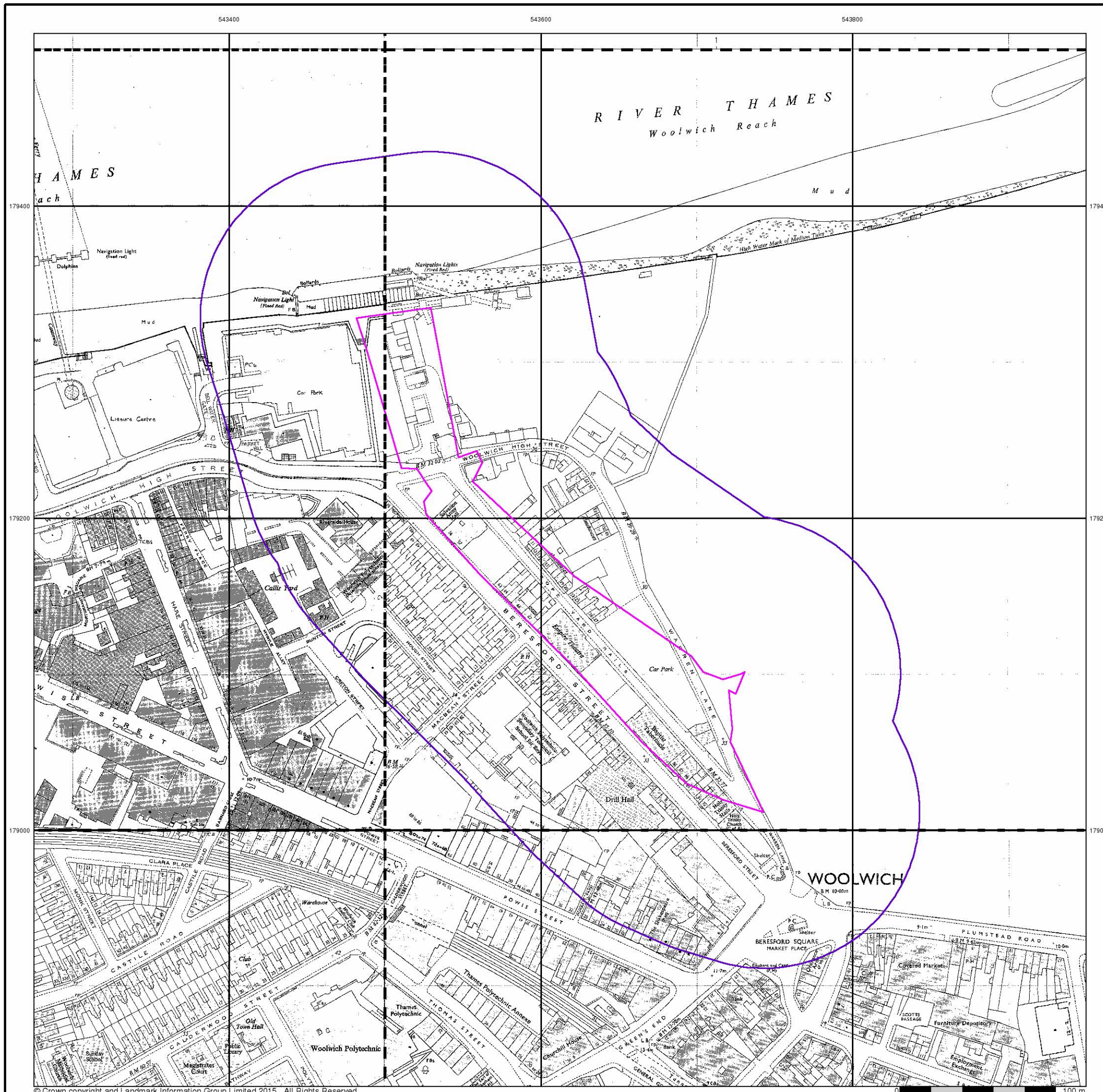
Order Number: 149792684_1_1
 Customer Ref: 1508005.014
 National Grid Reference: 543620, 179170
 Slice: A
 Site Area (Ha): 1.75
 Search Buffer (m): 100

Site Details

Linear Park, Woolwich, Greenwich



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 Fax: 0844 844 9951
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TWEEDIE EVANS CONSULTING
Ordnance Survey Plan

Published 1958

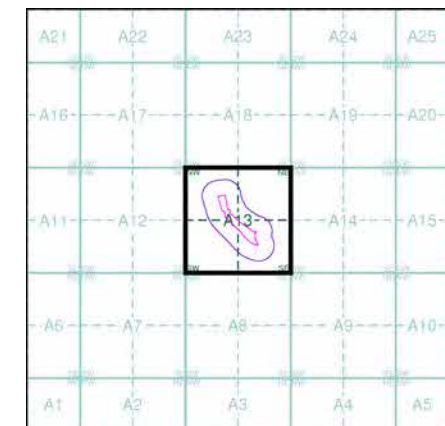
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)

TQ4379
1958
1:2,500
TQ4378
1958
1:2,500

Historical Map - Segment A13



Order Details

Order Number: 149792684_1_1
 Customer Ref: 1508005.014
 National Grid Reference: 543620, 179170
 Slice: A
 Site Area (Ha): 1.75
 Search Buffer (m): 100

Site Details

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TWEEDIE EVANS CONSULTING
Ordnance Survey Plan

Published 1970 - 1971

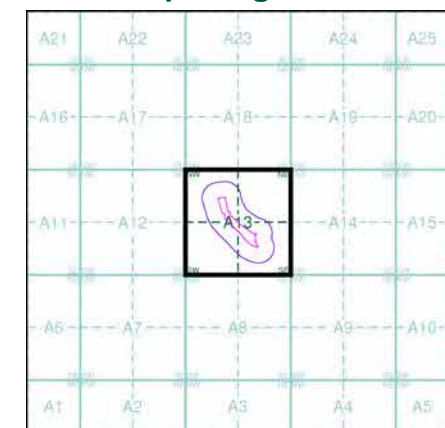
Source map scale - 1:1,250

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)

Q4379NW	1970	1:1,250
Q4379SW	1970	1:1,250
Q4379SE	1970	1:1,250
Q4378NW	1971	1:1,250
Q4378NE	1971	1:1,250

Historical Map - Segment A13



Order Details

Order Number: 149792684_1_1
 Customer Ref: 1508005.014
 National Grid Reference: 543620, 179170
 Slice: A
 Site Area (Ha): 1.75
 Search Buffer (m): 100

Site Details

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TWEEDIE EVANS CONSULTING
Supply of Unpublished Survey Information

Published 1973 - 1975

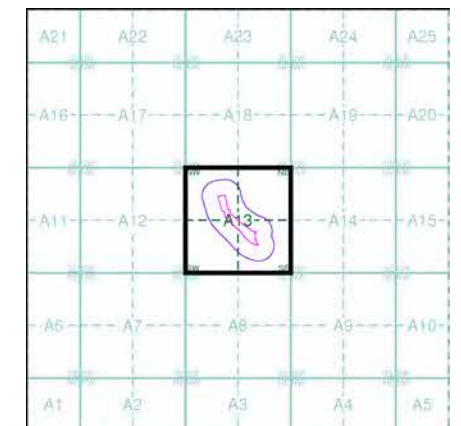
Source map scale - 1:1,250

SUSI maps (Supply of Unpublished Survey Information) were produced between 1972 and 1977, mainly for internal use at Ordnance Survey. These were more of a 'work-in-progress' plan as they showed updates of individual areas on a map. These maps were unpublished, and they do not represent a single moment in time. They were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)

Q4379NW	975	1:1,250
Q4379SW	975	1:1,250
Q4378NW	973	1:1,250

Historical Map - Segment A13



Order Details

Order Number: 149792684_1_1
 Customer Ref: 1508005.014
 National Grid Reference: 543620, 179170
 Slice: A
 Site Area (Ha): 1.75
 Search Buffer (m): 100

Site Details

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TWEEDIE EVANS CONSULTING

Additional SIMs

Published 1977 - 1987

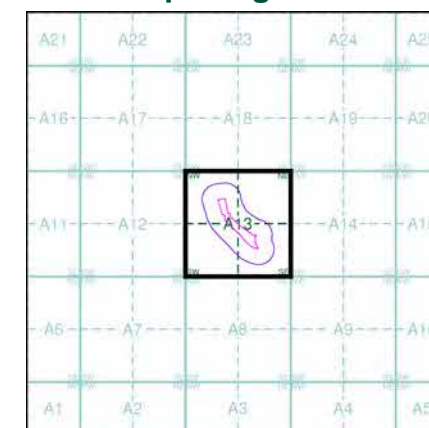
Source map scale - 1:1,250

The SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)

TQ4379SE	
1987	
1:1,250	
TQ4378NW	TQ4378NE
1977	1982
1:1,250	1:1,250

Historical Map - Segment A13



Order Details

Order Number: 149792684_1_1
 Customer Ref: 1508005.014
 National Grid Reference: 543620, 179170
 Slice: A
 Site Area (Ha): 1.75
 Search Buffer (m): 100

Site Details

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543400

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TWEEDIE EVANS CONSULTING

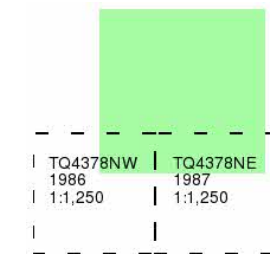
Additional SIMs

Published 1986 - 1987

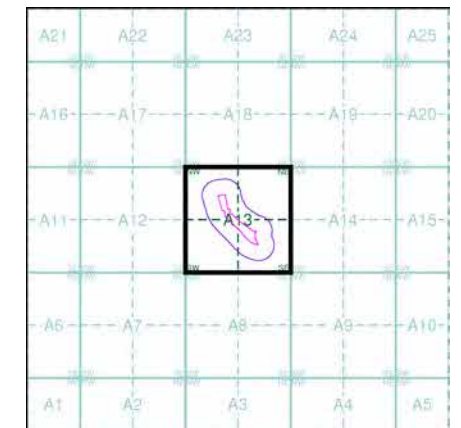
Source map scale - 1:1,250

The SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

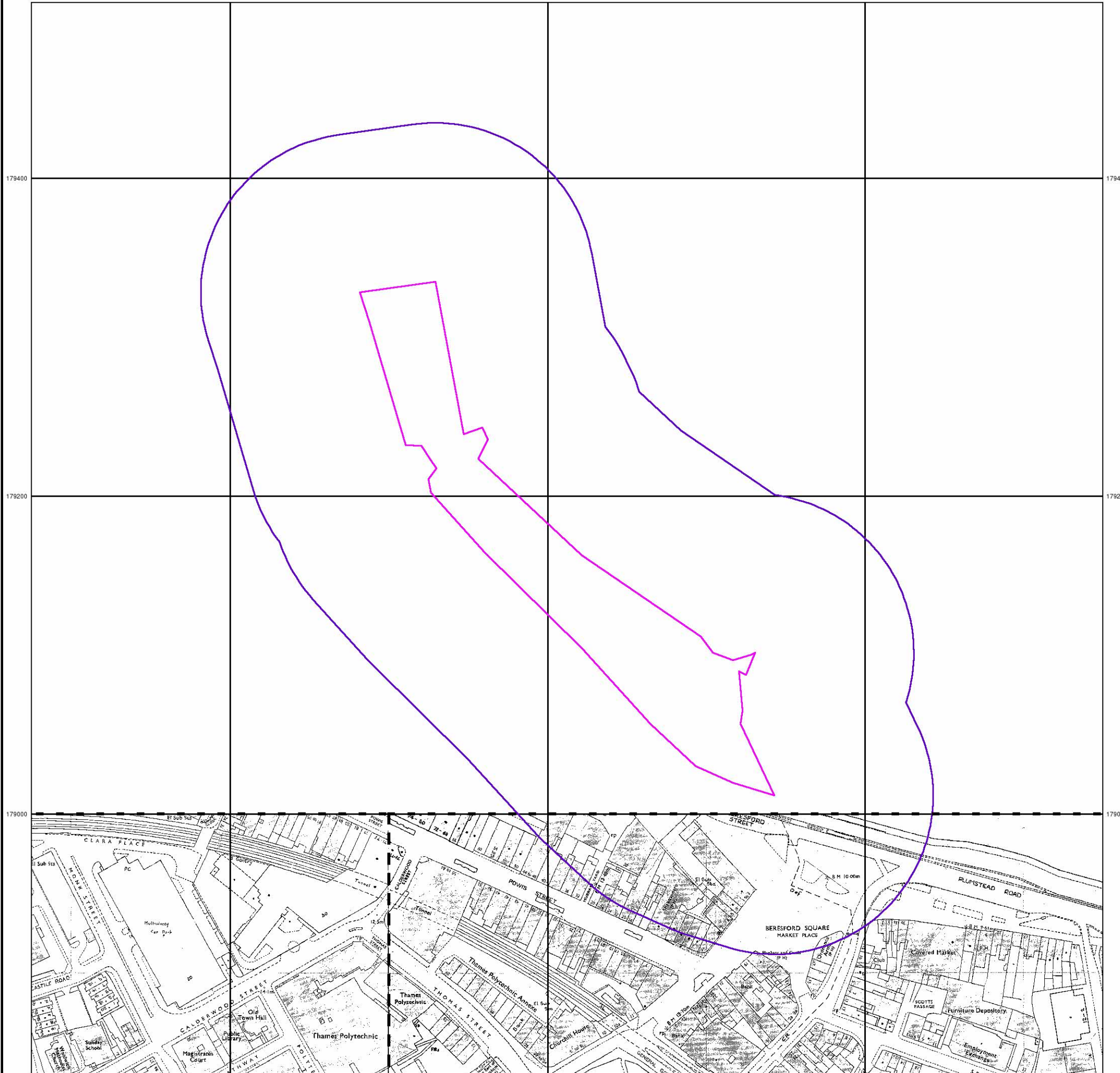
Order Number: 149792684_1_1
Customer Ref: 1508005.014
National Grid Reference: 543620, 179170
Slice: A
Site Area (Ha): 1.75
Search Buffer (m): 100

Site Details

Linear Park, Woolwich, Greenwich



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Web: www.envirocheck.co.uk



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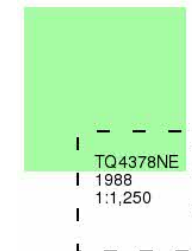
TWEEDIE EVANS CONSULTING
Ordnance Survey Plan

Published 1988

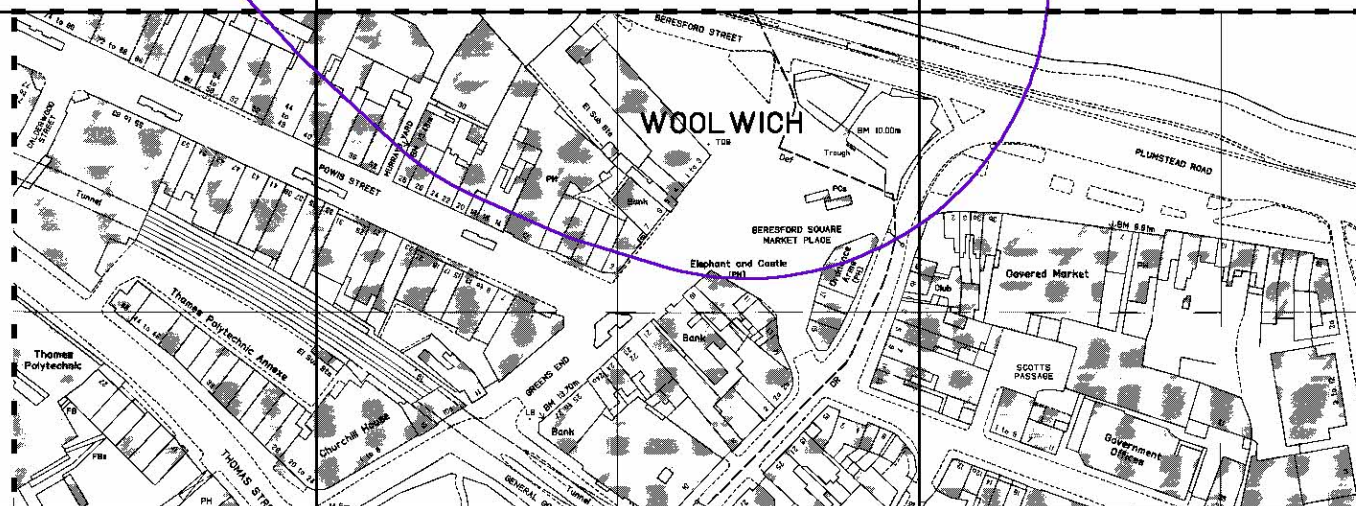
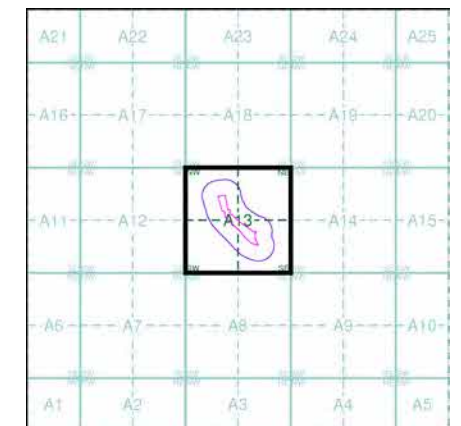
Source map scale - 1:1,250

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Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number: 149792684_1_1
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Slice: A
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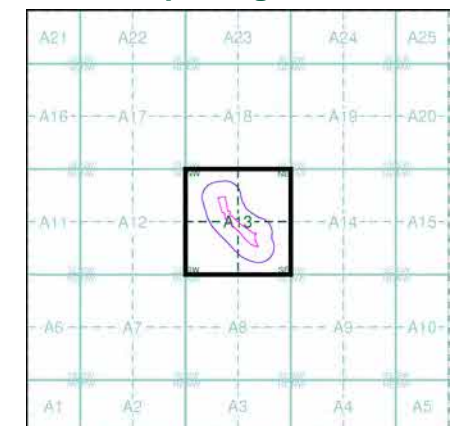
TWEEDIE EVANS CONSULTING
Large-Scale National Grid Data
Published 1991
Source map scale - 1:1,250

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)

Q4379NW	Q4379NE
1991	1991
1:1,250	1:1,250
Q4379SW	Q4379SE
1991	1991
1:1,250	1:1,250
Q4378NW	Q4378NE
1991	1991
1:1,250	1:1,250

Historical Map - Segment A13



Order Details

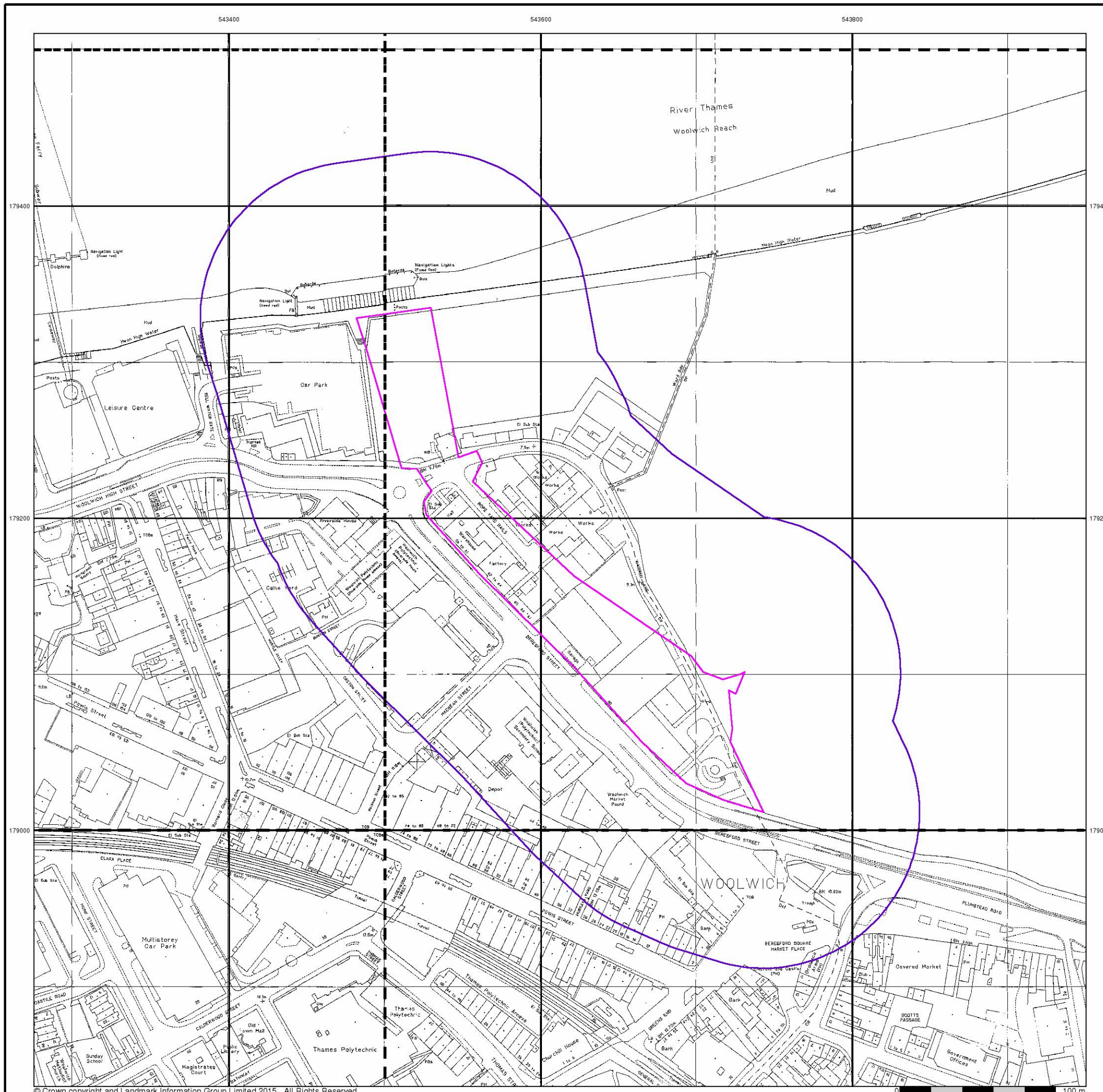
Order Number: 149792684_1_1
 Customer Ref: 1508005.014
 National Grid Reference: 543620, 179170
 Slice: A
 Site Area (Ha): 1.75
 Search Buffer (m): 100

Site Details

Linear Park, Woolwich, Greenwich



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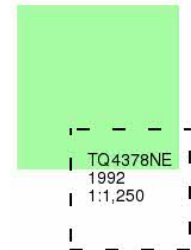
179000



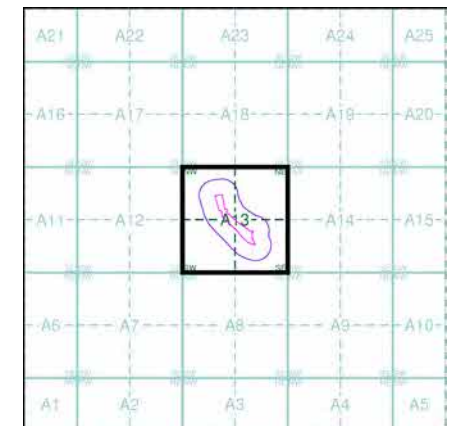
TWEEDIE EVANS CONSULTING
Large-Scale National Grid Data
Published 1992
Source map scale - 1:1,250

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

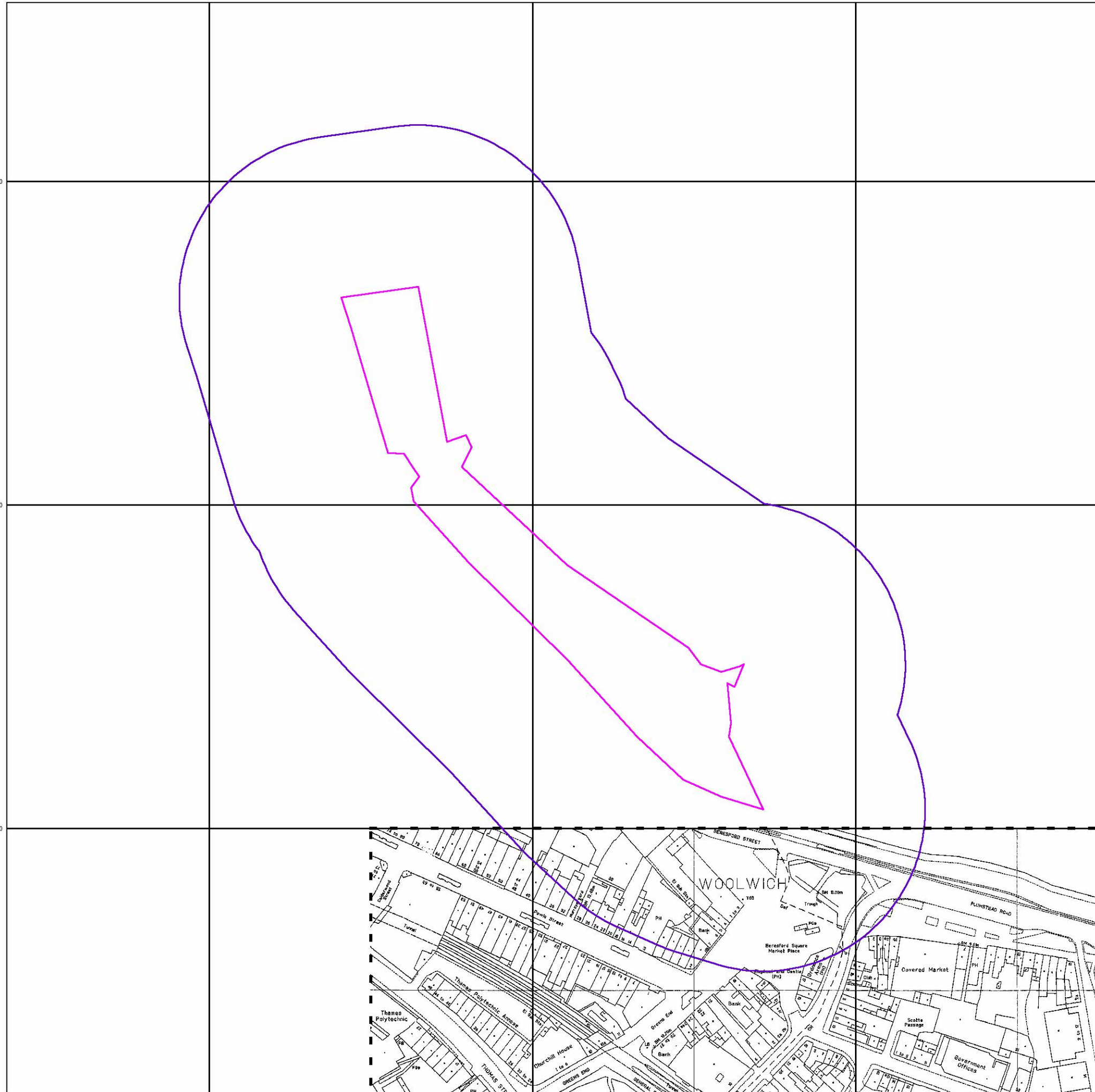
Order Number: 149792684_1_1
 Customer Ref: 1508005.014
 National Grid Reference: 543620, 179170
 Slice: A
 Site Area (Ha): 1.75
 Search Buffer (m): 100

Site Details

Linear Park, Woolwich, Greenwich



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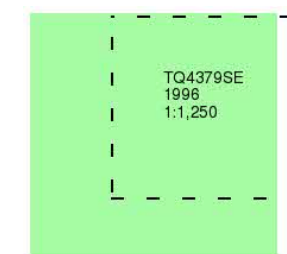
TWEEDIE EVANS CONSULTING
Large-Scale National Grid Data

Published 1996

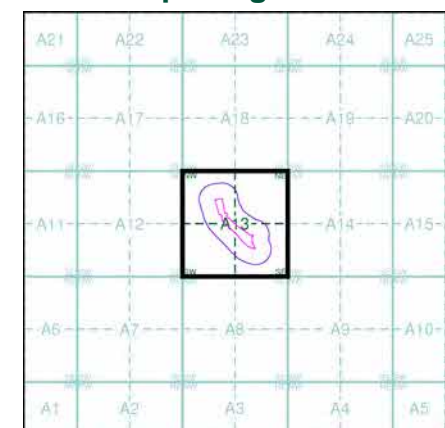
Source map scale - 1:1,250

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number: 149792684_1_1
Customer Ref: 1508005.014
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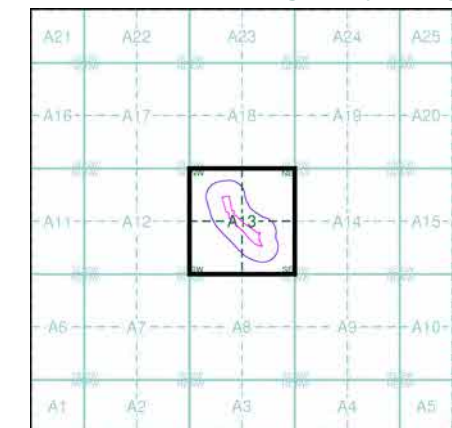


TWEEDIE EVANS CONSULTING
Historical Aerial Photography

Published 1999

This aerial photography was produced by Getmapping, these vertical aerial photographs provide a seamless, full colour survey of the whole of Great Britain

Historical Aerial Photography - Segment A13



Order Details

Order Number: 149792684_1_1
 Customer Ref: 1508005.014
 National Grid Reference: 543620, 179170
 Slice: A
 Site Area (Ha): 1.75
 Search Buffer (m): 100

Site Details

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Historical Mapping Legends

Ordnance Survey County Series 1:10,560

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

Ordnance Survey Plan 1:10,000

	Chalk Pit, Clay Pit or Quarry		Gravel Pit
	Sand Pit		Disused Pit or Quarry
	Refuse or Slag Heap		Lake, Loch or Pond
	Dunes		Boulders
	Coniferous Trees		Non-Coniferous Trees
	Orchard		Scrub
	Coppice		
	Bracken		Heath
	Rough Grassland		
	Marsh		Reeds
	Saltings		
	Building		Glasshouse
	Sloping Masonry		Pylon
	Electricity Transmission Line		Pole
	Cutting		Embankment
	Standard Gauge Multiple Track		
	Standard Gauge Single Track		
	Siding, Tramway or Mineral Line		
	Narrow Gauge		
	Geographical County		
	Administrative County, County Borough or County of City		
	Municipal Borough, Urban or Rural District, Burgh or District Council		
	Borough, Burgh or County Constituency Shown only when not coincident with other boundaries		
	Civil Parish Shown alternately when coincidence of boundaries occurs		
	BP, BS Boundary Post or Stone		Pol Sta Police Station
	Ch Church		PO Post Office
	CH Club House		PC Public Convenience
	F E Sta Fire Engine Station		PH Public House
	FB Foot Bridge		SB Signal Box
	Fn Fountain		Spr Spring
	GP Guide Post		TCB Telephone Call Box
	MP Mile Post		TCP Telephone Call Post
	MS Mile Stone		W Well

1:10,000 Raster Mapping

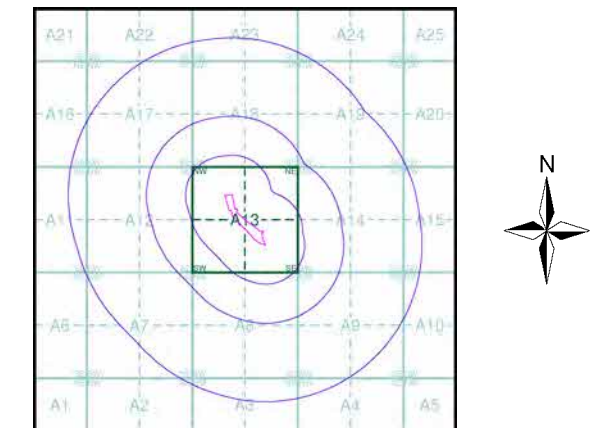
	Gravel Pit		Refuse tip or slag heap
	Rock		Rock (scattered)
	Boulders		Boulders (scattered)
	Shingle		Mud
	Sand		Sand Pit
	Slopes		Top of cliff
	General detail		Underground detail
	Overhead detail		Narrow gauge railway
	Multi-track railway		Single track railway
	County boundary (England only)		Civil,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



TWEEDIE EVANS CONSULTING
Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Kent	1:10,560	1870	3
Middlesex	1:10,560	1871 - 1873	4
Essex	1:10,560	1873	5
Middlesex	1:10,560	1873	6
London	1:10,560	1896	7
Essex	1:10,560	1898 - 1899	8
Kent	1:10,560	1898 - 1899	9
Kent	1:10,560	1910	10
Essex	1:10,560	1920	11
London	1:10,560	1920	12
Kent	1:10,560	1931	13
Kent	1:10,560	1931	14
Kent	1:10,560	1938	15
London	1:10,560	1938	16
Essex	1:10,560	1938	17
Ordnance Survey Plan	1:10,000	1940	18
Ordnance Survey Plan	1:10,000	1950	19
Ordnance Survey Plan	1:10,000	1962 - 1966	20
Ordnance Survey Plan	1:10,000	1974 - 1975	21
Ordnance Survey Plan	1:10,000	1982 - 1984	22
London	1:25,000	1985	23
Ordnance Survey Plan	1:10,000	1989	24
Ordnance Survey Plan	1:10,000	1991 - 1996	25
Ordnance Survey Plan	1:10,000	1996	26
10K Raster Mapping	1:10,000	1999	27
10K Raster Mapping	1:10,000	2006	28
VectorMap Local	1:10,000	2017	29

Historical Map - Slice A



Order Details

Order Number: 149792684_1_1
Customer Ref: 1508005.014
National Grid Reference: 543620, 179170
Slice: A
Site Area (Ha): 1.75
Search Buffer (m): 1000

Site Details

Linear Park, Woolwich, Greenwich

Landmark
INFORMATION GROUP

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

Russian Military Mapping Legends

1:5,000 and 1:10,000 mapping

a. Not drawn to scale b. Drawn to scale

	Government and Administrative Buildings		Military and Industrial Buildings
	Military and Communication Areas		Subway Entrance
	Fireproof Building		Prominent Fireproof Building
	Non-fireproof Building		Non-fireproof Building (non-dwelling)
	Factory, mill, and flour mill, with chimneys		Factory, mill, and flour mill, without chimneys
	Power Station, drawn to scale		Hydroelectric Power Station
	Radio Station, drawn to scale		Telephone Station, drawn to scale
	Abandoned Open-pit Mine or Quarry		Open-pit Salt Mine
	Pit		Oil Deposit or Well
	Oil Seepage		Natural Gas Tank
	Tailings Pile		Fuel Storage Tanks
	Bench Mark		Drill Hole
	Burial Mound		Triangulation Point on Burial Mound
	Single-track Railroad		Double-track Railroad
	Small Bridge		Pipe (Culvert)
	Tunnel		Railroad and Station Building
	Coniferous Forest		Deciduous Forest
	Mixed Forest		Lawns
	Citrus Orchard		Wet Ground
	Scattered Vegetation		

243,8 Values for prominent elevations

186.0 Numbers for spot elevations, depth soundings, contour lines, etc.

0.2 Velocity of the current, width of river bed, depth of river

180/12 Fractional terms: length and capacity of bridges; depth of fords and condition of the river bottom; height of forest and the diameter of trees

Russian Alphabet (For reference and phonetic interpretation of map text)

А а (A)	З з (Z)	П п (P)	Ч ч (CH)
Б б (B)	И и (I)	Р р (R)	Ш ш (SH)
В в (V)	Й й (Y)	С с (S)	Щ щ (SHCH)
Г г (G)	К к (K)	Т т (T)	Ъ (-)
Д д (D)	Л л (L)	У у (U)	Ы (Y)
Е е (E)	М м (M)	Ф ф (F)	Ь (')
Ё ё (YO)	Н н (N)	Х х (KH)	Э э (E)
Ж ж (ZH)	О о (O)	Ц ц (TS)	Ю ю (YU or IU)
			Я я (YA or IA)

1:25,000 mapping

a. Not drawn to scale b. Drawn to scale

	Government and Administrative Buildings		Military and Industrial Buildings
	Military and Communication Areas		Subway Entrance
	Partly Demolished Buildings		Demolished Buildings
	Built-Up Area with Fireproof Buildings Predominant		Built-Up Area with Non-Fireproof Buildings Predominant
	Individual Fireproof Building		Prominent Industrial Building
	Individual Dwelling, Fireproof		Ruins of an Individual Dwelling
	Factory or Mill Chimney		Factory or Mill with Chimney
	Factory or Mill without Chimney		Salt Mine
	Operating Shaft or Mine		Tailings Pile
	Non-Operating Shaft or Mine		Gas Pump or Service Station
	Pit		Fuel Storage or Natural Gas Tank
	Oil or Natural Gas Derrick		Small Hydroelectric Power Station
	Power Station		Transformer Station
	Cemetery		Burial Mound (height in metres)
	Triangulation Point on Burial Mound		Triangulation Point
	Bench Mark		Telegraph Office
	Bench Mark (monumented)		Telephone Station
	Radio Station		Radio Tower
	Airfield or Seaplane Base		Landing Strip
	Cut		Fill
	Km Post		Plantings
	Telegraph/Telephone Lines		Main Highway
	Highway under Construction		Improved Dirt Road (former truck road)
	Steep Grade		Small Bridge
	Pipe (Culvert)		Tunnel
	Dismantled Railroad		Double-track Railroad with First Class Station
	Railroad Under Construction		Shore Embankment
	River or Ditch with Embankment		Water Gauge
	Direction and velocity of current		Water Level Mark
	Well		Water Reservoir or Rain Water Pit
	Spring		Isobath with value
	Heavy (Index) Contour Line		Contour Line and Value
	Half Contour Line		Spot Elevation Value
	Coniferous		Deciduous
	Mixed		Scrub

Key to Numbers on Mapping

TQ47_London

No.	Description
3	Storage (Artillery)
4	Storage (Artillery)
195	Chemical Plant
230	Military Barracks
233	Military Barracks

TQ48_London

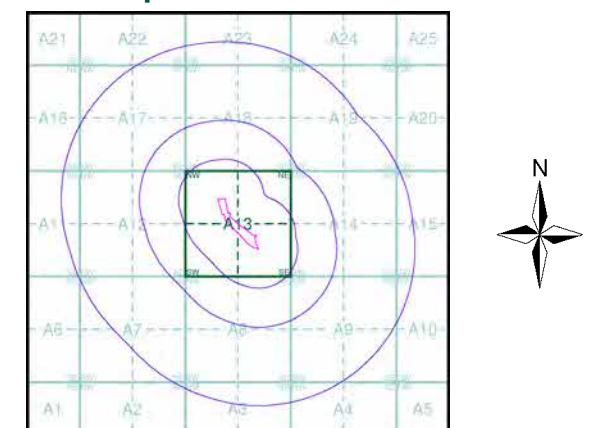
No.	Description
327	Custom House



TWEEDIE EVANS CONSULTING
Historical Mapping & Photography included:

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Kent	1:10,560	1870	3
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10K Raster Mapping	1:10,000	1999	27
10K Raster Mapping	1:10,000	2006	28
VectorMap Local	1:10,000	2017	29

Russian Map - Slice A



Order Details

Order Number: 149792684_1_1
Customer Ref: 1508005.014
National Grid Reference: 543620, 179170
Slice: A
Site Area (Ha): 1.75
Search Buffer (m): 1000

Site Details

Linear Park, Woolwich, Greenwich

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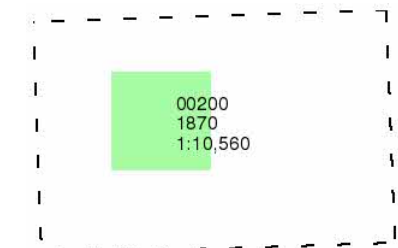
TWEEDIE EVANS CONSULTING
Kent

Published 1870

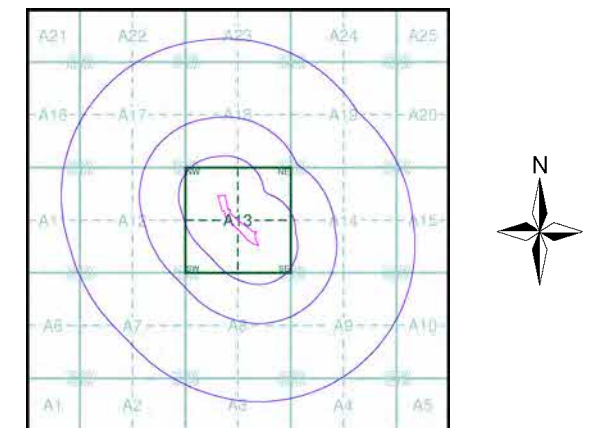
Source map scale - 1:10,560

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

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

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542400 542600 542800 543000 543200 543400 543600 543800 544000 544200 544400 544600 544800



TWEEDIE EVANS CONSULTING
Middlesex

Published 1871 - 1873

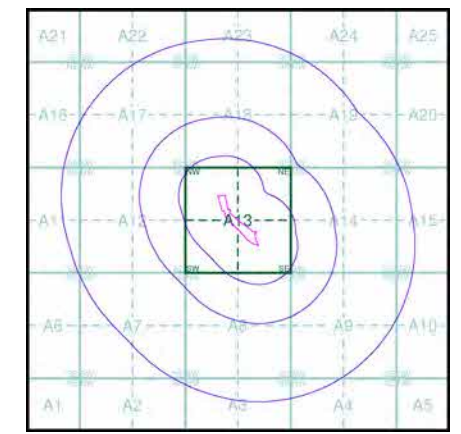
Source map scale - 1:10,560

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

Map Name(s) and Date(s)

01800	1873	1:10,560
02300	1871	1:10,560

Historical Map - Slice A



Order Details

Order Number: 149792684_1_1
 Customer Ref: 1508005.014
 National Grid Reference: 543620, 179170
 Slice: A
 Site Area (Ha): 1.75
 Search Buffer (m): 1000

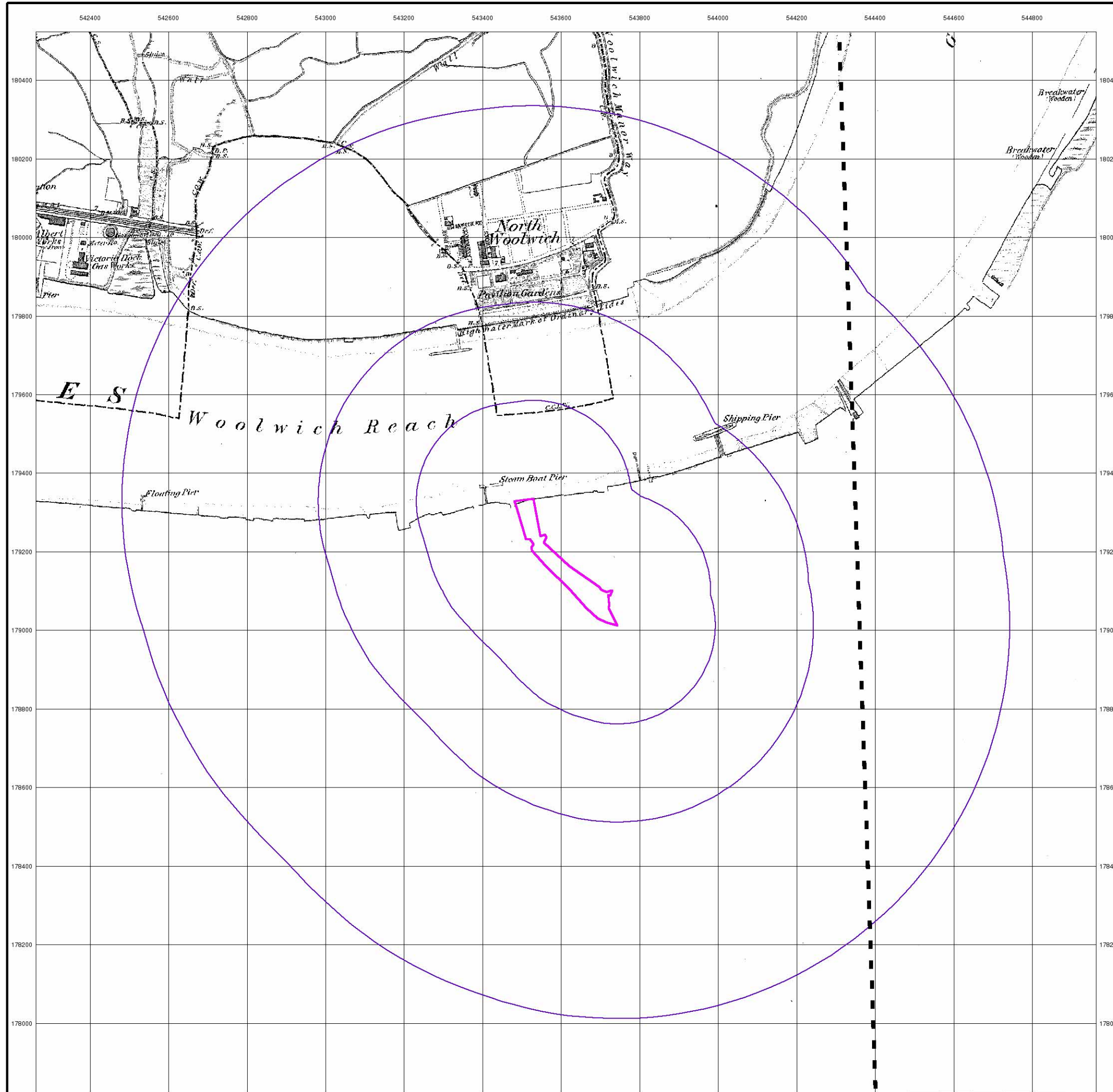
Site Details

Linear Park, Woolwich, Greenwich



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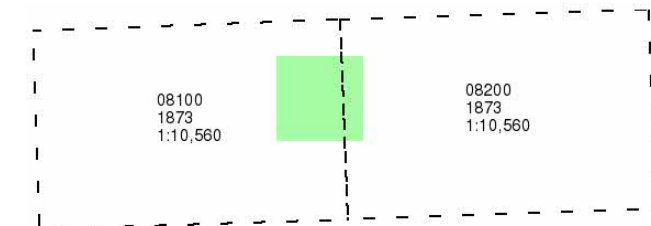
TWEEDIE EVANS CONSULTING
Essex

Published 1873

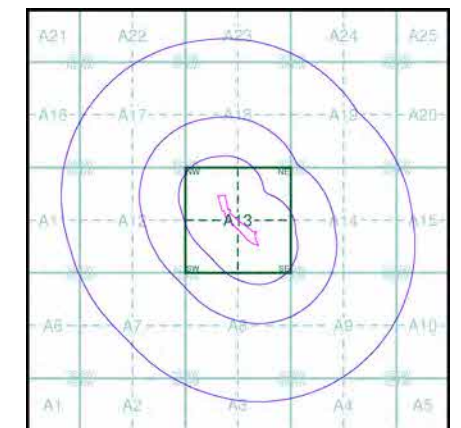
Source map scale - 1:10,560

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

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

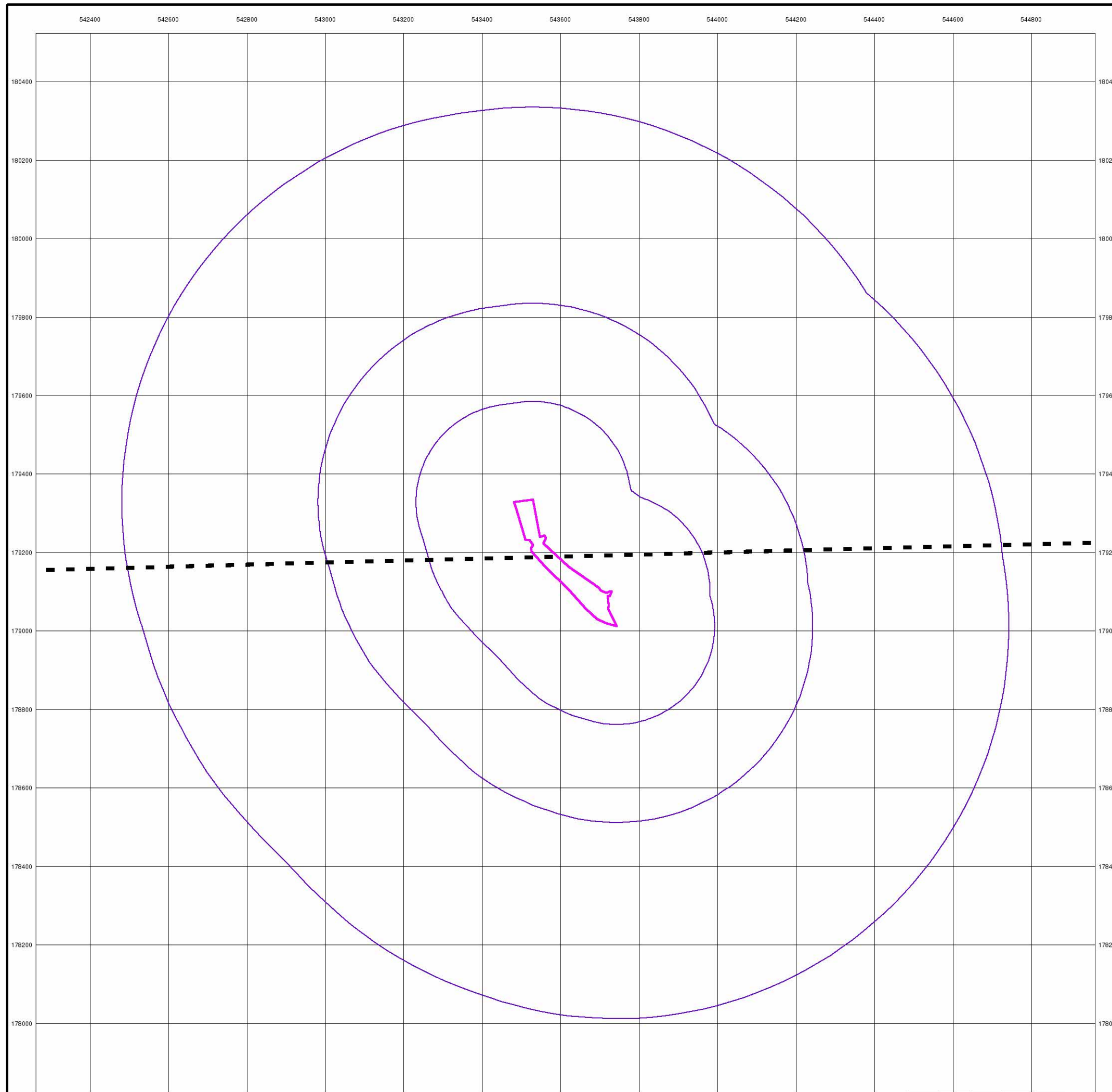
Order Number: 149792684_1_1
 Customer Ref: 1508005.014
 National Grid Reference: 543620, 179170
 Slice: A
 Site Area (Ha): 1.75
 Search Buffer (m): 1000

Site Details

Linear Park, Woolwich, Greenwich



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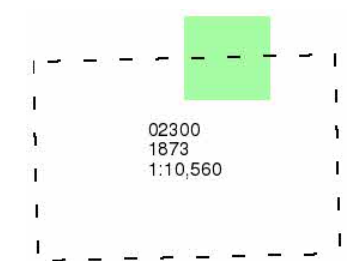
TWEEDIE EVANS CONSULTING
Middlesex

Published 1873

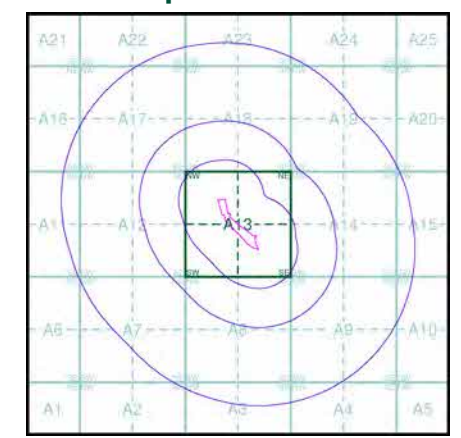
Source map scale - 1:10,560

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

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

Order Number: 149792684_1_1
 Customer Ref: 1508005.014
 National Grid Reference: 543620, 179170
 Slice: A
 Site Area (Ha): 1.75
 Search Buffer (m): 1000

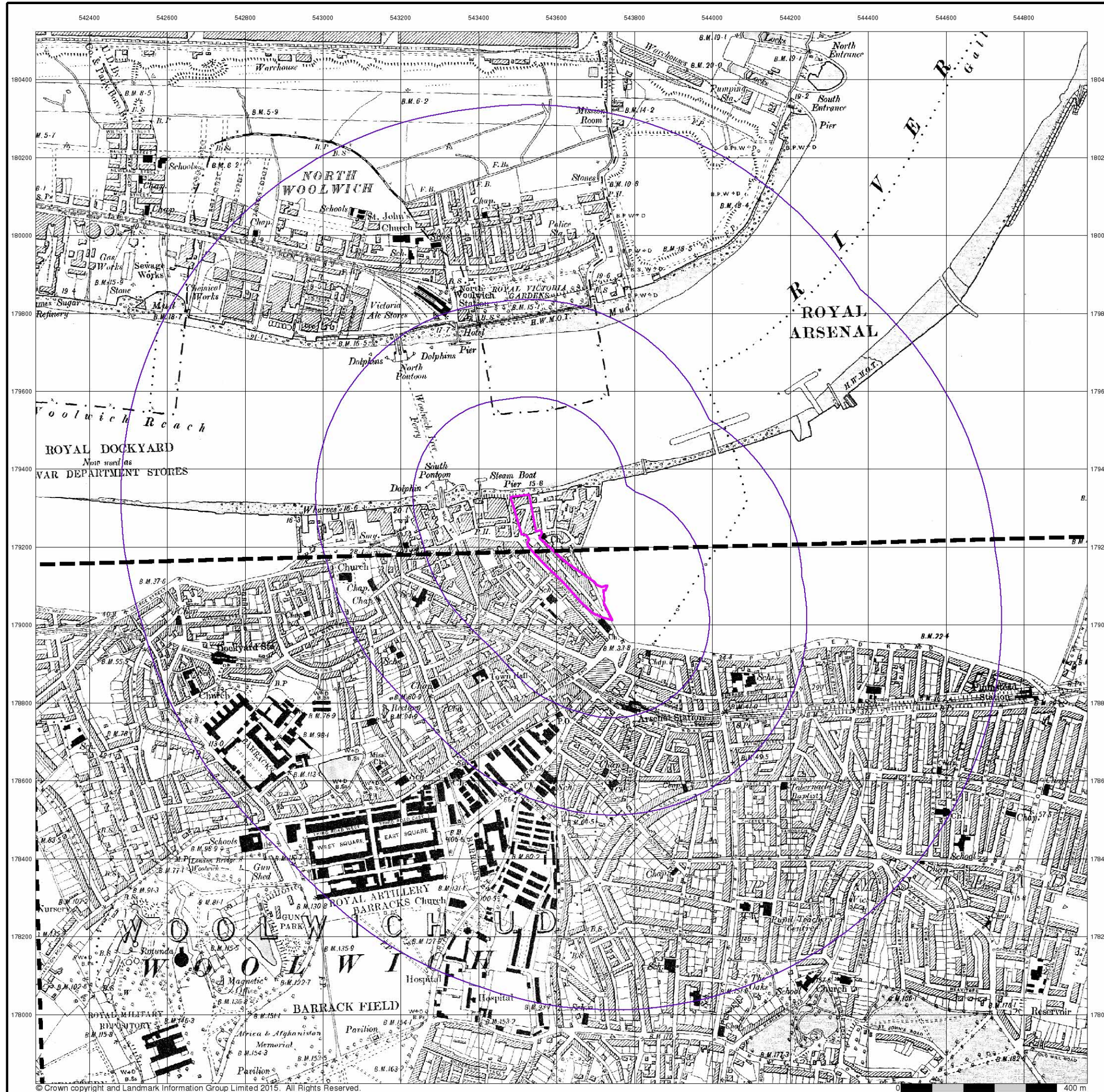
Site Details

Linear Park, Woolwich, Greenwich



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TWEEDIE EVANS CONSULTING
London

Published 1896

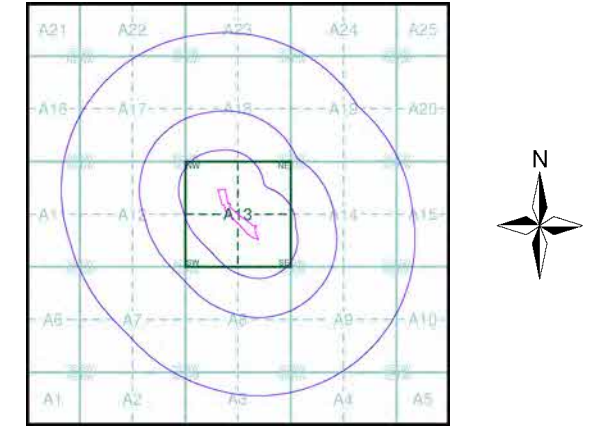
Source map scale - 1:10,560

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

Map Name(s) and Date(s)

012NW	012NE
1896	1896
1:10,560	1:10,560

Historical Map - Slice A



Order Details

Order Number: 149792684_1_1
 Customer Ref: 1508005.014
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 Slice: A
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Site Details

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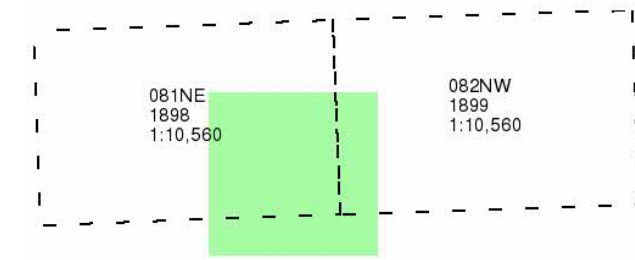


TWEEDIE EVANS CONSULTING
Essex

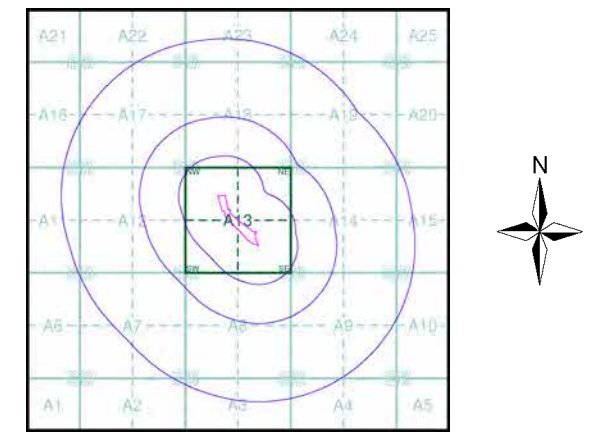
Published 1898 - 1899
Source map scale - 1:10,560

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

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

Order Number: 149792684_1_1
Customer Ref: 1508005.014
National Grid Reference: 543620, 179170
Slice: A
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TWEEDIE EVANS CONSULTING
Kent

Published 1898 - 1899

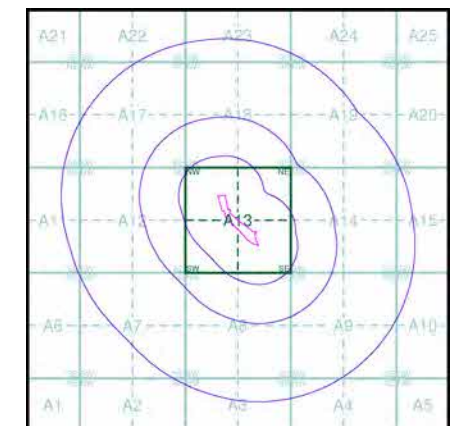
Source map scale - 1:10,560

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Map Name(s) and Date(s)

002NW
1899
1:10,560
002SW
1898
1:10,560

Historical Map - Slice A



Order Details

Order Number: 149792684_1_1
 Customer Ref: 1508005.014
 National Grid Reference: 543620, 179170
 Slice: A
 Site Area (Ha): 1.75
 Search Buffer (m): 1000

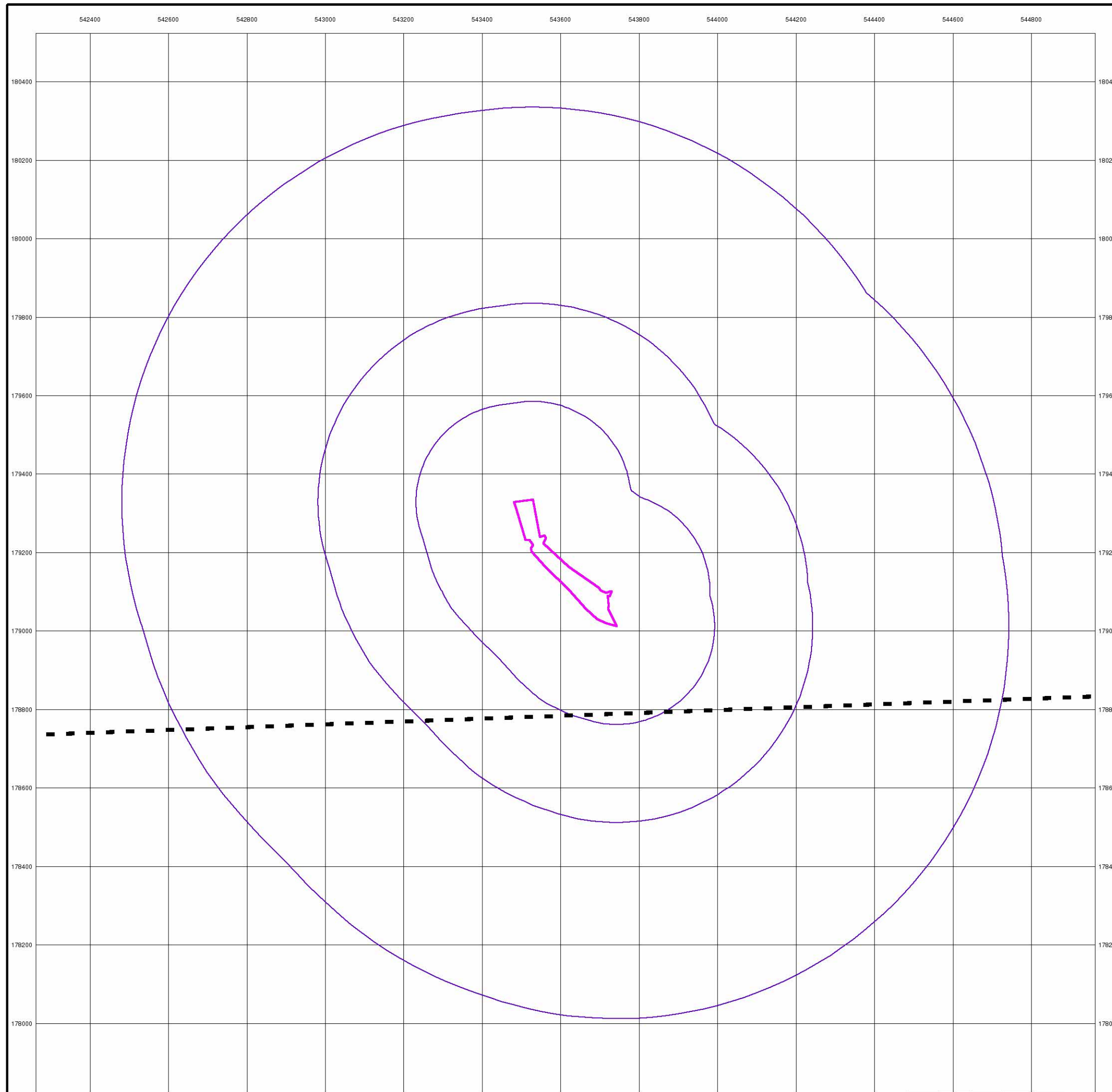
Site Details

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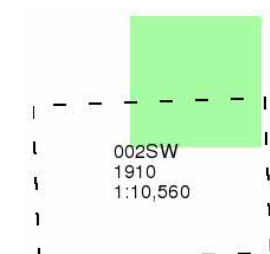
TWEEDIE EVANS CONSULTING
Kent

Published 1910

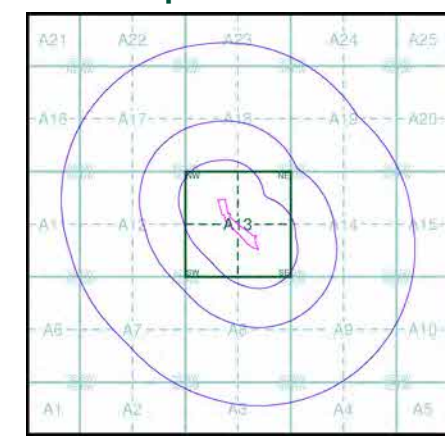
Source map scale - 1:10,560

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

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

Order Number: 149792684_1_1
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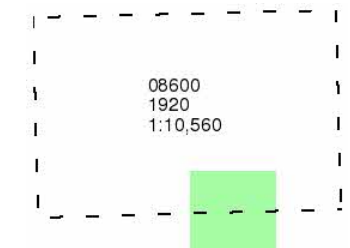
TWEEDIE EVANS CONSULTING
Essex

Published 1920

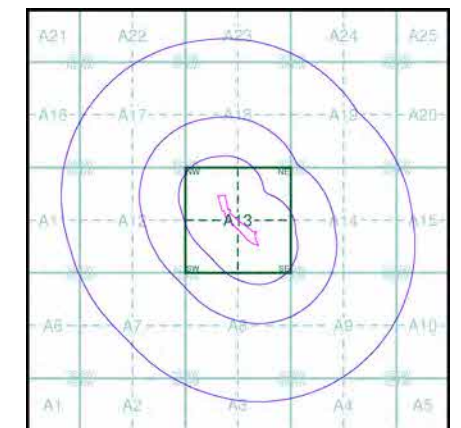
Source map scale - 1:10,560

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

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

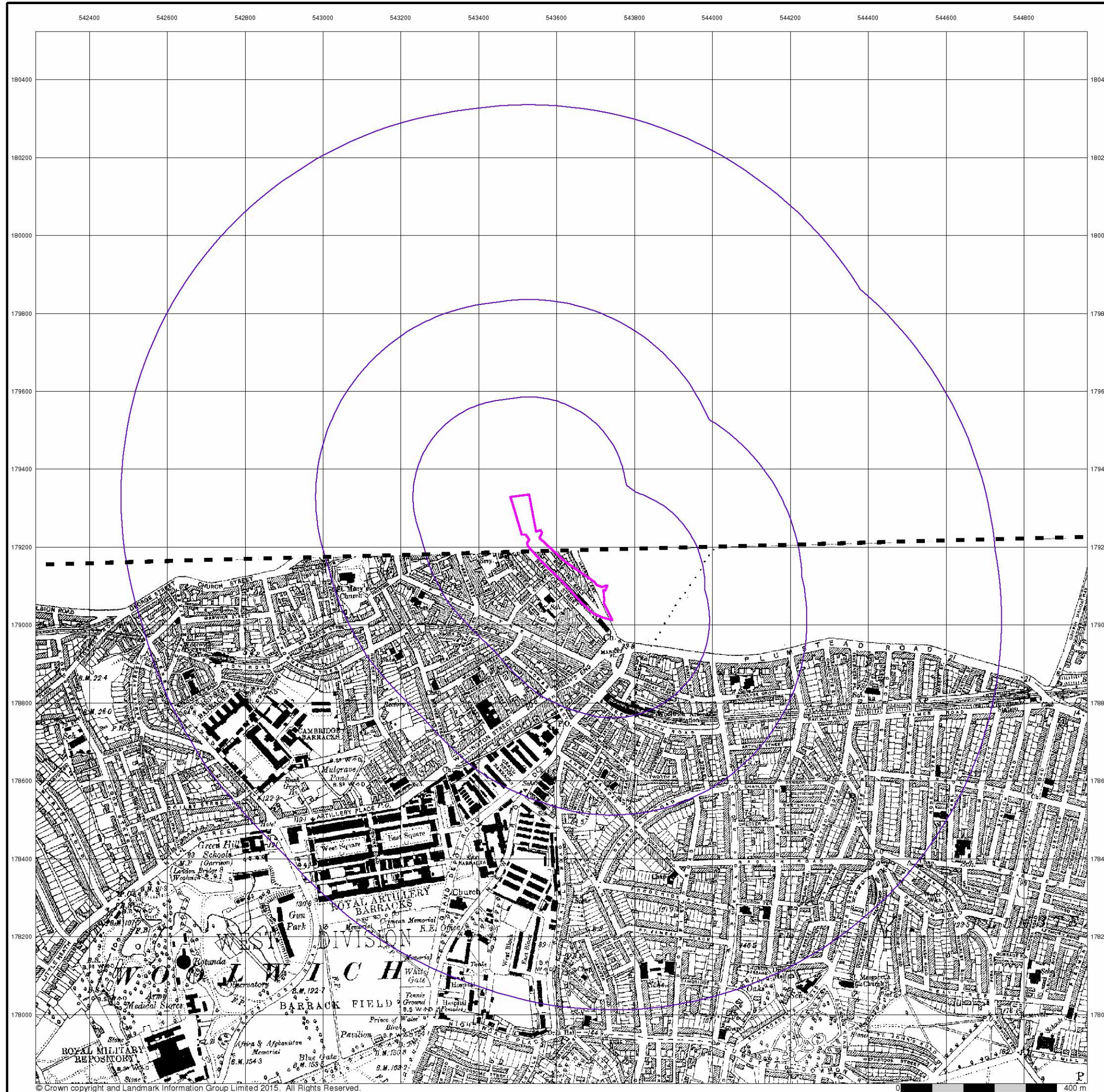
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 Customer Ref: 1508005.014
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 Slice: A
 Site Area (Ha): 1.75
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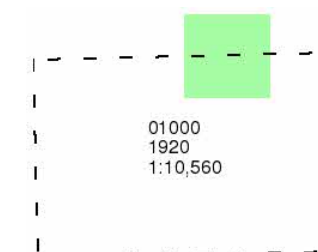
TWEEDIE EVANS CONSULTING
London

Published 1920

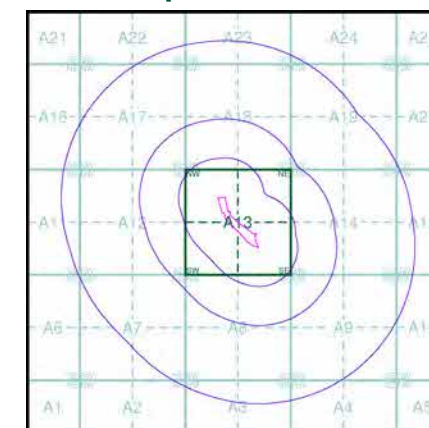
Source map scale - 1:10,560

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

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

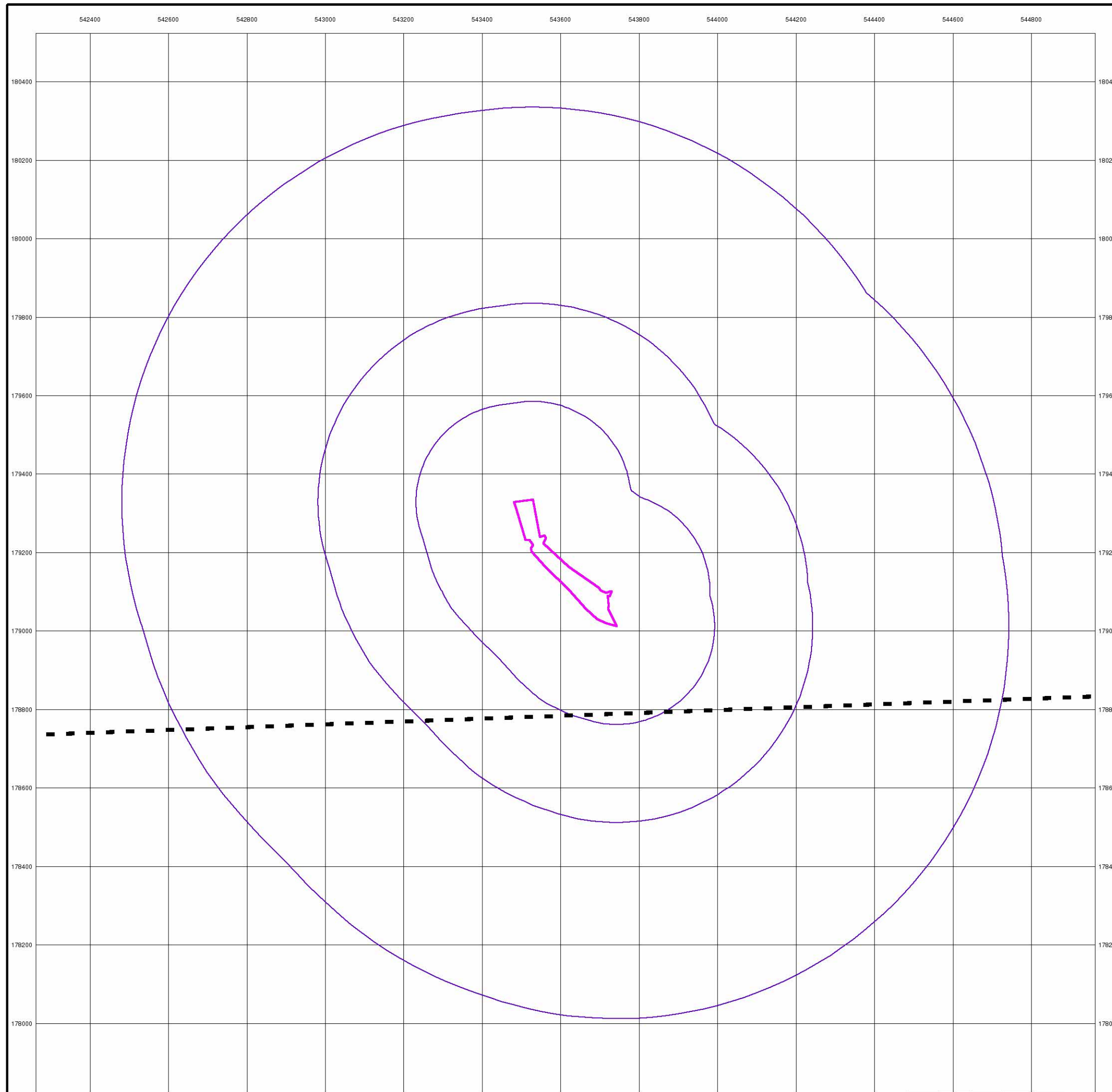
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Customer Ref: 1508005.014
National Grid Reference: 543620, 179170
Slice: A
Site Area (Ha): 1.75
Search Buffer (m): 1000

Site Details

Linear Park, Woolwich, Greenwich



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



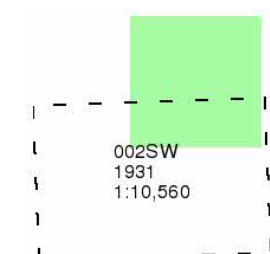
TWEEDIE EVANS CONSULTING
Kent

Published 1931

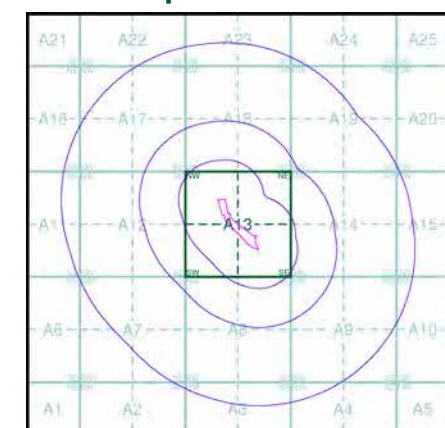
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The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps.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

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

Order Number: 149792684_1_1
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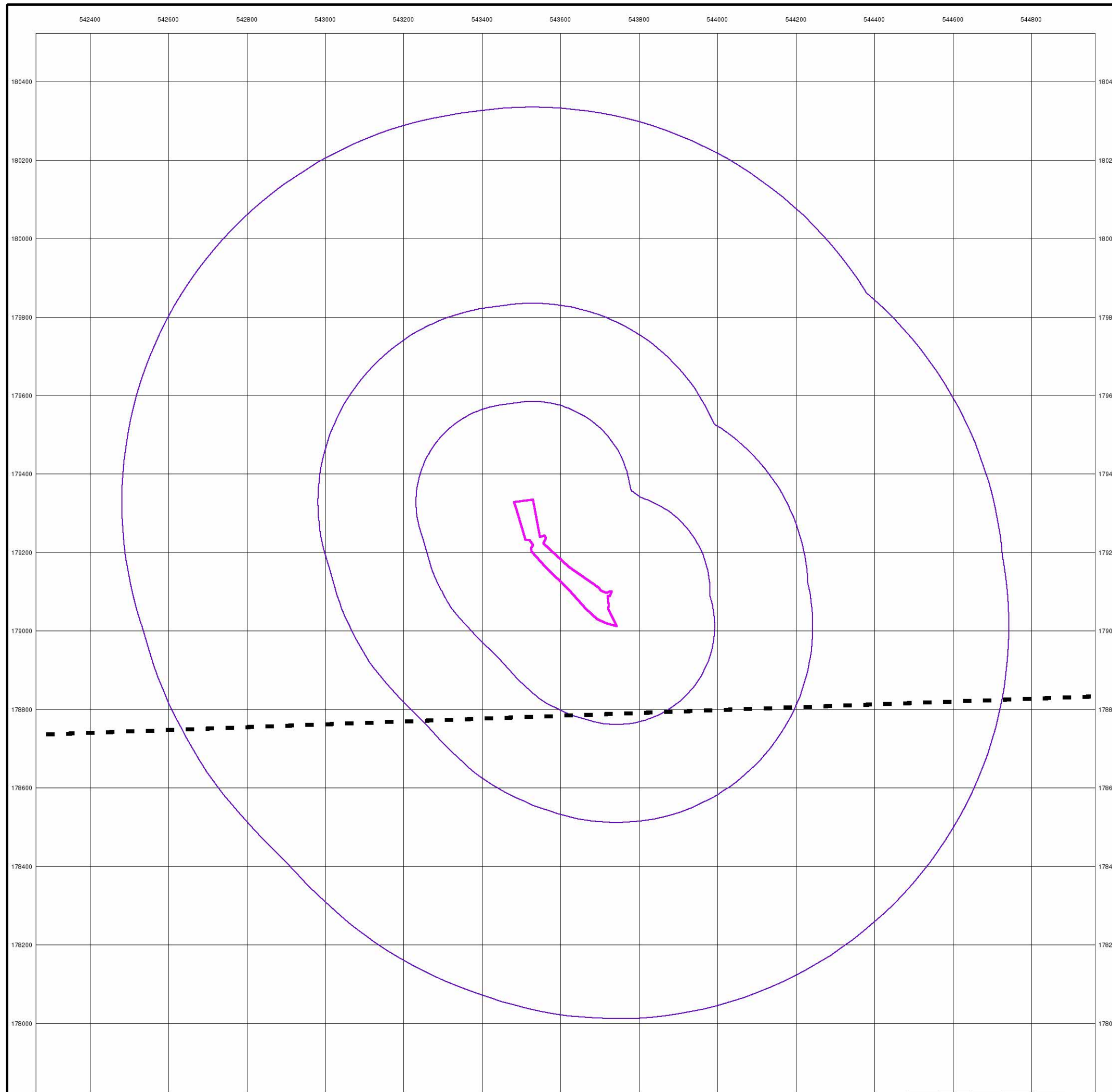
Site Details

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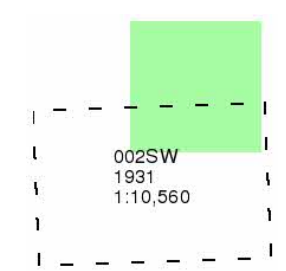
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Kent

Published 1931

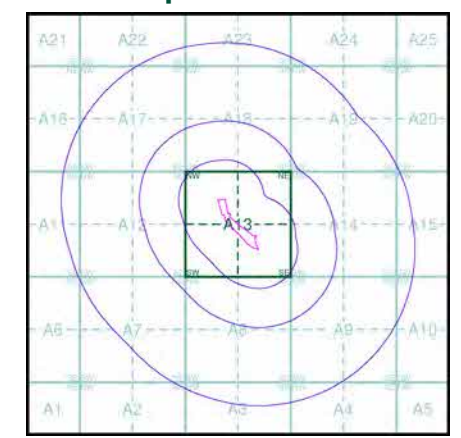
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Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

Order Number: 149792684_1_1
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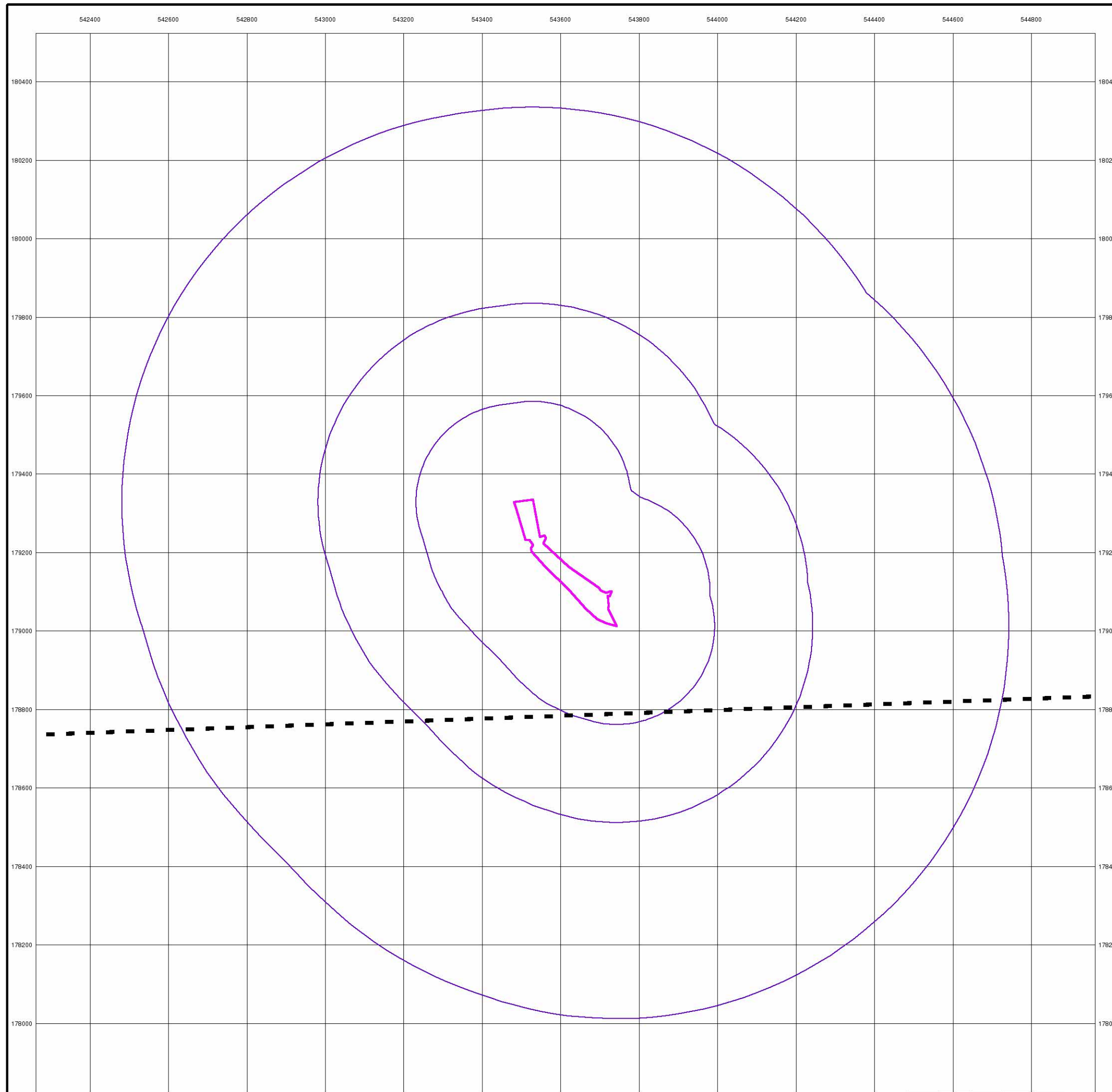
Site Details

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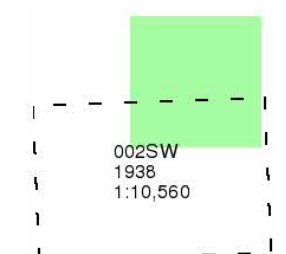
TWEEDIE EVANS CONSULTING
Kent

Published 1938

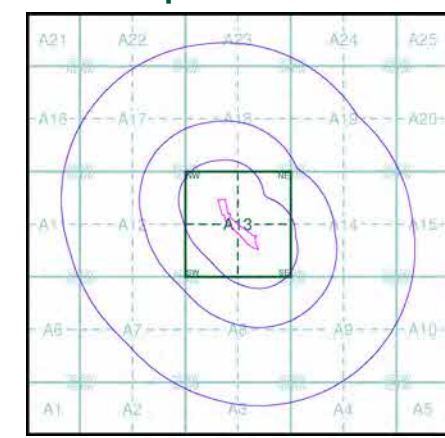
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Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

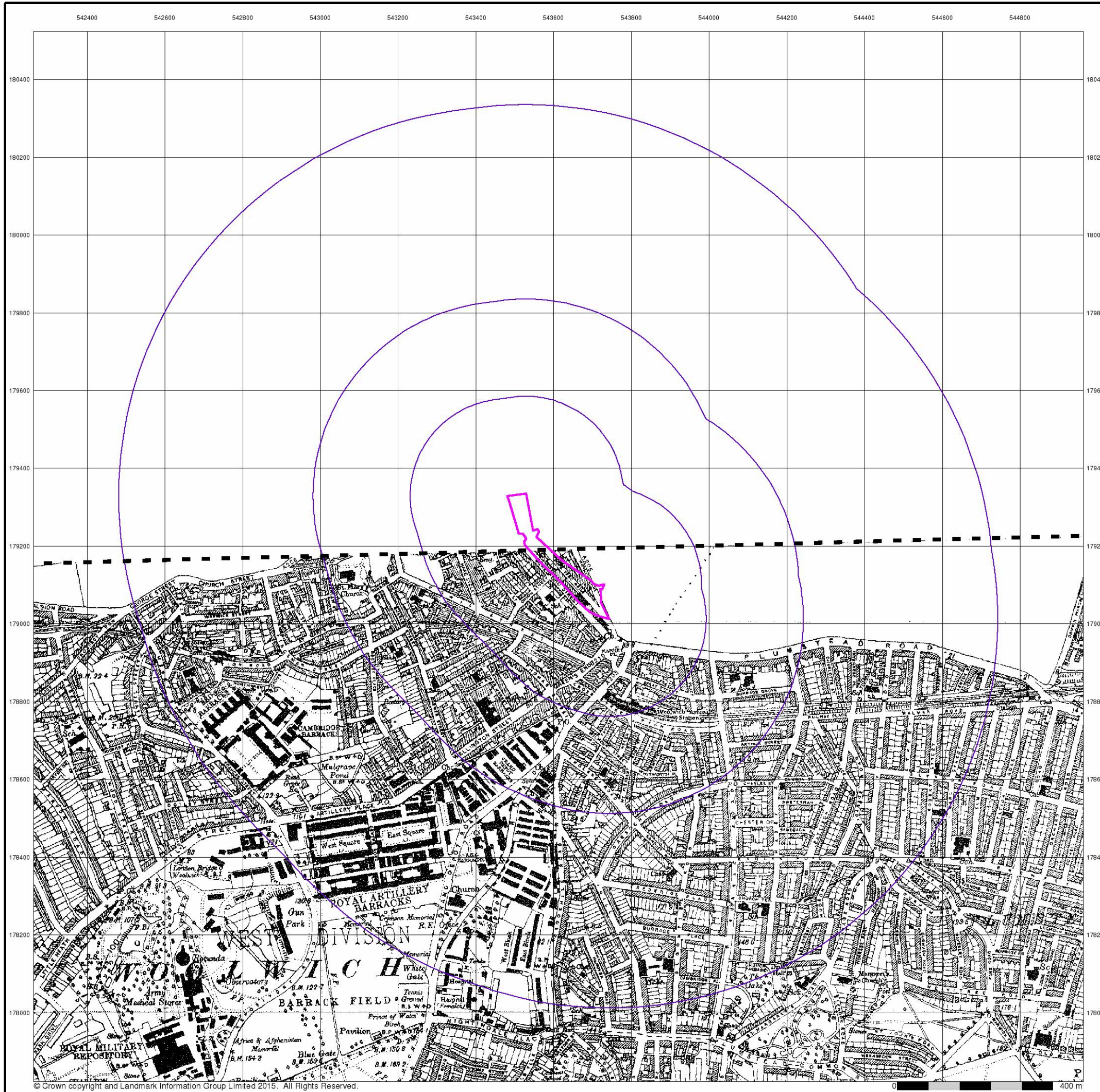
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Site Details

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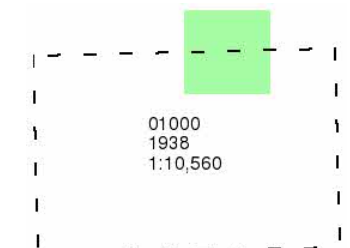
TWEEDIE EVANS CONSULTING
London

Published 1938

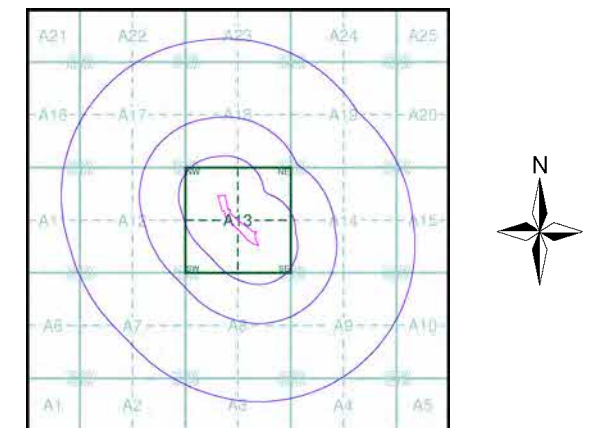
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Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

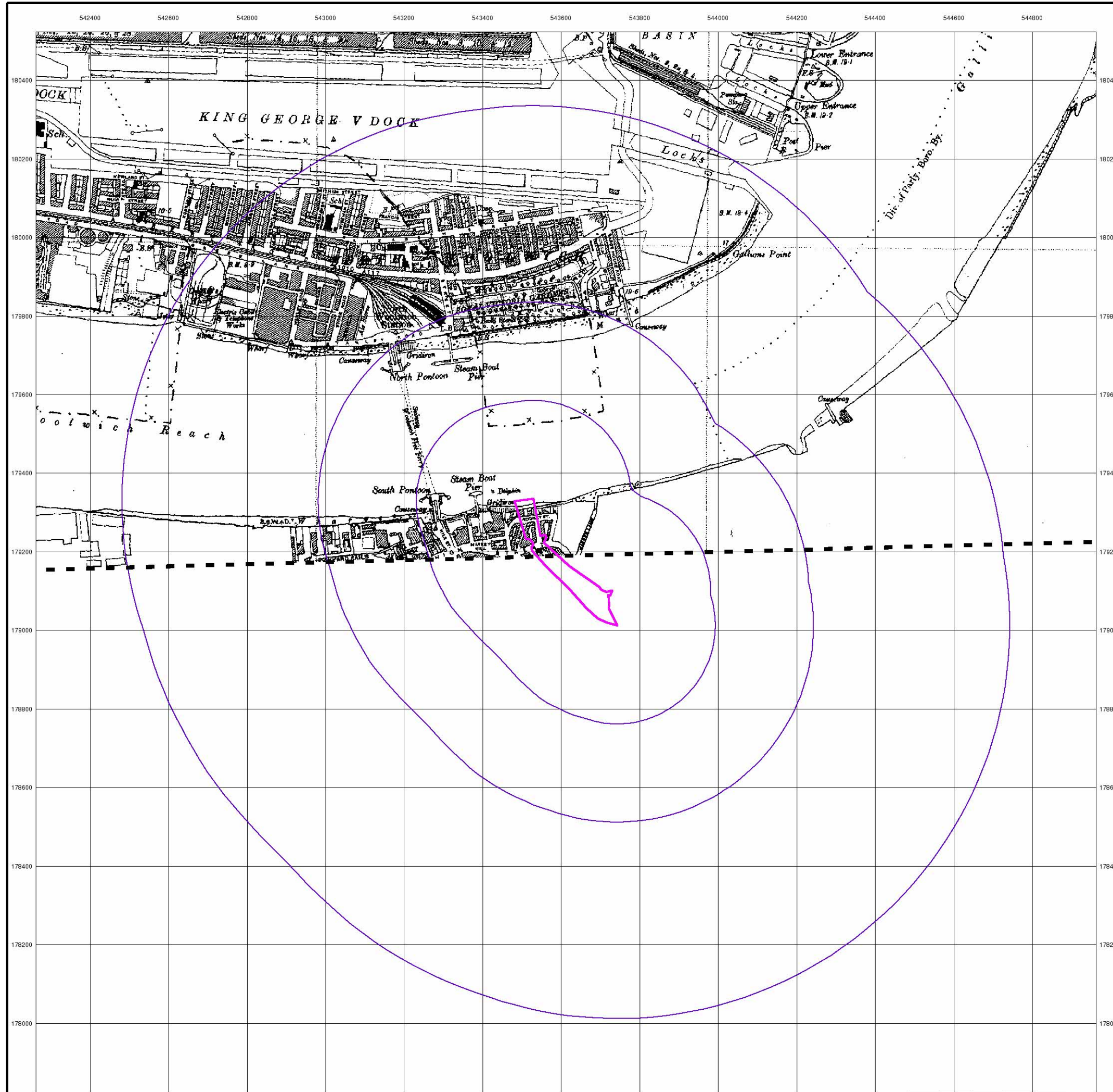
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Site Details

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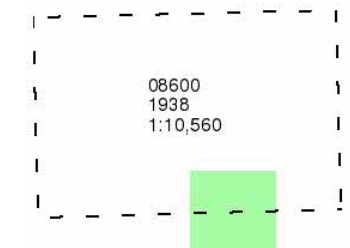
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Essex

Published 1938

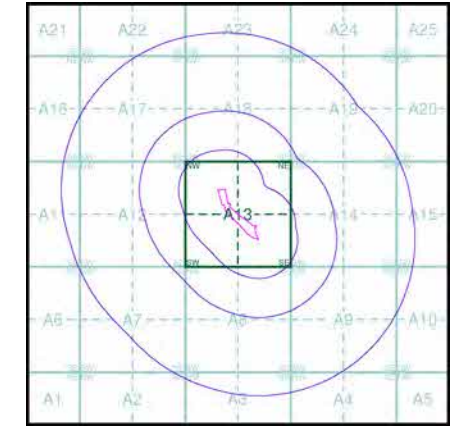
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The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps.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

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

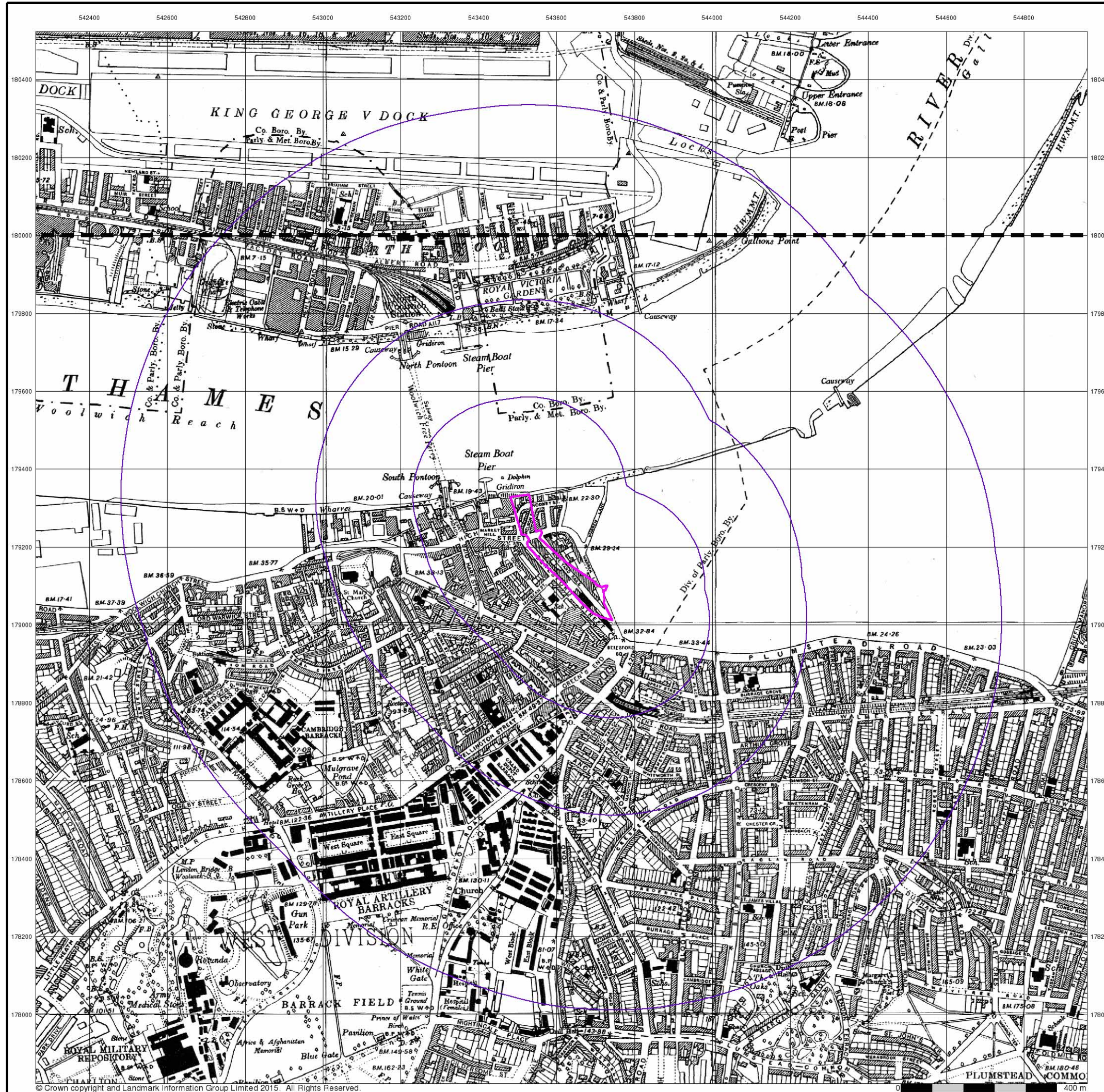
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 Slice: A
 Site Area (Ha): 1.75
 Search Buffer (m): 1000

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Ordnance Survey Plan

Published 1940

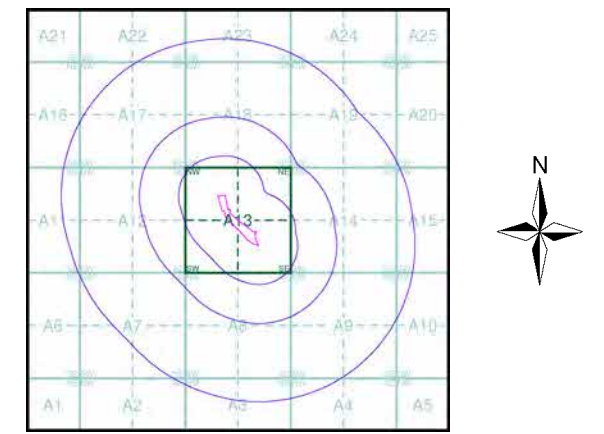
Source map scale - 1:10,000

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

Map Name(s) and Date(s)

TQ48SW	1940
1:10,560	
TQ47NW	1940
1:10,560	

Historical Map - Slice A



Order Details

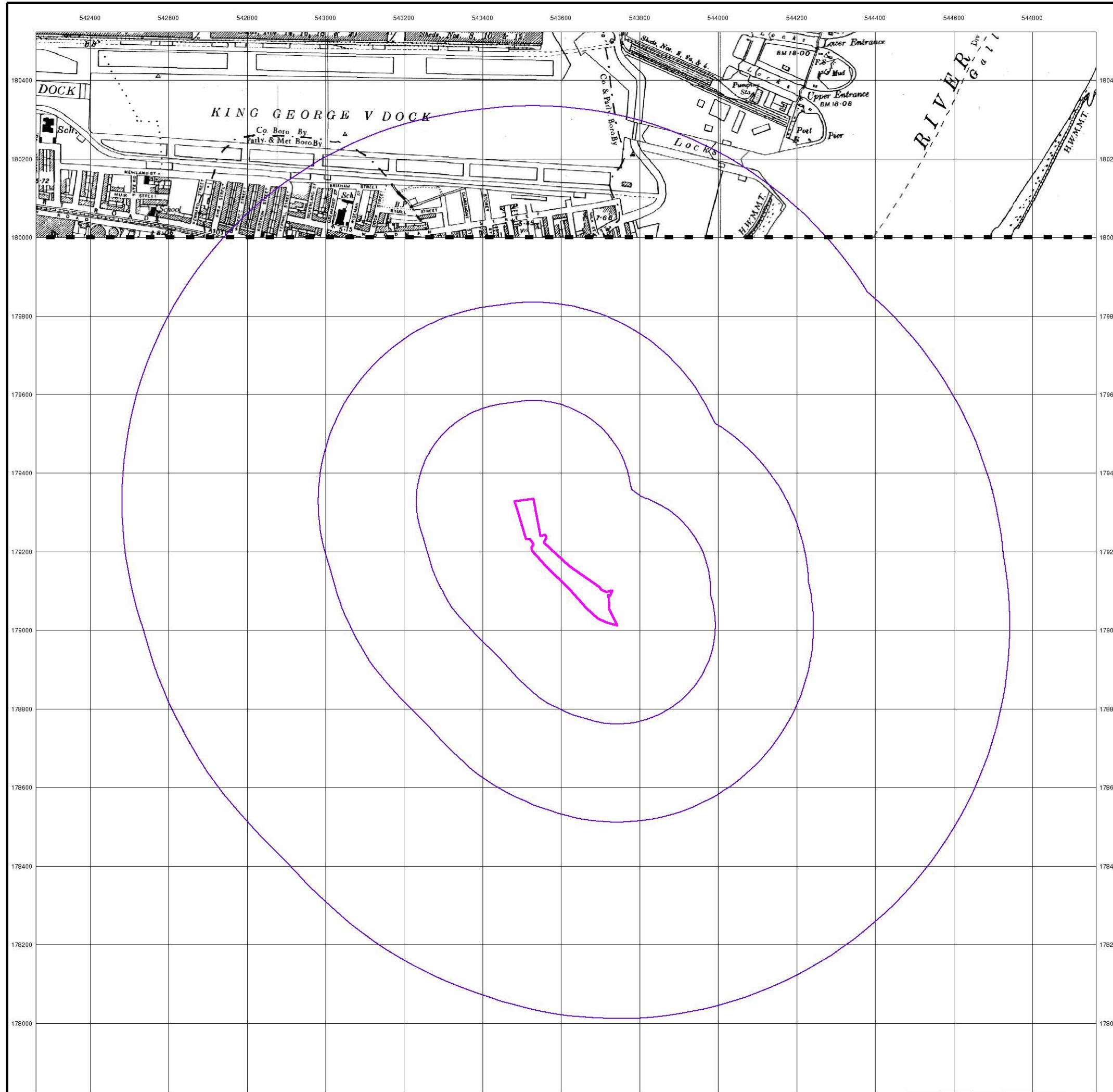
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 Slice: A
 Site Area (Ha): 1.75
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Site Details

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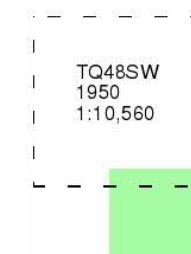


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Ordnance Survey Plan

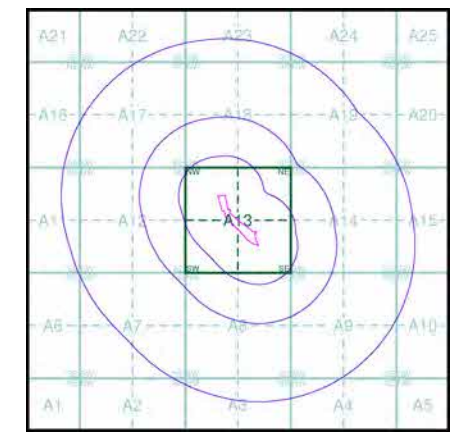
Published 1950
Source map scale - 1:10,000

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

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

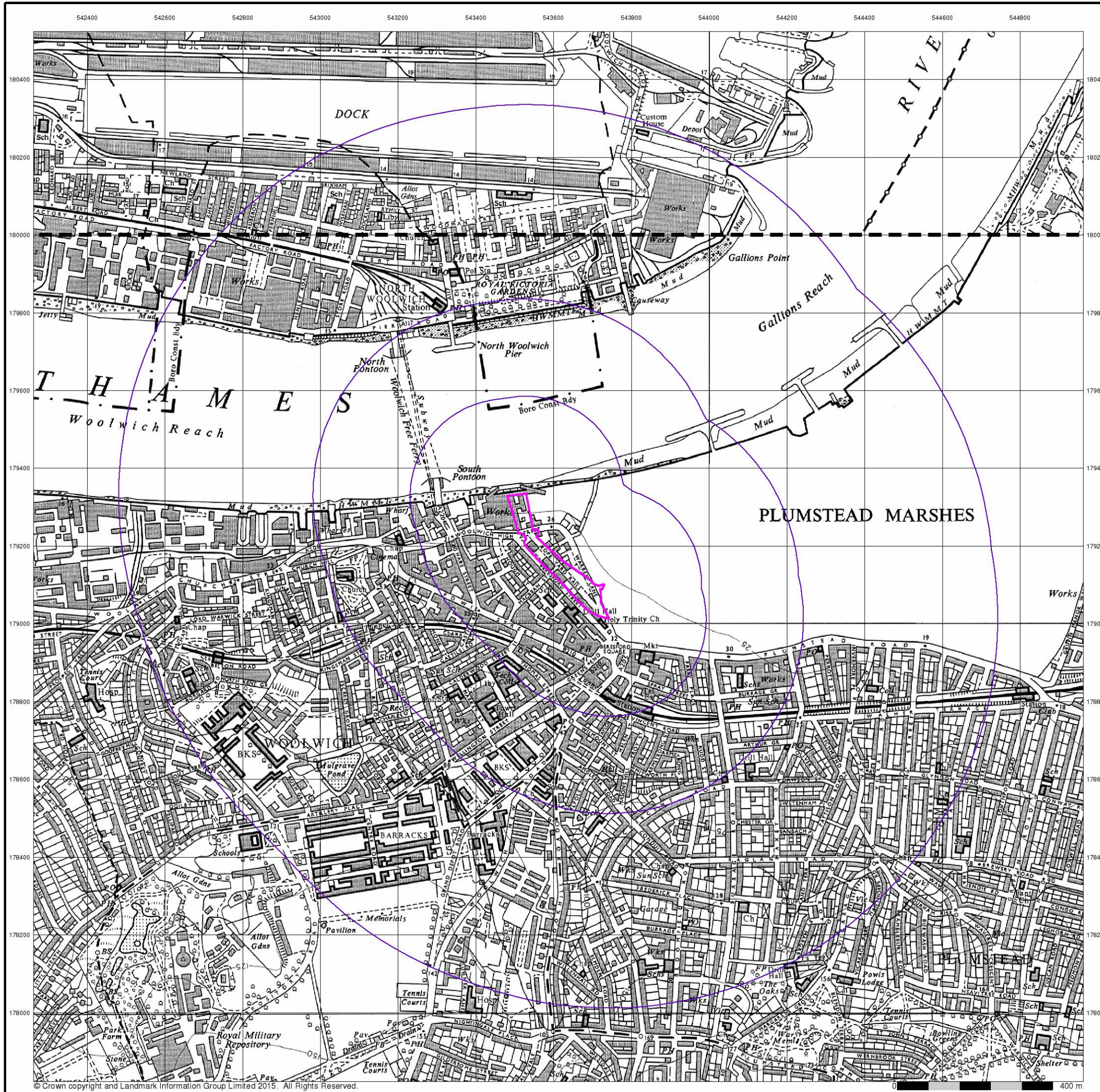
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 Site Area (Ha): 1.75
 Search Buffer (m): 1000

Site Details

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TWEEDIE EVANS CONSULTING
Ordnance Survey Plan

Published 1962 - 1966

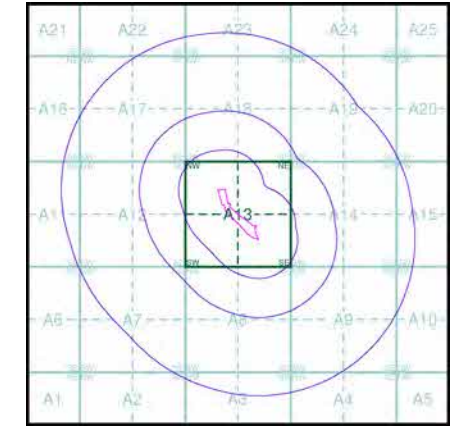
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Map Name(s) and Date(s)

TQ48SW	1966	1:10,560
TQ47NW	1962	1:10,560

Historical Map - Slice A



Order Details

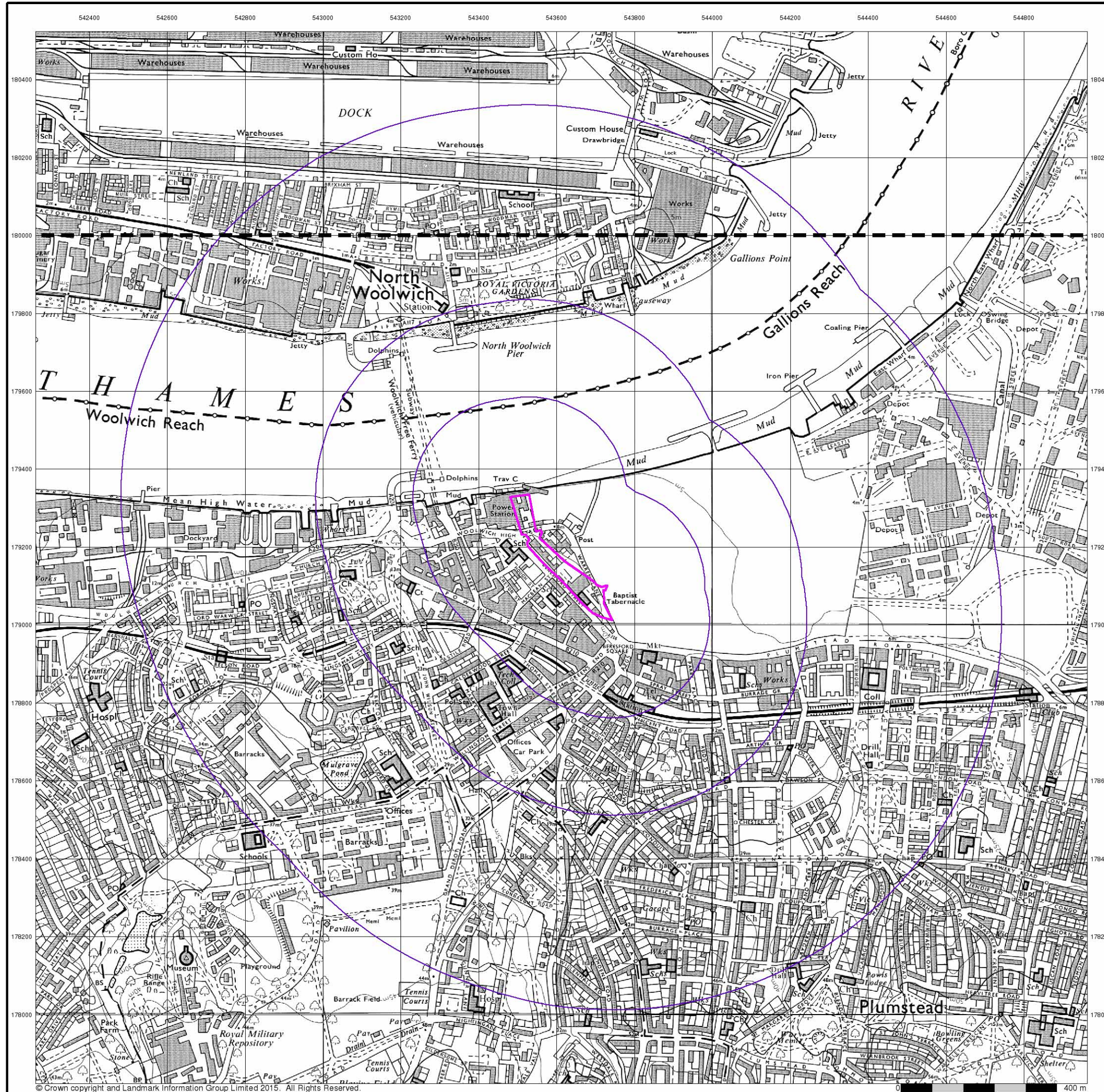
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 Site Area (Ha): 1.75
 Search Buffer (m): 1000

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Ordnance Survey Plan**

Published 1974 - 1975

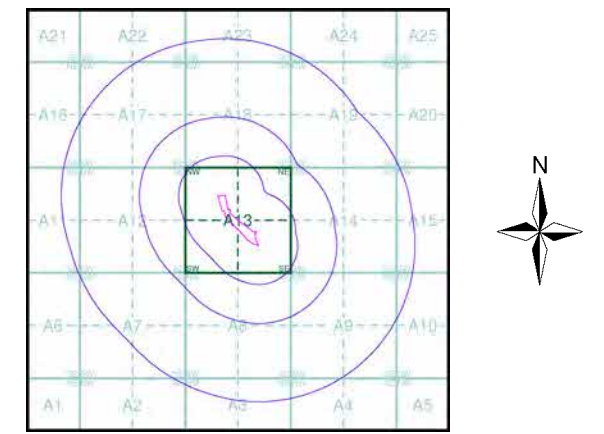
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Map Name(s) and Date(s)

TQ48SW	1975	1:10,000
TQ47NW	1974	1:10,000

Historical Map - Slice A



Order Details

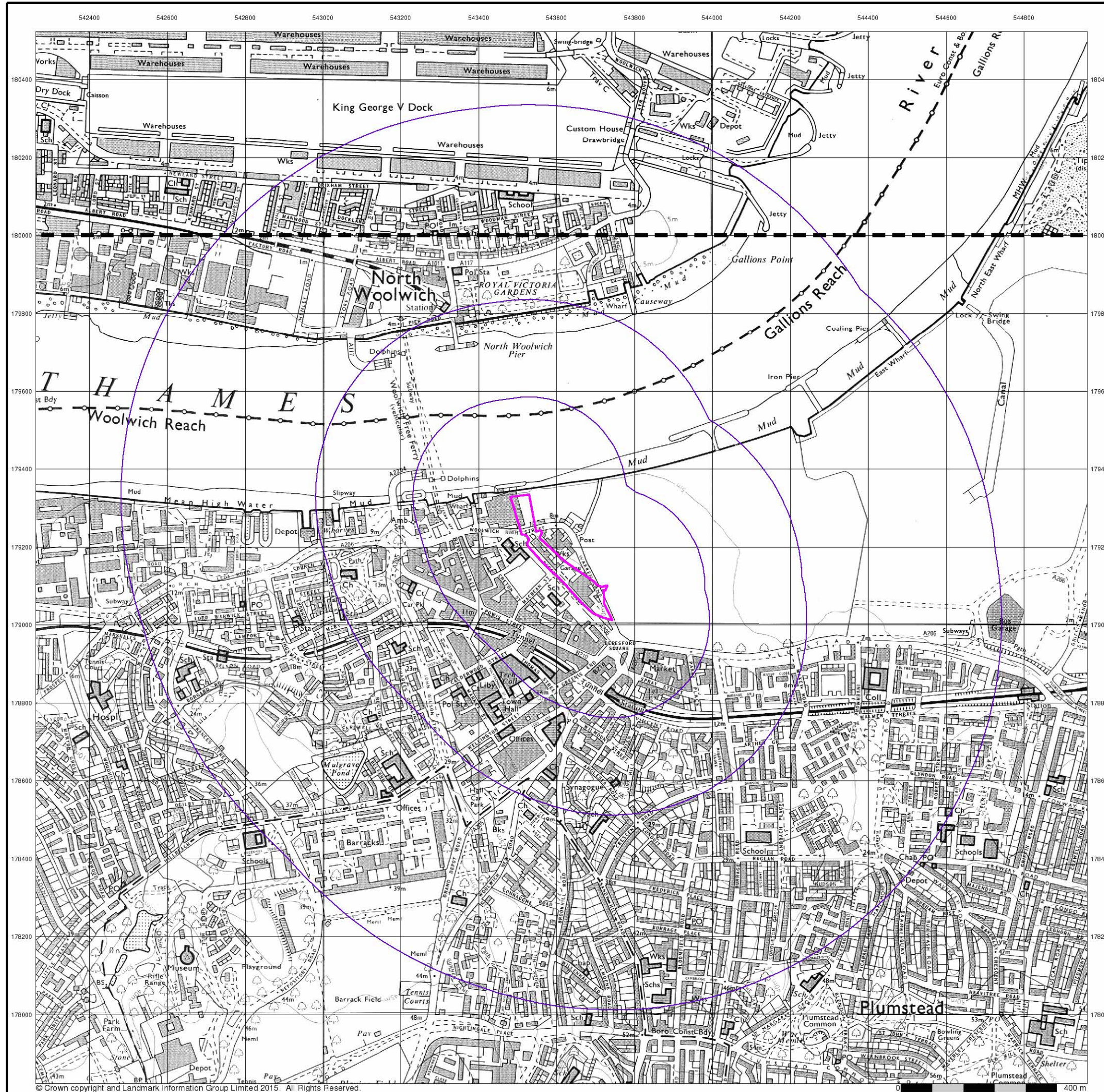
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 Search Buffer (m): 1000

Site Details

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TWEEDIE EVANS CONSULTING
Ordnance Survey Plan

Published 1982 - 1984

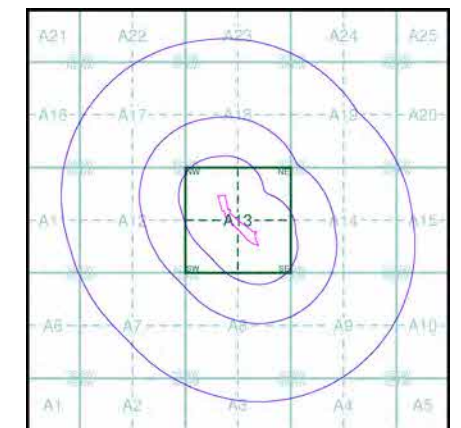
Source map scale - 1:10,000

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

Map Name(s) and Date(s)

TQ48SW	1984	1:10,000
TQ47NW	1982	1:10,000

Historical Map - Slice A



Order Details

Order Number: 149792684_1_1
 Customer Ref: 1508005.014
 National Grid Reference: 543620, 179170
 Slice: A
 Site Area (Ha): 1.75
 Search Buffer (m): 1000

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TWEEDIE EVANS CONSULTING
London

Published 1985

Source map scale - 1:25,000

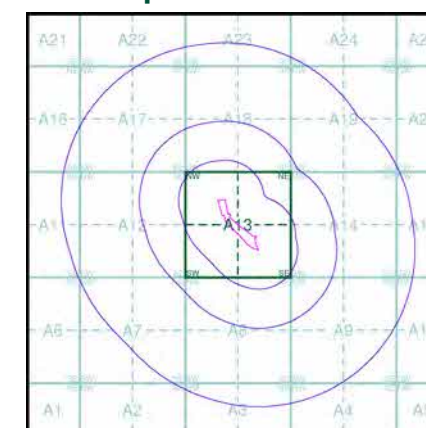
These maps were produced by the Russian military during the Cold War between 1950 and 1997, and cover 103 towns and cities throughout the U.K. The maps are produced at 1:25,000, 1:10,000 and 1:5,000 scale, and show detailed land use, with colour-coded areas for development, green areas, and non-developed areas. Buildings are coloured black and important building uses (such as hospitals, post offices, factories etc.) are numbered, with a numbered key describing their use.

They were produced by the Russians for the benefit of navigation, as well as strategic military sites and transport hubs, for use if they were to have invaded the U.K. The detailed information provided indicates that the areas were surveyed using land-based personnel, on the ground, in the cities that are mapped.

Map Name(s) and Date(s)

TQ48	1985	1:25,000
TQ47	1985	1:25,000

Russian Map - Slice A



Order Details

Order Number: 149792684_1_1
 Customer Ref: 1508005.014
 National Grid Reference: 543620, 179170
 Slice: A
 Site Area (Ha): 1.75
 Search Buffer (m): 1000

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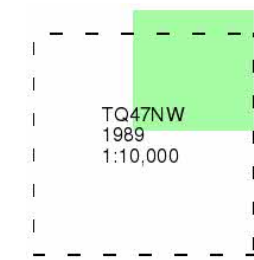
TWEEDIE EVANS CONSULTING
Ordnance Survey Plan

Published 1989

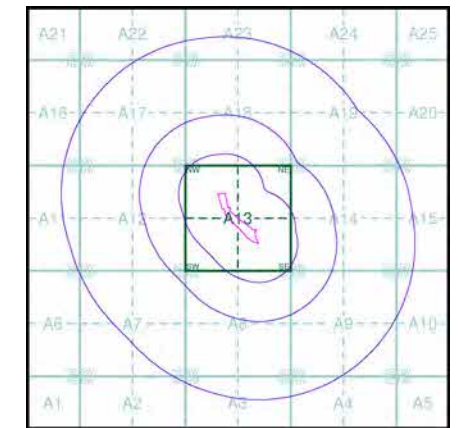
Source map scale - 1:10,000

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Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

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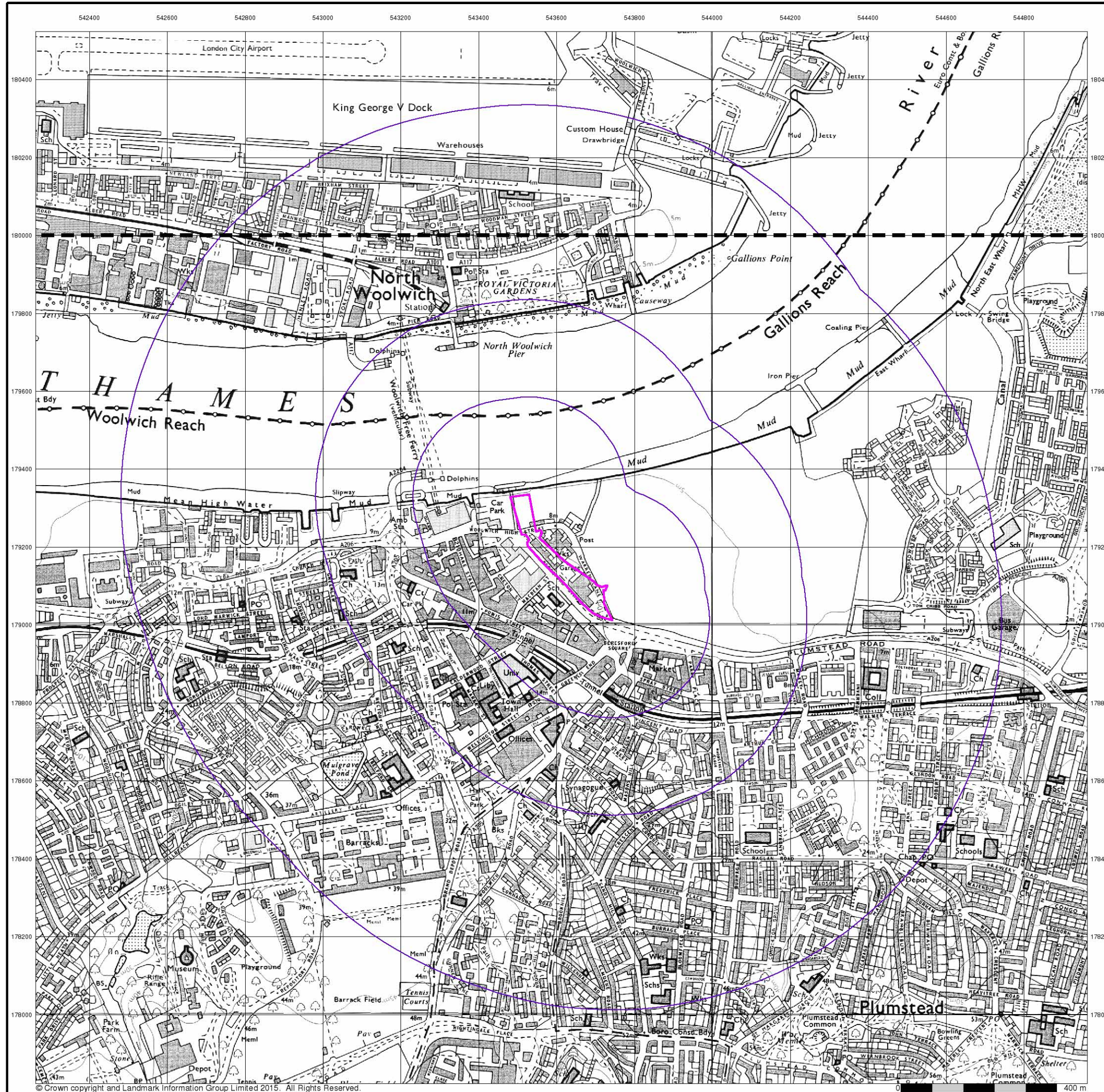
Site Details

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**TWEEDIE EVANS CONSULTING
Ordnance Survey Plan**

Published 1991 - 1996

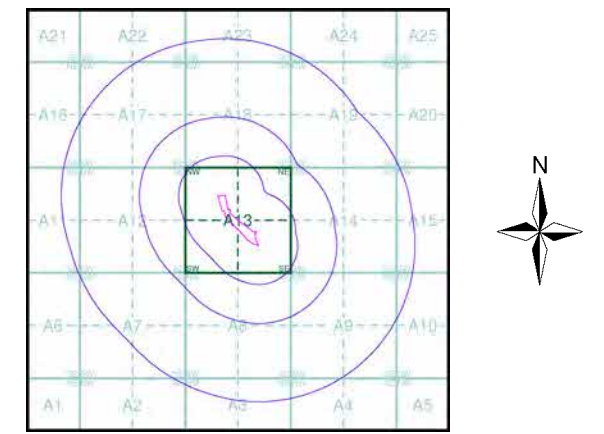
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The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps.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

Map Name(s) and Date(s)

TQ48SW	1991	1:10,000
TQ47NW	1996	1:10,000

Historical Map - Slice A



Order Details

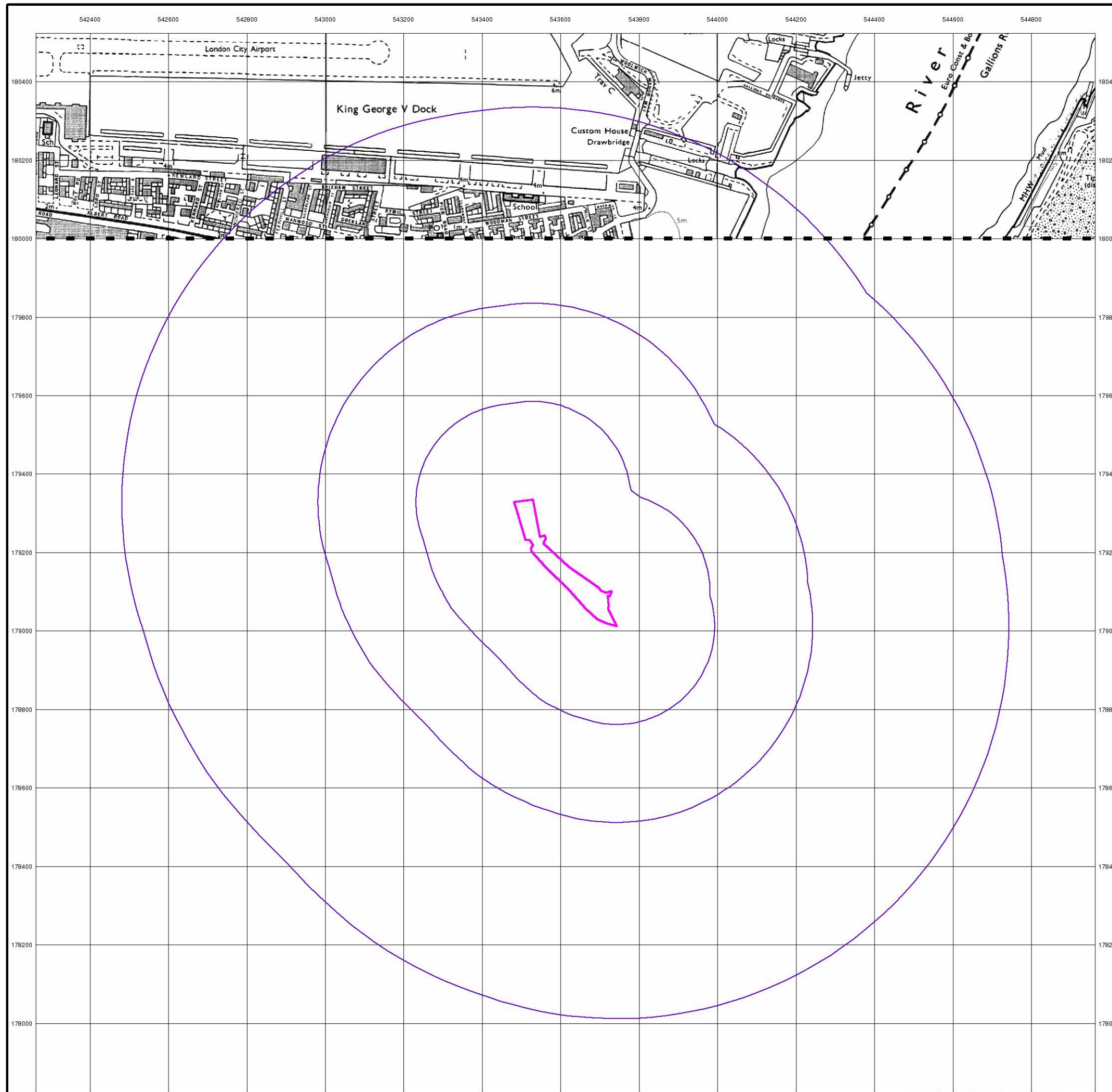
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Site Details

Linear Park, Woolwich, Greenwich



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



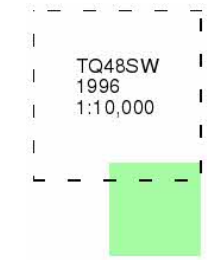
TWEEDIE EVANS CONSULTING
Ordnance Survey Plan

Published 1996

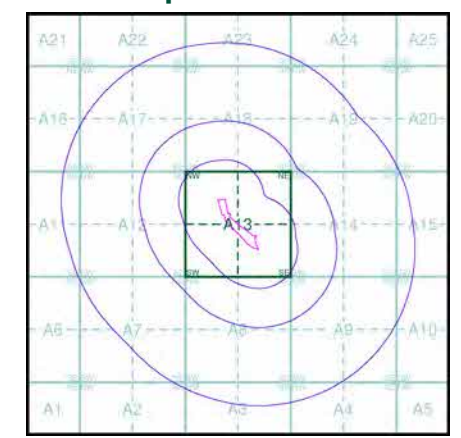
Source map scale - 1:10,000

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

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

Order Number: 149792684_1_1
 Customer Ref: 1508005.014
 National Grid Reference: 543620, 179170
 Slice: A
 Site Area (Ha): 1.75
 Search Buffer (m): 1000

Site Details

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TWEEDIE EVANS CONSULTING
10k Raster Mapping

Published 1999

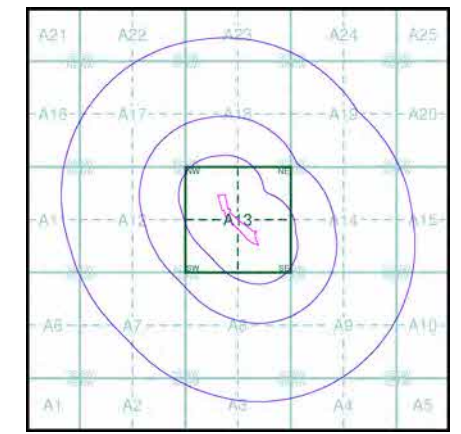
Source map scale - 1:10,000

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

Map Name(s) and Date(s)

TQ48SW	1999	1:10,000
TQ47NW	1999	1:10,000

Historical Map - Slice A



Order Details

Order Number: 149792684_1_1
 Customer Ref: 1508005.014
 National Grid Reference: 543620, 179170
 Slice: A
 Site Area (Ha): 1.75
 Search Buffer (m): 1000

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TWEEDIE EVANS CONSULTING
10k Raster Mapping

Published 2006

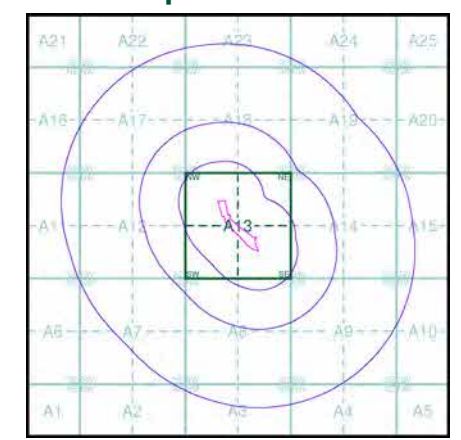
Source map scale - 1:10,000

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

Map Name(s) and Date(s)

TQ48SW	2006	1:10,000
TQ47NW	2006	1:10,000

Historical Map - Slice A



Order Details

Order Number: 149792684_1_1
 Customer Ref: 1508005.014
 National Grid Reference: 543620, 179170
 Slice: A
 Site Area (Ha): 1.75
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Linear Park, Woolwich, Greenwich



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TWEEDIE EVANS CONSULTING
VectorMap Local

Published 2017

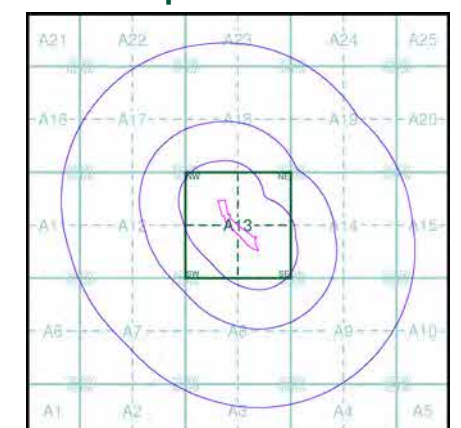
Source map scale - 1:10,000

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

Map Name(s) and Date(s)

- TQ48SW | 2017 | Variable
- TQ47NW | 2017 | Variable

Historical Map - Slice A



Order Details

Order Number: 149792684_1_1
 Customer Ref: 1508005.014
 National Grid Reference: 543620, 179170
 Slice: A
 Site Area (Ha): 1.75
 Search Buffer (m): 1000

Site Details

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APPENDIX B

Envirocheck[®]

Envirocheck[®] Report:

Datasheet

Order Details:

Order Number:

149792684_1_1

Customer Reference:

1508005.014

National Grid Reference:

543620, 179170

Slice:

A

Site Area (Ha):

1.75

Search Buffer (m):

1000

Site Details:

Linear Park

Woolwich

Greenwich

Client Details:

Mr E Tweedie

Tweedie Evans Consulting Ltd

The Old Chapel

35a Southover

Wells

Somerset

BA5 1UH

Report Section	Page Number
Summary	-
Agency & Hydrological	1
Waste	14
Hazardous Substances	16
Geological	17
Industrial Land Use	23
Sensitive Land Use	52
Data Currency	53
Data Suppliers	60
Useful Contacts	61

Introduction

The Environment Act 1995 has made site sensitivity a key issue, as the legislation pays as much attention to the pathways by which contamination could spread, and to the vulnerable targets of contamination, as it does the potential sources of contamination. For this reason, Landmark's Site Sensitivity maps and Datasheet(s) place great emphasis on statutory data provided by the Environment Agency/Natural Resources Wales and the Scottish Environment Protection Agency; it also incorporates data from Natural England (and the Scottish and Welsh equivalents) and Local Authorities; and highlights hydrogeological features required by environmental and geotechnical consultants. It does not include any information concerning past uses of land. The datasheet is produced by querying the Landmark database to a distance defined by the client from a site boundary provided by the client.

In the attached datasheet the National Grid References (NGRs) are rounded to the nearest 10m in accordance with Landmark's agreements with a number of Data Suppliers.

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Radon Potential dataset Copyright Notice

Information supplied from a joint dataset compiled by The British Geological Survey and Public Health England.

Report Version v53.0

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Agency & Hydrological					
BGS Groundwater Flooding Susceptibility	pg 1	Yes	Yes	Yes	n/a
Contaminated Land Register Entries and Notices					
Discharge Consents	pg 2		1	2	14
Prosecutions Relating to Controlled Waters			n/a	n/a	n/a
Enforcement and Prohibition Notices					
Integrated Pollution Controls					
Integrated Pollution Prevention And Control					
Local Authority Integrated Pollution Prevention And Control					
Local Authority Pollution Prevention and Controls	pg 6		1	2	6
Local Authority Pollution Prevention and Control Enforcements					
Nearest Surface Water Feature	pg 7		Yes		
Pollution Incidents to Controlled Waters	pg 7			3	6
Prosecutions Relating to Authorised Processes					
Registered Radioactive Substances	pg 9			3	2
River Quality					
River Quality Biology Sampling Points					
River Quality Chemistry Sampling Points					
Substantiated Pollution Incident Register	pg 10				1
Water Abstractions	pg 10			1	1 (*7)
Water Industry Act Referrals	pg 12			1	
Groundwater Vulnerability	pg 12	Yes	n/a	n/a	n/a
Drift Deposits	pg 12	1	n/a	n/a	n/a
Bedrock Aquifer Designations	pg 12	Yes	n/a	n/a	n/a
Superficial Aquifer Designations	pg 12	Yes	n/a	n/a	n/a
Source Protection Zones					
Extreme Flooding from Rivers or Sea without Defences	pg 12	Yes		n/a	n/a
Flooding from Rivers or Sea without Defences	pg 12	Yes		n/a	n/a
Areas Benefiting from Flood Defences	pg 12		Yes	n/a	n/a
Flood Water Storage Areas				n/a	n/a
Flood Defences	pg 13	Yes		n/a	n/a
OS Water Network Lines	pg 13		1		5

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Waste					
BGS Recorded Landfill Sites					
Historical Landfill Sites					
Integrated Pollution Control Registered Waste Sites					
Licensed Waste Management Facilities (Landfill Boundaries)					
Licensed Waste Management Facilities (Locations)	pg 14		1		2
Local Authority Landfill Coverage		1	n/a	n/a	n/a
Local Authority Recorded Landfill Sites					
Potentially Infilled Land (Non-Water)	pg 14				2
Potentially Infilled Land (Water)	pg 14				4
Registered Landfill Sites					
Registered Waste Transfer Sites	pg 15		2		
Registered Waste Treatment or Disposal Sites					
Hazardous Substances					
Control of Major Accident Hazards Sites (COMAH)					
Explosive Sites	pg 16				1
Notification of Installations Handling Hazardous Substances (NIHHS)					
Planning Hazardous Substance Consents					
Planning Hazardous Substance Enforcements					

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Geological					
BGS 1:625,000 Solid Geology	pg 17	Yes	n/a	n/a	n/a
BGS Estimated Soil Chemistry	pg 17			Yes	Yes
BGS Recorded Mineral Sites	pg 17				1
BGS Urban Soil Chemistry	pg 17		Yes	Yes	Yes
BGS Urban Soil Chemistry Averages	pg 21	Yes			
CBSCB Compensation District			n/a	n/a	n/a
Coal Mining Affected Areas			n/a	n/a	n/a
Mining Instability			n/a	n/a	n/a
Man-Made Mining Cavities	pg 21				1
Natural Cavities					
Non Coal Mining Areas of Great Britain	pg 21	Yes	Yes	n/a	n/a
Potential for Collapsible Ground Stability Hazards	pg 21	Yes		n/a	n/a
Potential for Compressible Ground Stability Hazards	pg 21	Yes	Yes	n/a	n/a
Potential for Ground Dissolution Stability Hazards	pg 22		Yes	n/a	n/a
Potential for Landslide Ground Stability Hazards	pg 22	Yes		n/a	n/a
Potential for Running Sand Ground Stability Hazards	pg 22	Yes	Yes	n/a	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards	pg 22	Yes	Yes	n/a	n/a
Radon Potential - Radon Affected Areas			n/a	n/a	n/a
Radon Potential - Radon Protection Measures			n/a	n/a	n/a
Industrial Land Use					
Contemporary Trade Directory Entries	pg 23		42	51	103
Fuel Station Entries	pg 39		1		2
Points of Interest - Commercial Services	pg 39		12	14	28
Points of Interest - Education and Health					
Points of Interest - Manufacturing and Production	pg 44	1	6	2	14
Points of Interest - Public Infrastructure	pg 46		3	5	12
Points of Interest - Recreational and Environmental	pg 47		3	1	36
Gas Pipelines					
Underground Electrical Cables					

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Sensitive Land Use					
Ancient Woodland					
Areas of Adopted Green Belt					
Areas of Unadopted Green Belt					
Areas of Outstanding Natural Beauty					
Environmentally Sensitive Areas					
Forest Parks					
Local Nature Reserves					
Marine Nature Reserves	pg 52		1		
National Nature Reserves					
National Parks					
Nitrate Sensitive Areas					
Nitrate Vulnerable Zones					
Ramsar Sites					
Sites of Special Scientific Interest					
Special Areas of Conservation					
Special Protection Areas					
World Heritage Sites					

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NW (NW)	0	1	543500 179250
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13NE (SE)	0	1	543615 179174
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A13NW (NW)	0	1	543500 179300
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NW (N)	0	1	543600 179300
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13SE (S)	0	1	543615 179150
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NE (NE)	53	1	543700 179250
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NW (W)	135	1	543350 179250
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NW (W)	184	1	543300 179250
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NE (NE)	256	1	543800 179350
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A18SW (N)	258	1	543450 179600
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A8NE (SE)	283	1	543850 178750
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A12NE (W)	333	1	543150 179250
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A13NE (NE)	344	1	543900 179400
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A8NE (S)	414	1	543615 178600
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A9NW (SE)	416	1	544100 178800
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A12SE (SW)	453	1	543150 178950
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A18SE (N)	460	1	543615 179800
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A8NE (S)	462	1	543700 178550
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A18SE (N)	471	1	543750 179750
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A9NW (SE)	475	1	544050 178650
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A12NE (W)	483	1	543000 179250

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
1	<p>Discharge Consents</p> <p>Operator: London Borough Of Greenwich Property Type: SPORT, AMUSEMENT+RECREATION/GOLF CLUB/GYM/THEME PK/SPA Location: Woolwich Leisure Centre & Carpark, Woolwich, London Authority: Environment Agency, Thames Region Catchment Area: Not Supplied Reference: Ctwc.1156 Permit Version: 1 Effective Date: 21st August 1986 Issued Date: 21st August 1986 Revocation Date: 4th October 1995 Discharge Type: Discharge Of Other Matter-Surface Water Discharge: Saline Estuary Environment: Receiving Water: River Thames Status: Authorisation revokedRevoked Positional Accuracy: Located by supplier to within 100m</p>	A13NW (W)	184	2	543300 179300
2	<p>Discharge Consents</p> <p>Operator: Waldair Court Management Company Limited Property Type: CONSTRUCTION OF BUILDINGS Location: Waldair Wharf, Bargehouse Road,London E15 Authority: Environment Agency, Thames Region Catchment Area: Not Given Reference: CTWC.1330 Permit Version: 1 Effective Date: 28th November 1986 Issued Date: 28th November 1986 Revocation Date: Not Supplied Discharge Type: Discharge Of Other Matter-Surface Water Discharge: Saline Estuary Environment: Receiving Water: River Thames Tidal Status: Varied under EPR 2010 Positional Accuracy: Located by supplier to within 100m</p>	A18SE (N)	496	2	543700 179800
2	<p>Discharge Consents</p> <p>Operator: Thames Water Utilities Ltd Property Type: STORM TANK/CSO ON SEWERAGE NETWORK (WATER COMPANY) Location: N Woolwich P.S., Albert Roadn Woolwich P.S.Albert Road Authority: Environment Agency, Thames Region Catchment Area: Not Supplied Reference: Temp.2366 Permit Version: 2 Effective Date: 3rd September 2010 Issued Date: 3rd September 2010 Revocation Date: Not Supplied Discharge Type: Public Sewage: Storm Sewage Overflow Discharge: Saline Estuary Environment: Receiving Water: Tidal Thames Status: Varied under EPR 2010 Positional Accuracy: Located by supplier to within 10m</p>	A18SE (N)	507	2	543730 179800
2	<p>Discharge Consents</p> <p>Operator: Thames Water Utilities Ltd Property Type: STORM TANK/CSO ON SEWERAGE NETWORK (WATER COMPANY) Location: N Woolwich P.S., Albert Roadn Woolwich P.S.Albert Road Authority: Environment Agency, Thames Region Catchment Area: Not Supplied Reference: Temp.2366 Permit Version: 1 Effective Date: 2nd November 1989 Issued Date: 2nd November 1989 Revocation Date: 2nd September 2010 Discharge Type: Public Sewage: Storm Sewage Overflow Discharge: Saline Estuary Environment: Receiving Water: Tidal Thames Status: Temporary Consents (Water Act 1989, Section 113) Positional Accuracy: Located by supplier to within 10m</p>	A18SE (N)	507	2	543730 179800

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
2	<p>Discharge Consents</p> <p>Operator: Thames Water Utilities Limited. Property Type: STORM TANK/CSO ON SEWERAGE NETWORK (WATER COMPANY) Location: Albert Road Sewer, London Authority: Environment Agency, Thames Region Catchment Area: Not Given Reference: CSAB.0523 Permit Version: 1 Effective Date: 5th October 1987 Issued Date: 5th October 1987 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge: Saline Estuary Environment: Receiving Water: R.Thames (Tidal) Status: Post National Rivers Authority Legislation where issue date > 31/08/1989 Positional Accuracy: Located by supplier to within 10m</p>	A18SE (N)	507	2	543730 179800
2	<p>Discharge Consents</p> <p>Operator: Thames Water Utilities Ltd Property Type: STORM TANK/CSO ON SEWERAGE NETWORK (WATER COMPANY) Location: Woolwich Manorway Authority: Environment Agency, Thames Region Catchment Area: Not Supplied Reference: Temp.3043 Permit Version: 2 Effective Date: 3rd September 2010 Issued Date: 3rd September 2010 Revocation Date: Not Supplied Discharge Type: Public Sewage: Storm Sewage Overflow Discharge: Freshwater Stream/River Environment: Receiving Water: Woolwich Reach Status: Temporary Consents (Water Act 1989, Section 113) Positional Accuracy: Located by supplier to within 10m</p>	A18SE (N)	531	2	543720 179830
2	<p>Discharge Consents</p> <p>Operator: Thames Water Utilities Ltd Property Type: STORM TANK/CSO ON SEWERAGE NETWORK (WATER COMPANY) Location: Woolwich Manorway Authority: Environment Agency, Thames Region Catchment Area: Not Supplied Reference: Temp.3043 Permit Version: 1 Effective Date: 2nd November 1989 Issued Date: 2nd November 1989 Revocation Date: 2nd September 2010 Discharge Type: Public Sewage: Storm Sewage Overflow Discharge: Freshwater Stream/River Environment: Receiving Water: Woolwich Reach Status: Temporary Consents (Water Act 1989, Section 113) Positional Accuracy: Located by supplier to within 10m</p>	A18SE (N)	531	2	543720 179830
3	<p>Discharge Consents</p> <p>Operator: Thames Water Utilities Limited. Property Type: PUMPING STATION ON SEWERAGE NETWORK (WATER COMPANY) Location: North Woolwich Pumping Station Storm Overflow, London Authority: Environment Agency, Thames Region Catchment Area: Not Given Reference: CSSC.9966 Permit Version: 1 Effective Date: 11th February 1988 Issued Date: 11th February 1988 Revocation Date: Not Supplied Discharge Type: Public Sewage: Storm Sewage Overflow Discharge: Saline Estuary Environment: Receiving Water: Tidal River Thames Status: Transferred from COPA 1974 Positional Accuracy: Located by supplier to within 10m</p>	A17SE (NW)	499	2	543200 179740

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
4	<p>Discharge Consents</p> <p>Operator: Amec Plc Property Type: CONSTRUCTION OF BUILDINGS Location: Marlborough Road Off Armstrong Road Woolwich London Se18 6re Authority: Environment Agency, Thames Region Catchment Area: Not Supplied Reference: Casm.1486 Permit Version: 2 Effective Date: 28th February 2008 Issued Date: 28th February 2008 Revocation Date: 1st October 2008 Discharge Type: Trade Effluent Discharge-Site Drainage Discharge: Saline Estuary Environment: Receiving Water: The Thames Estuary Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995) Positional Accuracy: Located by supplier to within 10m</p>	A14NW (NE)	618	2	544210 179490
4	<p>Discharge Consents</p> <p>Operator: Amec Plc Property Type: CONSTRUCTION OF BUILDINGS Location: Marlborough Road Off Armstrong Road Woolwich London Se18 6re Authority: Environment Agency, Thames Region Catchment Area: Not Supplied Reference: Casm.1486 Permit Version: 1 Effective Date: 10th August 2006 Issued Date: 19th September 2006 Revocation Date: 27th February 2008 Discharge Type: Trade Effluent Discharge-Site Drainage Discharge: Saline Estuary Environment: Receiving Water: The Thames Estuary Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995) Positional Accuracy: Located by supplier to within 10m</p>	A14NW (NE)	618	2	544210 179490
5	<p>Discharge Consents</p> <p>Operator: London Borough Of Greenwich Property Type: DOMESTIC PROPERTY (MULTIPLE) (INCL FARM HOUSES) Location: Magistrates Court Housing Site,Leda Road, London Authority: Environment Agency, Thames Region Catchment Area: Not Supplied Reference: Cntw.0350 Permit Version: 1 Effective Date: 7th March 1990 Issued Date: 7th March 1990 Revocation Date: 18th August 1994 Discharge Type: Discharge Of Other Matter-Surface Water Discharge: Saline Estuary Environment: Receiving Water: River Thames Status: Authorisation revokedRevoked Positional Accuracy: Located by supplier to within 10m</p>	A12NW (W)	633	2	542850 179300
6	<p>Discharge Consents</p> <p>Operator: Thames Water Utilities Ltd Property Type: STORM TANK/CSO ON SEWERAGE NETWORK (WATER COMPANY) Location: Henley Road Authority: Environment Agency, Thames Region Catchment Area: Not Supplied Reference: Temp.2679 Permit Version: 2 Effective Date: 3rd September 2010 Issued Date: 3rd September 2010 Revocation Date: Not Supplied Discharge Type: Public Sewage: Storm Sewage Overflow Discharge: Freshwater Stream/River Environment: Receiving Water: Woolwich Reach Status: Varied under EPR 2010 Positional Accuracy: Located by supplier to within 10m</p>	A17SW (NW)	685	2	542920 179720

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
6	<p>Discharge Consents</p> <p>Operator: Thames Water Utilities Ltd Property Type: STORM TANK/CSO ON SEWERAGE NETWORK (WATER COMPANY) Location: Henley Road Authority: Environment Agency, Thames Region Catchment Area: Not Supplied Reference: Temp.2679 Permit Version: 1 Effective Date: 2nd November 1989 Issued Date: 2nd November 1989 Revocation Date: 2nd September 2010 Discharge Type: Public Sewage: Storm Sewage Overflow Discharge: Freshwater Stream/River Environment: Receiving Water: Woolwich Reach Status: Temporary Consents (Water Act 1989, Section 113) Positional Accuracy: Located by supplier to within 10m</p>	A17SW (NW)	685	2	542920 179720
6	<p>Discharge Consents</p> <p>Operator: Thames Water Utilities Limited. Property Type: STORM TANK/CSO ON SEWERAGE NETWORK (WATER COMPANY) Location: Albert Road Sewer, London Authority: Environment Agency, Thames Region Catchment Area: Not Given Reference: CSAB.0529 Permit Version: 1 Effective Date: 5th October 1987 Issued Date: 5th October 1987 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge: Saline Estuary Environment: Receiving Water: R.Thames (Tidal) Status: Post National Rivers Authority Legislation where issue date > 31/08/1989 Positional Accuracy: Located by supplier to within 10m</p>	A17SW (NW)	697	2	542920 179740
7	<p>Discharge Consents</p> <p>Operator: Amec Group Limited & Amec Spie Rail (Uk) Limited Property Type: MAKING OF OTHER TRANSPORT EQUIP/SHIPS/TRAINS/BIKES Location: Docklands Light Railway Nwtc Jv Royal Docks Off Woolwich Manor Way North Woolwich London E16 2pb Authority: Environment Agency, Thames Region Catchment Area: Non-Tidal (River Roding) Reference: Canm.1005 Permit Version: 1 Effective Date: 1st December 2005 Issued Date: 7th December 2005 Revocation Date: 11th October 2006 Discharge Type: Trade Discharges - Site Drainage (Contam Surface Water, Not Tips) Discharge: Into Land Environment: Receiving Water: To Land Via Boreholes Status: Revoked (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995) Positional Accuracy: Located by supplier to within 10m</p>	A18NW (N)	816	2	543550 180150
8	<p>Discharge Consents</p> <p>Operator: Amec Group Ltd & Amec Spie Rail (Uk) Ltd Property Type: LAND TRANSPORT + VIA PIPELINES/FREIGHT Location: Royal Docks Off Woolwich Manor Way North Woolwich London E16 2pb Authority: Environment Agency, Thames Region Catchment Area: Non-Tidal (River Roding) Reference: Canm.1032 Permit Version: 1 Effective Date: 13th January 2006 Issued Date: 17th January 2006 Revocation Date: 11th October 2006 Discharge Type: Trade Discharge - Process Water Discharge: Into Land Environment: Receiving Water: Ground Waters Via Rech Bholes Status: Revoked (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995) Positional Accuracy: Located by supplier to within 100m</p>	A23SW (N)	869	2	543600 180200

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
9	<p>Discharge Consents</p> <p>Operator: Amec Group Ltd & Amec Spie Rail (Uk) Ltd Property Type: LAND TRANSPORT + VIA PIPELINES/FREIGHT Location: Docklands Light Railway Nwtc Jv Royal Docks Off Woolwich Manor Way North Woolwich London E16 2pb Authority: Environment Agency, Thames Region Catchment Area: Non-Tidal (River Roding) Reference: Canm.1006 Permit Version: 1 Effective Date: 8th December 2005 Issued Date: 25th January 2006 Revocation Date: 11th October 2006 Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge: Freshwater Stream/River Environment: Receiving Water: To River Thames Status: Revoked (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995) Positional Accuracy: Located by supplier to within 10m</p>	A19NW (NE)	972	2	544117 180108
10	<p>Prosecutions Relating to Controlled Waters</p> <p>Location: Store Road Pumping Station, Store Road, LONDON, E16 2EH Prosecution Text: EA Data 08/02/2000, Polluting the River Thames with undiluted sewage at North Woolwich due to an electrical failure in the pumping station causing the storm pump to come online. Prosecution Act: WRA91 s85(3a) Hearing Date: 3rd February 2000 Verdict: Guilty Fine: 5000 Cost: 700 Positional Accuracy: Manually positioned to the address or location</p>	A17NE (NW)	673	2	543091 179875
11	<p>Local Authority Pollution Prevention and Controls</p> <p>Name: Shell Woolwich Petrol Filling Station Location: 125-127 Woolwich High Street, Woolwich, London, SE18 6DN Authority: London Borough of Greenwich, Environmental Health Department Permit Reference: Lbg 227/A Dated: 20th January 1999 Process Type: Local Authority Air Pollution Control Description: PG1/14 Petrol filling station Status: Authorised Positional Accuracy: Automatically positioned to the address</p>	A13SW (W)	228	3	543291 179173
12	<p>Local Authority Pollution Prevention and Controls</p> <p>Name: Woolwich Express Location: 59 Woolwich New Road, London, Se18 6ed Authority: London Borough of Greenwich, Environmental Health Department Permit Reference: 312 Dated: Not Supplied Process Type: Local Authority Pollution Prevention and Control Description: PG6/46 Dry cleaning Status: Permitted Positional Accuracy: Manually positioned to the address or location</p>	A8NE (S)	289	3	543657 178736
13	<p>Local Authority Pollution Prevention and Controls</p> <p>Name: T & T Launderette And Dry Cleaners Location: 9 Anglesea Road, Se18 6eg Authority: London Borough of Greenwich, Environmental Health Department Permit Reference: 331 Dated: Not Supplied Process Type: Local Authority Pollution Prevention and Control Description: PG6/46 Dry cleaning Status: Permitted Positional Accuracy: Manually positioned to the address or location</p>	A8NE (S)	364	3	543646 178661
14	<p>Local Authority Pollution Prevention and Controls</p> <p>Name: W J King (Garages) Ltd Location: 40 Artillery Place, Woolwich, London, SE18 4AE Authority: London Borough of Greenwich, Environmental Health Department Permit Reference: 230 Dated: 20th January 1999 Process Type: Local Authority Air Pollution Control Description: PG1/14 Petrol filling station Status: Authorised Positional Accuracy: Manually positioned to the address or location</p>	A7NE (SW)	739	3	543130 178548

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
14	<p>Local Authority Pollution Prevention and Controls</p> <p>Name: Wj King (Garages) Ltd Location: 40 Artillery Place, Woolwich, LONDON, SE18 1SF Authority: London Borough of Greenwich, Environmental Health Department Permit Reference: 127 Dated: 23rd May 1996 Process Type: Local Authority Air Pollution Control Description: PG6/34 Respraying of road vehicles Status: Authorised Positional Accuracy: Manually positioned to the address or location</p>	A7NE (SW)	739	3	543128 178549
15	<p>Local Authority Pollution Prevention and Controls</p> <p>Name: 2in1 Dry Cleaners Location: 6 Pier Parade, London, E16 2ly Authority: London Borough of Newham, Environmental Health Department Permit Reference: LA-PPC 124/11 Dated: 1st April 2011 Process Type: Local Authority Pollution Prevention and Control Description: PG6/46 Dry cleaning Status: Permitted Positional Accuracy: Manually positioned to the address or location</p>	A17NE (N)	744	4	543264 180039
16	<p>Local Authority Pollution Prevention and Controls</p> <p>Name: Tills Petrol Filling Station Location: 79 Sandy Hill Road, Woolwich, LONDON, SE18 7BQ Authority: London Borough of Greenwich, Environmental Health Department Permit Reference: Lbg 228/A Dated: 20th January 1999 Process Type: Local Authority Air Pollution Control Description: PG1/14 Petrol filling station Status: Authorised Positional Accuracy: Automatically positioned to the address</p>	A8SE (S)	782	3	543778 178231
17	<p>Local Authority Pollution Prevention and Controls</p> <p>Name: King'S Troop Royal Horse Artillery Location: Napier Lines, Artillery Road, Woolwich, Se18 4bb Authority: London Borough of Greenwich, Environmental Health Department Permit Reference: 154 Dated: Not Supplied Process Type: Local Authority Pollution Prevention and Control Description: Part B - General Waste Disposal Process (No Specific Reference) Status: Application Not Yet Authorised Positional Accuracy: Manually positioned to the address or location</p>	A7SE (SW)	917	3	542954 178475
18	<p>Local Authority Pollution Prevention and Controls</p> <p>Name: Unique Dry Cleaners Location: 6 Frances Street, Woolwich, Se18 5ef Authority: London Borough of Greenwich, Environmental Health Department Permit Reference: 322 Dated: Not Supplied Process Type: Local Authority Pollution Prevention and Control Description: PG6/46 Dry cleaning Status: Permitted Positional Accuracy: Manually positioned to the address or location</p>	A7NW (SW)	939	3	542873 178525
	Nearest Surface Water Feature	A13NW (N)	7	-	543591 179350
19	<p>Pollution Incidents to Controlled Waters</p> <p>Property Type: Not Given Location: Woolwich Reach Authority: Environment Agency, Thames Region Pollutant: Oils - Unknown Note: Confirmed As A Pollution Incident Incident Date: Not Supplied Incident Reference: SE940006 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m</p>	A14NW (NE)	482	2	544000 179500

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
20	<p>Pollution Incidents to Controlled Waters</p> <p>Property Type: Not Given Location: Woolwich Ferry Authority: Environment Agency, Thames Region Pollutant: Oils - Unknown Note: Confirmed As A Pollution Incident Incident Date: 19th October 1994 Incident Reference: SE940347 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m</p>	A12NE (W)	487	2	543000 179400
21	<p>Pollution Incidents to Controlled Waters</p> <p>Property Type: Not Given Location: SILVERTOWN Authority: Environment Agency, Thames Region Pollutant: Oils - Unknown Note: Not Supplied Incident Date: 13th May 1996 Incident Reference: SE960201 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m</p>	A17SE (NW)	499	2	543150 179700
22	<p>Pollution Incidents to Controlled Waters</p> <p>Property Type: Not Given Location: Woolwich Arsenal Authority: Environment Agency, Thames Region Pollutant: Oils - Unknown Note: Confirmed As A Pollution Incident Incident Date: 29th October 1993 Incident Reference: SE930331 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 2 - Significant Incident Positional Accuracy: Located by supplier to within 100m</p>	A14NW (NE)	540	2	544100 179495
22	<p>Pollution Incidents to Controlled Waters</p> <p>Property Type: Not Given Location: Woolwich Arsenal Authority: Environment Agency, Thames Region Pollutant: Miscellaneous - Unknown Note: Confirmed As A Pollution Incident Incident Date: 16th February 1994 Incident Reference: SE940043 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m</p>	A14NW (NE)	544	2	544105 179495
22	<p>Pollution Incidents to Controlled Waters</p> <p>Property Type: Not Given Location: Woolwich Arsenal Authority: Environment Agency, Thames Region Pollutant: Oils - Unknown Note: Confirmed As A Pollution Incident Incident Date: 24th October 1993 Incident Reference: SE930323 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m</p>	A14NW (NE)	544	2	544100 179500
23	<p>Pollution Incidents to Controlled Waters</p> <p>Property Type: Not Given Location: Woolwich Ferry Authority: Environment Agency, Thames Region Pollutant: Oils - Unknown Note: Confirmed As A Pollution Incident Incident Date: 20th May 1995 Incident Reference: SE950224 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 2 - Significant Incident Positional Accuracy: Located by supplier to within 100m</p>	A12SE (W)	561	2	543000 179000

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
24	<p>Pollution Incidents to Controlled Waters</p> <p>Property Type: Not Given Location: NORTH WOOLWICH Authority: Environment Agency, Thames Region Pollutant: Oils - Unknown Note: Confirmed As A Pollution Incident Incident Date: 28th July 1995 Incident Reference: SE950326 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 2 - Significant Incident Positional Accuracy: Located by supplier to within 100m</p>	A17SW (NW)	643	2	542900 179600
25	<p>Pollution Incidents to Controlled Waters</p> <p>Property Type: Not Given Location: Thamesmead West Authority: Environment Agency, Thames Region Pollutant: Oils - Unknown Note: Confirmed As A Pollution Incident Incident Date: 12th October 1994 Incident Reference: SE940341 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m</p>	A14NE (E)	920	2	544600 179400
26	<p>Registered Radioactive Substances</p> <p>Name: University Of Greenwich Location: Woolwich Campus, Wellington Street, WOOLWICH, LONDON, SE18 6PF Authority: Environment Agency, Thames Region Permit Reference: Bw7929 Dated: 1st December 2003 Process Type: Authorisation under S13 RSA for the disposal of Radioactive waste (was RSA60 S7) Description: Minor variation to authorisation under RSA Status: Authorisation either revoked or cancelledCancelled Positional Accuracy: Automatically positioned to the address</p>	A8NW (S)	273	2	543530 178812
26	<p>Registered Radioactive Substances</p> <p>Name: University Of Greenwich Location: Woolwich Campus, Wellington Street, Woolwich, LONDON, SE18 6PF Authority: Environment Agency, Thames Region Permit Reference: AD6935 Dated: 31st March 1991 Process Type: Authorisation under S13 RSA for the disposal of Radioactive waste (was RSA60 S7) Description: Authorisation under RSA Status: Authorisation superseded by a substantial or non substantial variationSuperseded Positional Accuracy: Automatically positioned to the address</p>	A8NW (S)	273	2	543530 178812
26	<p>Registered Radioactive Substances</p> <p>Name: University Of Greenwich Location: Woolwich Campus, Wellington Street, LONDON, Greater London, SE18 6PF Authority: Environment Agency, Thames Region Permit Reference: AP0739 Dated: 25th May 1995 Process Type: Authorisation under S13 RSA for the disposal of Radioactive waste (was RSA60 S7) Description: Substantial variation to authorisation under RSA Status: Authorisation superseded by a substantial or non substantial variationSuperseded Positional Accuracy: Automatically positioned to the address</p>	A8NW (S)	274	2	543535 178807
27	<p>Registered Radioactive Substances</p> <p>Name: Le(A) Reme Units Location: Woolwich Garrison, Repository Road, Woolwich, LONDON, Greater London, SE18 4QA Authority: Environment Agency, Thames Region Permit Reference: AB9836 Dated: 21st August 1992 Process Type: Authorisation under S13 RSA for the disposal of Radioactive waste (was RSA60 S7) Description: Authorisation under RSA Status: Authorisation either revoked or cancelledCancelled Positional Accuracy: Unknown</p>	A7SE (SW)	823	2	543138 178424

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
28	<p>Registered Radioactive Substances</p> <p>Name: Ministry Of Defence Location: Royal Artillery Training Area, Woolwich Garrison, Woolwich, London, Se18 6xp Authority: Environment Agency, Thames Region Permit Reference: Bw8054 Dated: 1st December 2003 Process Type: Authorisation under S13 RSA for the disposal of Radioactive waste (was RSA60 S7) Description: Minor variation to authorisation under RSA Status: Authorisation either revoked or cancelledCancelled Positional Accuracy: Manually positioned within the geographical locality</p>	A7SW (SW)	956	2	542884 178490
29	<p>Substantiated Pollution Incident Register</p> <p>Authority: Environment Agency - South East Region, Kent & South London Area Incident Date: 21st October 2007 Incident Reference: 539952 Water Impact: Category 2 - Significant Incident Air Impact: Category 4 - No Impact Land Impact: Category 4 - No Impact Positional Accuracy: Located by supplier to within 10m Pollutant: Pollutant Not Identified: Not Identified</p>	A12NW (W)	673	2	542815 179236
30	<p>Water Abstractions</p> <p>Operator: London Borough Of Greenwich Licence Number: 28/39/44/0018 Permit Version: Not Supplied Location: Woolwich Baths, Woolwich, LONDON, Se18 Authority: Environment Agency, Thames Region Abstraction: Domestic Use Only Abstraction Type: Not Supplied Source: Groundwater Daily Rate (m3): 614 Yearly Rate (m3): 31822 Details: Chalk (Undifferentiated) Authorised Start: Not Supplied Authorised End: Not Supplied Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m</p>	A8NW (SW)	369	2	543400 178800
31	<p>Water Abstractions</p> <p>Operator: Amec Group Ltd Licence Number: 28/39/45/0014 Permit Version: 1 Location: River Thames At East End Of King George V Dock, London E16 Authority: Environment Agency, Thames Region Abstraction: Construction: General use relating to Secondary Category (Low Loss) Abstraction Type: Water may be abstracted from a single point Source: Tidal Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Adjacent To King George V Dock Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 25th November 2005 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m</p>	A23SW (N)	856	2	543540 180190
	<p>Water Abstractions</p> <p>Operator: T & L Sugars Limited Licence Number: 28/39/45/0006 Permit Version: 103 Location: River Thames At Thames Refinery, Silvertown, London E16 Authority: Environment Agency, Thames Region Abstraction: Food And Drink: Non-Evaporative Cooling Abstraction Type: Water may be abstracted from a single point Source: Tidal Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Thames Refinery, Silvertown, London E16 Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 9th September 2010 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m</p>	A16SE (NW)	1273	2	542300 179800

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<p>Water Abstractions</p> <p>Operator: Tate & Lyle Sugars Licence Number: 28/39/45/0006 Permit Version: 102 Location: River Thames At Thames Refinery, Silvertown, London E16 Authority: Environment Agency, Thames Region Abstraction: Food And Drink: Non-Evaporative Cooling Abstraction Type: Water may be abstracted from a single point Source: Tidal Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Thames Refinery, Silvertown, London E16 Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 2nd February 2010 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m</p>	A16SE (NW)	1273	2	542300 179800
	<p>Water Abstractions</p> <p>Operator: Tate & Lyle Sugars Licence Number: 28/39/45/0006 Permit Version: 101 Location: River Thames At Thames Refinery, Silvertown, London E16 Authority: Environment Agency, Thames Region Abstraction: Food And Drink: Non-Evaporative Cooling Abstraction Type: Water may be abstracted from a single point Source: Tidal Daily Rate (m3): 60916 Yearly Rate (m3): 16365600 Details: Thames Refinery, Silvertown, London E16 Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 29th July 1999 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m</p>	A16SE (NW)	1273	2	542300 179800
	<p>Water Abstractions</p> <p>Operator: T & L Sugars Limited Licence Number: 28/39/45/0006 Permit Version: 104 Location: River Thames At Thames Refinery, Silvertown, London E16. Authority: Environment Agency, Thames Region Abstraction: Food And Drink: Non-Evaporative Cooling Abstraction Type: Water may be abstracted from a single point Source: Tidal Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Thames Refinery, Silvertown, London E16 Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 10th June 2016 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m</p>	A16SW (W)	1388	2	542154 179733
	<p>Water Abstractions</p> <p>Operator: T & L Sugars Limited Licence Number: 28/39/45/0006 Permit Version: 103 Location: River Thames At Thames Refinery, Silvertown, London E16. Authority: Environment Agency, Thames Region Abstraction: Food And Drink: Non-Evaporative Cooling Abstraction Type: Water may be abstracted from a single point Source: Tidal Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Thames Refinery, Silvertown, London E16 Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 9th September 2010 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m</p>	A16SW (W)	1388	2	542154 179733

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: European Colour (Pigments) Ltd Licence Number: 28/39/44/0034 Permit Version: 101 Location: Nathan Way, West Thamesmead Business Park - Borehole 'A' Authority: Environment Agency, Thames Region Abstraction: Other Industrial/Commercial/Public Services: General Use (Medium Loss) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Nathan Way, West Thamesmead Business Park, London Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 12th December 2000 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(E)	1857	2	545580 179280
	Water Abstractions Operator: European Colour (Pigments) Ltd Licence Number: 28/39/44/0034 Permit Version: 100 Location: Nathan Way, West Thamesmead Business Park - Borehole 'A' Authority: Environment Agency, Thames Region Abstraction: Other Industrial/Commercial/Public Services: General Use (Medium Loss) Abstraction Type: Not Supplied Source: Groundwater Daily Rate (m3): 750 Yearly Rate (m3): 200000 Details: Nathan Way, West Thamesmead Business Park, London Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 9th March 1998 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	(E)	1857	2	545580 179280
32	Water Industry Act Referrals Name: Thames Polytechnic Location: THAMES POLYTECHNIC, WELLINGTON STREET, WELLINGTON STREET, WOOLWICH, LONDON, SE18 4BG Authority: Environment Agency, Thames Region Permit Reference: AF0512 Dated: 31st March 1992 Process Type: Permissions or amendments to discharge under the Water Industry Act 1991 Description: Processes which result in the discharge of Special Category effluents under The Trade Effluents (Prescribed Processes and Substances) Regulations Status: Application cancelled Positional Accuracy: Automatically positioned to the address	A8NW (S)	266	2	543535 178817
	Groundwater Vulnerability Soil Classification: Soils of High Leaching Potential (U) - Soil information for restored mineral workings and urban areas is based on fewer observations than elsewhere. A worst case vulnerability classification (H) assumed, until proved otherwise Map Sheet: Sheet 40 Thames Estuary Scale: 1:100,000	A13NE (SE)	0	2	543615 179174
	Drift Deposits Drift Deposit: Low permeability drift deposits occurring at the surface and overlying Major and Minor Aquifers are head, clay-with-flints, brickearth, peat, river terrace deposits and marine and estuarine alluvium Map Sheet: Sheet 40 Thames Estuary Scale: 1:100,000	A13NE (N)	0	2	543638 179237
	Bedrock Aquifer Designations Aquifer Designation: Secondary Aquifer - A	A13NE (SE)	0	1	543615 179174
	Superficial Aquifer Designations Aquifer Designation: Secondary Aquifer - Undifferentiated	A13NE (SE)	0	1	543615 179174
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A13NW (NW)	0	2	543550 179316
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Tidal Models Boundary Accuracy: As Supplied	A13NW (N)	0	2	543583 179332
	Areas Benefiting from Flood Defences Type: Area Benefiting from Flood Defences Boundary Accuracy: As Supplied	A13NW (NW)	5	2	543483 179258

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Areas Benefiting from Flood Defences Type: Area Benefiting from Flood Defences Boundary Accuracy: As Supplied	A13NW (NW)	105	2	543380 179298
	Areas Benefiting from Flood Defences Type: Area Benefiting from Flood Defences Boundary Accuracy: As Supplied	A13NE (NE)	173	2	543714 179318
	Flood Water Storage Areas None				
	Flood Defences Type: Flood Defences Reference: Not Supplied	A13NW (NW)	0	2	543530 179272
33	OS Water Network Lines Watercourse Form: Tidal river Watercourse Length: 5608.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: River Thames Catchment Name: Thames Primacy: 1	A18SW (N)	227	5	543572 179568
34	OS Water Network Lines Watercourse Form: Lake Watercourse Length: 1368.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: King George V Dock Catchment Name: Thames Primacy: 1	A23SE (N)	917	5	543643 180248
35	OS Water Network Lines Watercourse Form: Lake Watercourse Length: 259.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: King George V Dock Catchment Name: Thames Primacy: 1	A24SW (N)	944	5	543959 180188
36	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 19.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: King George V Dock Catchment Name: Thames Primacy: 1	A23SE (N)	945	5	543802 180239
37	OS Water Network Lines Watercourse Form: Lake Watercourse Length: 566.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A15NW (E)	957	5	544661 179325
38	OS Water Network Lines Watercourse Form: Tidal river Watercourse Length: 392.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: King George V Dock Catchment Name: Thames Primacy: 1	A19NW (NE)	982	5	544043 180171

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
39	Licensed Waste Management Facilities (Locations) Licence Number: 83241 Location: 6-14 Beresford Street, Woolwich, London, SE18 6BE Operator Name: Greenwich London Borough Council Operator Location: Not Supplied Authority: Environment Agency - South East Region, Kent & South London Area Site Category: Household, Commercial And Industrial Transfer Stations Licence Status: Surrendered Issued: 16th April 1992 Last Modified: 4th September 1995 Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: 28th February 2009 IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m	A13SE (S)	25	2	543661 179027
40	Licensed Waste Management Facilities (Locations) Licence Number: 103174 Location: Unit 6 & 7 Standard Ind Est, Factory Road, Silvertow Operator Name: London City Metals Ltd Operator Location: Not Supplied Authority: Environment Agency - Thames Region, North East Area Site Category: Metal recycling site Licence Status: Issued Issued: 19th August 2011 Last Modified: Not Supplied Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m	A17NW (NW)	888	2	542801 179897
40	Licensed Waste Management Facilities (Locations) Licence Number: 400735 Location: Unit 6, Standard Industrial Estate, Factory Road, London, E16 2EJ Operator Name: London City Metals Limited Operator Location: Not Supplied Authority: Environment Agency - Thames Region, North East Area Site Category: Vehicle depollution facility Licence Status: Issued Issued: 17th October 2013 Last Modified: Not Supplied Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m	A17NW (NW)	892	2	542809 179913
	Local Authority Landfill Coverage Name: London Borough of Greenwich - Has supplied landfill data		0	3	543615 179174
	Local Authority Landfill Coverage Name: London Borough of Newham - Has supplied landfill data		169	6	543538 179514
41	Potentially Infilled Land (Non-Water) Bearing Ref: SE Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1996	A9NW (SE)	587	-	544221 178672
42	Potentially Infilled Land (Non-Water) Bearing Ref: SE Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1996	A9NE (SE)	903	-	544536 178582
43	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A18NE (N)	649	-	543783 179932
44	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1870	A7NE (SW)	700	-	543090 178646
45	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A17NE (NW)	714	-	543257 180005
46	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A19NW (N)	798	-	543955 180010

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
47	<p>Registered Waste Transfer Sites</p> <p>Licence Holder: L.B. of Greenwich Licence Reference: DL125 Site Location: Market Traders Compound, 6-14 Beresford Street, WOOLWICH, London, SE18</p> <p>Operator Location: 50 Woolwich New Road, GREENWICH, London, SE18 6HQ Authority: Environment Agency - Thames Region, South East Area Site Category: Transfer Max Input Rate: Small (Equal to or greater than 10,000 and less than 25,000 tonnes per year) Waste Source: No known restriction on source of waste Restrictions: Licence Status: Operational as far as is knownOperational Dated: 16th April 1992 Preceded By: DL125 Licence: Superseded By: Not Given Licence: Positional Accuracy: Manually positioned to the address or location Boundary Quality: Not Supplied Authorised Waste: Calcium Carb/Sulphate(Gypsum)/Chloride Cardboard/Fibreboard Cement Cork,Ebonite,Kapok Decontam.Containers (< 50 L Cap.) Iron,Steel,Alum.Brass,Copper,Tin,Zinc Leather Lwra Cat. Bi Gen.Non-Putresc. Namely Lwra Cat. C 'Putresc' Namely Magnesium Carb. Max.Waste Permitted By Licence-Styled Paper (Incl. Oiled/Tarred) Plasterboard Plastics (Finished Prods/Manuf.Scrap) String,Rope,Fibre(Manmade/Natural) Wood (Incl. Saw/Sanderdust) Wood Prods (Incl.Chip/Fibreboard) Wool,Cotton,Linen,Hemp,Sisal,Hessian</p> <p>Prohibited Waste Clinical - As In Coll/Disp.Reg's Of '88 Leather Proc'G Waste Metal Swarf,Dusts,Particulate Noxious, Poisoning, Polluting Sub'S P.F.A. & Vanadium Contam. Ash Sludges/Liquids Special Wastes Toxic Metal Slags</p>	A13SE (S)	38	2	543655 179015
47	<p>Registered Waste Transfer Sites</p> <p>Licence Holder: L.B. of Greenwich Licence Reference: DL125 Site Location: Market Traders Compound, 6-14 Beresford Street, WOOLWICH, London, SE18</p> <p>Operator Location: 50 Woolwich Nw Road, GREENWICH, London, SE18 6HQ Authority: Environment Agency - Thames Region, South East Area Site Category: Transfer Max Input Rate: Very Small (Less than 10,000 tonnes per year) Waste Source: No known restriction on source of waste Restrictions: Licence Status: Record supersededSuperseded Dated: 1st June 1983 Preceded By: Not Given Licence: Superseded By: DL125 Licence: Positional Accuracy: Manually positioned to the address or location Boundary Quality: Not Supplied Authorised Waste: Commercial Waste From Street Market Prohibited Waste: Clinical Wastes Notifiable Wastes Special Wastes</p>	A13SE (S)	38	2	543655 179015

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
48	<p>Explosive Sites</p> <p>Name: Royal Docks Management Authority Company Location: Woolwich Manor Way, King George V Dock, Newham, London, E16 2nj Status: Not Active Positional Accuracy: Manually positioned to the road within the address or location</p>	A23SE (N)	984	7	543801 180280

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS 1:625,000 Solid Geology Description: Thanet Sand Formation	A13NE (SE)	0	1	543615 179174
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: <15 mg/kg Cadmium Concentration: no data Chromium Concentration: 60 - 90 mg/kg Lead Concentration: no data Nickel Concentration: 15 - 30 mg/kg	A12NE (W)	482	1	543000 179345
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: <15 mg/kg Cadmium Concentration: no data Chromium Concentration: 60 - 90 mg/kg Lead Concentration: no data Nickel Concentration: 15 - 30 mg/kg	A19NW (NE)	861	1	544000 180055
49	BGS Recorded Mineral Sites Site Name: Arthur Street Brick Field Location: Plumstead, Woolwich, London, Greater London Source: British Geological Survey, National Geoscience Information Service Reference: 130851 Type: Opencast Status: Ceased Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Palaeocene Geology: Lambeth Group Commodity: Common Clay and Shale Positional Accuracy: Located by supplier to within 10m	A9NW (SE)	648	1	544262 178625
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 543763, 179221 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured Concentration: 15.60 mg/kg Cadmium Measured Concentration: 0.60 mg/kg Chromium Measured Concentration: 59.60 mg/kg Lead Measured Concentration: 78.20 mg/kg Nickel Measured Concentration: 25.60 mg/kg	A13NE (E)	124	1	543763 179221
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 543666, 178830 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured Concentration: 28.50 mg/kg Cadmium Measured Concentration: 10.40 mg/kg Chromium Measured Concentration: 184.00 mg/kg Lead Measured Concentration: 510.60 mg/kg Nickel Measured Concentration: 66.10 mg/kg	A8NE (S)	197	1	543666 178830

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<p>BGS Measured Urban Soil Chemistry</p> <p>Source: British Geological Survey, National Geoscience Information Service Grid: 543249, 179224 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured 13.10 mg/kg Concentration: Cadmium Measured 0.80 mg/kg Concentration: Chromium Measured 61.50 mg/kg Concentration: Lead Measured 204.00 mg/kg Concentration: Nickel Measured 17.90 mg/kg Concentration:</p>	A12NE (W)	254	1	543249 179224
	<p>BGS Measured Urban Soil Chemistry</p> <p>Source: British Geological Survey, National Geoscience Information Service Grid: 543302, 178665 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured 10.60 mg/kg Concentration: Cadmium Measured 0.90 mg/kg Concentration: Chromium Measured 60.70 mg/kg Concentration: Lead Measured 743.50 mg/kg Concentration: Nickel Measured 21.10 mg/kg Concentration:</p>	A8NW (SW)	534	1	543302 178665
	<p>BGS Measured Urban Soil Chemistry</p> <p>Source: British Geological Survey, National Geoscience Information Service Grid: 543417, 179877 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured 27.70 mg/kg Concentration: Cadmium Measured 0.90 mg/kg Concentration: Chromium Measured 89.90 mg/kg Concentration: Lead Measured 358.20 mg/kg Concentration: Nickel Measured 48.90 mg/kg Concentration:</p>	A18NW (N)	553	1	543417 179877
	<p>BGS Measured Urban Soil Chemistry</p> <p>Source: British Geological Survey, National Geoscience Information Service Grid: 544287, 179160 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured 11.40 mg/kg Concentration: Cadmium Measured 0.40 mg/kg Concentration: Chromium Measured 49.10 mg/kg Concentration: Lead Measured 144.00 mg/kg Concentration: Nickel Measured 17.20 mg/kg Concentration:</p>	A14SW (E)	560	1	544287 179160
	<p>BGS Measured Urban Soil Chemistry</p> <p>Source: British Geological Survey, National Geoscience Information Service Grid: 543604, 179902 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured 16.90 mg/kg Concentration: Cadmium Measured 0.40 mg/kg Concentration: Chromium Measured 73.00 mg/kg Concentration: Lead Measured 242.10 mg/kg Concentration: Nickel Measured 31.10 mg/kg Concentration:</p>	A18NW (N)	573	1	543604 179902

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<p>BGS Measured Urban Soil Chemistry</p> <p>Source: British Geological Survey, National Geoscience Information Service Grid: 544219, 178652 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured 20.40 mg/kg Concentration: Cadmium Measured 1.80 mg/kg Concentration: Chromium Measured 99.60 mg/kg Concentration: Lead Measured 249.20 mg/kg Concentration: Nickel Measured 31.30 mg/kg Concentration:</p>	A9NW (SE)	597	1	544219 178652
	<p>BGS Measured Urban Soil Chemistry</p> <p>Source: British Geological Survey, National Geoscience Information Service Grid: 542828, 179110 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured 14.70 mg/kg Concentration: Cadmium Measured 0.70 mg/kg Concentration: Chromium Measured 60.20 mg/kg Concentration: Lead Measured 748.00 mg/kg Concentration: Nickel Measured 22.60 mg/kg Concentration:</p>	A12SW (W)	689	1	542828 179110
	<p>BGS Measured Urban Soil Chemistry</p> <p>Source: British Geological Survey, National Geoscience Information Service Grid: 543780, 178211 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured 4.20 mg/kg Concentration: Cadmium Measured 0.60 mg/kg Concentration: Chromium Measured 50.60 mg/kg Concentration: Lead Measured 3424.70 mg/kg Concentration: Nickel Measured 18.60 mg/kg Concentration:</p>	A8SE (S)	802	1	543780 178211
	<p>BGS Measured Urban Soil Chemistry</p> <p>Source: British Geological Survey, National Geoscience Information Service Grid: 543269, 180105 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured 17.10 mg/kg Concentration: Cadmium Measured 0.50 mg/kg Concentration: Chromium Measured 74.50 mg/kg Concentration: Lead Measured 263.20 mg/kg Concentration: Nickel Measured 24.60 mg/kg Concentration:</p>	A17NE (N)	806	1	543269 180105
	<p>BGS Measured Urban Soil Chemistry</p> <p>Source: British Geological Survey, National Geoscience Information Service Grid: 543885, 180132 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured 13.10 mg/kg Concentration: Cadmium Measured 0.30 mg/kg Concentration: Chromium Measured 72.30 mg/kg Concentration: Lead Measured 186.90 mg/kg Concentration: Nickel Measured 26.20 mg/kg Concentration:</p>	A18NE (N)	873	1	543885 180132

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<p>BGS Measured Urban Soil Chemistry</p> <p>Source: British Geological Survey, National Geoscience Information Service Grid: 544440, 179629 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured 11.70 mg/kg Concentration: Cadmium Measured 0.70 mg/kg Concentration: Chromium Measured 66.70 mg/kg Concentration: Lead Measured 196.40 mg/kg Concentration: Nickel Measured 24.10 mg/kg Concentration:</p>	A19SE (NE)	885	1	544440 179629
	<p>BGS Measured Urban Soil Chemistry</p> <p>Source: British Geological Survey, National Geoscience Information Service Grid: 543273, 178239 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured 12.90 mg/kg Concentration: Cadmium Measured 0.60 mg/kg Concentration: Chromium Measured 52.60 mg/kg Concentration: Lead Measured 301.50 mg/kg Concentration: Nickel Measured 16.70 mg/kg Concentration:</p>	A7SE (S)	896	1	543273 178239
	<p>BGS Measured Urban Soil Chemistry</p> <p>Source: British Geological Survey, National Geoscience Information Service Grid: 544308, 178250 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured 12.70 mg/kg Concentration: Cadmium Measured 0.70 mg/kg Concentration: Chromium Measured 50.30 mg/kg Concentration: Lead Measured 277.00 mg/kg Concentration: Nickel Measured 19.10 mg/kg Concentration:</p>	A9SE (SE)	949	1	544308 178250
	<p>BGS Measured Urban Soil Chemistry</p> <p>Source: British Geological Survey, National Geoscience Information Service Grid: 542727, 178659 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured 10.90 mg/kg Concentration: Cadmium Measured 0.40 mg/kg Concentration: Chromium Measured 52.70 mg/kg Concentration: Lead Measured 262.80 mg/kg Concentration: Nickel Measured 18.90 mg/kg Concentration:</p>	A7NW (SW)	967	1	542727 178659
	<p>BGS Measured Urban Soil Chemistry</p> <p>Source: British Geological Survey, National Geoscience Information Service Grid: 544635, 178601 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured 12.60 mg/kg Concentration: Cadmium Measured 2.00 mg/kg Concentration: Chromium Measured 47.10 mg/kg Concentration: Lead Measured 158.50 mg/kg Concentration: Nickel Measured 18.50 mg/kg Concentration:</p>	A10NW (SE)	983	1	544635 178601

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	<p>BGS Urban Soil Chemistry Averages</p> <p>Source: British Geological Survey, National Geoscience Information Service</p> <p>Sample Area: London</p> <p>Count Id: 7209</p> <p>Arsenic Minimum Concentration: 1.00 mg/kg</p> <p>Arsenic Average Concentration: 17.00 mg/kg</p> <p>Arsenic Maximum Concentration: 161.00 mg/kg</p> <p>Cadmium Minimum Concentration: 0.10 mg/kg</p> <p>Cadmium Average Concentration: 0.90 mg/kg</p> <p>Cadmium Maximum Concentration: 165.20 mg/kg</p> <p>Chromium Minimum Concentration: 13.00 mg/kg</p> <p>Chromium Average Concentration: 79.00 mg/kg</p> <p>Chromium Maximum Concentration: 2094.00 mg/kg</p> <p>Lead Minimum Concentration: 11.00 mg/kg</p> <p>Lead Average Concentration: 280.00 mg/kg</p> <p>Lead Maximum Concentration: 10000.00 mg/kg</p> <p>Nickel Minimum Concentration: 2.00 mg/kg</p> <p>Nickel Average Concentration: 28.00 mg/kg</p> <p>Nickel Maximum Concentration: 506.00 mg/kg</p>	A13NE (SE)	0	1	543615 179174
	<p>Coal Mining Affected Areas</p> <p>In an area that might not be affected by coal mining</p>				
	<p>Man-Made Mining Cavities</p> <p>Easting: 544200</p> <p>Northing: 178600</p> <p>Distance: 616</p> <p>Quadrant Reference: A9</p> <p>Quadrant Reference: NW</p> <p>Bearing Ref: SE</p> <p>Cavity Type: Historical Brick Works-Potential Chalk Mining</p> <p>Commodity: Chalk</p> <p>Solid Geology Detail: Lambeth Group, Thanet Sand Formation, Upper Chalk Formation</p> <p>Superficial Geology: Worked Ground</p> <p>Detail:</p>	A9NW (SE)	616	8	544200 178600
	<p>Non Coal Mining Areas of Great Britain</p> <p>Risk: Rare</p> <p>Source: British Geological Survey, National Geoscience Information Service</p>	A13NE (SE)	0	1	543615 179174
	<p>Non Coal Mining Areas of Great Britain</p> <p>Risk: Rare</p> <p>Source: British Geological Survey, National Geoscience Information Service</p>	A13NE (NE)	7	1	543693 179310
	<p>Non Coal Mining Areas of Great Britain</p> <p>Risk: Highly Unlikely</p> <p>Source: British Geological Survey, National Geoscience Information Service</p>	A12NE (NW)	226	1	543256 179330
	<p>Potential for Collapsible Ground Stability Hazards</p> <p>Hazard Potential: Very Low</p> <p>Source: British Geological Survey, National Geoscience Information Service</p>	A13NE (SE)	0	1	543615 179174
	<p>Potential for Collapsible Ground Stability Hazards</p> <p>Hazard Potential: No Hazard</p> <p>Source: British Geological Survey, National Geoscience Information Service</p>	A13NE (NE)	7	1	543693 179310
	<p>Potential for Compressible Ground Stability Hazards</p> <p>Hazard Potential: Very Low</p> <p>Source: British Geological Survey, National Geoscience Information Service</p>	A13NE (NE)	0	1	543668 179204
	<p>Potential for Compressible Ground Stability Hazards</p> <p>Hazard Potential: No Hazard</p> <p>Source: British Geological Survey, National Geoscience Information Service</p>	A13NE (SE)	0	1	543615 179174
	<p>Potential for Compressible Ground Stability Hazards</p> <p>Hazard Potential: Moderate</p> <p>Source: British Geological Survey, National Geoscience Information Service</p>	A13NW (N)	22	1	543592 179364

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (SE)	0	1	543615 179174
	Potential for Ground Dissolution Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	49	1	543495 179380
	Potential for Ground Dissolution Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A12NE (NW)	226	1	543256 179330
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (SE)	0	1	543615 179174
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (SE)	0	1	543615 179174
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A13NW (N)	22	1	543592 179364
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NW (N)	46	1	543564 179387
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A13SW (SW)	165	1	543473 178966
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (SE)	0	1	543615 179174
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	7	1	543693 179310
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SW (SW)	165	1	543473 178966
	Radon Potential - Radon Affected Areas Affected Area: The property is in a Lower probability radon area (less than 1% of homes are estimated to be at or above the Action Level). Source: British Geological Survey, National Geoscience Information Service	A13NE (SE)	0	1	543615 179174
	Radon Potential - Radon Protection Measures Protection Measure: No radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	A13NE (SE)	0	1	543615 179174

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
50	<p>Contemporary Trade Directory Entries</p> <p>Name: Kingsfisher Accident Repairs Location: Rope Yard Rails, LONDON, SE18 6BN Classification: Car Body Repairs Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A13NE (E)	18	-	543631 179177
51	<p>Contemporary Trade Directory Entries</p> <p>Name: Site Assistant Services Location: Royal Sovereign House, 40, Beresford Street, London, SE18 6BF Classification: Commercial Cleaning Services Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A13SW (SW)	30	-	543555 179128
52	<p>Contemporary Trade Directory Entries</p> <p>Name: Business Innovation Centre Ltd Location: 16, Warren Lane, London, SE18 6BW Classification: Precision Engineers Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A13NE (N)	33	-	543626 179203
52	<p>Contemporary Trade Directory Entries</p> <p>Name: Molyneux Press Ltd Location: 10-12, Warren Lane, London, SE18 6BS Classification: Printers Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A13NW (N)	40	-	543611 179226
53	<p>Contemporary Trade Directory Entries</p> <p>Name: Rolenco Ltd Location: Riverside House, Woolwich High Street, London, SE18 6DN Classification: Freight Forwarders Status: Inactive Positional Accuracy: Manually positioned to the address or location</p>	A13NW (W)	52	-	543475 179195
54	<p>Contemporary Trade Directory Entries</p> <p>Name: White Knights Laundry Services Ltd Location: 38, MacBean Street, London, SE18 6LW Classification: Laundries & Launderettes Status: Inactive Positional Accuracy: Automatically positioned in the proximity of the address</p>	A13SW (SW)	81	-	543546 179066
55	<p>Contemporary Trade Directory Entries</p> <p>Name: Snappy Snaps Location: 2, Powis Street, London, SE18 6LF Classification: Photographic Processors Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A13SE (S)	95	-	543704 178925
55	<p>Contemporary Trade Directory Entries</p> <p>Name: The Perfume Shop Location: 14-20, Powis Street, London, SE18 6LF Classification: Perfume Suppliers Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A13SE (S)	100	-	543661 178936
55	<p>Contemporary Trade Directory Entries</p> <p>Name: Www.Requestacleaner.Com Location: 14-16, Powis Street, London, SE18 6LF Classification: Cleaning Services - Domestic Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A13SE (S)	100	-	543661 178936
55	<p>Contemporary Trade Directory Entries</p> <p>Name: Fads Location: 22-24, Green's End, London, SE18 6JY Classification: Wallpapers & Wall Coverings Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A13SE (S)	141	-	543701 178877
56	<p>Contemporary Trade Directory Entries</p> <p>Name: S W S Location: 11, Beresford Square, London, SE18 6BA Classification: Domestic Appliances - Servicing, Repairs & Parts Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A13SE (SE)	109	-	543742 178903
56	<p>Contemporary Trade Directory Entries</p> <p>Name: Shaw Clean Ltd Location: 14, Beresford Square, London, SE18 6BA Classification: Dry Cleaners Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A13SE (SE)	124	-	543752 178889

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
57	<p>Contemporary Trade Directory Entries</p> <p>Name: Reval Ward Ltd Location: 3, Plumstead Road, London, SE18 7BZ Classification: Electrical Goods Sales, Manufacturers & Wholesalers Status: Active Positional Accuracy: Automatically positioned to the address</p>	A13SE (SE)	110	-	543814 178928
57	<p>Contemporary Trade Directory Entries</p> <p>Name: Femsilva Oil & Gas Ltd Location: 1c, Woolwich New Road, London, SE18 6EX Classification: Oil Companies Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A13SE (SE)	126	-	543812 178907
57	<p>Contemporary Trade Directory Entries</p> <p>Name: Sanco Group Location: 5, Woolwich New Road, London, SE18 6EX Classification: Commercial Cleaning Services Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A13SE (SE)	136	-	543803 178891
58	<p>Contemporary Trade Directory Entries</p> <p>Name: Currys Digital Location: 60, Powis Street, London, SE18 6LQ Classification: Electrical Goods Sales, Manufacturers & Wholesalers Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A13SW (S)	124	-	543563 178986
59	<p>Contemporary Trade Directory Entries</p> <p>Name: Plumstead Rubbish Clearance Location: 111, Woolwich High Street, London, SE18 6DN Classification: Rubbish Clearance Status: Inactive Positional Accuracy: Manually positioned to the address or location</p>	A13NW (W)	131	-	543378 179218
59	<p>Contemporary Trade Directory Entries</p> <p>Name: Green Wellness Location: 112, Woolwich High Street, London, SE18 6DN Classification: Medical & Dental Laboratories Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A13NW (W)	134	-	543375 179218
59	<p>Contemporary Trade Directory Entries</p> <p>Name: George Autos Location: 1 Woolwich High St, London, SE18 6DS Classification: Garage Services Status: Inactive Positional Accuracy: Manually positioned to the road within the address or location</p>	A13NW (W)	150	-	543356 179226
60	<p>Contemporary Trade Directory Entries</p> <p>Name: Electromode Location: 36-42, Hare Street, London, SE18 6LZ Classification: Domestic Appliances - Servicing, Repairs & Parts Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A13SW (W)	151	-	543385 179148
61	<p>Contemporary Trade Directory Entries</p> <p>Name: Homey & Lewis Forwarding Location: 9, Plumstead Road, London, SE18 7BZ Classification: Freight Forwarders Status: Inactive Positional Accuracy: Manually positioned within the geographical locality</p>	A13SE (SE)	190	-	543908 178919
62	<p>Contemporary Trade Directory Entries</p> <p>Name: Finesse Colour Ltd Location: 5, Mortgramit Square, London, SE18 6DR Classification: Printers Status: Active Positional Accuracy: Automatically positioned to the address</p>	A13SW (W)	211	-	543319 179144
62	<p>Contemporary Trade Directory Entries</p> <p>Name: Hyper Services Ltd Location: 125-127, Woolwich High Street, London, SE18 6DS Classification: Commercial Cleaning Services Status: Active Positional Accuracy: Automatically positioned to the address</p>	A13NW (W)	214	-	543304 179181
62	<p>Contemporary Trade Directory Entries</p> <p>Name: A R Payne Autos Ltd Location: 125-129, Woolwich High Street, London, SE18 6DS Classification: Car Body Repairs Status: Active Positional Accuracy: Automatically positioned to the address</p>	A13NW (W)	214	-	543304 179181

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
62	<p>Contemporary Trade Directory Entries</p> <p>Name: Crawford Car Sales Location: 125-129, Woolwich High Street, London, SE18 6DS Classification: Car Dealers - Used Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A13NW (W)	214	-	543304 179181
62	<p>Contemporary Trade Directory Entries</p> <p>Name: Approved Cars Location: 125 Woolwich High Street, London, SE18 6DS Classification: Car Dealers Status: Inactive Positional Accuracy: Manually positioned within the geographical locality</p>	A13SW (W)	228	-	543291 179173
62	<p>Contemporary Trade Directory Entries</p> <p>Name: Shell (Uk) Ltd Location: 125-127, Woolwich High Street, London, SE18 6DS Classification: Petrol Filling Stations - 24 Hour Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A13SW (W)	228	-	543291 179173
62	<p>Contemporary Trade Directory Entries</p> <p>Name: Morgan Richards Location: 125-127, Woolwich High Street, London, SE18 6DS Classification: Garage Services Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A13SW (W)	228	-	543291 179173
62	<p>Contemporary Trade Directory Entries</p> <p>Name: Payne Autos Location: 125-129, Woolwich High Street, London, SE18 6DS Classification: Garage Services Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A13SW (W)	228	-	543291 179173
62	<p>Contemporary Trade Directory Entries</p> <p>Name: A.C.E Autogas Ltd Location: 160-170, Powis Street, London, SE18 6NL Classification: Garage Services Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A13SW (W)	249	-	543277 179147
63	<p>Contemporary Trade Directory Entries</p> <p>Name: Brighthouse Location: 105, Powis Street, London, SE18 6JB Classification: Electrical Goods Sales, Manufacturers & Wholesalers Status: Active Positional Accuracy: Automatically positioned to the address</p>	A13SW (SW)	214	-	543423 178999
64	<p>Contemporary Trade Directory Entries</p> <p>Name: Spray Street Autos Location: 31a Spray Street, London, SE18 6AP Classification: Garage Services Status: Active Positional Accuracy: Manually positioned within the geographical locality</p>	A13SE (SE)	216	-	543881 178846
64	<p>Contemporary Trade Directory Entries</p> <p>Name: London Jag Centre Location: 31, Spray Street, London, SE18 6AP Classification: Garage Services Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A13SE (SE)	219	-	543905 178866
64	<p>Contemporary Trade Directory Entries</p> <p>Name: Paul Smee B M W Specialist Location: 31, Spray Street, London, SE18 6AP Classification: Garage Services Status: Active Positional Accuracy: Automatically positioned to the address</p>	A13SE (SE)	219	-	543905 178866
64	<p>Contemporary Trade Directory Entries</p> <p>Name: Spray Street Autos Location: 31, Spray Street, London, SE18 6AP Classification: Garage Services Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A13SE (SE)	219	-	543905 178866
64	<p>Contemporary Trade Directory Entries</p> <p>Name: A1 Montys Bodyworks Location: 31, Spray Street, London, SE18 6AP Classification: Car Body Repairs Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A13SE (SE)	219	-	543905 178866

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
64	<p>Contemporary Trade Directory Entries</p> <p>Name: Todd Meat Trading Co Ltd Location: 39, Spray Street, London, SE18 6AP Classification: Meat - Wholesale Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A13SE (SE)	244	-	543916 178841
64	<p>Contemporary Trade Directory Entries</p> <p>Name: Micheal'S Meat Market Location: 39, Spray Street, London, SE18 6AP Classification: Meat - Wholesale Status: Active Positional Accuracy: Automatically positioned to the address</p>	A13SE (SE)	244	-	543916 178841
65	<p>Contemporary Trade Directory Entries</p> <p>Name: Tidy Cleaners Ltd Location: Flat 227, The Vista Building, 30, Calderwood Street, London, SE18 6JF Classification: Cleaning Services - Domestic Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A13SW (SW)	223	-	543463 178947
66	<p>Contemporary Trade Directory Entries</p> <p>Name: Kall Kwik Location: 23, Thomas Street, London, SE18 6HU Classification: Printers Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A13SW (S)	229	-	543538 178863
66	<p>Contemporary Trade Directory Entries</p> <p>Name: Nationwide Cleaners East London Location: 18-36, Wellington Street, London, SE18 6PF Classification: Cleaning Services - Domestic Status: Active Positional Accuracy: Automatically positioned to the address</p>	A13SW (S)	268	-	543493 178851
67	<p>Contemporary Trade Directory Entries</p> <p>Name: Pest Control (Woolwich) Location: 529 Woolwich New Rd, London, SE18 6ED Classification: Pest & Vermin Control Status: Inactive Positional Accuracy: Manually positioned to the road within the address or location</p>	A8NE (S)	232	-	543680 178789
68	<p>Contemporary Trade Directory Entries</p> <p>Name: Bluevision Services (Uk) Ltd Location: C, 1, Parry Place, London, SE18 6AN Classification: Freight Forwarders Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A14SW (SE)	239	-	543952 178896
68	<p>Contemporary Trade Directory Entries</p> <p>Name: Varietes Domestic Service Location: 22, Plumstead Road, London, SE18 7BZ Classification: Domestic Appliances - Servicing, Repairs & Parts Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A14SW (SE)	251	-	543970 178905
68	<p>Contemporary Trade Directory Entries</p> <p>Name: Widescope International Location: 22, Plumstead Road, London, SE18 7BZ Classification: Freight Forwarders Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A14SW (SE)	252	-	543970 178905
68	<p>Contemporary Trade Directory Entries</p> <p>Name: Clemenchi Ltd Location: 22, Plumstead Road, LONDON, SE18 7BZ Classification: Commercial Cleaning Services Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A14SW (SE)	252	-	543970 178905
68	<p>Contemporary Trade Directory Entries</p> <p>Name: Compliance Impact Ltd Location: 22, Plumstead Road, LONDON, SE18 7BZ Classification: Hygiene & Cleansing Services Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A14SW (SE)	252	-	543970 178905
68	<p>Contemporary Trade Directory Entries</p> <p>Name: Tompkins Service Location: 24, Plumstead Road, London, SE18 7BZ Classification: Washing Machines - Servicing & Repairs Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A14SW (SE)	270	-	543989 178902

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
69	Contemporary Trade Directory Entries Name: Heaney Meat Ltd Location: 14, Parry Place, London, SE18 6AN Classification: Meat - Wholesale Status: Inactive Positional Accuracy: Automatically positioned to the address	A13SE (SE)	253	-	543934 178846
69	Contemporary Trade Directory Entries Name: Heaney Meat Ltd Location: 14, Parry Place, London, SE18 6AN Classification: Meat - Wholesale Status: Inactive Positional Accuracy: Automatically positioned to the address	A13SE (SE)	253	-	543934 178846
69	Contemporary Trade Directory Entries Name: B & J Services Location: 15, Parry Place, London, SE18 6AN Classification: Washing Machines - Servicing & Repairs Status: Inactive Positional Accuracy: Automatically positioned to the address	A9NW (SE)	290	-	543968 178830
70	Contemporary Trade Directory Entries Name: Cheri'S Beauty Salon Location: 131, Woolwich High Street, London, SE18 6DS Classification: Electrolysis Status: Inactive Positional Accuracy: Automatically positioned to the address	A12NE (W)	257	-	543258 179182
71	Contemporary Trade Directory Entries Name: Worldwide Link Uk Location: 1-3, Love Lane, London, SE18 6QT Classification: Freight Forwarders Status: Inactive Positional Accuracy: Automatically positioned to the address	A8NW (S)	265	-	543607 178779
71	Contemporary Trade Directory Entries Name: Worldwide Link Ltd Location: 1-3, Love Lane, London, SE18 6QT Classification: Airfreight Services Status: Active Positional Accuracy: Automatically positioned to the address	A8NW (S)	265	-	543607 178779
72	Contemporary Trade Directory Entries Name: Furlongs Location: 160, Powis Street, London, SE18 6NL Classification: Mot Testing Centres Status: Active Positional Accuracy: Automatically positioned to the address	A12SE (W)	270	-	543264 179122
72	Contemporary Trade Directory Entries Name: A I S Services Ltd Location: 160-162, Powis Street, London, SE18 6NL Classification: Commercial Cleaning Services Status: Inactive Positional Accuracy: Manually positioned to the address or location	A12SE (W)	271	-	543264 179122
72	Contemporary Trade Directory Entries Name: Ais Facilities Cleaning Service Ltd Location: 162 Powis St, London, SE18 6NL Classification: Commercial Cleaning Services Status: Inactive Positional Accuracy: Manually positioned to the address or location	A12SE (W)	274	-	543262 179117
73	Contemporary Trade Directory Entries Name: Cleaners Woolwich Location: 18-36, Wellington Street, London, SE18 6PF Classification: Cleaning Services - Domestic Status: Inactive Positional Accuracy: Automatically positioned to the address	A8NW (S)	273	-	543530 178812
73	Contemporary Trade Directory Entries Name: Cleaners Woolwich Location: 18-36, Wellington Street, London, SE18 6PF Classification: Cleaning Services - Domestic Status: Inactive Positional Accuracy: Automatically positioned to the address	A8NW (S)	273	-	543530 178812
73	Contemporary Trade Directory Entries Name: 786 Services Ltd Location: Suite 115p Block, 18-36 Wellington Street, London, SE18 6PF Classification: Commercial Cleaning Services Status: Active Positional Accuracy: Manually positioned within the geographical locality	A8NW (S)	273	-	543530 178812

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
73	<p>Contemporary Trade Directory Entries</p> <p>Name: Smart Chemical Co Ltd The Location: Woolwich Campus, Wellington Street, London, SE18 6PF Classification: Chemicals - Distributors & Wholesalers Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A8NW (S)	273	-	543530 178812
74	<p>Contemporary Trade Directory Entries</p> <p>Name: Maksx Ltd Location: Flat 28, Building 22, Cadogan Road, London, SE18 6YL Classification: Road Haulage Services Status: Active Positional Accuracy: Automatically positioned to the address</p>	A14NW (E)	287	-	543995 179210
75	<p>Contemporary Trade Directory Entries</p> <p>Name: Woolwich Express Dry Cleaners Location: 59, Woolwich New Road, London, SE18 6ED Classification: Dry Cleaners Status: Active Positional Accuracy: Automatically positioned to the address</p>	A8NE (S)	289	-	543657 178736
75	<p>Contemporary Trade Directory Entries</p> <p>Name: Cleaning Services Woolwich Location: 65, Woolwich New Road, London, SE18 6ED Classification: Cleaning Services - Domestic Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A8NE (S)	301	-	543646 178727
76	<p>Contemporary Trade Directory Entries</p> <p>Name: Vivid Perception Location: Island Business Centre 18-36, Wellington Street, London, SE18 6PF Classification: Freight Forwarders Status: Inactive Positional Accuracy: Manually positioned to the address or location</p>	A8NW (S)	293	-	543517 178796
76	<p>Contemporary Trade Directory Entries</p> <p>Name: Castlewoods Location: 5-6, Love Lane, London, SE18 6QT Classification: Garage Services Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A8NW (S)	313	-	543545 178755
77	<p>Contemporary Trade Directory Entries</p> <p>Name: Cleaners Polthorne Estate Location: 26, London, SE18 7HR Classification: Cleaning Services - Domestic Status: Inactive Positional Accuracy: Manually positioned within the geographical locality</p>	A14SW (SE)	326	-	544041 178882
78	<p>Contemporary Trade Directory Entries</p> <p>Name: Pison-Business Solutions Ltd Location: 20-22, Wilmount Street, London, SE18 6EN Classification: Commercial Cleaning Services Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A8NE (S)	327	-	543717 178686
78	<p>Contemporary Trade Directory Entries</p> <p>Name: Femsilva Ltd Location: 20-22, Wilmount Street, London, SE18 6EN Classification: Cleaning Services - Domestic Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A8NE (S)	327	-	543717 178686
79	<p>Contemporary Trade Directory Entries</p> <p>Name: Citipost Ltd Location: 16, Gunnery Terrace, Cornwallis Road, London, SE18 6SW Classification: Distribution Services Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A14SW (E)	341	-	544083 178988
80	<p>Contemporary Trade Directory Entries</p> <p>Name: Scrap Yard In London Htt Location: 12-14 Gunnery Terrace, London, se18 6sw Classification: Car Breakers & Dismantlers Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A14SW (E)	346	-	544088 179017
80	<p>Contemporary Trade Directory Entries</p> <p>Name: Hop Stuff Location: 7, Gunnery Terrace, Cornwallis Road, London, SE18 6SW Classification: Brewers Status: Active Positional Accuracy: Automatically positioned to the address</p>	A14SW (E)	362	-	544100 179066

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
80	Contemporary Trade Directory Entries Name: Scorpion Press Location: 7, Gunnery Terrace, London, SE18 6SW Classification: Printers Status: Inactive Positional Accuracy: Automatically positioned to the address	A14SW (E)	362	-	544100 179066
80	Contemporary Trade Directory Entries Name: Scorpion Press Ltd Location: 7, Gunnery Terrace, Cornwallis Road, London, SE18 6SW Classification: Printers Status: Inactive Positional Accuracy: Automatically positioned to the address	A14SW (E)	362	-	544100 179066
80	Contemporary Trade Directory Entries Name: Carlow Precast Location: Gunner House Gunnery Terrace, Cornwallis Road, London, SE18 6SW Classification: Concrete Products Status: Active Positional Accuracy: Manually positioned within the geographical locality	A14SW (E)	371	-	544110 179064
80	Contemporary Trade Directory Entries Name: Yannedis Location: Suite G9b, Gunnery Terrace, London, SE18 6SW Classification: Hardware Status: Active Positional Accuracy: Manually positioned within the geographical locality	A14SW (E)	382	-	544122 179057
80	Contemporary Trade Directory Entries Name: Citipost (Europe) Ltd Location: Gunnery Ter, Cornwallis Rd, London, SE18 6SW Classification: Distribution Services Status: Inactive Positional Accuracy: Manually positioned within the geographical locality	A14SW (E)	382	-	544124 179031
80	Contemporary Trade Directory Entries Name: Carlow Precasts Location: 1, Gunnery Terrace, Cornwallis Road, London, SE18 6SW Classification: Concrete Products Status: Active Positional Accuracy: Automatically positioned to the address	A14SW (E)	400	-	544141 179052
81	Contemporary Trade Directory Entries Name: F P Mailing (Premier) Ltd Location: 9-11 Gunnery Ter, Cornwallis Rd, London, SE18 6SW Classification: Mailing Machines & Equipment Status: Inactive Positional Accuracy: Manually positioned to the address or location	A14SW (E)	348	-	544086 179068
81	Contemporary Trade Directory Entries Name: Upscalecleaners Location: 9-11, Gunnery Terrace, Cornwallis Road, London, SE18 6SW Classification: Cleaning Services - Domestic Status: Inactive Positional Accuracy: Automatically positioned to the address	A14SW (E)	350	-	544087 179069
81	Contemporary Trade Directory Entries Name: Upscalecleaners Location: 9-11, Gunnery Terrace, Cornwallis Road, London, SE18 6SW Classification: Cleaning Services - Domestic Status: Inactive Positional Accuracy: Automatically positioned to the address	A14SW (E)	350	-	544087 179069
82	Contemporary Trade Directory Entries Name: Ask Mobile Accessories Location: 89, Woolwich New Road, London, SE18 6ED Classification: Mobile Phone Accessories and Car Kits Status: Inactive Positional Accuracy: Automatically positioned to the address	A8NE (S)	356	-	543621 178677
82	Contemporary Trade Directory Entries Name: T & T Launderette Location: 9, Anglesea Road, London, SE18 6EG Classification: Dry Cleaners Status: Active Positional Accuracy: Automatically positioned to the address	A8NE (S)	364	-	543646 178661
82	Contemporary Trade Directory Entries Name: Big M Motor Spares Ltd Location: 93-95, Woolwich New Road, London, SE18 6EF Classification: Garage Services Status: Inactive Positional Accuracy: Automatically positioned to the address	A8NW (S)	391	-	543610 178644

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
83	<p>Contemporary Trade Directory Entries</p> <p>Name: Plaistow Broadway Petrol Fitting Station Ltd Location: 37, Market Street, London, SE18 6QR Classification: Petrol Filling Stations Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A13SW (SW)	376	-	543350 178844
84	<p>Contemporary Trade Directory Entries</p> <p>Name: Blitz Sports Location: Unit 10, The I O Centre, Skeffington Street, London, SE18 6SR Classification: Leisure & Sportswear Manufacturers & Wholesalers Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A14SW (E)	453	-	544193 179060
84	<p>Contemporary Trade Directory Entries</p> <p>Name: Stephen James Location: Unit 10, The I O Centre, Skeffington Street, London, SE18 6SR Classification: Car Customisation & Conversion Specialists Status: Active Positional Accuracy: Automatically positioned to the address</p>	A14SW (E)	453	-	544193 179060
85	<p>Contemporary Trade Directory Entries</p> <p>Name: C D L Location: Unit 21-22, The I O Centre, Armstrong Road, London, SE18 6RS Classification: Freight Forwarders Status: Active Positional Accuracy: Automatically positioned to the address</p>	A14SW (E)	474	-	544204 179123
85	<p>Contemporary Trade Directory Entries</p> <p>Name: C D L London Ltd Location: Unit 22, The I O Centre, Armstrong Road, London, SE18 6RS Classification: Distribution Services Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A14SW (E)	474	-	544204 179123
86	<p>Contemporary Trade Directory Entries</p> <p>Name: Trident Printing Location: Unit 25, The I O Centre, Armstrong Road, London, SE18 6RS Classification: Printers Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A14NW (E)	475	-	544192 179212
86	<p>Contemporary Trade Directory Entries</p> <p>Name: Dartex Office Furniture Location: Unit 23, The I O Centre, Armstrong Road, London, SE18 6RS Classification: Office Furniture & Equipment Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A14NW (E)	477	-	544200 179186
86	<p>Contemporary Trade Directory Entries</p> <p>Name: Trident Printing Location: 24-26 Armstrong Road, London, SE18 6RS Classification: Printers Status: Active Positional Accuracy: Manually positioned to the address or location</p>	A14NW (E)	485	-	544205 179200
87	<p>Contemporary Trade Directory Entries</p> <p>Name: Unique Cleaning Services Location: Flat 78, Canada Court, 109, Brookhill Road, London, SE18 6BJ Classification: Carpet, Curtain & Upholstery Cleaners Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A8NW (S)	500	-	543592 178535
88	<p>Contemporary Trade Directory Entries</p> <p>Name: Briar Location: Duke of Wellington Av, London, SE18 6SS Classification: Mechanical Engineers Status: Inactive Positional Accuracy: Manually positioned to the road within the address or location</p>	A14SW (E)	509	-	544246 179086
88	<p>Contemporary Trade Directory Entries</p> <p>Name: F I T Shirts Location: Unit 20, The I O Centre, Armstrong Road, London, SE18 6RS Classification: T-Shirts Status: Active Positional Accuracy: Automatically positioned to the address</p>	A14SW (E)	524	-	544258 179107
88	<p>Contemporary Trade Directory Entries</p> <p>Name: Smiths Office Furniture Location: Armstrong Road, London, SE18 6RD Classification: Office Furniture & Equipment Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A14SW (E)	524	-	544258 179107

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
88	<p>Contemporary Trade Directory Entries</p> <p>Name: T G Print & Design Location: Unit 20, The I O Centre, Armstrong Road, London, SE18 6RS Classification: Printers Status: Active Positional Accuracy: Automatically positioned to the address</p>	A14SW (E)	524	-	544258 179107
89	<p>Contemporary Trade Directory Entries</p> <p>Name: Eque Distribution Ltd Location: Flat 603, Mizzen Mast House, Mast Quay, London, SE18 5NP Classification: Distribution Services Status: Inactive Positional Accuracy: Manually positioned to the address or location</p>	A12NE (W)	511	-	542976 179254
90	<p>Contemporary Trade Directory Entries</p> <p>Name: T F W Printers Ltd Location: Unit 28-29, The I O Centre, Armstrong Road, London, SE18 6RS Classification: Printers Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A14NW (E)	521	-	544228 179254
91	<p>Contemporary Trade Directory Entries</p> <p>Name: David Wealth Location: Flat 9, Abel House, Plumstead Road, London, SE18 7DD Classification: Cleaning Services - Domestic Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A14SW (E)	529	-	544262 178912
92	<p>Contemporary Trade Directory Entries</p> <p>Name: K M Heating Location: 113, Burrage Road, London, SE18 7LN Classification: Boilers - Servicing, Replacements & Repairs Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A9NW (SE)	532	-	544082 178603
93	<p>Contemporary Trade Directory Entries</p> <p>Name: Ironing Service Location: St. Mary St, London, SE18 5AL Classification: Ironing & Home Laundry Services Status: Inactive Positional Accuracy: Manually positioned within the geographical locality</p>	A12SE (W)	561	-	543017 178966
94	<p>Contemporary Trade Directory Entries</p> <p>Name: P T D Ltd Location: Unit 28-29 The I O Centre, Armstrong Road, London, SE18 6RS Classification: Printers Status: Active Positional Accuracy: Automatically positioned to the address</p>	A14NW (E)	571	-	544287 179227
94	<p>Contemporary Trade Directory Entries</p> <p>Name: Delatim Location: Unit 33, The I O Centre, Armstrong Road, London, SE18 6RS Classification: Electrical Engineers Status: Active Positional Accuracy: Automatically positioned to the address</p>	A14NE (E)	598	-	544305 179263
94	<p>Contemporary Trade Directory Entries</p> <p>Name: Carter Allen Ltd Location: Unit 33, The I O Centre, Armstrong Road, London, SE18 6RS Classification: Office Equipment Manufacturers & Distributors Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A14NE (E)	598	-	544304 179271
95	<p>Contemporary Trade Directory Entries</p> <p>Name: Cityplus Services Limited Location: Flat 14, Parker House, 120, Brookhill Road, London, SE18 6UU Classification: Commercial Cleaning Services Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A8SW (S)	582	-	543596 178449
96	<p>Contemporary Trade Directory Entries</p> <p>Name: Absolute Hygiene Solutions Location: Unit 42, The I O Centre, Armstrong Road, London, SE18 6RS Classification: Hygiene & Cleansing Services Status: Active Positional Accuracy: Automatically positioned to the address</p>	A14NE (E)	594	-	544319 179178
96	<p>Contemporary Trade Directory Entries</p> <p>Name: Fujitec Uk Ltd Location: Unit 43, The I O Centre, Armstrong Road, London, SE18 6RS Classification: Lift Manufacturers Status: Active Positional Accuracy: Automatically positioned to the address</p>	A14NE (E)	610	-	544335 179176

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
96	<p>Contemporary Trade Directory Entries</p> <p>Name: Gilmex International Ltd Location: Unit 40, The I O Centre, Armstrong Road, London, SE18 6RS Classification: Print Finishers Status: Active Positional Accuracy: Automatically positioned to the address</p>	A14NE (E)	620	-	544343 179190
96	<p>Contemporary Trade Directory Entries</p> <p>Name: Osgood Textiles Ltd Location: Unit 41 The I O Centre Armstrong rd, London, SE18 6RS Classification: Children & Babywear - Manufacturers & Wholesalers Status: Active Positional Accuracy: Manually positioned to the address or location</p>	A14NE (E)	630	-	544354 179188
96	<p>Contemporary Trade Directory Entries</p> <p>Name: Blinds Poles & Tracks Direct Location: Unit 45, The I O Centre, Armstrong Road, London, SE18 6RS Classification: Blinds, Awnings & Canopies Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A14NE (E)	642	-	544368 179177
96	<p>Contemporary Trade Directory Entries</p> <p>Name: Cleaning Services Location: Pettacre Cl, London, SE28 0BX Classification: Cleaning Services - Domestic Status: Inactive Positional Accuracy: Manually positioned within the geographical locality</p>	A14NE (E)	670	-	544396 179178
97	<p>Contemporary Trade Directory Entries</p> <p>Name: Us Ltd Location: 7 Pier Rd, London, E16 2JJ Classification: Catering Equipment Status: Inactive Positional Accuracy: Manually positioned to the address or location</p>	A18NW (NW)	595	-	543309 179897
98	<p>Contemporary Trade Directory Entries</p> <p>Name: Hobbyshopuk Location: Unit 34, The I O Centre, Armstrong Road, London, SE18 6RS Classification: Electrical Goods Sales, Manufacturers & Wholesalers Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A14NE (E)	610	-	544316 179274
99	<p>Contemporary Trade Directory Entries</p> <p>Name: Fast Cleaners Location: 23, Sky Studios, 147, Albert Road, London, E16 2JN Classification: Commercial Cleaning Services Status: Active Positional Accuracy: Automatically positioned to the address</p>	A17NE (NW)	623	-	543250 179906
99	<p>Contemporary Trade Directory Entries</p> <p>Name: Fast Cleaners Ltd Location: 23, Sky Studios, 147, Albert Road, London, E16 2JN Classification: Carpet, Curtain & Upholstery Cleaners Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A17NE (NW)	625	-	543247 179907
99	<p>Contemporary Trade Directory Entries</p> <p>Name: Uk Commercial Power Uk Ltd Location: 165 Albert Rd, London, E16 2JD Classification: Mechanical Engineers Status: Inactive Positional Accuracy: Manually positioned to the road within the address or location</p>	A17NE (NW)	641	-	543236 179920
100	<p>Contemporary Trade Directory Entries</p> <p>Name: A T A Cleaning Location: 12, Conduit Road, London, SE18 7AJ Classification: Cleaning Services - Domestic Status: Active Positional Accuracy: Automatically positioned to the address</p>	A8SE (S)	633	-	543876 178393
101	<p>Contemporary Trade Directory Entries</p> <p>Name: T R L Print Location: Unit 36, The I O Centre, Armstrong Road, London, SE18 6RS Classification: Printers Status: Active Positional Accuracy: Automatically positioned to the address</p>	A14NE (E)	634	-	544340 179273
101	<p>Contemporary Trade Directory Entries</p> <p>Name: T G Print Location: Unit 36, The I O Centre, Armstrong Road, London, SE18 6RS Classification: Printers Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A14NE (E)	634	-	544338 179281

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
101	<p>Contemporary Trade Directory Entries</p> <p>Name: Flagship Print Location: Unit 36, The I O Centre, Armstrong Road, London, SE18 6RS Classification: Printers Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A14NE (E)	634	-	544338 179281
101	<p>Contemporary Trade Directory Entries</p> <p>Name: Isis Office Ltd Location: Unit 39, The I O Centre, Armstrong Road, London, SE18 6RS Classification: Printers Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A14NE (E)	673	-	544378 179284
102	<p>Contemporary Trade Directory Entries</p> <p>Name: Allied Remedial Treatments Ltd Location: 4, Conduit Mews, London, SE18 7AP Classification: Damp & Dry Rot Control Status: Active Positional Accuracy: Automatically positioned to the address</p>	A8SE (S)	636	-	543815 178380
103	<p>Contemporary Trade Directory Entries</p> <p>Name: Extra Carpets London Location: 8, Willow Lane, London, SE18 5TB Classification: Carpet, Curtain & Upholstery Cleaners Status: Active Positional Accuracy: Automatically positioned to the address</p>	A7NE (SW)	661	-	542991 178815
104	<p>Contemporary Trade Directory Entries</p> <p>Name: A Washing Machine Healer Location: 12, Storey Street, London, E16 2LT Classification: Domestic Appliances - Servicing, Repairs & Parts Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A18NW (N)	669	-	543390 179990
105	<p>Contemporary Trade Directory Entries</p> <p>Name: Wicks Plastics Location: 5, Lowestoft Mews, London, E16 2ST Classification: Catering Equipment Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A18NE (N)	690	-	543856 179942
106	<p>Contemporary Trade Directory Entries</p> <p>Name: Veolia Location: Nathan Way, London, SE28 0AN Classification: Waste Disposal Services Status: Active Positional Accuracy: Manually positioned within the geographical locality</p>	A14SE (E)	710	-	544443 179127
106	<p>Contemporary Trade Directory Entries</p> <p>Name: Gods War Gaming Location: Flat 96, Long Acre House, Pettacre Close, London, SE28 0PB Classification: Toys, Games & Sporting Goods - Manufacturers Status: Active Positional Accuracy: Automatically positioned to the address</p>	A14SE (E)	745	-	544480 179114
107	<p>Contemporary Trade Directory Entries</p> <p>Name: E 3 Taxis Location: 3d-3f, Unit, Standard Industrial Estate, Henley Road, London, E16 2ES Classification: Garage Services Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A17SW (NW)	719	-	542917 179773
107	<p>Contemporary Trade Directory Entries</p> <p>Name: Ping Pong Location: Unit 3f, Standard Industrial Estate, Henley Road, LONDON, E16 2ES Classification: Food Products - Manufacturers Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A17SW (NW)	719	-	542917 179773
108	<p>Contemporary Trade Directory Entries</p> <p>Name: O A Electricals Location: 54, Brookhill Road, London, SE18 6TU Classification: Electrical Goods Sales, Manufacturers & Wholesalers Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A8SE (S)	720	-	543637 178300
109	<p>Contemporary Trade Directory Entries</p> <p>Name: The Retailers Market Ltd Location: 28, Pier Parade, London, E16 2LJ Classification: Electrical Goods Sales, Manufacturers & Wholesalers Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A17NE (N)	722	-	543267 180017

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
109	<p>Contemporary Trade Directory Entries</p> <p>Name: 2 In 1 Dry Cleaners & Launderette Location: 6, Pier Parade, London, E16 2LJ Classification: Dry Cleaners Status: Active Positional Accuracy: Automatically positioned to the address</p>	A17NE (N)	742	-	543264 180037
110	<p>Contemporary Trade Directory Entries</p> <p>Name: E U Energy Location: 44, Mulgrave Road, London, SE18 5TY Classification: Energy Efficient Products and Services Status: Active Positional Accuracy: Automatically positioned to the address</p>	A7NE (SW)	725	-	542963 178746
111	<p>Contemporary Trade Directory Entries</p> <p>Name: W J King Garages Location: 40, Artillery Place, London, SE18 4AB Classification: Car Dealers Status: Active Positional Accuracy: Automatically positioned to the address</p>	A7NE (SW)	741	-	543105 178570
112	<p>Contemporary Trade Directory Entries</p> <p>Name: Cleaners North Woolwich Location: 16, Woodman Street, London, E16 2NF Classification: Cleaning Services - Domestic Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A18NW (N)	747	-	543591 180079
113	<p>Contemporary Trade Directory Entries</p> <p>Name: Signature Industries Ltd Location: Tom Cribb Road, London, SE28 0BH Classification: Radio Communication Equipment Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A14SE (E)	756	-	544498 179021
113	<p>Contemporary Trade Directory Entries</p> <p>Name: Signature Industries Ltd Location: Tom Cribb Road, London, SE28 0BH Classification: Radio Communication Equipment Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A14SE (E)	756	-	544498 179021
113	<p>Contemporary Trade Directory Entries</p> <p>Name: Bhl Leather Location: Unit 2, Gateway Business Centre, Tom Cribb Road, London, SE28 0EZ Classification: Leather Garments & Products Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A14SE (E)	804	-	544546 179025
114	<p>Contemporary Trade Directory Entries</p> <p>Name: Colton Commercials Location: 1j-1k, Unit, Standard Industrial Estate, Factory Road, London, E16 2EJ Classification: Commercial Vehicle Servicing, Repairs, Parts & Accessories Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A17NW (NW)	759	-	542935 179854
114	<p>Contemporary Trade Directory Entries</p> <p>Name: Asiatic Location: Unit 1h, Standard Industrial Estate, Factory Road, London, E16 2EJ Classification: Frozen Food Processors & Distributors Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A17NE (NW)	764	-	542937 179864
114	<p>Contemporary Trade Directory Entries</p> <p>Name: Metamorphis Car Care Ltd Location: Unit 1d, Standard Industrial Estate, Factory Road, London, E16 2EJ Classification: Garage Services Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A17NE (NW)	785	-	542945 179900
115	<p>Contemporary Trade Directory Entries</p> <p>Name: Kimss Ltd Location: Swetenham Walk, London, SE18 7EZ Classification: Abrasive Products - Manufacturers & Distributors Status: Active Positional Accuracy: Manually positioned within the geographical locality</p>	A9SW (SE)	765	-	544242 178433
116	<p>Contemporary Trade Directory Entries</p> <p>Name: W Taylor & Sons Location: 76, Bloomfield Road, London, SE18 7JQ Classification: Scrap Metal Merchants Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A8SE (S)	775	-	543946 178264

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
116	<p>Contemporary Trade Directory Entries</p> <p>Name: J C Garage Location: 75-77, Bloomfield Road, London, SE18 7JJ Classification: Garage Services Status: Active Positional Accuracy: Automatically positioned to the address</p>	A8SE (S)	794	-	543918 178238
116	<p>Contemporary Trade Directory Entries</p> <p>Name: Scarf Multi Skill Engineering Location: 22-23, Burrage Place, London, SE18 7BG Classification: Domestic Appliances - Servicing, Repairs & Parts Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A8SE (S)	807	-	543918 178224
117	<p>Contemporary Trade Directory Entries</p> <p>Name: Tills Location: 79, Sandy Hill Road, London, SE18 7BQ Classification: Garage Services Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A8SE (S)	781	-	543778 178232
118	<p>Contemporary Trade Directory Entries</p> <p>Name: Data Techniques Location: Unit 4, Gateway Business Centre, Tom Cribb Road, London, SE28 0EZ Classification: Fibre Optics Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A14SE (E)	795	-	544537 178978
119	<p>Contemporary Trade Directory Entries</p> <p>Name: Super Bright Domestics Ltd Location: Flat 7, Plantagenet House, 1, Leda Road, London, SE18 5QR Classification: Cleaning Services - Domestic Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A12SW (W)	796	-	542712 179128
120	<p>Contemporary Trade Directory Entries</p> <p>Name: O J'S Pallet Services Location: Unit 3g, Standard Industrial Estate, Henley Road, London, E16 2ES Classification: Pallets, Crates & Packing Cases Status: Active Positional Accuracy: Automatically positioned to the address</p>	A17SW (NW)	796	-	542833 179789
120	<p>Contemporary Trade Directory Entries</p> <p>Name: C W E Dairies Ltd Location: Unit 5a, Standard Industrial Estate, Henley Road, London, E16 2ES Classification: Dairies Status: Active Positional Accuracy: Automatically positioned to the address</p>	A17SW (NW)	808	-	542828 179803
120	<p>Contemporary Trade Directory Entries</p> <p>Name: Marconi Marine Location: 5f-5k, Unit, Standard Industrial Estate, Henley Road, London, E16 2ES Classification: Electronic Engineers Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A17SW (NW)	840	-	542791 179805
121	<p>Contemporary Trade Directory Entries</p> <p>Name: Castlewood Garage Location: St James Garage, Burrage Place, London, SE18 7BG Classification: Garage Services Status: Active Positional Accuracy: Manually positioned within the geographical locality</p>	A8SE (S)	802	-	543909 178228
122	<p>Contemporary Trade Directory Entries</p> <p>Name: City Chairs Location: Flat 65, Claymill House, Raglan Road, London, SE18 7HX Classification: Office Furniture & Equipment Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A9SW (SE)	808	-	544197 178345
123	<p>Contemporary Trade Directory Entries</p> <p>Name: Leonedahlia Cleaning Ltd Location: Flat 18, Sarah Turnbull House, 43, Brewhouse Road, London, SE18 5SH Classification: Commercial Cleaning Services Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A7NW (SW)	809	-	542815 178818
124	<p>Contemporary Trade Directory Entries</p> <p>Name: J S Transport Location: Factory Rd, London, E16 2EJ Classification: Road Haulage Services Status: Inactive Positional Accuracy: Manually positioned to the road within the address or location</p>	A17NE (NW)	809	-	542949 179936

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
125	<p>Contemporary Trade Directory Entries</p> <p>Name: Bedrock Print Finishers Ltd Location: Unit 1n, Standard Industrial Estate, Factory Road, London, E16 2EJ Classification: Print Finishers Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A17NW (NW)	813	-	542875 179868
125	<p>Contemporary Trade Directory Entries</p> <p>Name: Bedrock Print Finishers Ltd Location: Unit 1N, Standard Ind Est, Factory Rd, London, E16 2EJ Classification: Print Finishers Status: Inactive Positional Accuracy: Manually positioned to the address or location</p>	A17NW (NW)	813	-	542874 179868
125	<p>Contemporary Trade Directory Entries</p> <p>Name: Online Lubricants Ltd Location: Unit 1S, Standard Industrial Estate, Factory Road, London, E16 2EJ Classification: Oil Companies Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A17NW (NW)	832	-	542883 179905
125	<p>Contemporary Trade Directory Entries</p> <p>Name: Architech Engineering Location: Unit 1T, Standard Ind Est, Factory Rd, London, E16 2EJ Classification: Air Conditioning Equipment & Systems Status: Inactive Positional Accuracy: Manually positioned to the address or location</p>	A17NW (NW)	837	-	542884 179914
126	<p>Contemporary Trade Directory Entries</p> <p>Name: Trackwork Resources Location: Unit 9-11, Gateway Business Centre, Tom Cribb Road, London, SE28 0EZ Classification: Railways Status: Active Positional Accuracy: Automatically positioned to the address</p>	A14SE (E)	820	-	544562 179029
127	<p>Contemporary Trade Directory Entries</p> <p>Name: Hercules Location: 13, Livesey Close, London, SE28 0GR Classification: Carpet, Curtain & Upholstery Cleaners Status: Active Positional Accuracy: Automatically positioned to the address</p>	A14NE (E)	832	-	544464 179492
128	<p>Contemporary Trade Directory Entries</p> <p>Name: Burrage Autos Location: 37, Burrage Place, London, SE18 7BG Classification: Garage Services Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A9SW (S)	834	-	543999 178218
129	<p>Contemporary Trade Directory Entries</p> <p>Name: Permagard Location: 1u-1v, Unit, Standard Industrial Estate, Factory Road, London, E16 2EJ Classification: Commercial Vehicle & Car Cleaning Equipment & Supplies Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A17NW (NW)	842	-	542887 179923
130	<p>Contemporary Trade Directory Entries</p> <p>Name: Sola Express Ltd Location: 3, Carronade Place, London, SE28 0EE Classification: Airfreight Services Status: Active Positional Accuracy: Automatically positioned to the address</p>	A14NE (E)	854	-	544532 179394
131	<p>Contemporary Trade Directory Entries</p> <p>Name: Henry & Henry Location: 95, Ann Street, London, SE18 7LS Classification: Builders' Merchants Status: Active Positional Accuracy: Automatically positioned to the address</p>	A9NE (SE)	861	-	544529 178662
131	<p>Contemporary Trade Directory Entries</p> <p>Name: The Lump Partnership Location: 79, Glyndon Road, LONDON, SE18 7PA Classification: Engineering Services Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A9NE (SE)	883	-	544538 178628
132	<p>Contemporary Trade Directory Entries</p> <p>Name: Cleaning Solutions Location: Felixstowe Court Galleons Reach, London, E16 2RR Classification: Commercial Cleaning Services Status: Active Positional Accuracy: Manually positioned within the geographical locality</p>	A18NE (N)	862	-	543865 180128

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
133	<p>Contemporary Trade Directory Entries</p> <p>Name: W Humphreys Transport (London) Ltd Location: Unit 7, Standard Industrial Estate, Factory Road, London, E16 2EJ Classification: Commercial Vehicle Bodybuilders & Repairers Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A17NW (NW)	867	-	542826 179894
133	<p>Contemporary Trade Directory Entries</p> <p>Name: W Humphreys Location: Unit 7, Standard Industrial Estate, Factory Road, London, E16 2EJ Classification: Road Haulage Services Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A17NW (NW)	867	-	542826 179894
133	<p>Contemporary Trade Directory Entries</p> <p>Name: Energyst Cat Rental Power Location: Unit 7, Standard Industrial Estate, Factory Road, London, E16 2EJ Classification: Generators - Sales & Service Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A17NW (NW)	867	-	542826 179894
133	<p>Contemporary Trade Directory Entries</p> <p>Name: S J Selfe & Sons Ltd Location: Unit 7, Standard Industrial Estate, Factory Road, London, E16 2EJ Classification: Road Haulage Services Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A17NW (NW)	867	-	542826 179894
133	<p>Contemporary Trade Directory Entries</p> <p>Name: Halso Petroleum South Location: Unit 7, Standard Industrial Estate, Factory Road, London, E16 2EJ Classification: Fuel Dealers Status: Inactive Positional Accuracy: Manually positioned to the address or location</p>	A17NW (NW)	867	-	542826 179894
134	<p>Contemporary Trade Directory Entries</p> <p>Name: 16o4 Location: 56, Hudson Place, London, SE18 7SL Classification: Clocks & Watches - Manufacturers & Wholesalers Status: Active Positional Accuracy: Automatically positioned to the address</p>	A9SW (SE)	875	-	544273 178316
135	<p>Contemporary Trade Directory Entries</p> <p>Name: L C M Scrap Company Ltd Location: Unit 6, Standard Industrial Estate, Factory Road, London, E16 2EJ Classification: Scrap Metal Merchants Status: Active Positional Accuracy: Automatically positioned to the address</p>	A17NW (NW)	910	-	542774 179899
135	<p>Contemporary Trade Directory Entries</p> <p>Name: London City Metals & Waste Ltd Location: Unit 6, Standard Industrial Estate, Factory Road, London, E16 2EJ Classification: Scrap Metal Merchants Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A17NW (NW)	917	-	542798 179939
136	<p>Contemporary Trade Directory Entries</p> <p>Name: Pest Pro Location: 34, Polthorne Grove, Polthorne Estate, London, SE18 7DU Classification: Pest & Vermin Control Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A15SW (E)	911	-	544637 178838
137	<p>Contemporary Trade Directory Entries</p> <p>Name: Ybee Services Location: 68, Brookhill Close, LONDON, SE18 6UD Classification: Cleaning Services - Domestic Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A3NW (S)	929	-	543489 178119
138	<p>Contemporary Trade Directory Entries</p> <p>Name: Royal Docks Management Authority Ltd Location: Pierhead, King George V Lock, Fishguard Way, London, E16 2RG Classification: Ports, Docks & Harbours Status: Active Positional Accuracy: Automatically positioned to the address</p>	A19NW (N)	931	-	543950 180164
139	<p>Contemporary Trade Directory Entries</p> <p>Name: Gmund Location: 56, Cumberland Court, Erebus Drive, London, SE28 0GE Classification: Paper & Pulp Mills Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A19SE (NE)	935	-	544491 179644

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
139	<p>Contemporary Trade Directory Entries</p> <p>Name: Office Chair (Uk) Location: Sark Tower,Erebus Dr, London, SE28 0GG Classification: Office Furniture & Equipment Status: Inactive Positional Accuracy: Manually positioned to the road within the address or location</p>	A19SE (NE)	937	-	544508 179624
140	<p>Contemporary Trade Directory Entries</p> <p>Name: Unit Dry Cleaners Location: 6, Frances Street, London, SE18 5EF Classification: Dry Cleaners Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A7NW (SW)	939	-	542873 178525
140	<p>Contemporary Trade Directory Entries</p> <p>Name: Dots Soap Opera Location: 4, Frances Street, London, SE18 5EF Classification: Laundries & Launderettes Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A7NW (SW)	941	-	542877 178517
141	<p>Contemporary Trade Directory Entries</p> <p>Name: C R Cleaning Location: 101, Glyndon Road, London, SE18 7PA Classification: Cleaning Services - Domestic Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A9NE (SE)	959	-	544617 178619
142	<p>Contemporary Trade Directory Entries</p> <p>Name: Cleaners Thamesmead West Location: 53, Whinchat Road, London, SE28 0EA Classification: Carpet, Curtain & Upholstery Cleaners Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A15NW (E)	970	-	544682 179291
143	<p>Contemporary Trade Directory Entries</p> <p>Name: W Robertson Electrical Services Ltd Location: King George V Dock,Woolwich Manor Way, London, E16 2NJ Classification: Hydraulic Engineers Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A23SE (N)	973	-	543649 180300
144	<p>Contemporary Trade Directory Entries</p> <p>Name: Thames Tyres Location: 3 Foreland St, London, SE18 7BY Classification: Tyre Dealers Status: Inactive Positional Accuracy: Manually positioned to the road within the address or location</p>	A15SW (E)	977	-	544708 178861
144	<p>Contemporary Trade Directory Entries</p> <p>Name: Bok Cop Location: Yard F, Foreland Street, London, SE18 7BY Classification: Tyre Dealers Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A15SW (E)	991	-	544721 178854
145	<p>Contemporary Trade Directory Entries</p> <p>Name: Sure Communications Location: Custom House, King George V Lock, Woolwich Manor Way, London, E16 2JU Classification: Telecommunications Equipment & Systems Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A23SE (N)	980	-	543841 180263
146	<p>Contemporary Trade Directory Entries</p> <p>Name: Mary Maid Location: 42f, Walmer Terrace, London, SE18 7EB Classification: Cleaning Services - Domestic Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A10NW (E)	987	-	544693 178747
147	<p>Contemporary Trade Directory Entries</p> <p>Name: Shining Homes Location: 11, St. Margarets Terrace, London, SE18 7RW Classification: Cleaning Services - Domestic Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A4NW (SE)	993	-	544251 178159
148	<p>Contemporary Trade Directory Entries</p> <p>Name: D J Building Supplies Location: 11, Brewery Road, London, SE18 7PS Classification: Builders' Merchants Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A9SE (SE)	994	-	544537 178415

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
149	Contemporary Trade Directory Entries Name: Abbey Autos Location: 1-2, Hillreach, London, SE18 4AJ Classification: Mot Testing Centres Status: Active Positional Accuracy: Automatically positioned to the address	A7NW (SW)	995	-	542815 178505
150	Contemporary Trade Directory Entries Name: Plumstead Bus Garage Location: Plumstead Bus Garage, Pettman Crescent, London, SE28 0BJ Classification: Bus & Coach Operators & Stations Status: Active Positional Accuracy: Automatically positioned to the address	A15SW (E)	997	-	544739 178974
150	Contemporary Trade Directory Entries Name: Stagecoach Location: Plumstead Bus Garage, Pettman Crescent, London, SE28 0BJ Classification: Bus & Coach Operators & Stations Status: Active Positional Accuracy: Automatically positioned to the address	A15SW (E)	998	-	544739 178974
150	Contemporary Trade Directory Entries Name: Johnstones Leyland Decorating Centre Location: Plumstead Bus Garage, Pettman Crescent, London, SE28 0BJ Classification: Painting & Decorating Supplies Status: Inactive Positional Accuracy: Automatically positioned to the address	A15SW (E)	998	-	544739 178974
151	Fuel Station Entries Name: Shell Woolwich Location: 125-129 Woolwich High Street, Woolwich, LONDON, SE18 6DS Brand: Shell Premises Type: Not Applicable Status: Obsolete Positional Accuracy: Automatically positioned to the address	A13SW (W)	228	-	543291 179173
152	Fuel Station Entries Name: W J King Garages Woolwich Location: 40, Artillery Place, London, SE18 4AB Brand: Harvest Energy Premises Type: Petrol Station Status: Open Positional Accuracy: Manually positioned to the address or location	A7NE (SW)	725	-	543143 178554
153	Fuel Station Entries Name: Tills Garage Ltd Location: 79, Sandy Hill Road, London, SE18 7BQ Brand: UNBRANDED Premises Type: Petrol Station Status: Closed Positional Accuracy: Automatically positioned to the address	A8SE (S)	782	-	543778 178231
154	Points of Interest - Commercial Services Name: Spray Street Autos Location: 31a Spray Street, London, SE18 6AP Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A13SE (SE)	218	9	543905 178866
154	Points of Interest - Commercial Services Name: A1 Montys Spraypaint & Bodywork Location: 31 Spray Street, London, SE18 6AP Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A13SE (SE)	219	9	543905 178866
154	Points of Interest - Commercial Services Name: Monty's Location: 31 Spray Street, London, SE18 6AP Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A13SE (SE)	219	9	543905 178866
154	Points of Interest - Commercial Services Name: Paul Smee B M W Specialist Location: 31 Spray Street, London, SE18 6AP Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A13SE (SE)	219	9	543905 178866

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
154	Points of Interest - Commercial Services Name: Bluevision Services (UK) Ltd Location: C 1 Parry Place, London, SE18 6AN Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A14SW (SE)	239	9	543952 178896
154	Points of Interest - Commercial Services Name: B S L Investment Ltd Location: 1c Parry Place, London, SE18 6AN Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A14SW (SE)	239	9	543952 178896
154	Points of Interest - Commercial Services Name: Bsl Investment Location: 1c Parry Place, London, SE18 6AN Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A14SW (SE)	239	9	543952 178896
154	Points of Interest - Commercial Services Name: Widescope International Location: 22 Plumstead Road, London, SE18 7BZ Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A14SW (SE)	252	9	543970 178905
155	Points of Interest - Commercial Services Name: Morgan Richards Location: 125-129 Woolwich High Street, London, SE18 6DS Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A13SW (W)	228	9	543291 179173
155	Points of Interest - Commercial Services Name: Payne Autos Location: 125-129 Woolwich High Street, London, SE18 6DS Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A13SW (W)	228	9	543291 179173
155	Points of Interest - Commercial Services Name: Payne Autos Location: 125-129 Woolwich High Street, London, SE18 6DS Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A13SW (W)	228	9	543291 179173
155	Points of Interest - Commercial Services Name: A R Payne Autos Ltd Location: 125-129 Woolwich High Street, London, SE18 6DS Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A13SW (W)	229	9	543290 179173
155	Points of Interest - Commercial Services Name: Furlongs Location: 160-170 Powis Street, London, SE18 6NL Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A13SW (W)	249	9	543277 179147
155	Points of Interest - Commercial Services Name: Morgan Richards Location: 160 Powis Street, London, SE18 6NL Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A12SE (W)	271	9	543264 179122
155	Points of Interest - Commercial Services Name: Furlongs Location: 160 Powis Street, London, SE18 6NL Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A12SE (W)	272	9	543263 179121
156	Points of Interest - Commercial Services Name: Bismadel & Co Ltd Location: 18-36 Wellington Street, London, SE18 6PF Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A8NW (S)	273	9	543530 178812

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
156	Points of Interest - Commercial Services Name: Vivid Perception Location: Island Business Centre 18-36, Wellington Street, London, SE18 6PF Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A8NW (S)	293	9	543517 178796
156	Points of Interest - Commercial Services Name: Castlewoods Location: 5-6 Love Lane, London, SE18 6QT Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A8NW (S)	313	9	543545 178755
157	Points of Interest - Commercial Services Name: Maksx Ltd Location: Flat 28 Building 22, Cadogan Road, London, SE18 6YL Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A14NW (E)	286	9	543995 179210
158	Points of Interest - Commercial Services Name: Citipost Ltd Location: 16 Gunnery Terrace, Cornwallis Road, London, SE18 6SW Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A14SW (E)	341	9	544083 178988
158	Points of Interest - Commercial Services Name: Citipost A M P Ltd Location: 16 Gunnery Terrace, Cornwallis Road, London, SE18 6SW Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A14SW (E)	341	9	544083 178988
159	Points of Interest - Commercial Services Name: Big M Motor Spares Ltd Location: 93-95 Woolwich New Road, London, SE18 6EF Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A8NW (S)	391	9	543610 178644
159	Points of Interest - Commercial Services Name: Big M Motor Spares Ltd Location: 93-95 Woolwich New Road, London, SE18 6EF Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A8NW (S)	391	9	543610 178644
160	Points of Interest - Commercial Services Name: Audi Mobile Auto Electrician Location: 10 Castile Road, London, SE18 6JJ Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A13SW (SW)	410	9	543284 178862
161	Points of Interest - Commercial Services Name: C D L London Ltd Location: Unit 22 The I O Centre, Armstrong Road, London, SE18 6RS Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A14SW (E)	474	9	544204 179123
161	Points of Interest - Commercial Services Name: C D L London Ltd Location: Unit 22 The I O Centre, Armstrong Road, London, SE18 6RS Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A14SW (E)	474	9	544204 179123
162	Points of Interest - Commercial Services Name: Eque Distribution Ltd Location: Flat 603, Mizzen Mast House, Mast Quay, London, SE18 5NP Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A12NE (W)	511	9	542976 179254
163	Points of Interest - Commercial Services Name: A D I Environmental Services Ltd Location: Thames House 141-143, Albert Road, London, E16 2JD Category: Recycling Services Class Code: Recycling, Reclamation and Disposal Positional Accuracy: Positioned to address or location	A18NW (NW)	594	9	543277 179885

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
164	<p>Points of Interest - Commercial Services</p> <p>Name: M G I Location: 1 Kingsman Street, London, SE18 5QF Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location</p>	A12SW (W)	643	9	542892 179057
165	<p>Points of Interest - Commercial Services</p> <p>Name: E 3 Taxis Location: 3d-3f Unit Standard Industrial Estate, Henley Road, London, E16 2ES Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location</p>	A17SW (NW)	719	9	542917 179773
165	<p>Points of Interest - Commercial Services</p> <p>Name: E 3 Taxis Location: Unit 3d-3e Standard Industrial Estate, Henley Road, London, E16 2ES Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location</p>	A17SW (NW)	719	9	542917 179773
165	<p>Points of Interest - Commercial Services</p> <p>Name: City Airport Taxi Garage Location: Unit 3d-3e Standard Industrial Estate, Henley Road, London, E16 2ES Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location</p>	A17SW (NW)	719	9	542916 179772
166	<p>Points of Interest - Commercial Services</p> <p>Name: 24hr Windscreens Direct Ltd Location: 11 St. James Close, London, SE18 7LE Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location</p>	A9SW (SE)	758	9	544108 178348
167	<p>Points of Interest - Commercial Services</p> <p>Name: X9 Vehicle Management Services Ltd Location: Unit 1f Standard Industrial Estate, Factory Road, London, E16 2EJ Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location</p>	A17NE (NW)	773	9	542940 179880
167	<p>Points of Interest - Commercial Services</p> <p>Name: Metamorphis Car Care Ltd Location: Unit 1d Standard Industrial Estate, Factory Road, London, E16 2EJ Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location</p>	A17NE (NW)	785	9	542945 179900
167	<p>Points of Interest - Commercial Services</p> <p>Name: Bromstone Engineering Ltd Location: Unit 1C Standard Industrial Estate, Factory Road, London, E16 2EJ Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location</p>	A17NE (NW)	790	9	542947 179909
168	<p>Points of Interest - Commercial Services</p> <p>Name: Tills Location: 79 Sandy Hill Road, London, SE18 7BQ Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location</p>	A8SE (S)	781	9	543778 178232
168	<p>Points of Interest - Commercial Services</p> <p>Name: Tills Garage Services Location: 79 Sandy Hill Road, London, SE18 7BQ Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location</p>	A8SE (S)	781	9	543778 178232
168	<p>Points of Interest - Commercial Services</p> <p>Name: Tills Location: 79 Sandy Hill Road, London, SE18 7BQ Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location</p>	A8SE (S)	781	9	543778 178232
169	<p>Points of Interest - Commercial Services</p> <p>Name: J C Garage Location: 75-77 Bloomfield Road, London, SE18 7JJ Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location</p>	A8SE (S)	794	9	543918 178238

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
169	Points of Interest - Commercial Services Name: J C Garage Location: 77 Bloomfield Road, London, SE18 7JJ Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A8SE (S)	794	9	543917 178237
170	Points of Interest - Commercial Services Name: Classic Shipping Services Location: Unit 5j Standard Industrial Estate, Henley Road, London, E16 2ES Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A17SW (NW)	859	9	542770 179808
171	Points of Interest - Commercial Services Name: Intersped Logistics (UK) Ltd Location: Unit 9 Gateway Business Centre, Tom Cribb Road, London, SE28 0EZ Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A14SE (E)	860	9	544602 178977
171	Points of Interest - Commercial Services Name: Intersped Logistics UK Ltd Location: Unit 9 Gateway Business Centre, Tom Cribb Road, London, SE28 0EZ Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A14SE (E)	860	9	544602 178977
172	Points of Interest - Commercial Services Name: S J Selfe & Sons Ltd Location: Unit 7 Standard Industrial Estate, Factory Road, London, E16 2EJ Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A17NW (NW)	867	9	542826 179894
172	Points of Interest - Commercial Services Name: W Humphreys Location: Unit 7 Standard Industrial Estate, Factory Road, London, E16 2EJ Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A17NW (NW)	867	9	542827 179896
172	Points of Interest - Commercial Services Name: L C M Scrap Company Ltd Location: Unit 6 Standard Industrial Estate, Factory Road, London, E16 2EJ Category: Recycling Services Class Code: Scrap Metal Merchants Positional Accuracy: Positioned to address or location	A17NW (NW)	910	9	542774 179899
172	Points of Interest - Commercial Services Name: London City Metals & Waste Ltd Location: Unit 6 Standard Industrial Estate, Factory Road, London, E16 2EJ Category: Recycling Services Class Code: Scrap Metal Merchants Positional Accuracy: Positioned to address or location	A17NW (NW)	917	9	542798 179939
173	Points of Interest - Commercial Services Name: Car Tec Detailing Location: 101 Ann Street, London, SE18 7LT Category: Personal, Consumer and other Services Class Code: Vehicle Cleaning Services Positional Accuracy: Positioned to address or location	A9NE (SE)	896	9	544524 178573
174	Points of Interest - Commercial Services Name: Pest-pro Location: 34 Polthorne Grove, Polthorne Estate, London, SE18 7DU Category: Contract Services Class Code: Pest and Vermin Control Positional Accuracy: Positioned to address or location	A15SW (E)	911	9	544637 178838
175	Points of Interest - Commercial Services Name: Stiller Group Ltd Location: King George V Dock, Woolwich Manor Way, London, E16 2NJ Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A19NW (N)	931	9	543950 180165
175	Points of Interest - Commercial Services Name: Stiller Group Location: King George V Dock, Woolwich Manor Way, London, E16 2NJ Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A19NW (N)	931	9	543950 180165

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
176	Points of Interest - Commercial Services Name: Abbey Autos Location: 1-2 Hillreach, London, SE18 4AJ Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A7NW (SW)	995	9	542815 178505
176	Points of Interest - Commercial Services Name: Abbey Autos Location: 1-2 Hillreach, London, SE18 4AJ Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A7NW (SW)	996	9	542815 178505
177	Points of Interest - Manufacturing and Production Name: Factory Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A13SW (W)	0	9	543573 179171
177	Points of Interest - Manufacturing and Production Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A13NW (NW)	2	9	543588 179196
177	Points of Interest - Manufacturing and Production Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A13NW (N)	13	9	543610 179191
177	Points of Interest - Manufacturing and Production Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A13NE (NE)	30	9	543628 179197
177	Points of Interest - Manufacturing and Production Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A13NW (N)	32	9	543600 179226
177	Points of Interest - Manufacturing and Production Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A13NW (N)	34	9	543608 179221
178	Points of Interest - Manufacturing and Production Name: B S L Location: 1c Parry Place, London, SE18 6AN Category: Industrial Features Class Code: Business Parks and Industrial Estates Positional Accuracy: Positioned to address or location	A14SW (SE)	239	9	543952 178896
178	Points of Interest - Manufacturing and Production Name: Imol Business Centre Ltd Location: 22 Plumstead Road, London, SE18 7BZ Category: Industrial Features Class Code: Business Parks and Industrial Estates Positional Accuracy: Positioned to address or location	A14SW (SE)	252	9	543970 178905
179	Points of Interest - Manufacturing and Production Name: Island Business Centre Location: 18-36 Wellington Street, London, SE18 6PF Category: Industrial Features Class Code: Business Parks and Industrial Estates Positional Accuracy: Positioned to address or location	A8NW (S)	273	9	543530 178812
180	Points of Interest - Manufacturing and Production Name: A-Z 1st Freeofficefinder.Com Location: 20 Grand Depot Road, London, SE18 6SJ Category: Industrial Features Class Code: Business Parks and Industrial Estates Positional Accuracy: Positioned to address or location	A8NW (S)	577	9	543403 178533

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
181	Points of Interest - Manufacturing and Production Name: Tanks Location: E16 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A18NE (N)	597	9	543696 179908
182	Points of Interest - Manufacturing and Production Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A8SE (S)	625	9	543815 178391
183	Points of Interest - Manufacturing and Production Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A14SE (E)	702	9	544444 179014
183	Points of Interest - Manufacturing and Production Name: Works Location: SE28 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A14SE (E)	702	9	544444 179014
183	Points of Interest - Manufacturing and Production Name: Works Location: SE28 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A14SE (E)	761	9	544503 179002
183	Points of Interest - Manufacturing and Production Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A14SE (E)	764	9	544506 179003
184	Points of Interest - Manufacturing and Production Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A7NE (SW)	768	9	543073 178566
184	Points of Interest - Manufacturing and Production Name: Works Location: SE18 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A7NE (SW)	769	9	543073 178565
185	Points of Interest - Manufacturing and Production Name: Standard Industrial Estate Location: E16 Category: Industrial Features Class Code: Business Parks and Industrial Estates Positional Accuracy: Positioned to an adjacent address or location	A17SW (NW)	813	9	542850 179839
186	Points of Interest - Manufacturing and Production Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A3NE (S)	863	9	543869 178158
187	Points of Interest - Manufacturing and Production Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A4NW (S)	905	9	543975 178137
188	Points of Interest - Manufacturing and Production Name: Tanks Location: E16 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A17SW (NW)	981	9	542640 179832

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
189	Points of Interest - Manufacturing and Production Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A4NW (S)	998	9	543964 178039
190	Points of Interest - Public Infrastructure Name: Shell UK Ltd Location: 125-127 Woolwich High Street, London, SE18 6DS Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A13NW (W)	223	9	543292 179187
191	Points of Interest - Public Infrastructure Name: Woolwich Arsenal Rail Station Location: Vincent Road, SE18 Category: Public Transport, Stations and Infrastructure Class Code: Railway Stations, Junctions and Halts Positional Accuracy: Positioned to address or location	A8NE (S)	227	9	543763 178786
191	Points of Interest - Public Infrastructure Name: Woolwich Arsenal Station Location: Vincent Road, SE18 Category: Public Transport, Stations and Infrastructure Class Code: Railway Stations, Junctions and Halts Positional Accuracy: Positioned to address or location	A8NE (S)	227	9	543763 178786
192	Points of Interest - Public Infrastructure Name: Plaistow Broadway Ltd Location: 37 Market Street, London, SE18 6QR Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A13SW (SW)	376	9	543350 178844
192	Points of Interest - Public Infrastructure Name: Plaistow Broadway Filling Station Location: 37 Market Street, London, SE18 6QR Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A13SW (SW)	376	9	543350 178844
192	Points of Interest - Public Infrastructure Name: Woolwich Police Station Location: 29 Market Street, London, SE18 6QR Category: Central and Local Government Class Code: Police Stations Positional Accuracy: Positioned to address or location	A8NW (SW)	382	9	543357 178828
192	Points of Interest - Public Infrastructure Name: Metropolitan Police Service Woolwich Location: 29 Market Street, Woolwich, London, SE18 6QR Category: Central and Local Government Class Code: Police Stations Positional Accuracy: Positioned to address or location	A8NW (SW)	382	9	543357 178828
192	Points of Interest - Public Infrastructure Name: Metropolitan Police Service Location: Market St, London, SE18 6QR Category: Central and Local Government Class Code: Police Stations Positional Accuracy: Positioned to address or location	A8NW (SW)	384	9	543356 178826
193	Points of Interest - Public Infrastructure Name: North Woolwich Station Location: Pier Road, E16 Category: Public Transport, Stations and Infrastructure Class Code: Railway Stations, Junctions and Halts Positional Accuracy: Positioned to address or location	A18SW (NW)	511	9	543307 179808
193	Points of Interest - Public Infrastructure Name: North Woolwich Police Station Location: Albert Road, London, E16 2JJ Category: Central and Local Government Class Code: Police Stations Positional Accuracy: Positioned to address or location	A18NW (N)	592	9	543338 179902
194	Points of Interest - Public Infrastructure Name: Woolwich Fire Station Location: Woolwich Fire Station 24, Sunbury Street, London, SE18 5LU Category: Central and Local Government Class Code: Fire Brigade Stations Positional Accuracy: Positioned to address or location	A12SW (W)	618	9	542937 179004

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
195	Points of Interest - Public Infrastructure Name: W J King Garages Woolwich Location: 40 Artillery Place, London, SE18 4AB Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A7NE (SW)	725	9	543143 178554
195	Points of Interest - Public Infrastructure Name: W J King Ltd Woolwich Location: 40 Artillery Place, London, SE18 4AB Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A7NE (SW)	741	9	543105 178570
196	Points of Interest - Public Infrastructure Name: T Tills Location: 79 Sandy Hill Road, London, SE18 7BQ Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A8SE (S)	781	9	543778 178232
196	Points of Interest - Public Infrastructure Name: Tills Garage Ltd Location: 79 Sandy Hill Road, London, SE18 7BQ Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A8SE (S)	782	9	543778 178231
197	Points of Interest - Public Infrastructure Name: Woolwich Dockyard Rail Station Location: Belson Road, SE18 Category: Public Transport, Stations and Infrastructure Class Code: Railway Stations, Junctions and Halts Positional Accuracy: Positioned to address or location	A12SW (W)	849	9	542728 178905
197	Points of Interest - Public Infrastructure Name: Woolwich Dockyard Station Location: Belson Road, SE18 Category: Public Transport, Stations and Infrastructure Class Code: Railway Stations, Junctions and Halts Positional Accuracy: Positioned to address or location	A12SW (W)	849	9	542728 178905
198	Points of Interest - Public Infrastructure Name: Stagecoach Location: Plumstead Bus Garage, Pettman Crescent, London, SE28 0BJ Category: Public Transport, Stations and Infrastructure Class Code: Bus and Coach Stations, Depots and Companies Positional Accuracy: Positioned to address or location	A15SW (E)	997	9	544739 178974
198	Points of Interest - Public Infrastructure Name: East London Bus Group Location: Plumstead Bus Garage, Pettman Crescent, London, SE28 0BJ Category: Public Transport, Stations and Infrastructure Class Code: Bus and Coach Stations, Depots and Companies Positional Accuracy: Positioned to address or location	A15SW (E)	998	9	544739 178974
198	Points of Interest - Public Infrastructure Name: Plumstead Bus Garage Location: Plumstead Bus Garage, Pettman Crescent, London, SE28 0BJ Category: Public Transport, Stations and Infrastructure Class Code: Bus and Coach Stations, Depots and Companies Positional Accuracy: Positioned to address or location	A15SW (E)	998	9	544739 178974
199	Points of Interest - Recreational and Environmental Name: Playground Location: Warren Lane, SE18 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to address or location	A13NW (N)	33	9	543567 179310
200	Points of Interest - Recreational and Environmental Name: Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A8NE (S)	246	9	543659 178781
200	Points of Interest - Recreational and Environmental Name: Playground Location: Woolwich New Road, SE18 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A8NE (S)	246	9	543659 178781

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
201	Points of Interest - Recreational and Environmental Name: Playground Location: Duke Of Wellington Avenue, SE18 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to address or location	A14SW (E)	385	9	544112 179150
202	Points of Interest - Recreational and Environmental Name: Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A12SE (W)	587	9	542958 179034
202	Points of Interest - Recreational and Environmental Name: Playground Location: Sunbury Street, SE18 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A12SE (W)	595	9	542950 179033
203	Points of Interest - Recreational and Environmental Name: Playground Location: Albert Road, E16 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to address or location	A18NE (N)	611	9	543642 179935
203	Points of Interest - Recreational and Environmental Name: Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A18NE (N)	635	9	543677 179952
203	Points of Interest - Recreational and Environmental Name: Playground Location: Albert Road, E16 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A18NE (N)	636	9	543669 179955
204	Points of Interest - Recreational and Environmental Name: Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A12SW (W)	641	9	542861 179170
204	Points of Interest - Recreational and Environmental Name: Playground Location: Maud Cashmore Way, SE18 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to address or location	A12SW (W)	642	9	542860 179169
205	Points of Interest - Recreational and Environmental Name: Playground Location: Mulgrave Road, SE18 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A7NE (SW)	747	9	542968 178707
206	Points of Interest - Recreational and Environmental Name: Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A17NE (NW)	764	9	543059 179964
206	Points of Interest - Recreational and Environmental Name: Playground Location: Albert Road, E16 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A17NE (NW)	767	9	543053 179963
207	Points of Interest - Recreational and Environmental Name: Skateboard Park Location: Connaught Road, SE18 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to address or location	A8SW (S)	767	9	543568 178265

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
207	Points of Interest - Recreational and Environmental Name: Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A8SW (S)	770	9	543558 178265
208	Points of Interest - Recreational and Environmental Name: Playground Location: Venus Road, SE18 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to address or location	A12SW (W)	774	9	542727 179158
208	Points of Interest - Recreational and Environmental Name: Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A12SW (W)	775	9	542728 179150
209	Points of Interest - Recreational and Environmental Name: Playground Location: Clendon Way, SE18 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to address or location	A9NE (E)	826	9	544547 178825
209	Points of Interest - Recreational and Environmental Name: Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A9NE (E)	827	9	544548 178823
210	Points of Interest - Recreational and Environmental Name: Playground Location: Belson Road, SE18 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to address or location	A12SW (W)	872	9	542713 178881
210	Points of Interest - Recreational and Environmental Name: Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A12SW (W)	873	9	542713 178878
211	Points of Interest - Recreational and Environmental Name: Playground Location: Vicarage Road, SE18 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to address or location	A9SE (SE)	875	9	544448 178494
211	Points of Interest - Recreational and Environmental Name: Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A9SE (SE)	877	9	544448 178491
211	Points of Interest - Recreational and Environmental Name: Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A9SE (SE)	948	9	544529 178483
212	Points of Interest - Recreational and Environmental Name: Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A8SW (S)	880	9	543516 178162
212	Points of Interest - Recreational and Environmental Name: Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A3NW (S)	944	9	543524 178094

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
212	Points of Interest - Recreational and Environmental Name: Playground Location: Brookhill Close, SE18 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A3NW (S)	944	9	543524 178094
212	Points of Interest - Recreational and Environmental Name: Playground Location: Brookhill Close, SE18 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to address or location	A3NW (S)	946	9	543525 178092
213	Points of Interest - Recreational and Environmental Name: Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A8SW (S)	888	9	543372 178202
213	Points of Interest - Recreational and Environmental Name: Playground Location: Mill Lane, SE18 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A8SW (S)	888	9	543372 178202
213	Points of Interest - Recreational and Environmental Name: Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A3NW (S)	954	9	543391 178124
213	Points of Interest - Recreational and Environmental Name: Playground Location: Gunner Lane, SE18 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to address or location	A3NW (S)	959	9	543383 178121
214	Points of Interest - Recreational and Environmental Name: Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A7NW (SW)	909	9	542880 178562
214	Points of Interest - Recreational and Environmental Name: Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A7NW (SW)	992	9	542808 178518
214	Points of Interest - Recreational and Environmental Name: Playground Location: Hillreach, SE18 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A7NW (SW)	992	9	542808 178519
215	Points of Interest - Recreational and Environmental Name: Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A11SE (W)	946	9	542586 179023
215	Points of Interest - Recreational and Environmental Name: Playground Location: Bowling Green Row, SE18 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to address or location	A11SE (W)	948	9	542584 179024
215	Points of Interest - Recreational and Environmental Name: Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A11SE (W)	983	9	542534 179068

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
215	<p>Points of Interest - Recreational and Environmental</p> <p>Name: Playground Location: Woolwich Church Street, SE18 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to address or location</p>	A11SE (W)	990	9	542529 179059

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
216	Marine Nature Reserves Name: Thames Estuary Multiple Area: Y Area (m2): 111738953.07 Source: Natural England	A13NW (N)	7	10	543591 179350

Agency & Hydrological	Version	Update Cycle
Contaminated Land Register Entries and Notices London Borough of Greenwich - Environmental Health Department London Borough of Lewisham - Environmental Health Department London Borough of Bexley - Environmental Health Department London Borough of Barking And Dagenham - Health and Consumer Services London Borough of Newham - Environmental Health Department London Borough of Redbridge - Environmental Health Department London Borough of Tower Hamlets - Environmental Health Department London Borough of Bromley - Environmental Health Department	April 2014 January 2013 January 2015 July 2014 March 2015 October 2014 October 2014 September 2014	Annual Rolling Update Annual Rolling Update Annual Rolling Update Annual Rolling Update Annual Rolling Update Annual Rolling Update Annual Rolling Update Annual Rolling Update
Discharge Consents Environment Agency - Southern Region Environment Agency - Thames Region	October 2017 October 2017	Quarterly Quarterly
Enforcement and Prohibition Notices Environment Agency - Thames Region	March 2013	As notified
Integrated Pollution Controls Environment Agency - Thames Region	October 2008	Not Applicable
Integrated Pollution Prevention And Control Environment Agency - South East Region - Kent & South London Area Environment Agency - South East Region - North East Thames Area Environment Agency - Thames Region	October 2017 October 2017 October 2017	Quarterly Quarterly Quarterly
Local Authority Integrated Pollution Prevention And Control London Borough of Redbridge - Environmental Health Department London Borough of Bromley - Environmental Health Department London Borough of Greenwich - Environmental Health Department London Borough of Bexley - Environmental Health Department London Borough of Barking And Dagenham - Environmental Health Department London Borough of Tower Hamlets - Environmental Health Department London Port Health Authority - Environmental Services London Borough of Newham - Environmental Health Department London Borough of Lewisham - Environmental Health Department	December 2014 July 2015 June 2014 March 2015 May 2016 October 2014 October 2014 September 2013 September 2014	Annual Rolling Update Annual Rolling Update Annual Rolling Update Annual Rolling Update Annual Rolling Update Annual Rolling Update Annual Rolling Update Annual Rolling Update Annual Rolling Update
Local Authority Pollution Prevention and Controls London Borough of Redbridge - Environmental Health Department London Borough of Bromley - Environmental Health Department London Borough of Greenwich - Environmental Health Department London Borough of Bexley - Environmental Health Department London Borough of Newham - Environmental Health Department London Borough of Barking And Dagenham - Environmental Health Department London Borough of Tower Hamlets - Environmental Health Department London Port Health Authority - Environmental Services London Borough of Lewisham - Environmental Health Department	December 2014 July 2015 June 2014 March 2015 March 2015 May 2016 October 2014 October 2014 September 2014	Annual Rolling Update Annual Rolling Update Annual Rolling Update Annual Rolling Update Annual Rolling Update Annual Rolling Update Annual Rolling Update Annual Rolling Update Annual Rolling Update
Local Authority Pollution Prevention and Control Enforcements London Borough of Redbridge - Environmental Health Department London Borough of Bromley - Environmental Health Department London Borough of Greenwich - Environmental Health Department London Borough of Bexley - Environmental Health Department London Borough of Barking And Dagenham - Environmental Health Department London Borough of Tower Hamlets - Environmental Health Department London Port Health Authority - Environmental Services London Borough of Newham - Environmental Health Department London Borough of Lewisham - Environmental Health Department	December 2014 July 2015 June 2014 March 2015 May 2016 October 2014 October 2014 September 2013 September 2014	Annual Rolling Update Annual Rolling Update Annual Rolling Update Annual Rolling Update Annual Rolling Update Annual Rolling Update Annual Rolling Update Annual Rolling Update Annual Rolling Update
Nearest Surface Water Feature Ordnance Survey	September 2017	
Pollution Incidents to Controlled Waters Environment Agency - Southern Region Environment Agency - Thames Region	December 1999 September 1999	Not Applicable Not Applicable

Agency & Hydrological	Version	Update Cycle
Prosecutions Relating to Authorised Processes Environment Agency - Thames Region	March 2013	As notified
Prosecutions Relating to Controlled Waters Environment Agency - Thames Region	March 2013	As notified
Registered Radioactive Substances Environment Agency - Thames Region	January 2015	
River Quality Environment Agency - Head Office	November 2001	Not Applicable
River Quality Biology Sampling Points Environment Agency - Head Office	July 2012	Annually
River Quality Chemistry Sampling Points Environment Agency - Head Office	July 2012	Annually
Substantiated Pollution Incident Register Environment Agency - South East Region - Kent & South London Area Environment Agency - South East Region - North East Thames Area Environment Agency - Thames Region - North East Area Environment Agency - Thames Region - South East Area	October 2017 October 2017 October 2017 October 2017	Quarterly Quarterly Quarterly Quarterly
Water Abstractions Environment Agency - Southern Region Environment Agency - Thames Region	October 2017 October 2017	Quarterly Quarterly
Water Industry Act Referrals Environment Agency - Thames Region	October 2017	Quarterly
Groundwater Vulnerability Environment Agency - Head Office	April 2015	Not Applicable
Drift Deposits Environment Agency - Head Office	January 1999	Not Applicable
Bedrock Aquifer Designations British Geological Survey - National Geoscience Information Service	August 2015	As notified
Superficial Aquifer Designations British Geological Survey - National Geoscience Information Service	August 2015	As notified
Source Protection Zones Environment Agency - Head Office	October 2017	Quarterly
Extreme Flooding from Rivers or Sea without Defences Environment Agency - Head Office	November 2017	Quarterly
Flooding from Rivers or Sea without Defences Environment Agency - Head Office	November 2017	Quarterly
Areas Benefiting from Flood Defences Environment Agency - Head Office	November 2017	Quarterly
Flood Water Storage Areas Environment Agency - Head Office	November 2017	Quarterly
Flood Defences Environment Agency - Head Office	November 2017	Quarterly
OS Water Network Lines Ordnance Survey	October 2017	6 Weekly
Surface Water 1 in 30 year Flood Extent Environment Agency - Head Office	October 2013	As notified
Surface Water 1 in 100 year Flood Extent Environment Agency - Head Office	October 2013	As notified
Surface Water 1 in 1000 year Flood Extent Environment Agency - Head Office	October 2013	As notified

Agency & Hydrological	Version	Update Cycle
Surface Water Suitability Environment Agency - Head Office	October 2013	As notified
BGS Groundwater Flooding Susceptibility British Geological Survey - National Geoscience Information Service	May 2013	Annually
Waste	Version	Update Cycle
BGS Recorded Landfill Sites British Geological Survey - National Geoscience Information Service	June 1996	Not Applicable
Historical Landfill Sites Environment Agency - Head Office	October 2017	Quarterly
Integrated Pollution Control Registered Waste Sites Environment Agency - Thames Region	October 2008	Not Applicable
Licensed Waste Management Facilities (Landfill Boundaries) Environment Agency - South East Region - Kent & South London Area Environment Agency - South East Region - North East Thames Area Environment Agency - Thames Region - North East Area Environment Agency - Thames Region - South East Area	October 2017 October 2017 October 2017 October 2017	Quarterly Quarterly Quarterly Quarterly
Licensed Waste Management Facilities (Locations) Environment Agency - South East Region - Kent & South London Area Environment Agency - South East Region - North East Thames Area Environment Agency - Thames Region - North East Area Environment Agency - Thames Region - South East Area	October 2017 October 2017 October 2017 October 2017	Quarterly Quarterly Quarterly Quarterly
Local Authority Landfill Coverage London Borough of Barking And Dagenham - Environmental Health Department London Borough of Bexley - Environmental Health Department London Borough of Bromley - Environmental Health Department London Borough of Greenwich - Environmental Health Department London Borough of Lewisham - Environmental Health Department London Borough of Newham London Borough of Redbridge - Environmental Health Department London Borough of Tower Hamlets - Environmental Health Department	May 2000 May 2000 May 2000 May 2000 May 2000 May 2000 May 2000 May 2000	Not Applicable Not Applicable Not Applicable Not Applicable Not Applicable Not Applicable Not Applicable Not Applicable
Local Authority Recorded Landfill Sites London Borough of Tower Hamlets - Environmental Health Department London Borough of Bromley - Environmental Health Department London Borough of Barking And Dagenham - Environmental Health Department London Borough of Bexley - Environmental Health Department London Borough of Greenwich - Environmental Health Department London Borough of Lewisham - Environmental Health Department London Borough of Newham London Borough of Redbridge - Environmental Health Department	April 2003 June 2003 May 2000 May 2000 May 2000 May 2000 May 2000 May 2000	Not Applicable Not Applicable Not Applicable Not Applicable Not Applicable Not Applicable Not Applicable Not Applicable
Potentially Infilled Land (Non-Water) Landmark Information Group Limited	December 1999	Not Applicable
Potentially Infilled Land (Water) Landmark Information Group Limited	December 1999	Not Applicable
Registered Landfill Sites Environment Agency - Thames Region - North East Area Environment Agency - Thames Region - South East Area	March 2003 March 2003	Not Applicable Not Applicable
Registered Waste Transfer Sites Environment Agency - Thames Region - North East Area Environment Agency - Thames Region - South East Area	March 2003 March 2003	Not Applicable Not Applicable
Registered Waste Treatment or Disposal Sites Environment Agency - Thames Region - North East Area Environment Agency - Thames Region - South East Area	June 2015 March 2003	Not Applicable Not Applicable

Hazardous Substances	Version	Update Cycle
Control of Major Accident Hazards Sites (COMAH) Health and Safety Executive	September 2017	Bi-Annually
Explosive Sites Health and Safety Executive	March 2017	Bi-Annually
Notification of Installations Handling Hazardous Substances (NIHHS) Health and Safety Executive	November 2000	Not Applicable
Planning Hazardous Substance Enforcements London Borough of Lewisham - Planning Services London Borough of Barking And Dagenham London Borough of Bromley London Borough of Greenwich - Planning Department London Borough of Newham London Borough of Redbridge London Borough of Tower Hamlets London Port Health Authority - Environmental Services London Borough of Bexley - Development Control	April 2015 February 2016 February 2016 February 2016 February 2016 February 2016 February 2016 January 2008 January 2016	Annual Rolling Update Annual Rolling Update Annual Rolling Update Annual Rolling Update Annual Rolling Update Annual Rolling Update Annual Rolling Update Annual Rolling Update Annual Rolling Update
Planning Hazardous Substance Consents London Borough of Lewisham - Planning Services London Borough of Barking And Dagenham London Borough of Bromley London Borough of Greenwich - Planning Department London Borough of Newham London Borough of Redbridge London Borough of Tower Hamlets London Port Health Authority - Environmental Services London Borough of Bexley - Development Control	April 2015 February 2016 February 2016 February 2016 February 2016 February 2016 February 2016 February 2016 January 2008 January 2016	Annual Rolling Update Annual Rolling Update Annual Rolling Update Annual Rolling Update Annual Rolling Update Annual Rolling Update Annual Rolling Update Annual Rolling Update Annual Rolling Update Annual Rolling Update

Geological	Version	Update Cycle
BGS 1:625,000 Solid Geology British Geological Survey - National Geoscience Information Service	January 2009	Not Applicable
BGS Estimated Soil Chemistry British Geological Survey - National Geoscience Information Service	October 2015	As notified
BGS Recorded Mineral Sites British Geological Survey - National Geoscience Information Service	November 2017	Bi-Annually
BGS Urban Soil Chemistry British Geological Survey - National Geoscience Information Service	October 2015	As notified
BGS Urban Soil Chemistry Averages British Geological Survey - National Geoscience Information Service	October 2015	As notified
CBSCB Compensation District Cheshire Brine Subsidence Compensation Board (CBSCB)	August 2011	Not Applicable
Coal Mining Affected Areas The Coal Authority - Property Searches	March 2014	As notified
Mining Instability Ove Arup & Partners	October 2000	Not Applicable
Non Coal Mining Areas of Great Britain British Geological Survey - National Geoscience Information Service	May 2015	Not Applicable
Potential for Collapsible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	Annually
Potential for Compressible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	Annually
Potential for Ground Dissolution Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	Annually
Potential for Landslide Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	Annually
Potential for Running Sand Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	Annually
Potential for Shrinking or Swelling Clay Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	Annually
Radon Potential - Radon Affected Areas British Geological Survey - National Geoscience Information Service	July 2011	As notified
Radon Potential - Radon Protection Measures British Geological Survey - National Geoscience Information Service	July 2011	As notified

Industrial Land Use	Version	Update Cycle
Contemporary Trade Directory Entries Thomson Directories	September 2017	Quarterly
Fuel Station Entries Catalist Ltd - Experian	November 2017	Quarterly
Gas Pipelines National Grid	July 2014	Quarterly
Points of Interest - Commercial Services PointX	December 2017	Quarterly
Points of Interest - Education and Health PointX	December 2017	Quarterly
Points of Interest - Manufacturing and Production PointX	December 2017	Quarterly
Points of Interest - Public Infrastructure PointX	December 2017	Quarterly
Points of Interest - Recreational and Environmental PointX	December 2017	Quarterly
Underground Electrical Cables National Grid	December 2015	Bi-Annually

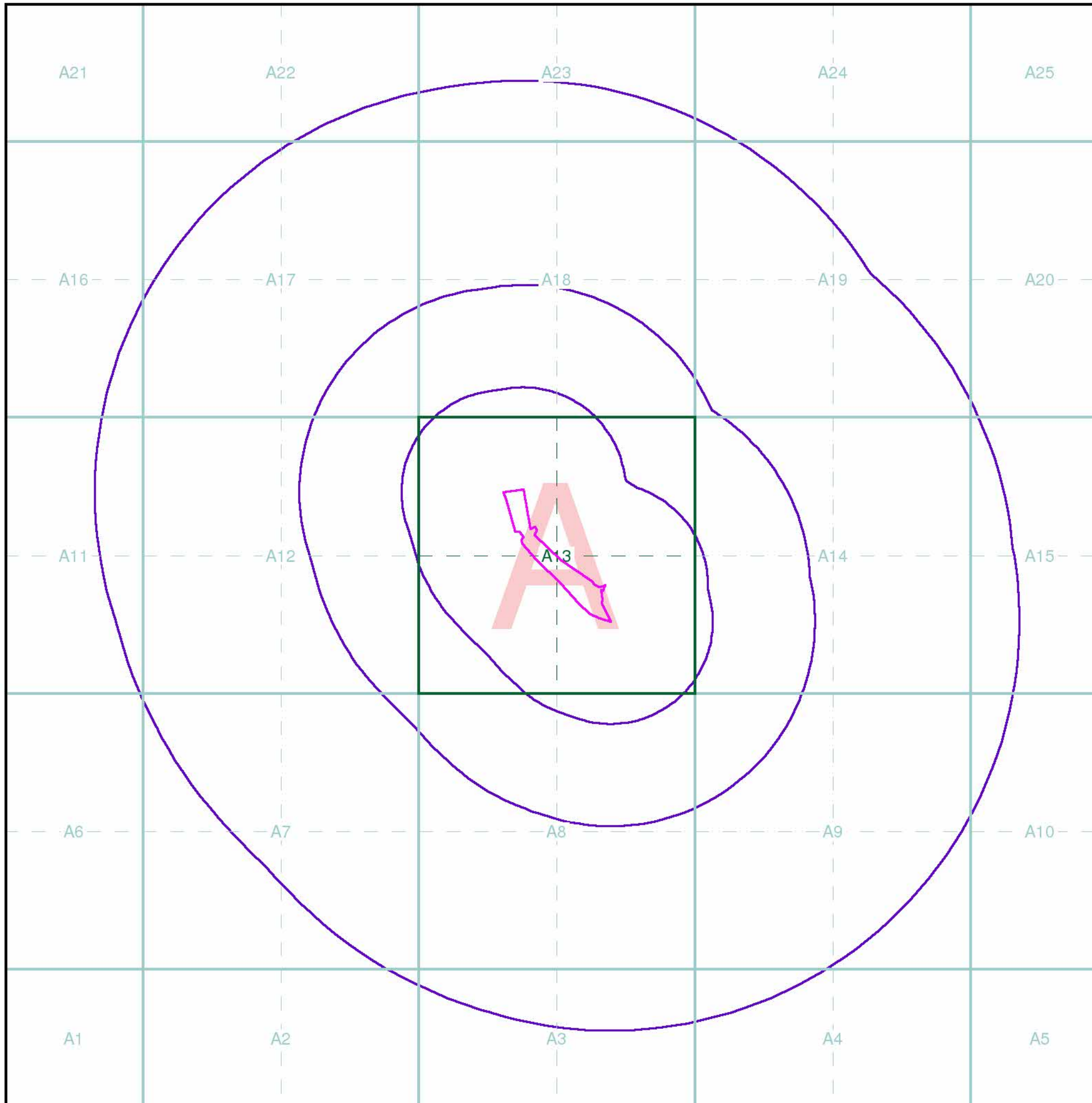
Sensitive Land Use	Version	Update Cycle
Ancient Woodland Natural England	October 2017	Bi-Annually
Areas of Adopted Green Belt London Borough of Barking And Dagenham London Borough of Bexley - Development Control London Borough of Bromley London Borough of Greenwich London Borough of Newham London Borough of Redbridge	November 2017 November 2017 November 2017 November 2017 November 2017 November 2017	As notified As notified As notified As notified As notified As notified
Areas of Unadopted Green Belt London Borough of Barking And Dagenham London Borough of Bexley - Development Control London Borough of Bromley London Borough of Greenwich London Borough of Newham London Borough of Redbridge	November 2017 November 2017 November 2017 November 2017 November 2017 November 2017	As notified As notified As notified As notified As notified As notified
Areas of Outstanding Natural Beauty Natural England	August 2017	Bi-Annually
Environmentally Sensitive Areas Natural England	January 2017	Annually
Forest Parks Forestry Commission	April 1997	Not Applicable
Local Nature Reserves Natural England	August 2017	Bi-Annually
Marine Nature Reserves Natural England	August 2017	Bi-Annually
National Nature Reserves Natural England	August 2017	Bi-Annually
National Parks Natural England	August 2017	Bi-Annually
Nitrate Vulnerable Zones Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	October 2015	
Ramsar Sites Natural England	August 2017	Bi-Annually
Sites of Special Scientific Interest Natural England	August 2017	Bi-Annually
Special Areas of Conservation Natural England	August 2017	Bi-Annually
Special Protection Areas Natural England	August 2017	Bi-Annually

A selection of organisations who provide data within this report

Data Supplier	Data Supplier Logo
Ordnance Survey	
Environment Agency	
Scottish Environment Protection Agency	
The Coal Authority	
British Geological Survey	 <p>British Geological Survey NATURAL ENVIRONMENT RESEARCH COUNCIL</p>
Centre for Ecology and Hydrology	 <p>Centre for Ecology & Hydrology NATURAL ENVIRONMENT RESEARCH COUNCIL</p>
Natural Resources Wales	
Scottish Natural Heritage	
Natural England	
Public Health England	
Ove Arup	
Peter Brett Associates	

Contact	Name and Address	Contact Details
1	British Geological Survey - Enquiry Service British Geological Survey, Kingsley Dunham Centre, Keyworth, Nottingham, Nottinghamshire, NG12 5GG	Telephone: 0115 936 3143 Fax: 0115 936 3276 Email: enquiries@bgs.ac.uk Website: www.bgs.ac.uk
2	Environment Agency - National Customer Contact Centre (NCCC) PO Box 544, Templeborough, Rotherham, S60 1BY	Telephone: 03708 506 506 Email: enquiries@environment-agency.gov.uk
3	London Borough of Greenwich - Environmental Health Department 12th Floor, Riverside House, Woolwich, London, SE18 6DN	Telephone: 020 8854 8888 Fax: 020 8921 8322 Website: www.greenwich.gov.uk
4	London Borough of Newham - Environmental Health Department Alice Billings House, 2-12 West Ham Lane, London, E15 4SF	Telephone: 020 8430 2000 Fax: 020 8557 8869 Website: www.newham.gov.uk
5	Ordnance Survey Adanac Drive, Southampton, Hampshire, SO16 0AS	Telephone: 023 8079 2000 Email: customerservices@ordnancesurvey.co.uk Website: www.ordnancesurvey.gov.uk
6	London Borough of Newham Town Hall Annexe, Barking Road, East Ham, London, E6 2RP	Telephone: 020 8430 2000 Fax: 020 8472 2284 Website: www.newham.gov.uk
7	Health and Safety Executive 5S.2 Redgrave Court, Merton Road, Bootle, L20 7HS	Website: www.hse.gov.uk
8	Peter Brett Associates Caversham Bridge House, Waterman Place, Reading, Berkshire, RG1 8DN	Telephone: 0118 950 0761 Fax: 0118 959 7498 Email: reading@pba.co.uk Website: www.pba.co.uk
9	PointX 7 Abbey Court, Eagle Way, Sowton, Exeter, Devon, EX2 7HY	Website: www.pointx.co.uk
10	Natural England County Hall, Spetchley Road, Worcester, WR5 2NP	Telephone: 0300 060 3900 Email: enquiries@naturalengland.org.uk Website: www.naturalengland.org.uk
11	Environment Agency - Head Office Rio House, Waterside Drive, Aztec West, Almondsbury, Bristol, Avon, BS32 4UD	Telephone: 01454 624400 Fax: 01454 624409
-	Public Health England - Radon Survey, Centre for Radiation, Chemical and Environmental Hazards Chilton, Didcot, Oxfordshire, OX11 0RQ	Telephone: 01235 822622 Fax: 01235 833891 Email: radon@phe.gov.uk Website: www.ukradon.org
-	Landmark Information Group Limited Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	Telephone: 0844 844 9952 Fax: 0844 844 9951 Email: customerservices@landmarkinfo.co.uk Website: www.landmarkinfo.co.uk

Please note that the Environment Agency / Natural Resources Wales / SEPA have a charging policy in place for enquiries.



TWEEDIE EVANS CONSULTING
Index Map

For ease of identification, your site and buffer have been split into Slices, Segments and Quadrants. These are illustrated on the Index Map opposite and explained further below.

Slice

Each slice represents a 1:10,000 plot area (2.7km x 2.7km) for your site and buffer. A large site and buffer may be made up of several slices (represented by a red outline), that are referenced by letters of the alphabet, starting from the bottom left corner of the slice "grid". This grid does not relate to National Grid lines but is designed to give best fit over the site and buffer.

Segment

A segment represents a 1:2,500 plot area. Segments that have plot files associated with them are shown in dark green, others in light blue. These are numbered from the bottom left hand corner within each slice.

Quadrant

A quadrant is a quarter of a segment. These are labelled as NW, NE, SW, SE and are referenced in the datasheet to allow features to be quickly located on plots. Therefore a feature that has a quadrant reference of A7NW will be in Slice A, Segment 7 and the NW Quadrant.

A selection of organisations who provide data within this report:



Envirocheck reports are compiled from 136 different sources of data.

Client Details

Mr E Tweedie, Tweedie Evans Consulting Ltd, The Old Chapel, 35a Southover, Wells, Somerset, BA5 1UH

Order Details

Order Number: 149792684_1_1
 Customer Ref: 1508005.014
 National Grid Reference: 543610, 179160
 Site Area (Ha): 1.75
 Search Buffer (m): 1000

Site Details

Linear Park, Woolwich, Greenwich

Full Terms and Conditions can be found on the following link:
<http://www.landmarkinfo.co.uk/Terms/Show/515>



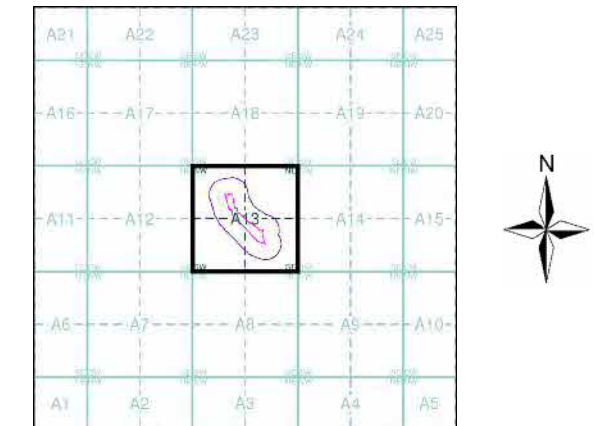
Tel: 0844 844 9952
 Fax: 0844 844 9951
 Web: www.envirocheck.co.uk



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- General**
- Specified Site
 - Specified Buffer(s)
 - Bearing Reference Point
 - Map ID
 - Several of Type at Location
 - Pylon
 - Overhead Transmission Line
- Agency and Hydrological**
- Contaminated Land Register Entry or Notice (Location)
 - Contaminated Land Register Entry or Notice
 - Discharge Consent
 - Enforcement or Prohibition Notice
 - Integrated Pollution Control
 - Integrated Pollution Prevention Control
 - Local Authority Integrated Pollution Prevention and Control
 - Local Authority Pollution Prevention and Control Enforcement
 - Pollution Incident to Controlled Waters
 - Prosecution Relating to Authorised Processes
 - Prosecution Relating to Controlled Waters
 - Registered Radioactive Substance
 - River Network or Water Feature
 - River Quality Sampling Point
 - Substantiated Pollution Incident Register
 - Water Abstraction
 - Water Industry Act Referral
- Waste**
- BGS Recorded Landfill Site (Location)
 - BGS Recorded Landfill Site
 - EA Historic Landfill (Buffered Point)
 - EA Historic Landfill (Polygon)
 - Integrated Pollution Control Registered Waste Site
 - Licensed Waste Management Facility (Landfill Boundary)
 - Licensed Waste Management Facility (Location)
 - Local Authority Recorded Landfill Site (Location)
 - Local Authority Recorded Landfill Site
 - Potentially Infilled Land (Non-water)
 - Potentially Infilled Land (Non-water)
 - Potentially Infilled Land (Water)
 - Potentially Infilled Land (Water)
 - Potentially Infilled Land (Water)
 - Registered Landfill Site
 - Registered Landfill Site (Location)
 - Registered Landfill Site (Point Buffered to 100m)
 - Registered Landfill Site (Point Buffered to 250m)
 - Registered Waste Transfer Site (Location)
 - Registered Waste Transfer Site
 - Registered Waste Treatment or Disposal Site (Location)
 - Registered Waste Treatment or Disposal Site
- Hazardous Substances**
- COMAH Site
 - Explosive Site
 - NIHHS Site
 - Planning Hazardous Substance Consent
 - Planning Hazardous Substance Enforcement
- Geological**
- BGS Recorded Mineral Site

Site Sensitivity Map - Segment A13



Order Details

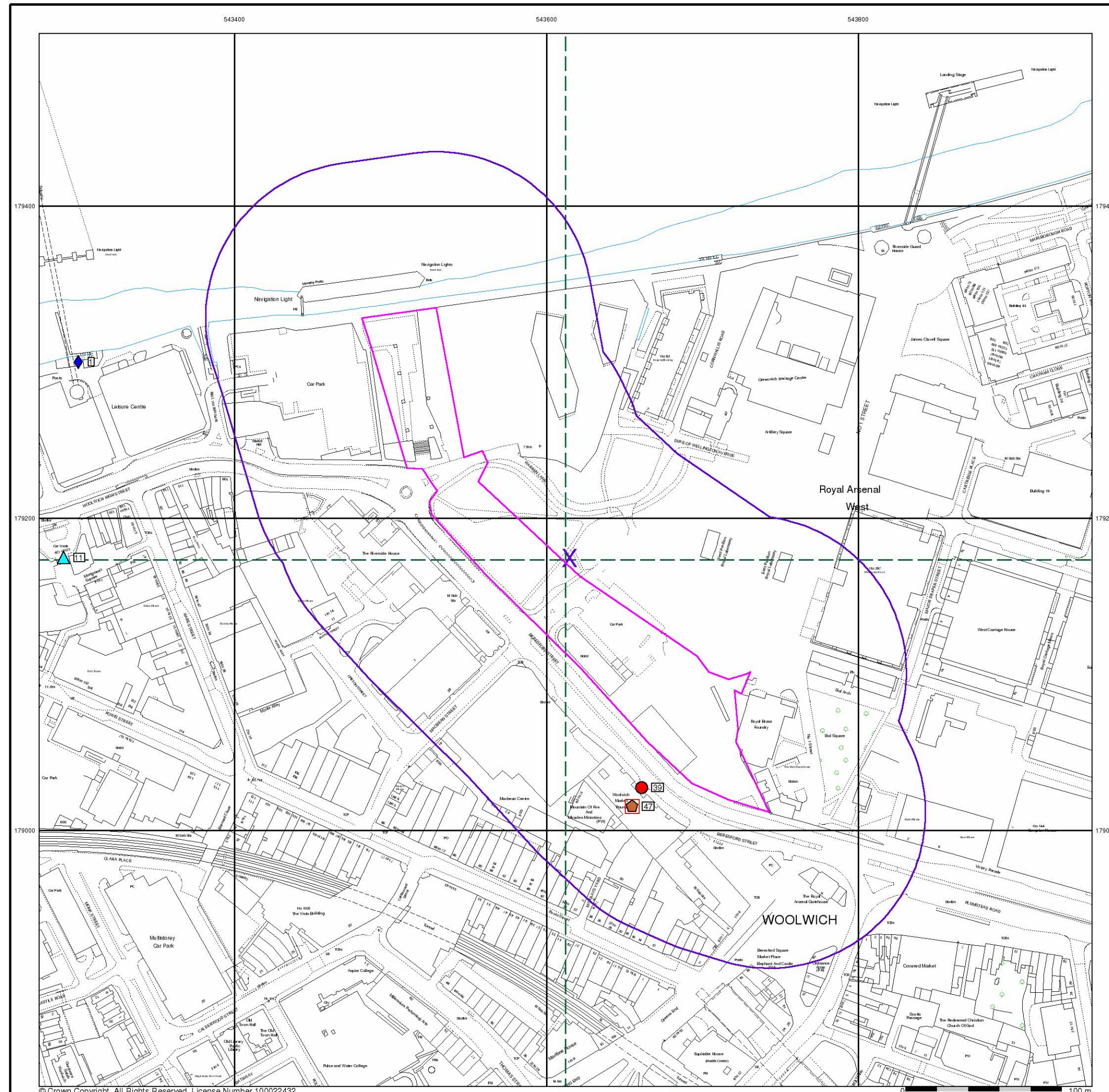
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 National Grid Reference: 543620, 179170
 Slice: A
 Site Area (Ha): 1.75
 Plot Buffer (m): 100

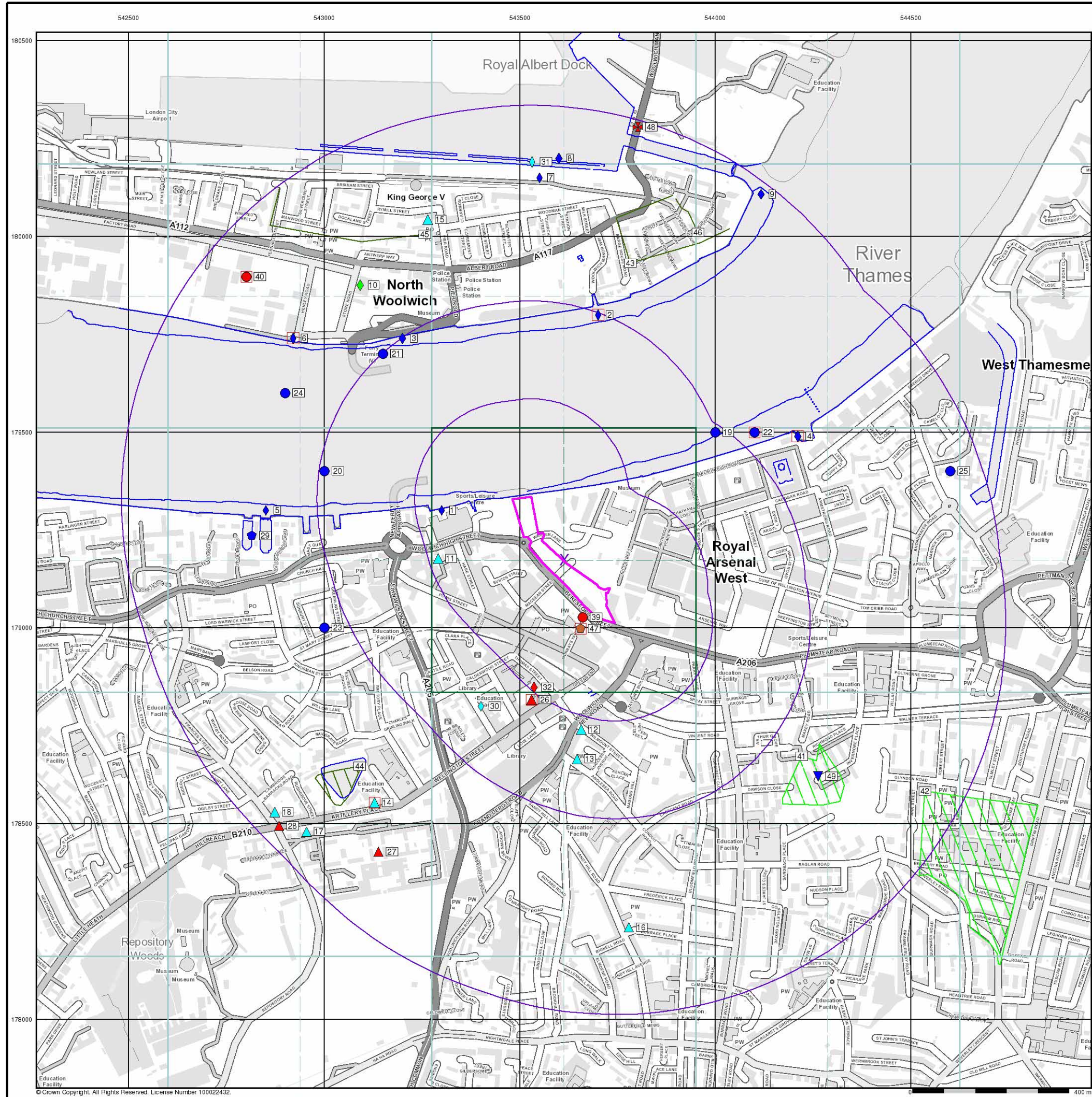
Site Details

Linear Park, Woolwich, Greenwich



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

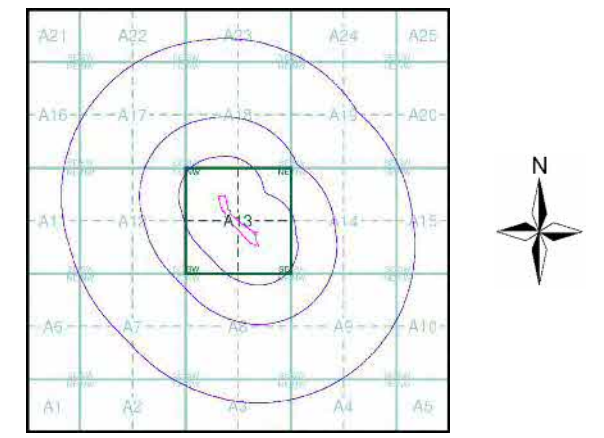




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- General**
- Specified Site
 - Specified Buffer(s)
 - Bearing Reference Point
 - Map ID
- Agency and Hydrological**
- Contaminated Land Register Entry or Notice (Location)
 - Contaminated Land Register Entry or Notice
 - Discharge Consent
 - Enforcement or Prohibition Notice
 - Integrated Pollution Control
 - Integrated Pollution Prevention Control
 - Local Authority Integrated Pollution Prevention and Control
 - Local Authority Pollution Prevention and Control Enforcement
 - Pollution Incident to Controlled Waters
 - Prosecution Relating to Authorised Processes
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 - Potentially Infilled Land (Non-water)
 - Potentially Infilled Land (Non-water)
 - Potentially Infilled Land (Water)
 - Potentially Infilled Land (Water)
 - Potentially Infilled Land (Water)
 - Registered Landfill Site (Location)
 - Registered Landfill Site (Point Buffered to 100m)
 - Registered Landfill Site (Point Buffered to 250m)
 - Registered Waste Transfer Site (Location)
 - Registered Waste Transfer Site
 - Registered Waste Treatment or Disposal Site (Location)
 - Registered Waste Treatment or Disposal Site
- Hazardous Substances**
- COMAH Site
 - Explosive Site
 - NIHHS Site
 - Planning Hazardous Substance Consent
 - Planning Hazardous Substance Enforcement
- Geological**
- BGS Recorded Mineral Site

Site Sensitivity Map - Slice A



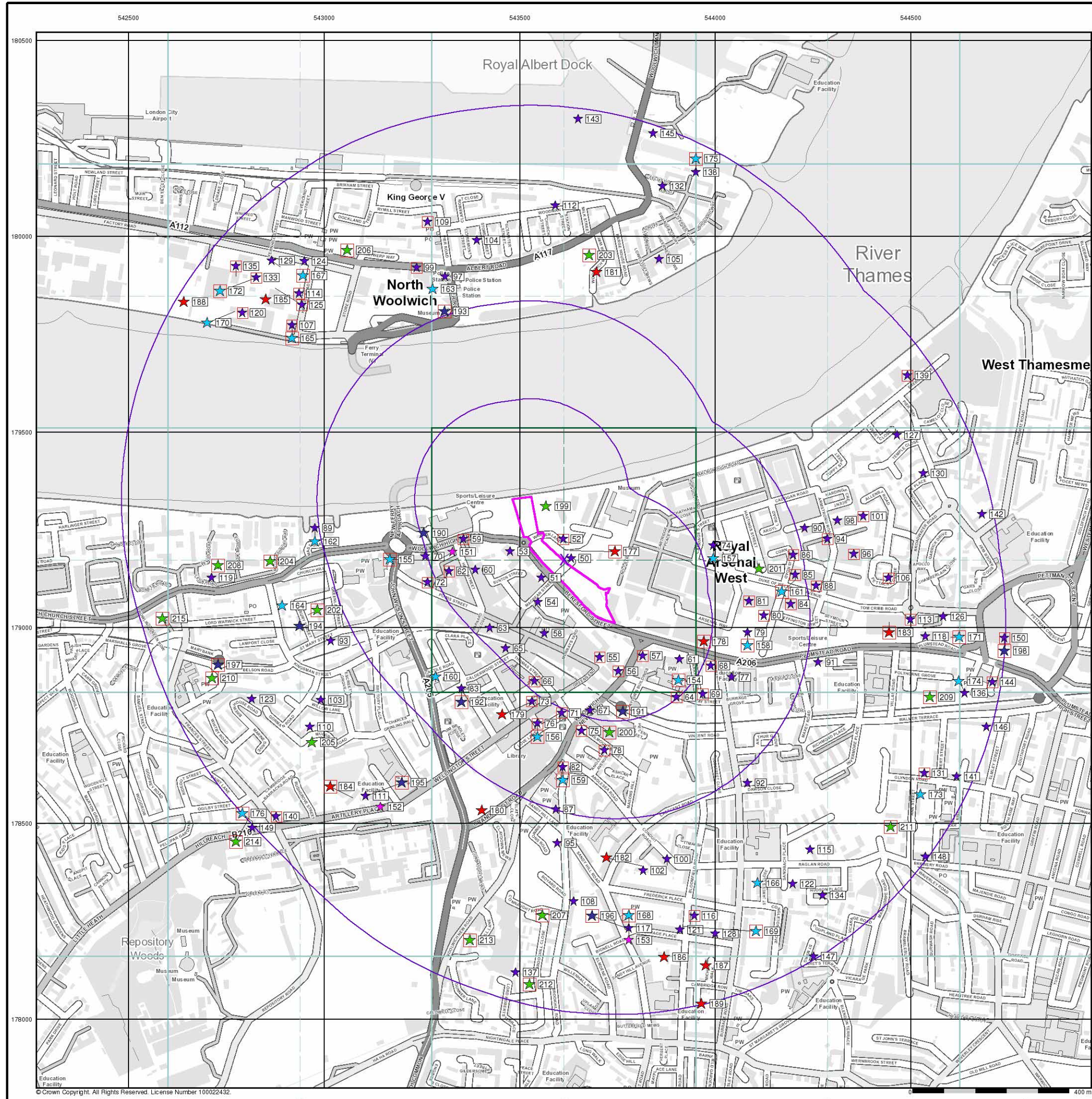
Order Details

Order Number: 149792684_1_1
 Customer Ref: 1508005.014
 National Grid Reference: 543620, 179170
 Slice: A
 Site Area (Ha): 1.75
 Search Buffer (m): 1000

Site Details
 Linear Park, Woolwich, Greenwich

Landmark
 INFORMATION GROUP

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



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Industrial Land Use Map

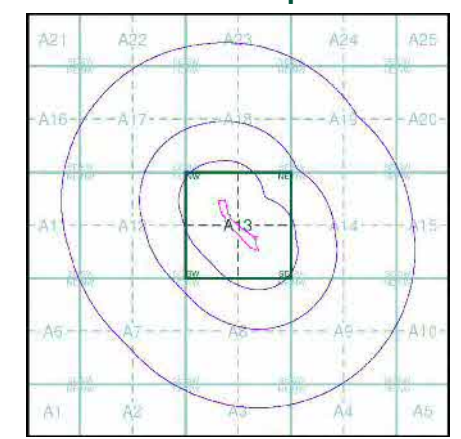
General

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

Industrial Land Use

- Contemporary Trade Directory Entry
- Fuel Station Entry
- Gas Pipeline
- Points of Interest - Commercial Services
- Points of Interest - Education and Health
- Points of Interest - Manufacturing and Production
- Points of Interest - Public Infrastructure
- Points of Interest - Recreational and Environmental
- Underground Electrical Cables

Industrial Land Use Map - Slice A



Order Details

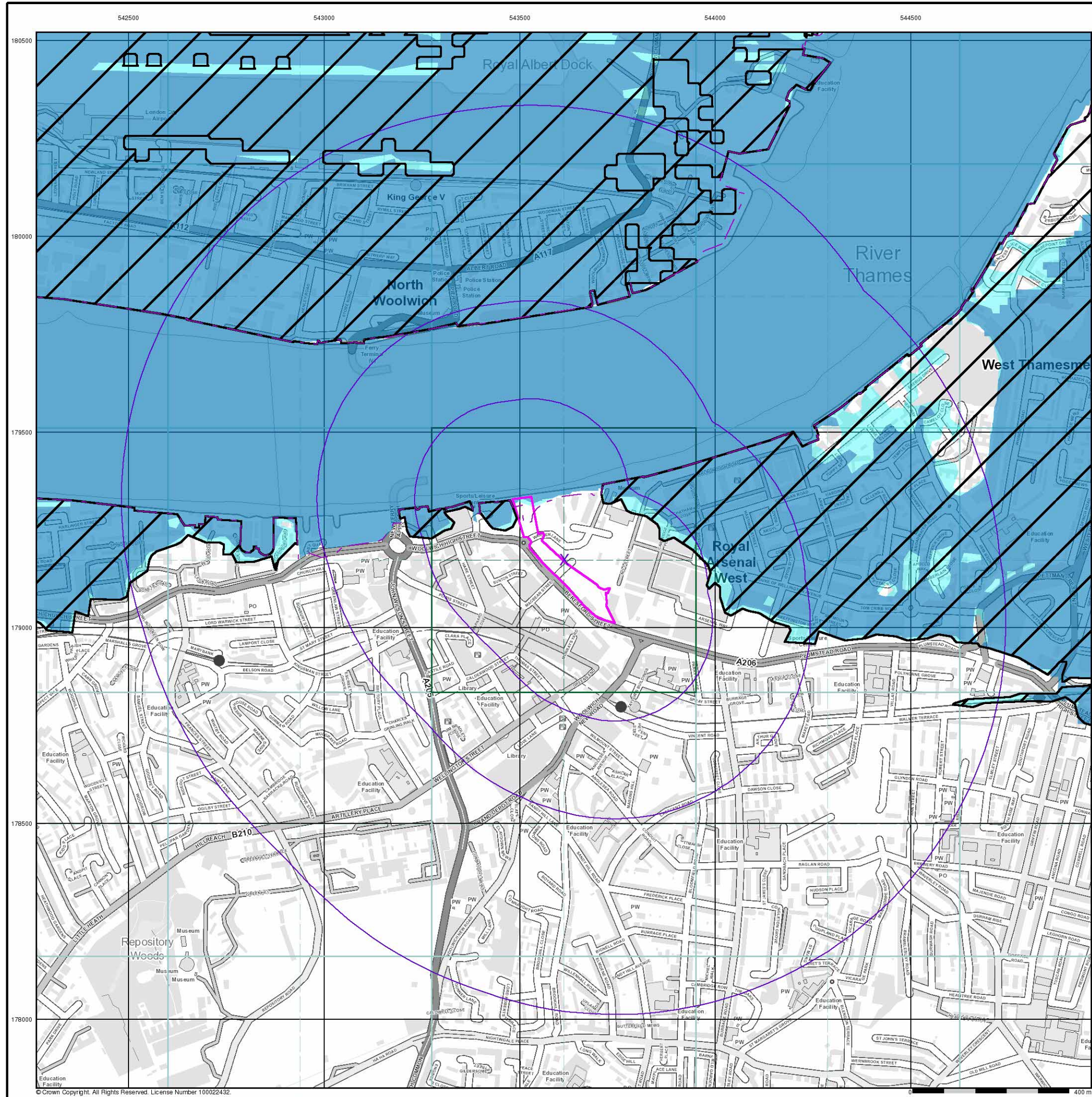
Order Number: 149792684_1_1
 Customer Ref: 1508005.014
 National Grid Reference: 543620, 179170
 Slice: A
 Site Area (Ha): 1.75
 Search Buffer (m): 1000

Site Details

Linear Park, Woolwich, Greenwich



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



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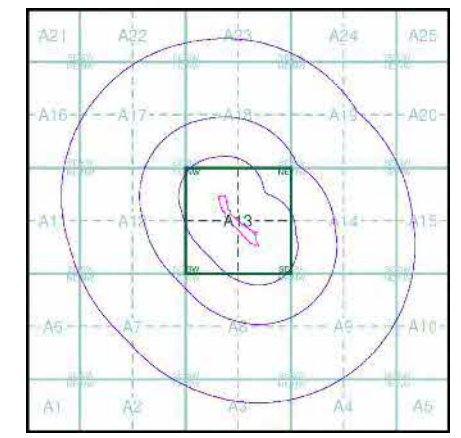
General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point

Agency and Hydrological (Flood)

- Extreme Flooding from Rivers or Sea without Defences (Zone 2)
- Flooding from Rivers or Sea without Defences (Zone 3)
- Area Benefiting from Flood Defence
- Flood Water Storage Areas
- Flood Defence

Flood Map - Slice A



Order Details

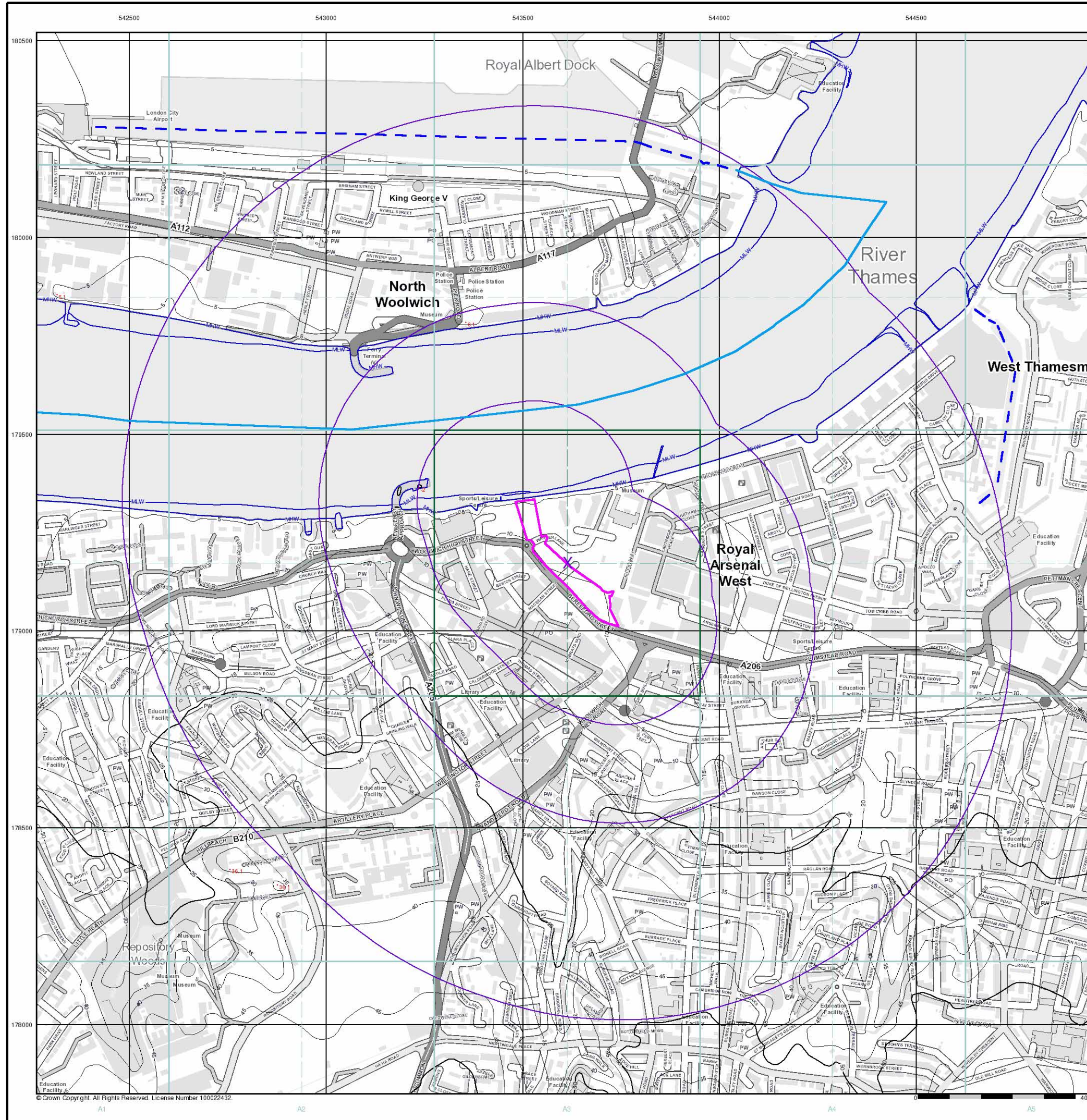
Order Number: 149792684_1_1
 Customer Ref: 1508005.014
 National Grid Reference: 543620, 179170
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General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point

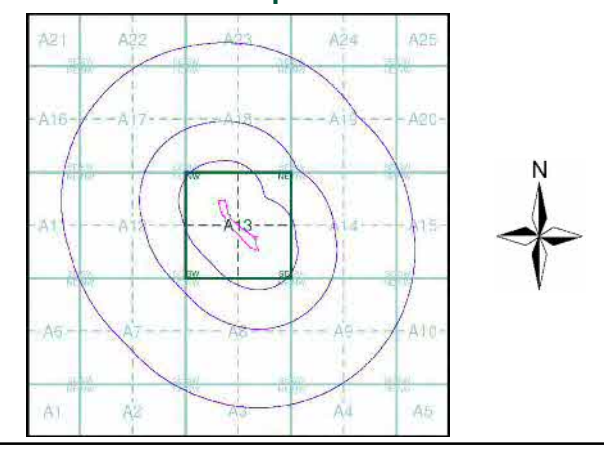
OS Water Network Data

- | | |
|--------------|-------------------------|
| Canal | Drain |
| Reservoir | Other |
| Foreshore | Lake |
| Marsh | Transfer |
| Tidal River | Lock Or Flight Of Locks |
| Inland River | Sea |

Contours (height in meters)

- Standard Contour 105 Mean Low Water
- Master Contour 100 Mean High Water
- Spot Height 167.3

OS Water Network Map - Slice A



Order Details

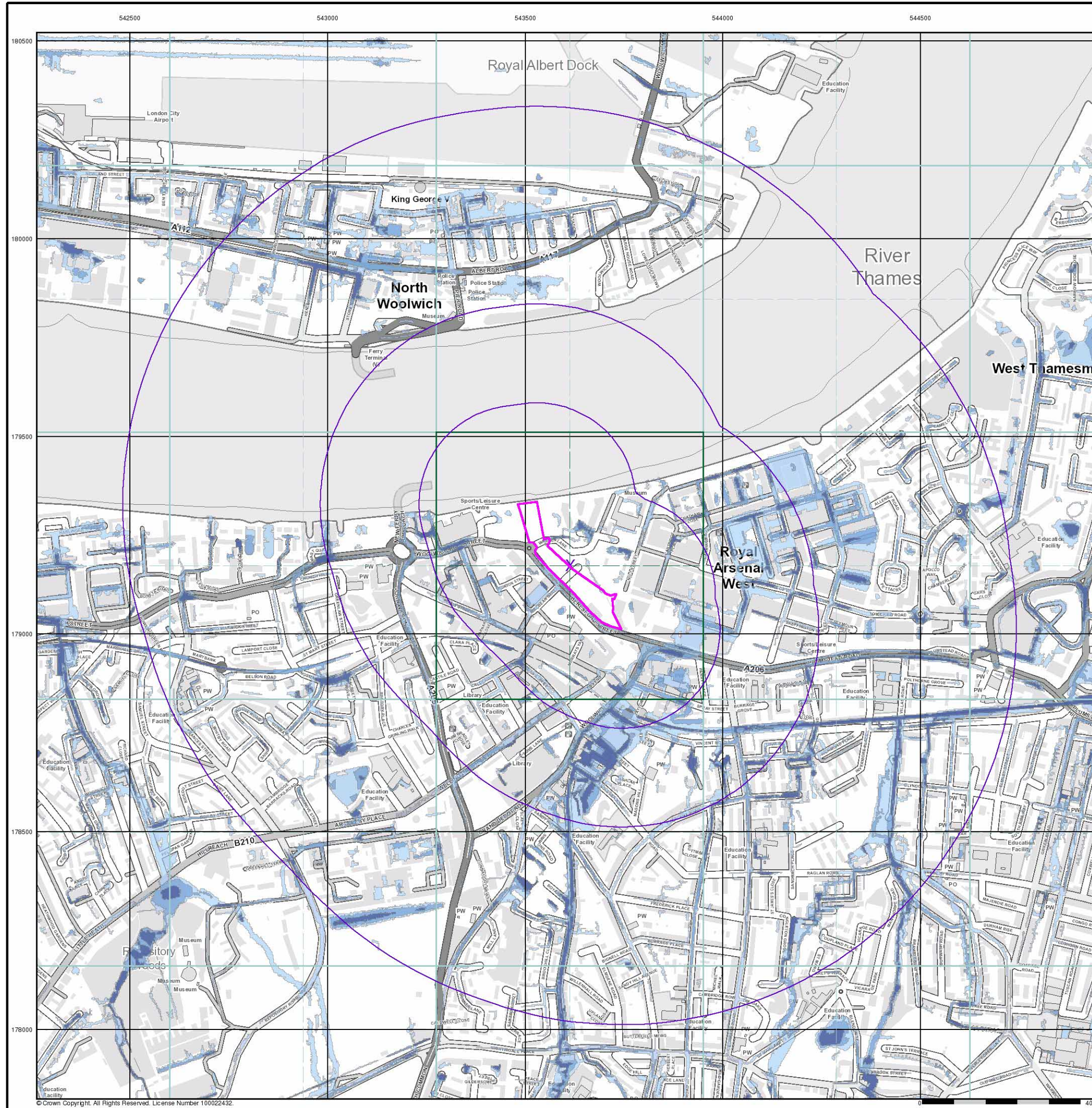
Order Number: 149792684_1_1
 Customer Ref: 1508005.014
 National Grid Reference: 543620, 179170
 Slice: A
 Site Area (Ha): 1.75
 Search Buffer (m): 1000

Site Details

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General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point

Risk of Flooding from Surface Water

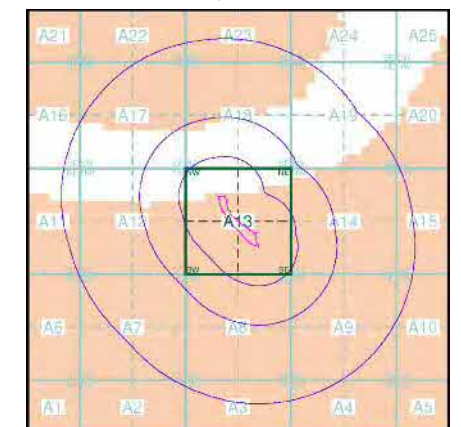
- High - 30 Year Return
- Medium - 100 Year Return
- Low - 1000 Year Return

Suitability

See the suitability map below

- National to county
- County to town
- Town to street
- Street to parcels of land
- Property

EANRW Suitability Map - Slice A



Order Details

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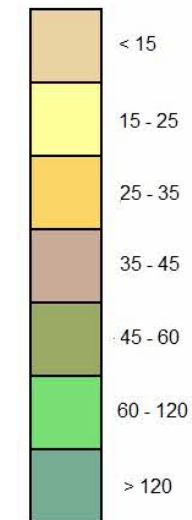
General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point

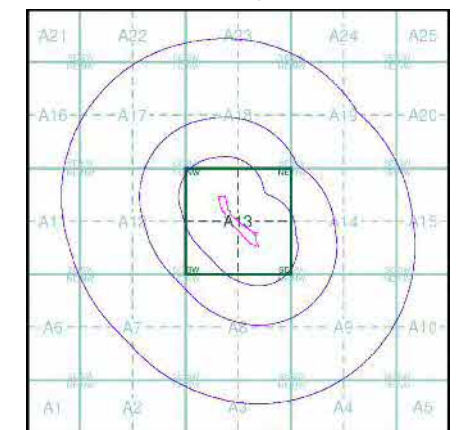
Urban Soil Chemistry Arsenic

- BGS Urban Soil Chemistry Measured Concentration Values (mg/kg)

Arsenic Concentrations mg/kg



Urban Soil Chemistry Arsenic - Slice A



Order Details

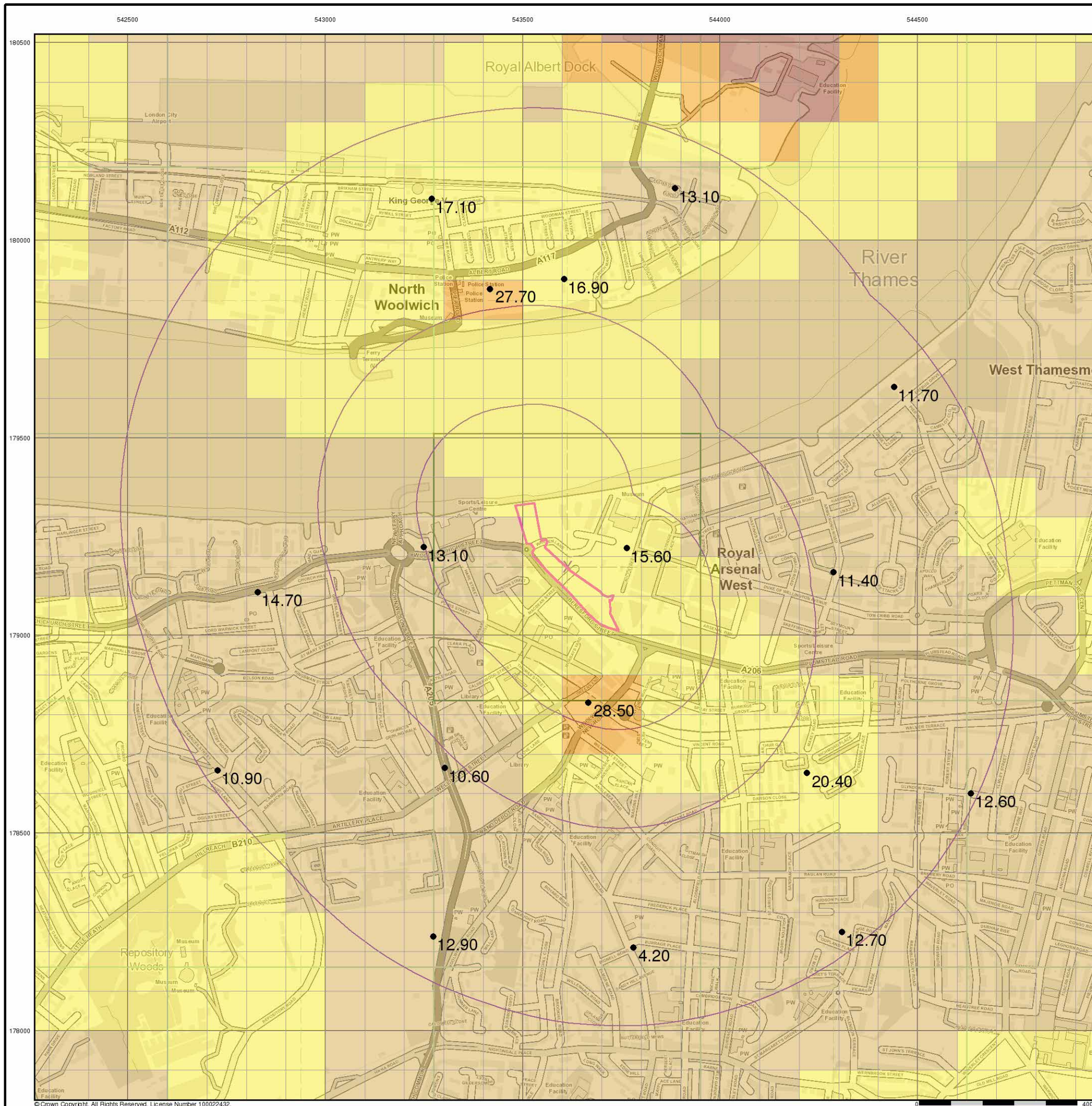
Order Details: 149792684_1_1
 Customer Ref: 1508005.014
 National Grid Reference: 543620, 179170
 Slice: A
 Site Area (Ha): 1.75
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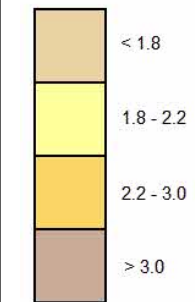
General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point

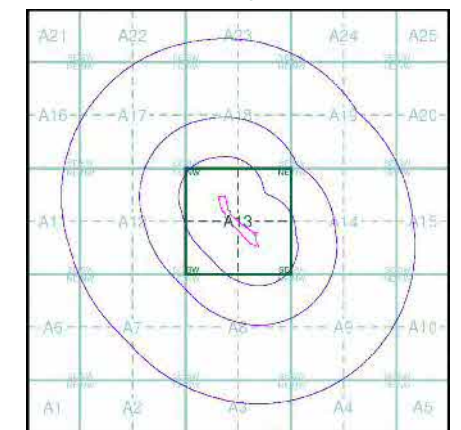
Urban Soil Chemistry Cadmium

BGS Urban Soil Chemistry Measured Concentration Values (mg/kg)

Cadmium Concentrations mg/kg



Urban Soil Chemistry Cadmium - Slice A



Order Details

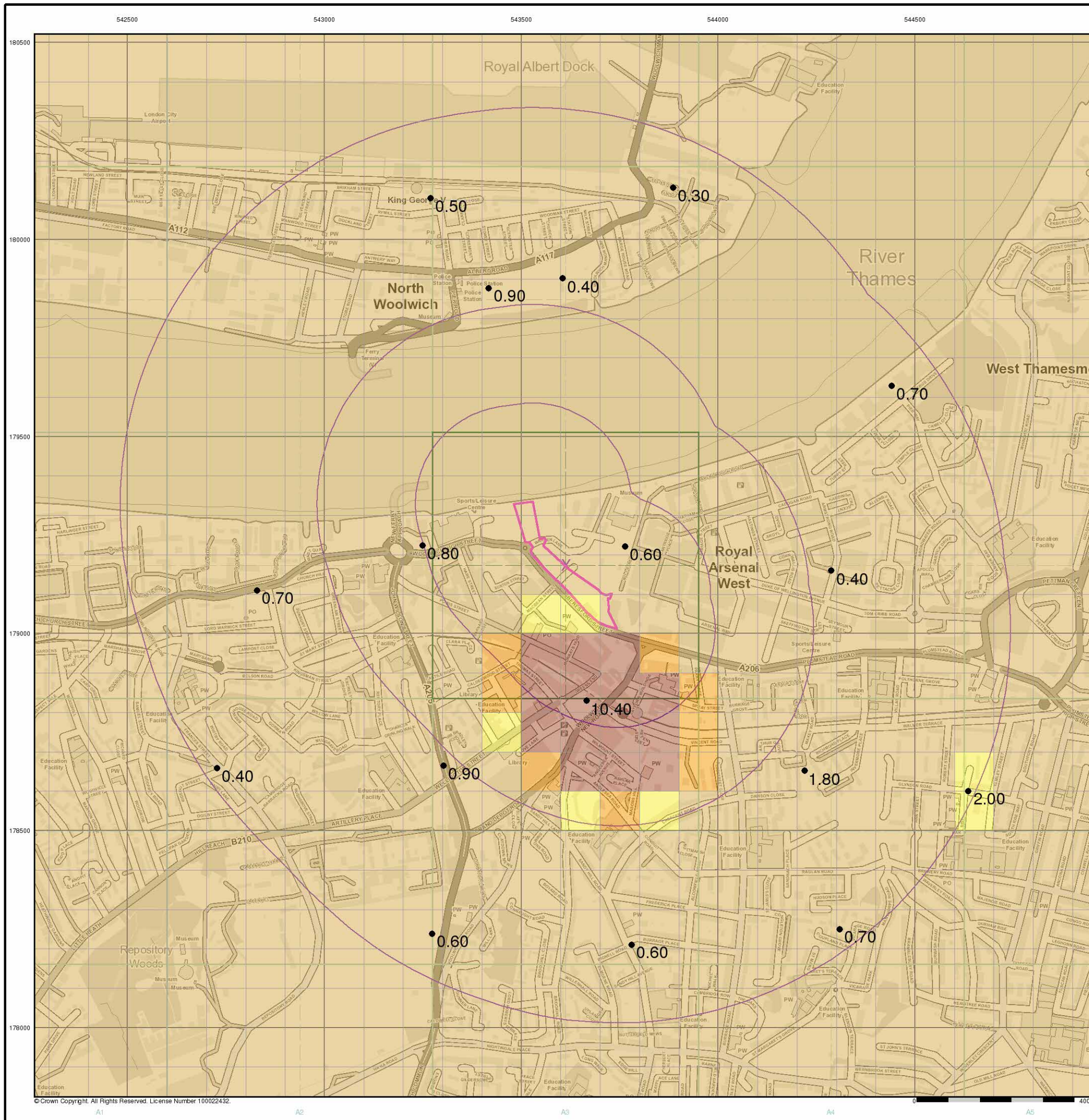
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 National Grid Reference: 543620, 179170
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 Site Area (Ha): 1.75
 Search Buffer (m): 1000

Site Details

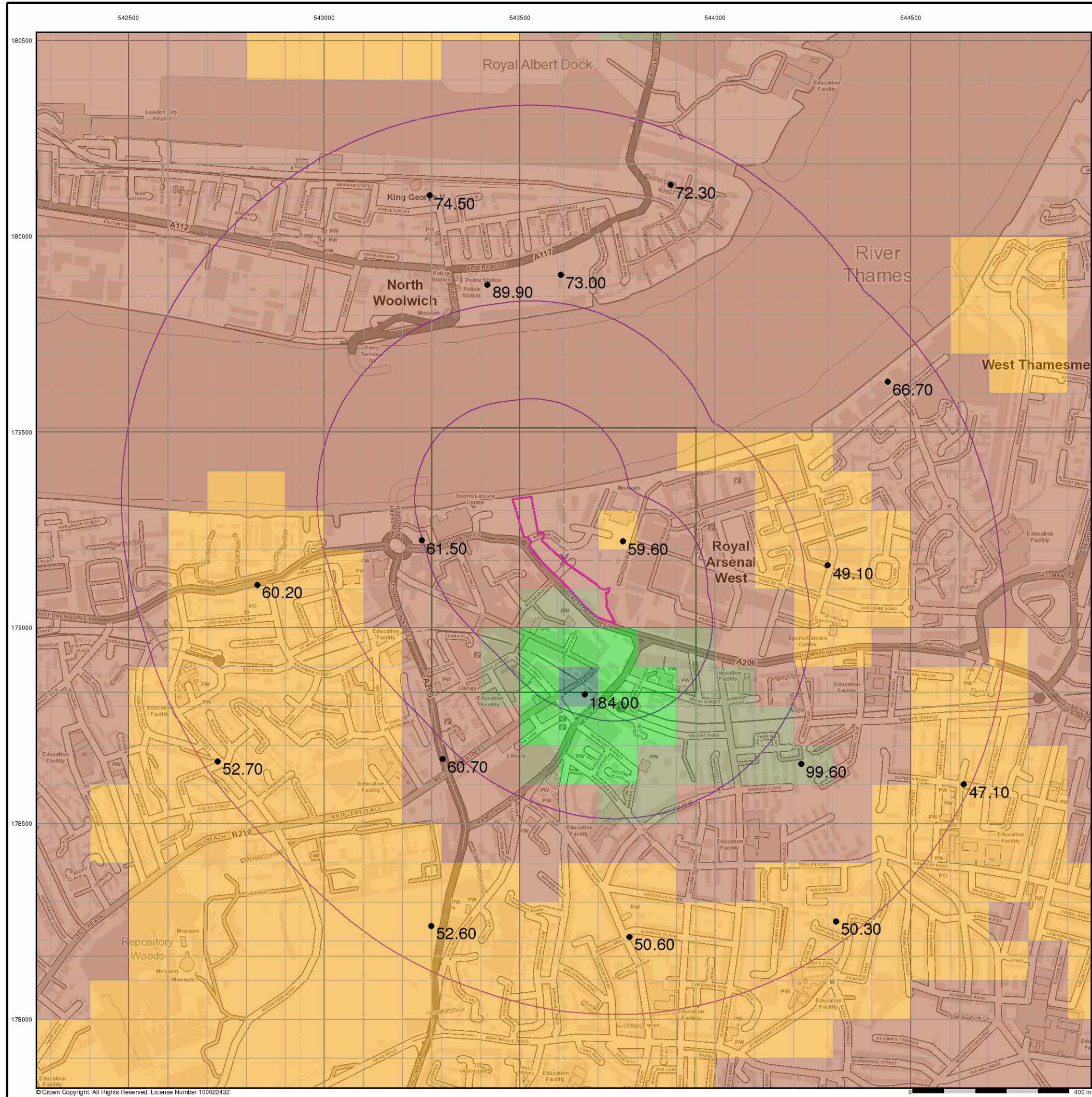
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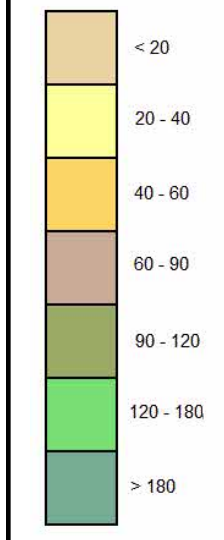
General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point

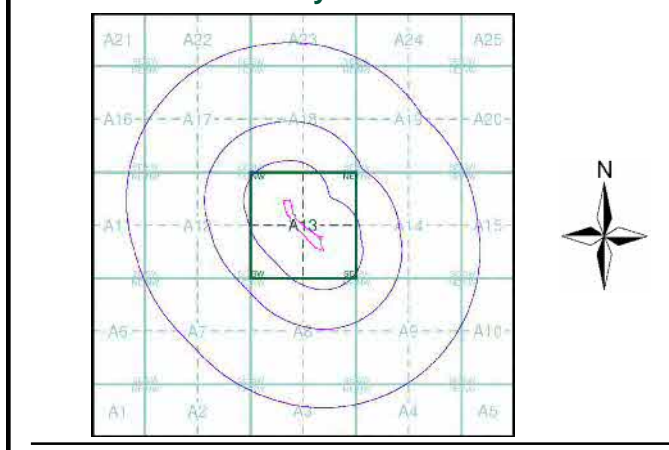
Urban Soil Chemistry Chromium

● BGS Urban Soil Chemistry Measured Concentration Values (mg/kg)

Chromium Concentrations mg/kg



Urban Soil Chemistry Chromium - Slice A



Order Details

Order Details: 149792684_1_1
 Customer Ref: 1508005.014
 National Grid Reference: 543620, 179170
 Slice: A
 Site Area (Ha): 1.75
 Search Buffer (m): 1000

Site Details

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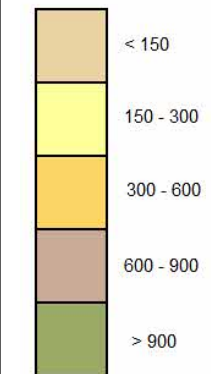
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- Specified Site
- Specified Buffer(s)
- Bearing Reference Point

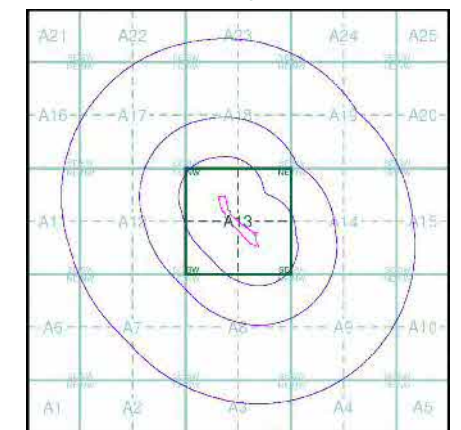
Urban Soil Chemistry Lead

BGS Urban Soil Chemistry Measured Concentration Values (mg/kg)

Lead Concentrations mg/kg



Urban Soil Chemistry Lead - Slice A



Order Details

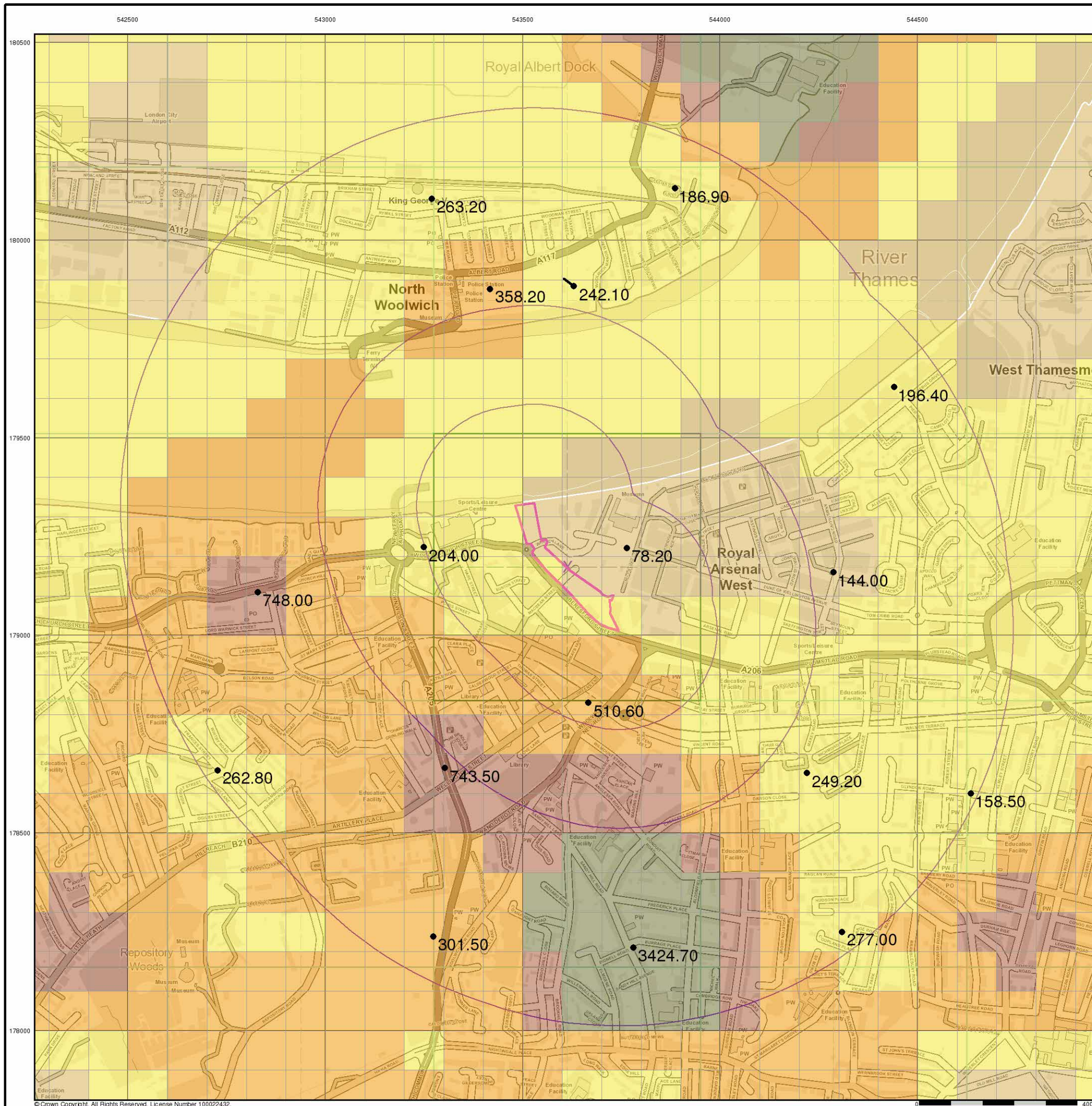
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 Customer Ref: 1508005.014
 National Grid Reference: 543620, 179170
 Slice: A
 Site Area (Ha): 1.75
 Search Buffer (m): 1000

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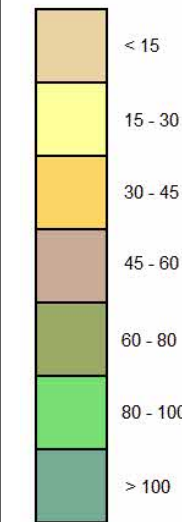
General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point

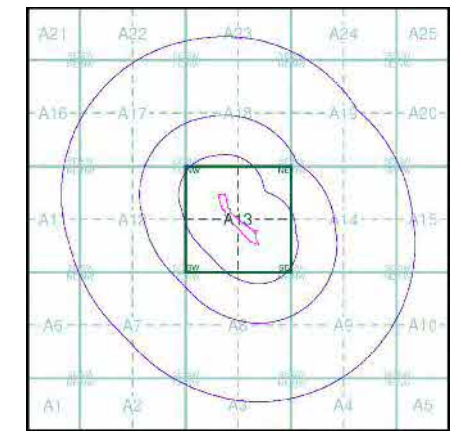
Urban Soil Chemistry Nickel

BGS Urban Soil Chemistry Measured Concentration Values (mg/kg)

Nickel Concentrations mg/kg



Urban Soil Chemistry Nickel - Slice A



Order Details

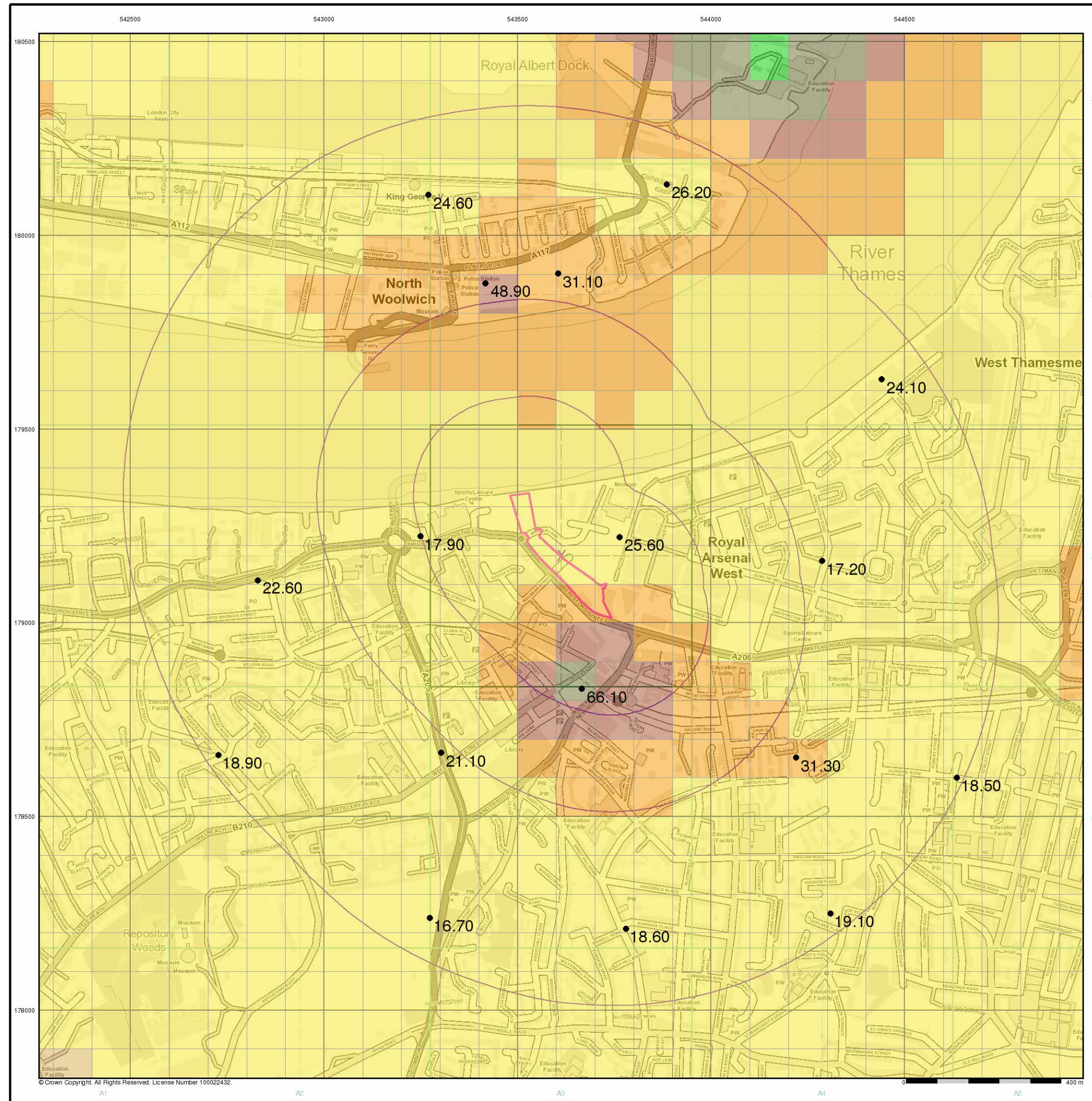
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 Customer Ref: 1508005.014
 National Grid Reference: 543620, 179170
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Site Details

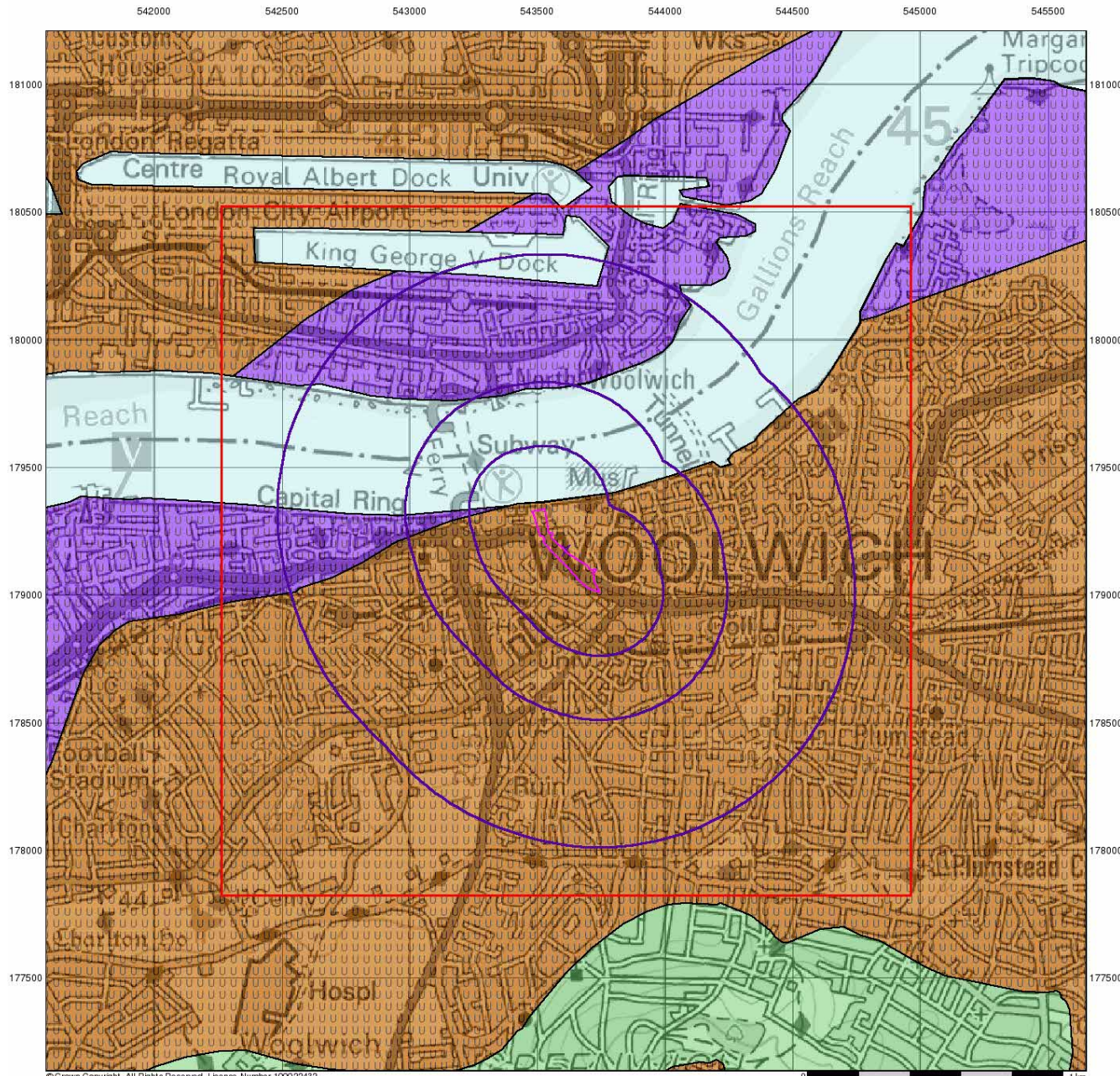
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0 1 km



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Groundwater Vulnerability

General

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

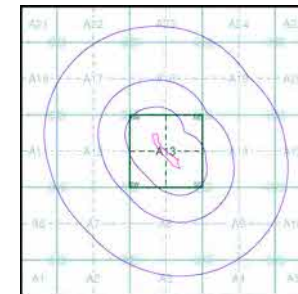
Agency and Hydrological

Geological Classes

- | | | |
|---------------------------------------|--|-----------------------|
| Major Aquifer
(Highly Permeable) | | High (H) 1, 2, 3, U |
| | | Intermediate (I) 1, 2 |
| | | Low |
| Minor Aquifer
(Variably Permeable) | | High (H) 1, 2, 3, U |
| | | Intermediate (I) 1, 2 |
| | | Low |
| Non Aquifer
(Negligibly Permeable) | | |
| Water or Sea | | |
| Drift Deposit | | |

Soil Classes

Site Sensitivity Context Map - Slice A



Order Details

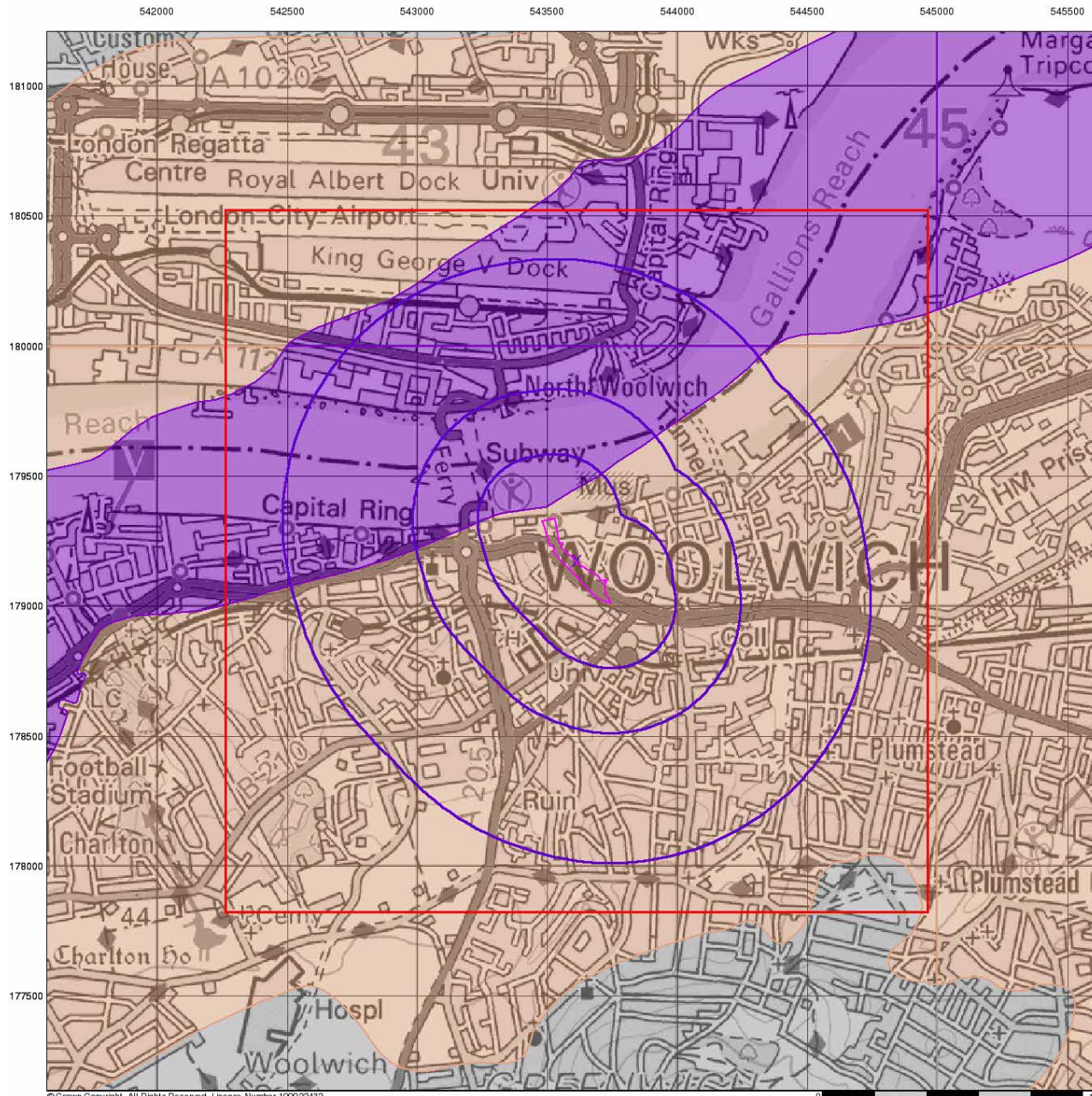
Order Number: 149792684_1_1
 Customer Ref: 1508005.014
 National Grid Reference: 543620, 179170
 Slice: A
 Site Area (Ha): 1.75
 Search Buffer (m): 1000

Site Details

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Bedrock Aquifer Designation

General

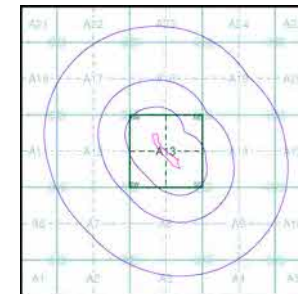
- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice
- Map ID

Agency and Hydrological

Geological Classes

- Principal Aquifer
- Secondary A Aquifer
- Secondary B Aquifer
- Secondary Undifferentiated
- Unproductive Strata
- Unknown
- Unknown (Lakes and Landslip)

Site Sensitivity Context Map - Slice A



Order Details

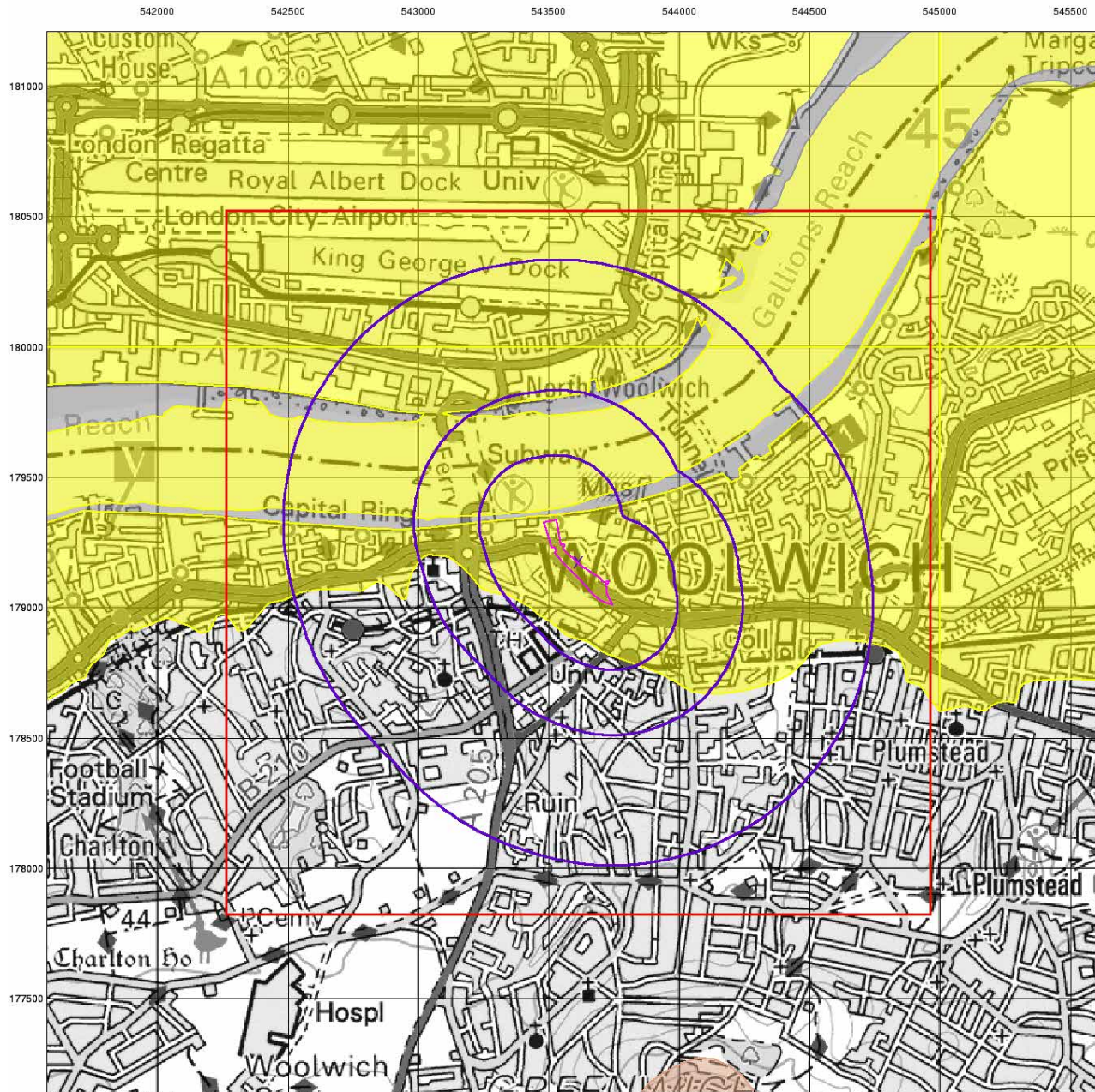
Order Number: 149792684_1_1
 Customer Ref: 1508005.014
 National Grid Reference: 543620, 179170
 Slice: A
 Site Area (Ha): 1.75
 Search Buffer (m): 1000

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Superficial Aquifer Designation

General

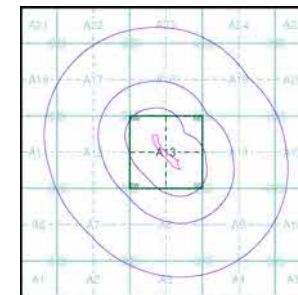
- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice
- Map ID

Agency and Hydrological

Geological Classes

- Principal Aquifer
- Secondary A Aquifer
- Secondary B Aquifer
- Secondary Undifferentiated
- Unproductive Strata
- Unknown
- Unknown (Lakes and Landslip)

Site Sensitivity Context Map - Slice A



Order Details

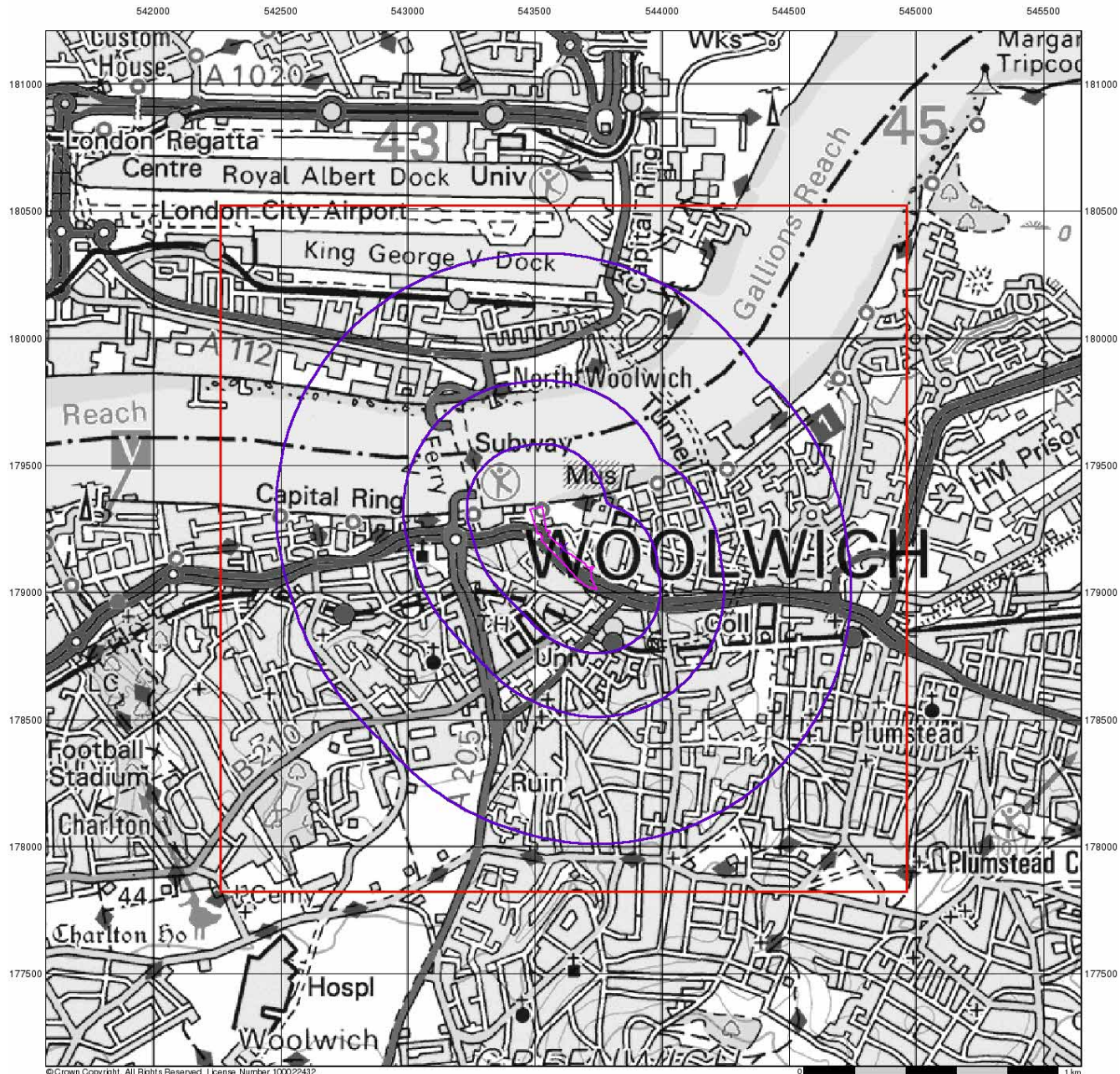
Order Number: 149792684_1_1
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Source Protection Zones

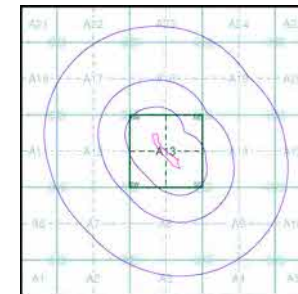
General

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

Agency and Hydrological

- Inner zone (Zone 1)
- Inner zone - subsurface activity only (Zone 1c)
- Outer zone (Zone 2)
- Outer zone - subsurface activity only (Zone 2c)
- Total catchment (Zone 3)
- Total catchment - subsurface activity only (Zone 3c)
- Special interest (Zone 4)
- Source Protection Zone Borehole

Site Sensitivity Context Map - Slice A



Order Details

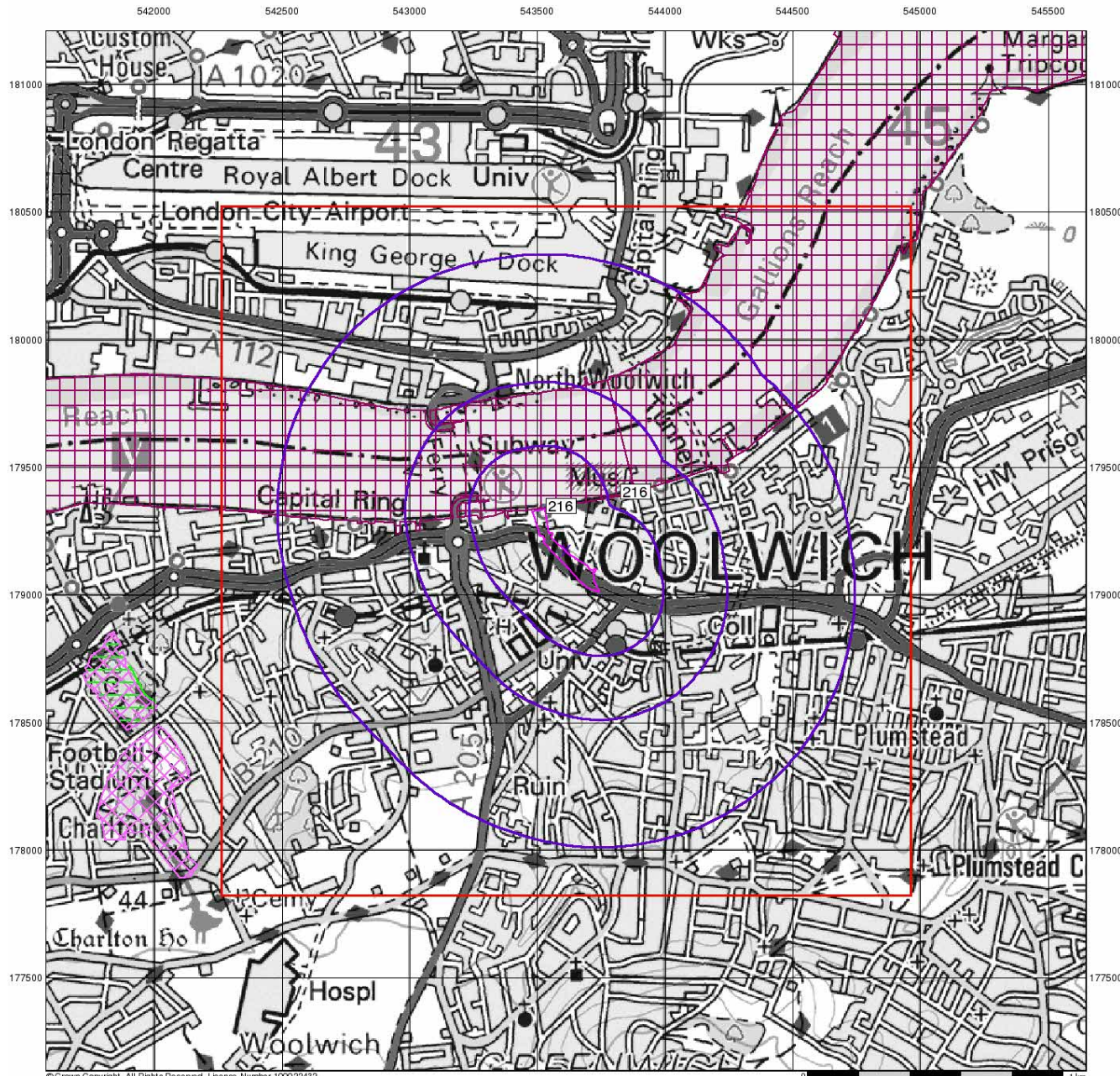
Order Number: 149792684_1_1
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Sensitive Land Uses

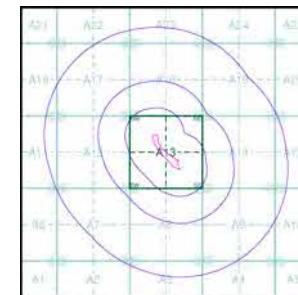
General

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

Sensitive Land Uses

- Ancient Woodland
- Area of Adopted Green Belt
- Area of Unadopted Green Belt
- Area of Outstanding Natural Beauty
- Environmentally Sensitive Area
- Forest Park
- Local Nature Reserve
- Marine Nature Reserve
- National Nature Reserve
- National Park
- Nitrate Sensitive Area
- Nitrate Vulnerable Zone
- Ramsar Site
- Site of Special Scientific Interest
- Special Area of Conservation
- Special Protection Area
- World Heritage Sites

Site Sensitivity Context Map - Slice A



Order Details

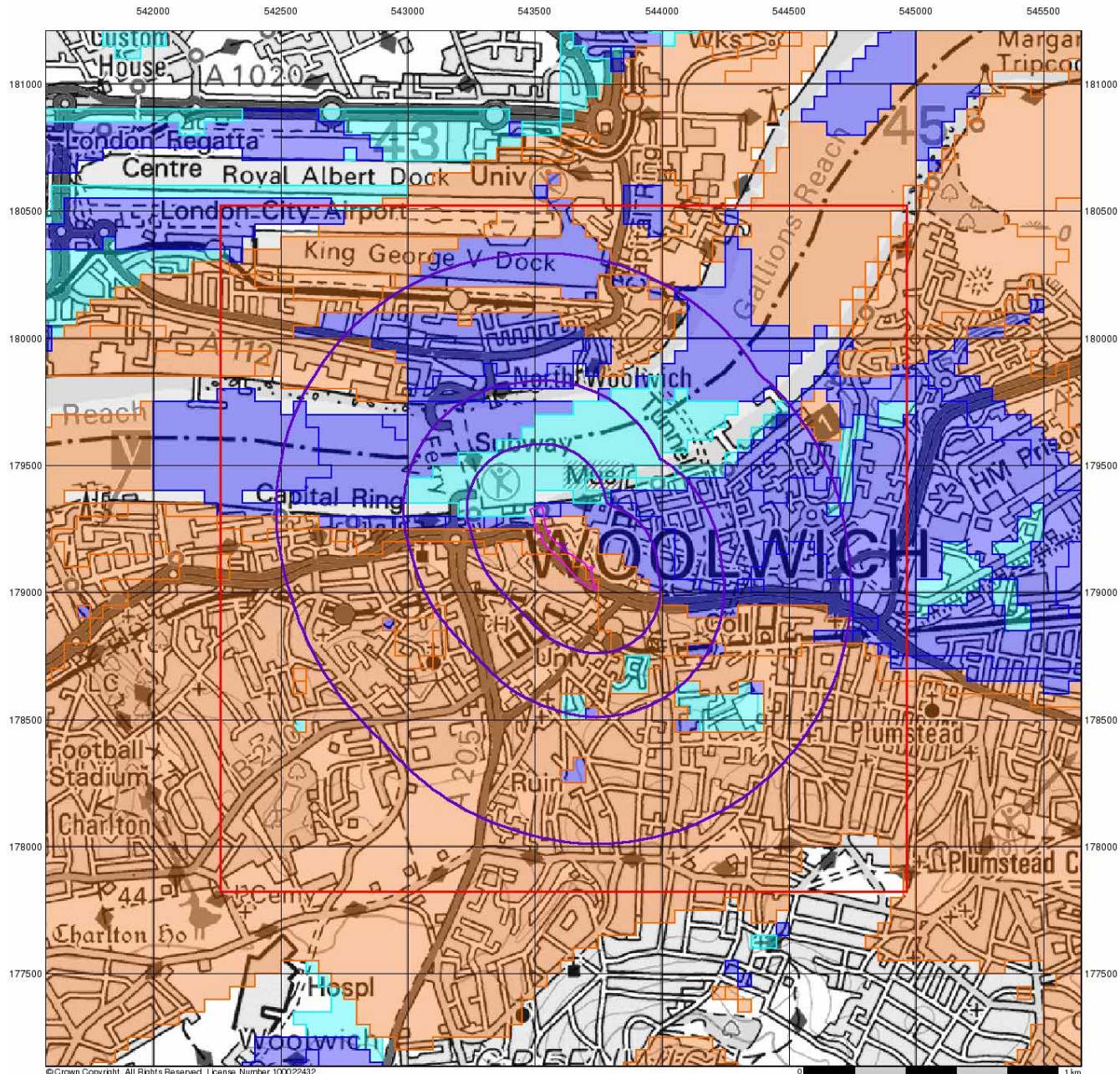
Order Number: 149792684_1_1
 Customer Ref: 1508005.014
 National Grid Reference: 543620, 179170
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 Site Area (Ha): 1.75
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Site Details

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BGS Flood GFS Data

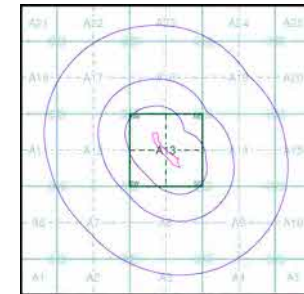
General

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

Agency and Hydrological (Flood)

- Limited Potential for Groundwater Flooding to Occur
- Potential for Groundwater Flooding of Property Situated Below Ground Level
- Potential for Groundwater Flooding to Occur at Surface

Site Sensitivity Context Map - Slice A



Order Details

Order Number: 149792684_1_1
 Customer Ref: 1508005.014
 National Grid Reference: 543620, 179170
 Slice: A
 Site Area (Ha): 1.75
 Search Buffer (m): 1000

Site Details

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

APPENDIX C

Regulatory Correspondence

Claire Hooley

From: [REDACTED]
Sent: 13 February 2018 14:04
To: [REDACTED]
Subject: FW: Environmental Review of Site - Linear Park within the Royal Arsenal Riverside development - Near Warren Lane - WK/201722533.
Attachments: Linear Park - Site Location Plan.docx
Follow Up Flag: Follow up
Flag Status: Flagged

Hi [REDACTED]

Thank you for your request for Environmental Information concerning the land depicted on the attached site plan. Please note this Department does not hold comprehensive land data sets – so cannot provide definitive assurances, as to contaminative status for parts of the Borough; which site specific reports could produce; and can only provide indicative information based on currently available data held.

The areas identified on your map basically relate to the Warren Lane Area, currently being developed by Berkley Homes.

In relation to the queries you raise please see the following response in blue:

1. Pre-license landfill sites within 500m of the subject site, including:
 - license holder
 - location of landfill/grid reference
 - nature of fill material
 - dates of operation
 - details of any leachate/landfill gas problems

I am not aware of any other former landfills located near these sites, however the Environment Agency may hold records: <http://maps.environment-agency.gov.uk/wiyby>

2. Pollution incidents/known areas of contaminated land within 500m of the subject site, including:
 - location/grid reference
 - previous uses
 - nature/source of pollution
 - any further details

I am not aware of any pollution incidents at this site, but would advise the Environment Agency are the best source for obtaining this type of information.

3. Part B APC authorisations within 500m of the subject site, including:

- authorisation holder
- location/grid reference
- nature of authorisation

Claire I will need to get back to you on this point.

4. Private water supplies within 500m of the subject site, including:

- location/grid reference
- details of source and abstraction purpose

I am not aware of records for private water supply at the subject site.

5. Storage of Petroleum Hydrocarbons.

There are no records of Petroleum Hydrocarbons stored on the subject site. These records may be held by the Petroleum Office London Fire Brigade - London Fire Brigade, the Petroleum Enforcing Authority (PEA) for London.

6. Records of any previous Site Investigations on or in close proximity to the site

In relation to your search site, historical maps to the present day shows what appears to be land linked to various industrial/manufacturing activity; primarily part of the site is located on land formerly occupied by the Royal Arsenal which was used for munitions manufacturing and testing; along with associated industries. Some areas of the site were contaminated by this activity. The site historically has also had a mixture of buildings and uses: residential buildings; rope works, warehouses, factories, works and garages.

Currently the whole area is being developed by Berkley Homes – I am aware that there are some reports on the Royal Borough of Greenwich Planning Portal that may be useful – please note however many of the reports are subject to Commercial Copyright, but can be viewed on the Royal Borough of Greenwich Planning Portal: <https://planning.royalgreenwich.gov.uk/online-applications/> In this case please enter Planning Application Number:

14/2783/SD | Submission of details pursuant to condition 7 (Contamination) of planning permission dated 31st July 2014 (Ref: 14/1223/F) for Change of use of existing car park and site compound to landscaped open space, including the provision of 10 car parking spaces and amended pedestrian and vehicle access, for a temporary period of five (5) years. | LAND OFF WARREN LANE, THE WARREN/ROYAL ARSENAL, WARREN LANE, WOOLWICH, SE18

https://planning.royalgreenwich.gov.uk/online-applications/applicationDetails.do?activeTab=documents&keyVal=_GRNW_DCAPR_78999

This includes a Contamination Assessment Report, from Scott Wilson 2008.

And for adjacent area – see also:

15/3580/SD | Submission of details pursuant to condition 18 (Verification Report) and condition 22 (Site Investigation) of Planning Permission dated 3rd April 2013 (Ref: 12/1168/F) for the construction of 92 residential units. | BLOCK C, PHASE 5, THE WARREN/ROYAL ARSENAL, NO 1 STREET, WARREN LANE GATE, WOOLWICH, SE18

<https://planning.royalgreenwich.gov.uk/online-applications/applicationDetails.do?activeTab=documents&keyVal= GRNW DCAPR 83612>

With this legacy, contaminants of concern (CoC) may have included metal hazardous substances (arsenic, cadmium, copper, lead, nickel, zinc) and hydrocarbons (Polyaromatic Hydrocarbon, PAH species) and asbestos, in the Made Ground overlying the general area; munitions and compounds associated with explosives and UXO may also be present.

7. Records of any unexploded ordnance in the site area.

I am not aware that there are specific records of any unexploded ordnance (UXO) in the subject site area; but would add - in general the Woolwich Arsenal area was heavily bombed during the Second World War.

8. Any known problems with ground gas in the site area

I have not been able to locate specific records attaining to gas status in this area. This would require verification by site specific intrusive investigation to identify any gas present and risks. Potentially methane and carbon dioxide may be generated from alluvial deposits; and any hydrocarbon-impacted made ground that may be present beneath the site.

9. Any potential issues regarding naturally elevated contaminant concentrations

See Point 10.

10. Any other information held by your authority which may have an impact upon the contaminative status of the site

There is no other information held I am currently aware of, other than that highlighted above – as to the last point - a site specific intrusive investigation, would of course provide a definitive attaining to contaminative status of the site.

In relation to contamination in the surrounding area - current proximal information is as above.

With regards to the site I can advise we have not identified it as contaminated land under Part 2A Environmental Protection Act 1990; however as we are in the process of prioritising sites I cannot confirm whether action will be taken in the future; however we will not be taking action on this site, at this point in time.

Regards

[Redacted signature]

Lead Officer – Environmental Protection (Contaminated Land)
Directorate of Housing & Safer Communities
Royal Borough of Greenwich

[Redacted contact information]

4th floor The Woolwich Centre, 35 Wellington Street, London SE18 6HQ
www.royalgreenwich.gov.uk

From: [REDACTED]
Sent: 24 January 2018 10:14
To: [REDACTED]
Subject: FW: Environmental Review of Site - Linear Park within the Royal Arsenal Riverside development - Near Warren Lane

Hi [REDACTED]

I have created a worksheet as requested and allocated it to you, ref number is WK/201722533.

From: [REDACTED]
Sent: 18 January 2018 17:27
To: [REDACTED]
Subject: FW: Environmental Review of Site - Linear Park within the Royal Arsenal Riverside development - Near Warren Lane

Hi,

Can a worksheet please be set up and assigned to me EP6 – C43.

Many Thanks

[REDACTED]

Lead Officer– Environmental Protection (Contaminated Land)
Directorate of Housing & Safer Communities
Royal Borough of Greenwich

[REDACTED]

 [REDACTED]
 4th floor The Woolwich Centre, 35 Wellington Street, London SE18 6HQ
 www.royalgreenwich.gov.uk

From: [REDACTED]
Sent: 10 January 2018 13:31
To: [REDACTED]
Subject: RE: Environmental Review of Site in SE28 0AE - Junction of Nathan Way and Griffin Manor Way - WK201720484

Thanks [REDACTED]

The site comprises the proposed Linear Park within the Royal Arsenal Riverside development. I have attached a site location plan for your reference and will include with the cheque also.

Please do not hesitate to contact me should you require any further information

Kind regards

[REDACTED]
Senior Geoenvironmental Consultant

DDI: [REDACTED]
Mobile: [REDACTED]
e-mail: [REDACTED]

Tweedie Evans Consulting Limited

The Old Chapel
35a Southover
Wells
Somerset
BA5 1UH

Tel: [REDACTED]
Fax: [REDACTED]
www.tecon.co.uk

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Registered Number 5186011 England

From: [REDACTED]
Sent: 10 January 2018 12:53
To: [REDACTED]
Subject: RE: Environmental Review of Site in SE28 OAE - Junction of Nathan Way and Griffin Manor Way - WK201720484

Hi [REDACTED]

Yes, please supply a site map and a cheque.

Must also advise we do not hold comprehensive data sets – so some searches we can provide a bit of information, others not much.

Hope this ok.

Kind Regards

[REDACTED]

Lead Officer– Environmental Protection (Contaminated Land)
Directorate of Housing & Safer Communities
Royal Borough of Greenwich



4th floor The Woolwich Centre, 35 Wellington Street, London SE18 6HQ



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From: [REDACTED]
Sent: 10 January 2018 12:41
To: [REDACTED]
Subject: RE: Environmental Review of Site in SE28 OAE - Junction of Nathan Way and Griffin Manor Way - WK201720484

Thanks [REDACTED]

I will send the cheque now.

I have another site in Woolwich we require a search for, would I be able to send details to you directly and arrange for payment at the same time?

Kind regards

[REDACTED]
Senior Geoenvironmental Consultant

DDI: [REDACTED]

Mobile: [REDACTED]

e-mail: [REDACTED]

Tweedie Evans Consulting Limited

The Old Chapel
35a Southover
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From: [REDACTED]
Sent: 10 January 2018 12:12

To: [REDACTED]

Subject: FW: Environmental Review of Site in SE28 OAE - Junction of Nathan Way and Griffin Manor Way - WK201720484

Hi [REDACTED]

I'm returning from leave and picking up on your request – to help expedite matters can you arrange for payment of £91.60 by cheque to cover the search costs – on receipt search results will be forwarded:

Thank you for your email enquiry today, 02 January 2018 09:06.

Details of the RB Greenwich contaminated land search service can be found on the Council website, you may follow the link below:

http://www.royalgreenwich.gov.uk/info/418/pollution_control_-_contaminated_land/594/information_on_land_contamination

The cost of a contaminated land search is £80 including VAT. **Please can you send a cheque with your request to:**

Directorate of Housing and Safer Communities,
Royal Borough of Greenwich,
Environmental Protection,
4th Floor, The Woolwich Centre,
35 Wellington Street,
London SE18 6HQ.

Regards

[REDACTED]

Lead Officer– Environmental Protection (Contaminated Land)
Directorate of Housing & Safer Communities
Royal Borough of Greenwich

☎ 020 8921 3695
✉ 4th floor The Woolwich Centre, 35 Wellington Street, London SE18 6HQ
🌐 www.royalgreenwich.gov.uk



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From: [REDACTED]

Sent: 08 January 2018 09:55

To: [REDACTED]




Subject: Environmental Review of Site in SE28 OAE - Junction of Nathan Way and Griffin Manor Way

Tony,

Can you respond to this enquiry please.

Regards

[REDACTED]
Team Manager – Environmental Protection
Environmental Health (Pollution and Residential) Services
Directorate of Housing and Safer Communities
Royal Borough of Greenwich

 [REDACTED]
 4th Floor, The Woolwich Centre, 35 Wellington Street, London SE18 6HQ
 www.royalgreenwich.gov.uk

From: [REDACTED]
Sent: 02 January 2018 09:06
To: Environmental Protection
Subject: FW: Environmental Review of Site in SE28 0AE - junction of Nathan Way and Griffin Manor Way

Good morning,

Can I please proceed with the below request for a site in Woolwich at a charge of £91.60. Please let me know how to arrange for payment.

As requested, I have reattached the site plan.

Please do not hesitate to contact me should you have any queries.

Kind regards

[REDACTED]
Senior Geoenvironmental Consultant

DDI: [REDACTED]
Mobile: [REDACTED]
e-mail: [REDACTED]

Tweedie Evans Consulting Limited

The Old Chapel
35a Southover
Wells
Somerset
BA5 1UH

Tel: [REDACTED]
Fax: [REDACTED]
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Registered Number 5186011 England

From: [REDACTED]
Sent: 28 December 2017 15:09
To: [REDACTED]
Cc: [REDACTED]

Subject: Environmental Review of Site in SE28 OAE - junction of Nathan Way and Griffin Manor Way

Dear [REDACTED]

I have recently received outline details of your request for a contaminated land search, and additional environmental information (as detailed below).

This service is available, as advertised on the RBG website via the link below.

http://www.royalgreenwich.gov.uk/info/200075/pollution/594/land_contamination

The cost of the service is £91.60 including VAT.

If you wish to proceed please contact Environmental Protection – T. 020 8921 8167

E. environmental.protection@royalgreenwich.gov.uk

Please can you also re-send the site location plan with your request.

Thank you for your assistance.

Regards

[REDACTED]
Team Manager – Environmental Protection
Environmental Health (Pollution and Residential) Services
Directorate of Housing and Safer Communities
Royal Borough of Greenwich

[REDACTED]
✉ 4th Floor, The Woolwich Centre, 35 Wellington Street, London SE18 6HQ
🌐 www.royalgreenwich.gov.uk

I am writing to ask if you could conduct a search for the following details in order for us to complete an environmental review of a site in Plumstead. The site is located at the junction of Nathan Way and Griffin Manor Way and covers an area of approximately 6.5 hectares, with the centre of the site situated at approximate National Grid Reference 545084, 179051. The nearest postcode is SE28 OAE. In addition, I have attached a site location plan for your reference.

1. Pre-license landfill sites within 500m of the subject site, including:
 - license holder
 - location of landfill/grid reference
 - nature of fill material
 - dates of operation
 - details of any leachate/landfill gas problems

2. Pollution incidents/known areas of contaminated land within 500m of the subject site, including:
 - location/grid reference

- previous uses
 - nature/source of pollution
 - any further details
3. Part B APC authorisations within 500m of the subject site, including:
 - authorisation holder
 - location/grid reference
 - nature of authorisation
 4. Private water supplies within 500m of the subject site, including:
 - location/grid reference
 - details of source and abstraction purpose
 5. Storage of Petroleum Hydrocarbons.
 6. Records of any previous Site Investigations on or in close proximity to the site
 7. Records of any unexploded ordnance in the site area
 8. Any known problems with ground gas in the site area
 9. Any potential issues regarding naturally elevated contaminant concentrations
 10. Any other information held by your authority which may have an impact upon the contaminative status of the site

It would be extremely helpful if you could forward us these details at your earliest convenience, I appreciate there may be a charge associated with this so please let me know costs and I will arrange payment as soon as possible.

If you require any further information please do not hesitate to contact me.

Kind regards

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[REDACTED]

From: [REDACTED]
Sent: Thursday, January 7, 2016 4:39 PM
To: [REDACTED]
Subject: RE: Information request

Afternoon [REDACTED]

Peter here at Greenwich Building Control, thanks for the below enquiry.

The Royal Arsenal site is fascinating, as it's an old Ministry of Defence plot, so not too much information on what exactly went on in each area.

You can view planning documents on Greenwich Councils website, these may help.

The plot adjacent to yours was delayed for some time due to finds in the ground- skeletons, coins, layers of arsenic, foundations of old buildings, cobbled streets, all sorts really.

Good luck,

[REDACTED]

Area Operational Manager
Building Control, Community Safety & Environment
Royal Borough of Greenwich

☎ 020 8921 6091
✉ 4th Floor, The Woolwich Centre, 35 Wellington Street, London SE18 6HQ
✉ peter.connell@royalgreenwich.gov.uk

Sent: 07 January 2016 16:08
[REDACTED]
Subject: FW: Information request

[REDACTED]

Can you help here?

[REDACTED]

From: [REDACTED]
Sent: 07 January 2016 15:46
To: Building Control
Subject: Information request

RE: ROYAL ARSENAL RIVERSIDE, WOOLWICH – PHASE 8

To whom it may concern,

I am writing to ask if you could conduct a search for the following information in order for us to complete a geotechnical assessment of the above-mentioned site. The site is part of the Royal Arsenal Riverside development with this phase situated within the area of the former skate park located off

Warren Lane. The centre of the site is situated at approximate National Grid Reference 543571, 179287. I have attached a site plan for your reference.

- Records of subsidence/instability in the area;
- Details of foundation type in the area;
- Anticipated ground conditions in the area;
- Details of any previous ground investigations undertaken at the site;
- Any known watercourses or culverts on the vicinity of the site; and
- The potential for unexploded ordnance in the area.

It would be extremely helpful if you could forward us these details at your earliest convenience.

If you require any further information please do not hesitate to contact me.

Kind regards

[REDACTED]
Geoenvironmental Consultant

DDI: [REDACTED]

Mobile: [REDACTED]

e-mail: [REDACTED]

Tweedie Evans Consulting Limited

The Old Chapel
35a Southover
Wells
Somerset
BA5 1UH

Tel: [REDACTED]

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APPENDIX D
Risk Evaluation

Risk Evaluation

The qualitative assessment methodology presented in Ciria publication C552 (2001) titled 'Contaminated Land Risk Assessment: A Guide to Good Practice' has been used by TEC for the basis of evaluating potential risk.

The method requires an assessment of the:

- magnitude of the probability or likelihood of the risk occurring (Table 1); and
- magnitude of the potential consequence or severity of the risk occurring (Table 2)

Table 1. Classification of Probability

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

Table 2. Classification of Consequence

Classification	Definition	Examples
Severe	Short-term (acute) risk to human health likely to result in "significant harm" as defined by the Environment Protection Act 1990, Part IIA. Short-term risk of pollution of sensitive water resource. (Note: Water Resources Act contains no scope for considering significance of pollution). Catastrophic damage to buildings/property. A short-term risk to a particular ecosystem, or organisation forming part of such ecosystem (note: the definitions of ecological systems within the draft circular on Contaminated Land, DETR, 2000).	High concentrations of cyanide on the surface of an informal recreation area. Major spillage of contaminants from site into controlled water. Explosion, causing building collapse (can also equate to a short-term human health risk if buildings are occupied).
Medium	Chronic damage to human health ("significant harm" as defined in DETR, 2000). Pollution of sensitive water resources. (Note: Water Resources Act contains no scope for considering significance of pollution). A significant change in a particular ecosystem, or organism forming part of such ecosystem, (note: the definitions of ecological systems within draft circular on Contaminated Land, DETR, 2000).	Concentration of a contaminant from site exceeding the generic or site-specific assessment criteria. Leaching of contaminants from a site to a major or minor aquifer. Death of a species within a designated nature reserve.
Mild	Pollution of non-sensitive water resources. Significant damage to crops, buildings, structures and services ("significant harm" as defined in the draft circular on Contaminated Land, DETR, 2000). Damage to sensitive buildings/structures/services or the environment.	Pollution of non-classified groundwater. Damage to building rendering it unsafe to occupy (for example foundation damage resulting in instability).
Minor	Harm, although not necessarily significant harm, which may result in a financial loss, or expenditure to resolve. Non-permanent health effects to human health (easily prevented by means such as personal protective clothing etc), easily repairable effects of damage to buildings, structures and services.	The presence of contaminants at such concentrations that protective equipment is required during site works. The loss of plants in a landscaping scheme. Discolouration of concrete.

The combination of the two factors is determined using Table 3 and the resulting level of risk is described in Table 4. The evaluation can be applied to each of the scenarios identified in the risk model and the overall risk assessed.

Table 3. Combination of Consequence with Probability


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

Table 4. Description of risks and likely action required


Very High Risk	There is a high probability that severe harm could arise to a designated receptor from an identified hazard, or there is evidence that severe harm to a designated receptor is currently happening. This risk, if realised, is likely to result in a substantial liability. Urgent investigation (if not undertaken already) and remediation are likely to be required.
High Risk	Harm is likely to arise to a designated receptor from an identified hazard. Realisation of the risk is likely to present a substantial liability. Urgent investigation (if not undertaken already) is required and remedial works may be necessary in the short-term and are likely over the longer-term.
Moderate Risk	It is possible that harm could arise to a designated receptor from an identified hazard. However, it is either relatively unlikely that any such harm would be severe, or if any harm were to occur it is more likely that the harm would be relatively mild. Investigation (if not already undertaken) is normally required to clarify the risk and to determine the potential liability. Some remedial works may be required in the long-term.
Low Risk	It is possible that harm could arise to a designated receptor from an identified hazard, but it is likely that this harm, if realised, would at worst normally be mild.
Very Low Risk	There is a low possibility that harm could arise to a receptor. In the event of such harm being realised it is not likely to be severe.


Using the risk model the pollutant linkages are identified and a preliminary estimate of risk undertaken. If there is no pollutant linkage identified, then there is no risk. If the estimate of risk for all the linkages and exposure scenarios is very low at this stage then it is likely that no further assessment will be required.


APPENDIX E
Exploratory Hole Logs


TRIAL PIT RECORD		 TWEEDIE EVANS CONSULTING www.tecon.co.uk info@tecon.co.uk
Project Title: Royal Arsenal Riverside - Linear Park	Trial Pit: TP01	
Project No: 1508005.005	Dates: 21 March 2016	
Client: Berkeley Homes (East Thames) Limited		


Description	Legend Side B	Sample Details	Remarks
0.00	Ground Surface	0.00	
0.40	MADE GROUND Dark brown locally clayey gravelly sandy silt. Gravel of chert, slate, sandstone, concrete, red brick and black carbonaceous material. Occasional rootlets.	A	
0.65	MADE GROUND Light brown locally mottled grey and orange gravelly sandy clay. Gravel of red brick, chert and black carbonaceous material. Occasional cobble of red brick.		
1.20	MADE GROUND Light brown slightly silty gravelly sand. Gravel of red brick, concrete, chert, black carbonaceous material and rare plastic. Occasional cobble of red brick and concrete.	1.00	
Trial Pit Terminated		2.00	
		3.00	
		4.00	

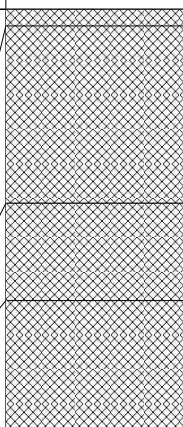
Excavation Details:	Dimensions:	Notes and Remarks:	
Date excavated: 21 March 2016	B: 1.5m  A: 0.35m	Terminated at 1.2mbgl due to extent of machine.	
Date backfilled: 21 March 2016		Water observations: No groundwater was encountered.	
Plant: 3t Excavator		Logged by: CH	Checked by: ET
Shoring: NA		Approved by: RE	
Stability: Stable			


TRIAL PIT RECORD		 www.tecon.co.uk info@tecon.co.uk
Project Title: Royal Arsenal Riverside - Linear Park	Trial Pit: TP02	
Project No: 1508005.005	Dates: 21 March 2016	
Client: Berkeley Homes (East Thames) Limited		


Description	Legend Side B	Sample Details	Remarks
0.00 Ground Surface			
0.40 MADE GROUND Dark brown locally clayey gravelly sandy silt. Gravel of chert, slate, sandstone, concrete, red brick, black carbonaceous material and rare plastic. Occasional rootlets.		A	
0.70 MADE GROUND Light brown to orangish brown mottled grey slightly gravelly sandy clay. Gravel of chert, red brick and black carbonaceous material.			
1.10 MADE GROUND Greyish brown to light brown slightly silty gravelly sand. Gravel of chert, red brick and black carbonaceous material. ...Pockets of bluish grey sandy silty observed throughout.		A	
Trial Pit Terminated			

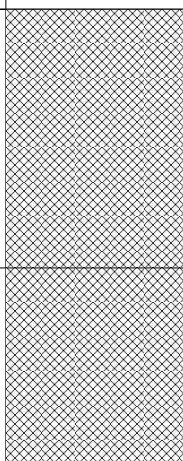
Excavation Details:	Dimensions:	Notes and Remarks:	
Date excavated: 21 March 2016	B: 1.4m  A: 0.35m	Terminated at 1.1m bgl due to extent of machine.	
Date backfilled: 21 March 2016		Water observations: No groundwater was encountered.	
Plant: 3t Excavator		Logged by: CH	Checked by: ET
Shoring: NA		Approved by: RE	
Stability: Stable			


TRIAL PIT RECORD		 TWEEDIE EVANS CONSULTING www.tecon.co.uk info@tecon.co.uk
Project Title: Royal Arsenal Riverside - Linear Park	Trial Pit: TP03	
Project No: 1508005.005	Dates: 21 March 2016	
Client: Berkeley Homes (East Thames) Limited		


Description	Legend Side B	Sample Details	Remarks
0.00 Ground Surface			
MADE GROUND Dark brown locally clayey gravelly sandy silt. Gravel of chert, slate, sandstone, concrete, red brick, black carbonaceous material and rare plastic. Occasional rootlets.		0.00	
MADE GROUND Brown mottled orangish brown and light brown gravelly sandy clay. Gravel of chert, red brick, black carbonaceous material, ceramic, wood fragments and glass.		A	
MADE GROUND Orangish brown locally grey gravelly sandy clay. Gravel of chert, red brick and rare ceramic.		1.00	
MADE GROUND Brown slightly silty gravelly sand. Gravel of chert, sandstone, red brick and occasional metal, chalk, slag and charcoal.		1.30	
... Concrete obstruction on north face of trial pit at 0.9-1.1mbgl. Trial Pit Terminated		2.00	
		3.00	
		4.00	

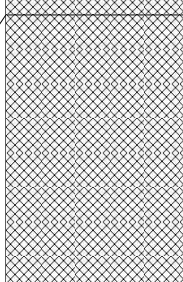
Excavation Details:	Dimensions:	Notes and Remarks:	
Date excavated: 21 March 2016	B: 1.35m  A: 0.35m	Terminated at 1.3mbgl due to extent of machine.	
Date backfilled: 21 March 2016		Water observations: No groundwater was encountered.	
Plant: 3t Excavator		Logged by: CH	Checked by: ET
Shoring: NA		Approved by: RE	
Stability: Stable			


TRIAL PIT RECORD		 TWEEDIE EVANS CONSULTING www.tecon.co.uk info@tecon.co.uk
Project Title: Royal Arsenal Riverside - Linear Park	Trial Pit: TP04	
Project No: 1508005.005	Dates: 21 March 2016	
Client: Berkeley Homes (East Thames) Limited		


Description	Legend Side B	Sample Details	Remarks
0.00	Ground Surface	0.00	
MADE GROUND Brown locally orangish brown and light brown slightly clayey silty gravelly sand. Gravel of chert, red brick, concrete, black carbonaceous material, sandstone and metal and occasional cobbles of red brick and concrete. Railway sleeper observed at 0.5mbgl.		A	
MADE GROUND Brown locally orangish brown and light brown slightly silty gravelly sandy clay. Gravel of chert, red brick, concrete, black carbonaceous material and sandstone. Boulder of concrete observed at 1.2mbgl.		1.00	
1.40	Trial Pit Terminated	2.00	
		3.00	
		4.00	

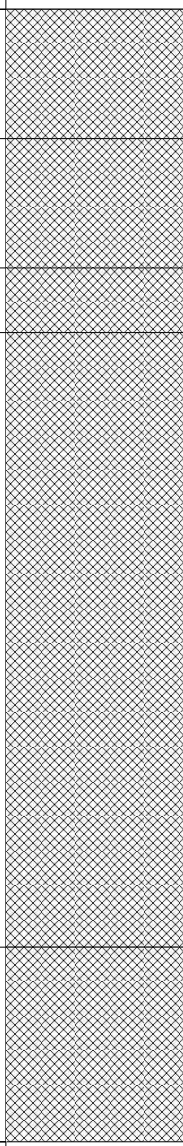
Excavation Details:	Dimensions:	Notes and Remarks:	
Date excavated: 21 March 2016	B: 1.3m  A: 0.35m	Terminated at 1.4mbgl due to extent of machine.	
Date backfilled: 21 March 2016		Water observations: No groundwater was encountered.	
Plant: 3t Excavator		Logged by: CH	Checked by: ET
Shoring: NA		Approved by: RE	
Stability: Stable			


TRIAL PIT RECORD		 TWEEDIE EVANS CONSULTING www.tecon.co.uk info@tecon.co.uk
Project Title: Royal Arsenal Riverside - Linear Park	Trial Pit: TP06	
Project No: 1508005.005	Dates: 22 March 2016	
Client: Berkeley Homes (East Thames) Limited		


Description	Legend Side B	Sample Details	Remarks
0.00 Ground Surface		0.00	
MADE GROUND Hardstanding of block paving. MADE GROUND Light brown to brown locally black slightly silty gravelly sand. Gravel of concrete, red brick, chert, tarmac, black carbonaceous material, clinker, yellow brick and fragments of wood and clay smoking pipe.			
0.90 Trial Pit Terminated		1.00	
		2.00	
		3.00	
		4.00	



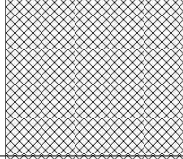

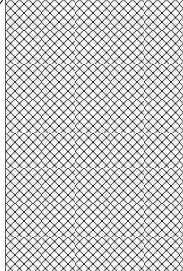

Excavation Details:	Dimensions:	Notes and Remarks:	
Date excavated: 22 March 2016	B: 1.7m  A: 0.65m	Trial pit terminated at 0.9mbgl due to the presence of water pipe.	
Date backfilled: 22 March 2016		Water observations: No groundwater was encountered.	
Plant: 14t Excavator		Logged by: CH	Checked by: ET
Shoring: NA		Approved by: RE	
Stability: Stable			


TRIAL PIT RECORD		 TWEEDIE EVANS CONSULTING www.tecon.co.uk info@tecon.co.uk
Project Title: Royal Arsenal Riverside - Linear Park	Trial Pit: TP07	
Project No: 1508005.005	Dates: 22 March 2016	
Client: Berkeley Homes (East Thames) Limited		


Description	Legend Side B	Sample Details	Remarks
0.00 Ground Surface			
0.40 MADE GROUND Brown slightly silty gravelly sand. Gravel of concrete, red brick, chert, tarmac, black carbonaceous material, clinker, yellow brick and fragments of wood and clay smoking pipe.		0.00	
0.80 MADE GROUND Black ashy sandy gravel of charcoal, clinker and red brick.		0.80	
1.00 MADE GROUND Concrete, recovered as gravel and cobbles.		1.00	
2.90 MADE GROUND Brown to greyish brown locally dark brown to black silty gravelly sand. Gravel of red brick, chert, sandstone, slate, chalk and yellow brick. Occasional cobble of red brick and concrete. ...Reinforced concrete encountered on northern face from 1.5mbgl.		2.00	
3.50 MADE GROUND Light brown to orangish brown locally dark brown slightly silty gravelly sand. Gravel of chert and red brick.		3.00	
Trial Pit Terminated		4.00	

Excavation Details:	Dimensions:	Notes and Remarks:	
Date excavated: 22 March 2016	B: 2.2m  A: 0.65m	Trial pit terminated at 3.5mbgl at the request of Berkeley Homes (East Thames) Limited.	
Date backfilled: 22 March 2016		Water observations: No groundwater was encountered.	
Plant: 14t Excavator		Logged by: CH	Checked by: ET
Shoring: NA		Approved by: RE	
Stability: Stable			


TRIAL PIT RECORD		 TWEEDIE EVANS CONSULTING www.tecon.co.uk info@tecon.co.uk
Project Title: Royal Arsenal Riverside - Linear Park	Trial Pit: TP08	
Project No: 1508005.005	Dates: 22 March 2016	
Client: Berkeley Homes (East Thames) Limited		


Description	Legend Side B	Sample Details	Remarks
0.00 Ground Surface			
0.15 MADE GROUND Hardstanding of block paving.		0.00	
MADE GROUND Yellow sand.			
0.80 MADE GROUND Brown to dark brown locally speckled light brown slightly silty gravelly sand. Gravel of chert, concrete, red brick, charcoal, chalk, black carbonaceous material, slate and sandstone and occasional cobble and boulder of concrete.			
1.00 MADE GROUND Dark brown to greyish brown gravelly sand. Gravel of red brick, chert and black carbonaceous material.		1.00	
MADE GROUND Light brown to greyish brown slightly silty slightly gravelly sand. Gravel of red brick and chert.			
... Band of black ashy material noted on northern face of trial pit from 1.6mbgl - 1.7mbgl.			
1.90			
2.00 MADE GROUND Concrete (Recovered as gravel and cobbles).		2.00	
Trial Pit Terminated			
		3.00	
		4.00	


Excavation Details:	Dimensions:	Notes and Remarks:	
Date excavated: 22 March 2016	B: 2.0m	Trial pit terminated at 2.0mbgl due to concrete obstruction.	
Date backfilled: 22 March 2016		Water observations: No groundwater was encountered.	
Plant: 14t Excavator		Logged by: CH	Checked by: ET
Shoring: NA			
Stability: Stable			


TRIAL PIT RECORD		 TWEEDIE EVANS CONSULTING www.tecon.co.uk info@tecon.co.uk
Project Title: Royal Arsenal Riverside - Linear Park	Trial Pit: TP09	
Project No: 1508005.005	Dates: 05 April 2016	
Client: Berkeley Homes (East Thames) Limited		


Depth (m)	Description	Legend Side B	Depth (m)	Sample Details	Remarks
0.00	Ground Surface		0.00		
0.00 - 0.40	MADE GROUND Hardstanding of block paving. MADE GROUND Yellow sand.				
0.40 - 0.80	MADE GROUND Brown locally light brown slightly silty gravelly sand. Gravel of red brick, chert, concrete, ceramic and glass. Occasional fragment of wood and shell. ...Localised pockets of light brown silty clay throughout.		1.00		
0.80 - 1.80	MADE GROUND Dark brown to black slightly silty gravelly sand. Gravel of chert, clinker, ceramic, glass and fragments of shell and clay smoking pipe. MADE GROUND Light brown to brown silty gravelly sand. Gravel of chert, red brick, black carbonaceous material and glass and fragments of wood and clay smoking pipe. Occasional boulder of concrete and cobble of red brick.		2.00	A	
1.80 - 3.30	MADE GROUND Grey locally yellowish brown slightly silty ashy gravelly sand. Gravel of red brick, clinker and slate and occasional shell fragment. ...Following collapse of eastern face of trial pit, red brick wall was noted along the length of the eastern face. ...Material noted to contain localised pockets of clay at depths greater than 2.0mbgl.		3.00		
3.30 - 3.90	MADE GROUND Light brown to pale brown locally orange gravelly sand. Gravel of red brick, chert and occasional black carbonaceous material.			A	
3.90 - 4.90	MADE GROUND Light brown to greyish brown locally light grey and orange fine to medium sand with occasional gravel of chert and red brick.		4.00	A + B	
4.90	Trial Pit Terminated		5.00		

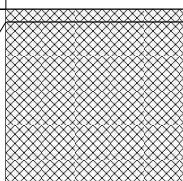
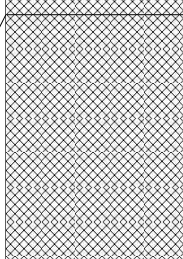


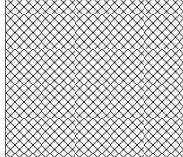
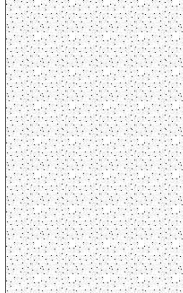
Excavation Details:	Dimensions:	Notes and Remarks:
Date excavated: 22 March 2016 Date backfilled: 22 March 2016 Plant: 14t Excavator Shoring: NA Stability: Stable	B: 2.8m  A: 0.65m	Trial pit terminated at 4.9mbgl due to extent of machine. Water observations: No groundwater was encountered.
		Logged by: CH Checked by: ET Approved by: RE


TRIAL PIT RECORD		 TWEEDIE EVANS CONSULTING www.tecon.co.uk info@tecon.co.uk
Project Title: Royal Arsenal Riverside - Linear Park	Trial Pit: TP10	
Project No: 1508005.005	Dates: 05 April 2016	
Client: Berkeley Homes (East Thames) Limited		


Description	Legend Side B	Sample Details	Remarks
0.00 Ground Surface			
1.10 MADE GROUND Brown silty gravelly sand. Gravel of concrete, red brick and plastic.		0.00	
1.55 MADE GROUND Dark brown slightly gravelly sand with localised pockets of orangish brown sand. Gravel of chert, red brick, yellow brick, and concrete, Occasional fragment of wood.		1.00	
4.00 MADE GROUND Dark brown locally white and grey silty gravelly sand. Gravel of red brick chalk, chert, ceramic, yellow brick, black carbonaceous material and charcoal. Occasional fragment of wood, bone and clay smoking pipe. ... Pockets of black sandy silt with strong organic odour noted from a depth of 2.4mbgl. Red brick structure, possible cess pit, observed along western face of trial pit following collapse of material.		2.00	A
4.20 MADE GROUND Light brown to brown locally mottled orangish brown slightly silty very gravelly sand. Gravel of chert.		3.00	A
Trial Pit Terminated		4.00	
		5.00	

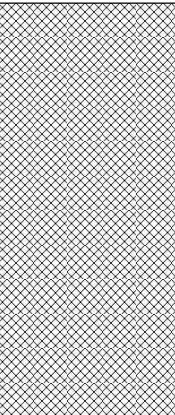
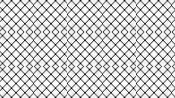

Excavation Details:	Dimensions:	Notes and Remarks:	
Date excavated: 05 April 2016	B: 2.8m  A: 0.65m	Trial pit terminated at 4.2mbgl due to stability of trial pit.	
Date backfilled: 05 April 2016		Water observations: No groundwater was encountered.	
Plant: 14t Excavator		Logged by: CH	Checked by: ET
Shoring: NA		Approved by: RE	
Stability: Stable			


TRIAL PIT RECORD		 TWEEDIE EVANS CONSULTING www.tecon.co.uk info@tecon.co.uk
Project Title: Royal Arsenal Riverside - Linear Park	Trial Pit: TP11	
Project No: 1508005.005	Dates: 05 April 2016	
Client: Berkeley Homes (East Thames) Limited		


Depth (m)	Description	Legend Side B	Depth (m)	Sample Details	Remarks
0.00	Ground Surface		0.00		
0.00 - 0.70	MADE GROUND Hardstanding of block paving. MADE GROUND Light brown to brown locally grey slightly silty gravelly sand. Gravel of red brick, concrete, chert, slate and clinker.		0.00 - 0.70		
0.70 - 1.80	MADE GROUND Dark brown to black sandy gravel of chert and clinker. MADE GROUND Light brown to brown slightly silty sandy gravel of red brick, chert, concrete, clinker, slate, black carbonaceous material, glass, ceramic and occasional shell fragment.		0.70 - 1.80		
1.80 - 2.00	MADE GROUND Dark brown gravelly sandy silt. Gravel and occasional cobble and boulder of red brick.		1.80 - 2.00		
2.00 - 2.40	MADE GROUND Brown to greyish brown slightly silty gravelly sand. Gravel of red brick, chert, black carbonaceous material and fragments of clay smoking pipe. Occasional cobbles and boulders of red brick and concrete.		2.00 - 2.40		
2.40 - 3.40	MADE GROUND Pale brown to yellowish brown locally brown and orange gravelly glauconitic sand. Gravel of chert and occasional red brick.		2.40 - 3.40		
3.40 - 4.60	Light brown to pale brown locally orange fine glauconitic SAND.		3.40 - 4.60		
4.60	Trial Pit Terminated		4.60	B	
			5.00		

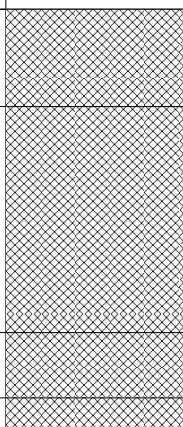
Excavation Details:	Dimensions:	Notes and Remarks:	
Date excavated: 05 April 2016 Date backfilled: 05 April 2016 Plant: 14t Excavator Shoring: NA Stability: Stable	B: 2.7m  A: 0.65m	Water observations: No groundwater was encountered.	
		Logged by: CH	Checked by: ET Approved by: RE


TRIAL PIT RECORD		 TWEEDIE EVANS CONSULTING www.tecon.co.uk info@tecon.co.uk
Project Title: Royal Arsenal Riverside - Linear Park	Trial Pit: TP12	
Project No: 1508005.005	Dates: 05 April 2016	
Client: Berkeley Homes (East Thames) Limited		


-	Description	Legend Side B	-	Sample Details	Remarks
0.00	Ground Surface		0.00		
1.60	MADE GROUND Brown to dark brown slightly silty gravelly sand. Gravel of chert, red brick, yellow brick, plastic, ceramic tile, metal and occasional fragment of wood and cobbles of red brick.		1.00	A	
2.00	MADE GROUND Dark brown locally clayey gravelly sandy silt. Gravel of chert, red brick, yellow brick, plastic, ceramic and black carbonaceous material.		2.00	A + B	
3.70	MADE GROUND Light brown to greyish brown slightly silty gravelly sand. gravel of red brick, chert, black carbonaceous material and chalk.		3.00		
4.00	Trial Pit Terminated		4.00	A + B	
5.00			5.00		

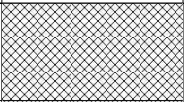
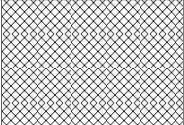


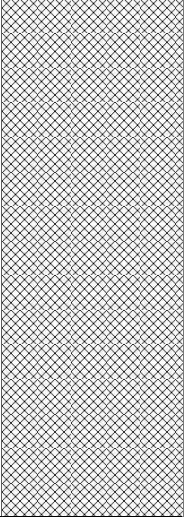
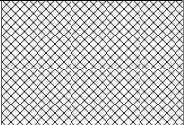
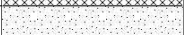
Excavation Details:	Dimensions:	Notes and Remarks:
Date excavated: 05 April 2016	B: 2.7m	Trial pit terminated at 3.7mbgl due to stability of pit.
Date backfilled: 05 April 2016	A: 0.65m	
Plant: 14t Excavator		Water observations: No groundwater was encountered.
Shoring: NA		Logged by: CH
Stability: Stable		Checked by: ET
		Approved by: RE


TRIAL PIT RECORD		 TWEEDIE EVANS CONSULTING www.tecon.co.uk info@tecon.co.uk
Project Title: Linear Park, Royal Arsenal Riverside	Trial Pit: TH01	
Project No: 1508005.014	Dates: 05/12/17	
Client: Berkeley Homes (East Thames) Limited		


Description	Legend Side B	Sample Details	Remarks
0.00 Ground Surface			
0.30 MADE GROUND Brown very silty sand. Rare gravel of flint.		0.00	
MADE GROUND Brown slightly clayey silty gravelly sand with low cobble content. Gravel and cobble of brick and concrete concrete. Gravel of ceramic, wood and plastic.		A	
1.00		A	
1.20		B	
1.30 MADE GROUND Black Tarmac.	1.00		
1.30 MADE GROUND Concrete.			
Trial Pit Terminated			
		2.00	
		3.00	
		4.00	

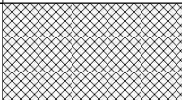
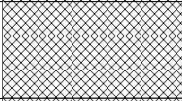

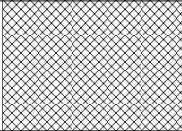
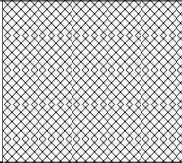
Excavation Details:	Dimensions:	Notes and Remarks:	
Date excavated: 05/12/17	B: 0.6m	Refused on concrete and potential service.	
Date backfilled: 05/12/17		A = Jar sample B = Bulk Sample	
Plant: JCB 3CX		A: 2.2m	Water observations: No groundwater encountered.
Shoring: NA		Logged by: JL	Checked by: CH
Stability: Stable		Approved by: ET	


TRIAL PIT RECORD		 www.tecon.co.uk info@tecon.co.uk
Project Title: Linear Park, Royal Arsenal Riverside	Trial Pit: TH02	
Project No: 1508005.014	Dates: 05/12/17	
Client: Berkeley Homes (East Thames) Limited		


Depth (m)	Description	Legend Side B	Depth (m)	Sample Details	Remarks
0.00	Ground Surface		0.00		
0.30	MADE GROUND Brown very silty sand. Rare gravel of flint.				
0.70	MADE GROUND Brown slightly clayey silty gravelly sand with low cobble content. Gravel and cobbles of brick and concrete. Gravel of ceramic, wood and plastic.			A	
0.90	MADE GROUND Brown slightly sandy gravelly clay. Gravel of brick and flint.				
1.10	MADE GROUND Black Tarmac.		1.00		
2.70	MADE GROUND Grey brown slightly clayey very gravelly sand with low cobble content. Gravel and cobbles of brick and gravel of flint, black carbonaceous material, pottery and wood.			A B	
3.10	MADE GROUND Grey brown slightly clayey silty gravelly sand. Gravel of brick and flint.			A B	
3.20	Greenish grey fine SAND.		3.00		
	Trial Pit Terminated		4.00		


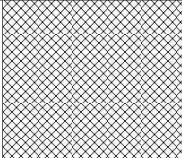
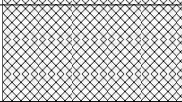
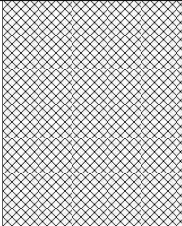

Excavation Details:	Dimensions:	Notes and Remarks:	
Date excavated: 05/12/17	A: 2.2m  B: 0.65m	A = Jar sample B = Bulk Sample	
Date backfilled: 05/12/17		Water observations: No groundwater encountered.	
Plant: JCB 3CX		Logged by: JL	Checked by: CH
Shoring: NA		Approved by: ET	
Stability: Stable			


TRIAL PIT RECORD		 www.tecon.co.uk info@tecon.co.uk
Project Title: Linear Park, Royal Arsenal Riverside	Trial Pit: TH03	
Project No: 1508005.014	Dates: 05/12/17	
Client: Berkeley Homes (East Thames) Limited		


Depth (m)	Description	Legend Side B	Depth (m)	Sample Details	Remarks
0.00	Ground Surface				
0.30	MADE GROUND Brown very silty sand. Rare gravel of flint.		0.00	A	
0.60	MADE GROUND Brown grey clayey gravelly sand with low cobble content. Gravel and cobbles of brick and concrete. Gravel of flint.			A	
0.80	MADE GROUND Black Tarmac.			B	
1.20	MADE GROUND Brown slightly clayey sandy gravel with low cobble content. Gravel and cobbles of brick and concrete. Gravel of ceramic.		1.00	A	
1.70	MADE GROUND Brick structure recovered as gravel and cobbles.			B	
	Trial Pit Terminated		2.00		
			3.00		
			4.00		


Excavation Details:	Dimensions:	Notes and Remarks:	
Date excavated: 05/12/17	B: 0.6m	Pit terminated on a brick wall.	
Date backfilled: 05/12/17		A = Jar sample B = Bulk Sample	
Plant: JCB 3CX		Water observations: No groundwater encountered.	
Shoring: NA		Logged by: JL	Checked by: CH
Stability: Stable		Approved by: ET	

TRIAL PIT RECORD		 www.tecon.co.uk info@tecon.co.uk
Project Title: Linear Park, Royal Arsenal Riverside	Trial Pit: TH04	
Project No: 1508005.014	Dates: 05/12/17	
Client: Berkeley Homes (East Thames) Limited		


Depth (m)	Description	Legend Side B	Depth (m)	Sample Details	Remarks
0.00	Ground Surface		0.00		
0.20	MADE GROUND Dark grey clayey silty sand.				
0.70	MADE GROUND Brown clayey gravelly sand with low cobble content. Gravel and cobbles of brick and concrete. Gravel of flint.			A B	
1.00	MADE GROUND Tarmac.				
1.70	MADE GROUND Brown grey clayey gravelly sand. Gravel of brick, concrete, flint and chalk. Occasional cobble of brick and concrete.			A B	
1.80	MADE GROUND Concrete.				
	Trial Pit Terminated				
			2.00		
			3.00		
			4.00		

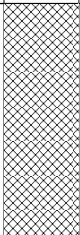
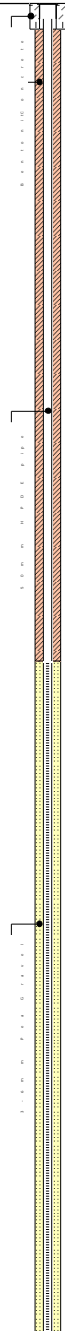


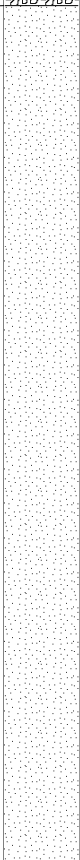
Excavation Details:	Dimensions:	Notes and Remarks:	
Date excavated: 05/12/17	B: 0.8m  A: 2.4m	Trial pit terminated due to the presence of a water main. A = Jar sample B = Bulk Sample	
Date backfilled: 05/12/17		Water observations: No groundwater encountered.	
Plant: JCB 3CX		Logged by: JL	Checked by: CH
Shoring: NA		Approved by: ET	
Stability: Stable			

CABLE PERCUSSIVE BOREHOLE RECORD		 www.tecon.co.uk info@tecon.co.uk
Project Title: Royal Arsenal Riverside - Phase 18-19	Borehole: BH01	
Project No: 1508005.003	Dates: 07 March 2016	
Client: Berkeley Homes (East Thames) Limited		


Depth (m)	Description	Legend	Sample Details	Depth (m)	SPT Results		Remarks/ Data	Installation
					Blow Count	N Value		
0.00	Ground Surface			0.0				
	MADE GROUND Brown slightly silty gravelly cobbly sand. Gravel and cobbles of red brick, yellow brick and concrete and gravel of sandstone, black carbonaceous material and clinker with occasional fragment of clay pipe.			0.0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0 1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8 1.9 2.0 2.1 2.2 2.3 2.4 2.5 2.6 2.7 2.8 2.9 3.0 3.1 3.2 3.3 3.4 3.5 3.6 3.7 3.8 3.9 4.0 4.1 4.2 4.3 4.4 4.5 4.6 4.7 4.8 4.9 5.0 5.1 5.2 5.3 5.4 5.5 5.6 5.7 5.8 5.9 6.0 6.1 6.2 6.3 6.4 6.5 6.6 6.7 6.8 6.9 7.0 7.1 7.2 7.3 7.4 7.5 7.6 7.7 7.8 7.9 8.0 8.1 8.2 8.3 8.4 8.5 8.6 8.7 8.8 8.9 9.0 9.1 9.2 9.3 9.4 9.5 9.6 9.7 9.8 9.9 10.0				

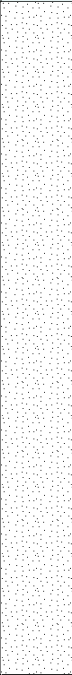


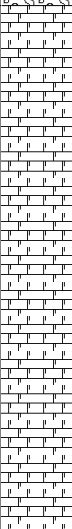
Notes: A: 250ml and 60ml Amber Glass Jars T: Plastic Tub (1Kg) B: Bulk Sample U: Undisturbed Sample SPT: Standard Penetration Test HSV: Hand Shear Vane PP: Pocket Penetrometer	Plant: Dando 2000		
	Water observations: No groundwater was encountered.		
	General remarks: Borehole terminated at a depth of 0.55mbgl due to the presence of a cable		
	Logged by: CH	Checked by: ET	Approved by: RE

CABLE PERCUSSIVE BOREHOLE RECORD		 www.tecon.co.uk info@tecon.co.uk
Project Title: Royal Arsenal Riverside - Phase 18-19	Borehole: BH01a	
Project No: 1508005.003	Dates:	
Client: Berkeley Homes (East Thames) Limited		


Depth (m)	Description	Legend	Sample Details	Depth (m)	SPT Results		Remarks/ Data	Installation
					Blow Count	N Value		
	Ground Surface			0.0				
1.80	MADE GROUND Brown slightly silty slightly clayey sandy gravel and cobbles of red brick and concrete and gravel of ceramic and glass. ...Red brick obstruction encountered from 0.7mbgl - 1.0mbgl.			0.0 - 1.80				
2.20	MADE GROUND Brown locally light brown slightly clayey gravelly sand. Gravel of chert, red brick and black carbonaceous material. ...Localised pockets of yellow sand throughout.			2.0 - 2.20	(14) 15, 15, 12, 8/25mm	>50		
3.60	Light brown sandy GRAVEL of rounded to sub-rounded chert.			2.20 - 3.60	(6) 4, 5, 6, 8	23		
	Light brown slightly silty fine to medium glauconitic SAND.			3.60 - 4.00	(7) 9, 20, 24, 6/5mm	>50		
				4.00 - 5.00	(12) 10, 25, 25/60mm	>50		
				5.00 - 6.00	(10) 27, 22/45mm	>50		
				6.00 - 8.00	(10) 18, 24, 3/2mm	>50		
				8.00 - 9.00	(9) 10, 21, 19/50mm	>50		
				9.00 - 10.00				

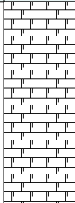
Notes: A: 250ml and 60ml Amber Glass Jars T: Plastic Tub (1Kg) B: Bulk Sample U: Undisturbed Sample SPT: Standard Penetration Test HSV: Hand Shear Vane PP: Pocket Penetrometer	Plant: Dando 2000		
	Water observations:		
	General remarks:		
	Logged by: CH	Checked by: ET	Approved by: RE

CABLE PERCUSSIVE BOREHOLE RECORD		 www.tecon.co.uk info@tecon.co.uk
Project Title: Royal Arsenal Riverside - Phase 18-19	Borehole: BH01a	
Project No: 1508005.003	Dates:	
Client: Berkeley Homes (East Thames) Limited		


Depth (m)	Description	Legend	Sample Details	Depth (m)	SPT Results		Remarks/ Data	Installation
					Blow Count	N Value		
				11.0	(10) 10, 15, 25/30mm	>50		
				12.0				
				13.0	(12) 21, 21, 9/5mm	>50		
				14.0				
				15.0	(15) 15, 17, 18/35mm	>50		
15.00				15.0				
	Light brown sandy GRAVEL of rounded chert.			16.0	(25/34mm) 25, 25/40mm	>50		
16.20				16.0				
	Weak, low to medium-density, white locally speckled black CHALK with moderate gravel and cobbles of angular to sub-rounded flint.			17.0	(9) 7, 10, 10, 7	34		
				18.0	(9) 4, 6, 6, 8	24		
				19.0				
				20.0	(11) 3, 3, 4, 6	16		


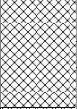
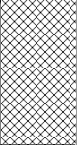
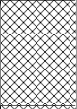
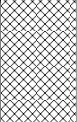
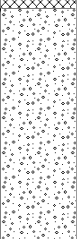
Notes: A: 250ml and 60ml Amber Glass Jars T: Plastic Tub (1Kg) B: Bulk Sample U: Undisturbed Sample SPT: Standard Penetration Test HSV: Hand Shear Vane PP: Pocket Penetrometer	Plant: Dando 2000		
	Water observations:		
	General remarks:		
	Logged by: CH	Checked by: ET	Approved by: RE

CABLE PERCUSSIVE BOREHOLE RECORD		 <p>www.tecon.co.uk info@tecon.co.uk</p>
Project Title: Royal Arsenal Riverside - Phase 18-19	Borehole: BH01a	
Project No: 1508005.003	Dates:	
Client: Berkeley Homes (East Thames) Limited		

Depth (m)	Description	Legend	Sample Details	Depth (m)	SPT Results		Remarks/ Data	Installation
					Blow Count	N Value		
21.50				21.0	(17) 11, 17, 22/50mm	>50		
	Borehole Terminated			22.0				
				23.0				
				24.0				
				25.0				
				26.0				
				27.0				
				28.0				
				29.0				
				30.0				


Notes: A: 250ml and 60ml Amber Glass Jars T: Plastic Tub (1Kg) B: Bulk Sample U: Undisturbed Sample SPT: Standard Penetration Test HSV: Hand Shear Vane PP: Pocket Penetrometer	Plant: Dando 2000		
	Water observations:		
	General remarks:		
	Logged by: CH	Checked by: ET	Approved by: RE

DYNAMIC SAMPLING RECORD		 www.tecon.co.uk info@tecon.co.uk
Project Title: Royal Arsenal Riverside - Phase 18-19	Borehole: WS01	
Project No: 1508005.003	Dates: 03 March 2016 - 04 March 2016	
Client: Berkeley Homes (East Thames) Limited		


Depth (m)	Description	Legend	Sample Details	Depth (m)	SPT Results		Remarks/ Data	Installation
					Blow Count	N Value		
0.00	Ground Surface			0.0				
0.20	MADE GROUND Brown gravelly sandy clay. Gravel of red brick, chert and clinker.						<u>PID (ppm) Results</u>	
0.65	MADE GROUND Dark brown to black slightly clayey sandy gravel of concrete, chert and black carbonaceous material.		A				PID = 0.00	
1.20	MADE GROUND Yellowish brown locally light brown gravelly sand. Gravel of chert. MADE GROUND Brown locally light brown and yellowish brown gravelly sandy clay with occasional pocket of gravelly sand. Gravel of chert, red brick, black carbonaceous material, concrete and yellow brick.			1.0	(1, 1) 2, 4, 9, 7	22	PID = 0.00	
1.60	MADE GROUND Yellowish brown to light brown locally reddish brown gravelly sand. Gravel of red brick, chert and concrete.							
2.10	MADE GROUND Brown slightly silty gravelly sandy clay. Gravel of chert and occasional red brick.			2.0	(3, 4) 5, 5, 5, 6	21		
3.00	Medium dense becoming very dense light brown gravelly fine to medium SAND. Gravel of rounded to sub-angular chert.			3.0	(12, 12) 14, 13, 13, 12	>50		
	Borehole Terminated							

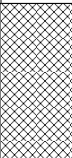
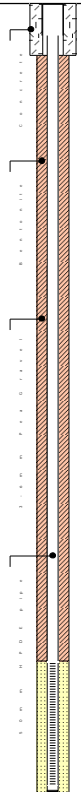
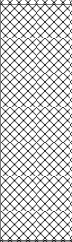
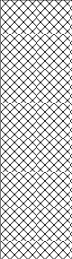
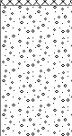

Notes: A: 250ml and 60ml Amber Glass Jars T: Plastic Tub (1Kg) SPT: Standard Penetration Test HSV: Hand Shear Vane PP: Pocket Penetrometer PID: Photo-Ionisation Detector	Plant: Archway Dart		
	Water observations: No groundwater was encountered.		
	General remarks: Borehole terminated at 3.0mbgl due to effective refusal on very dense gravelly sand.		
	Logged by: CH	Checked by: ET	Approved by: RE

DYNAMIC SAMPLING RECORD		 www.tecon.co.uk info@tecon.co.uk
Project Title: Royal Arsenal Riverside - Phase 18-19	Borehole: WS02	
Project No: 1508005.003	Dates: 04 March 2016	
Client: Berkeley Homes (East Thames) Limited		


Depth (m)	Description	Legend	Sample Details	Depth (m)	SPT Results		Remarks/ Data	Installation
					Blow Count	N Value		
0.00	Ground Surface			0.0				
0.10	MADE GROUND Brown slightly silty sandy clay. Gravel of red rick, chert and concrete. Borehole Terminated			0.0				
				1.0				
				2.0				
				3.0				
				4.0				
				5.0				

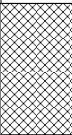
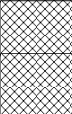
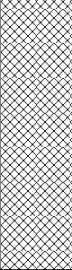

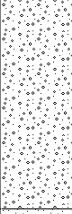
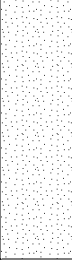
Notes: A: 250ml and 60ml Amber Glass Jars T: Plastic Tub (1Kg) SPT: Standard Penetration Test HSV: Hand Shear Vane PP: Pocket Penetrometer PID: Photo-Ionisation Detector	Plant: Archway Dart		
	Water observations: No groundwater was encountered.		
	General remarks: Borehole terminated at a depth of 0.1mbgl due to the presence of a concrete obstruction.		
	Logged by: CH	Checked by: ET	Approved by: RE

DYNAMIC SAMPLING RECORD		 www.tecon.co.uk info@tecon.co.uk
Project Title: Royal Arsenal Riverside - Phase 18-19	Borehole: WS03	
Project No: 1508005.003	Dates: 04 March 2016	
Client: Berkeley Homes (East Thames) Limited		


Depth (m)	Description	Legend	Sample Details	Depth (m)	SPT Results		Remarks/ Data	Installation
					Blow Count	N Value		
0.00	Ground Surface			0.0				
0.60	MADE GROUND Brown locally light brown and grey slightly silty gravelly sand. Gravel of red brick, concrete, yellow brick, chert, breeze block and clinker.		A				PID (ppm) Results PID = 0.00	
1.50	MADE GROUND Black locally dark brown and yellow clayey sandy gravel of red brick, charcoal, chalk, ceramic, flint, slate and yellow brick.			1.0	(2, 1) 1, 1, 1, 1	4	PID = 0.00	
2.50	MADE GROUND Light brown gravelly sand. Gravel of chert and rare red brick and black carbonaceous material.			2.0	(1, 0) 0, 0, 0, 1	1		
3.00	Medium dense light brown to orange brown gravelly fine to medium SAND. Gravel of rounded to sub-angular chert.			3.0	(5, 4) 4, 4, 4, 5	17		
5.00	Medium dense to very dense light brown to pale brown locally orange fine glauconitic SAND.			4.0	(5, 6) 8, 10, 12, 18	48		
				5.0				

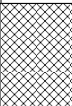
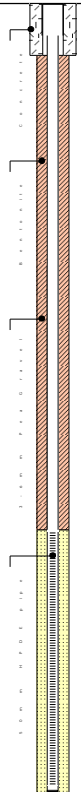
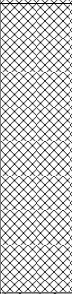
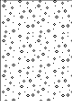
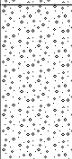
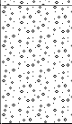
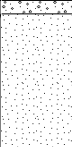


Notes: A: 250ml and 60ml Amber Glass Jars T: Plastic Tub (1Kg) SPT: Standard Penetration Test HSV: Hand Shear Vane PP: Pocket Penetrometer PID: Photo-Ionisation Detector	Plant: Archway Dart	
	Water observations: No groundwater was encountered.	
	General remarks:	
	Logged by: CH	Checked by: ET

DYNAMIC SAMPLING RECORD		 www.tecon.co.uk info@tecon.co.uk
Project Title: Royal Arsenal Riverside - Phase 18-19	Borehole: WS04	
Project No: 1508005.003	Dates: 04 March 2016	
Client: Berkeley Homes (East Thames) Limited		


Depth (m)	Description	Legend	Sample Details	Depth (m)	SPT Results		Remarks/ Data	Installation
					Blow Count	N Value		
0.00	Ground Surface			0.0				
0.50	MADE GROUND Brown locally light brown, yellow and black slightly clayey slightly silty gravelly sand. Gravel of red brick, concrete, chert, clinker and black carbonaceous material and rare cobble of clinker.		A				<u>PID (ppm) Results</u>	
0.70	MADE GROUND Gravel and cobble of concrete and yellow brick.		A				PID = 0.00	
1.95	MADE GROUND Dark brown locally black and light brown gravelly silty sand. Gravel of mudstone, chert, red brick, concrete and clinker. ...Hydrocarbon odour noted at 0.8-1.0mbgl.			1.0	(2, 3) 5, 4, 5, 5	19	PID = 68.2	
2.20	MADE GROUND Light brown to brown gravelly sand. Gravel of chert and rare red brick.			2.0	(2, 4) 4, 5, 6, 5	20	PID = 54.2	
3.00	Medium to to very dense light brown to orangish brown gravelly fine to medium SAND. Gravel of angular to sub-rounded chert.			3.0	(9, 11) 11, 12, 13, 14	50	PID = 4.0	
4.00	Very dense light brown to pale brown slightly silty fine SAND.			4.0				
	Borehole Terminated			4.0				
				5.0				

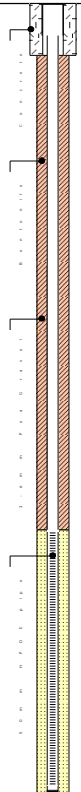
Notes: A: 250ml and 60ml Amber Glass Jars T: Plastic Tub (1Kg) SPT: Standard Penetration Test HSV: Hand Shear Vane PP: Pocket Penetrometer PID: Photo-Ionisation Detector	Plant: Archway Dart		
	Water observations: No groundwater was encountered.		
	General remarks: Borehole terminated due to refusal on very dense sand.		
	Logged by: CH	Checked by: ET	Approved by: RE

DYNAMIC SAMPLING RECORD		 www.tecon.co.uk info@tecon.co.uk
Project Title: Royal Arsenal Riverside - Phase 18-19	Borehole: WS05	
Project No: 1508005.003	Dates: 04 March 2016	
Client: Berkeley Homes (East Thames) Limited		

Depth (m)	Description	Legend	Sample Details	Depth (m)	SPT Results		Remarks/ Data	Installation
					Blow Count	N Value		
0.00	Ground Surface			0.0				
0.40	MADE GROUND Light brown to pinkish brown slightly clayey sandy gravel of limestone, chert and occasional red brick.						<u>PID (ppm) Results</u>	
1.50	MADE GROUND Brown slightly clayey gravelly silty sand. Gravel of chert, black carbonaceous material and red brick.		A	1.0	(3, 4) 4, 2, 1, 1	8	PID = 0.00	
1.90	Loose light brown locally orange slightly gravelly fine to medium SAND. Gravel of angular to sub-rounded chert.							
2.50	Loose brown to light brown locally grey slightly silty fine SAND with occasional gravel of angular to sub-rounded chert.			2.0	(2, 1) 2, 1, 1, 2	6		
2.95	Loose light brown to pale brown fine SAND.							
4.40	Loose brown slightly gravelly SAND. Gravel of fine rounded to sub-rounded chert.			3.0	(2, 2) 1, 1, 2, 1	5		
4.50	Loose light brown to yellowish brown locally grey and orange slightly silty fine SAND.			4.0	(0, 0) 1, 0, 0, 1	2		
4.50	Very dense light brown to pale brown fine glauconitic SAND.							
	Borehole Terminated			-5.0				


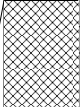
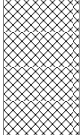
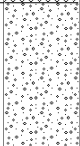
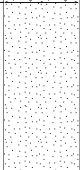
Notes: A: 250ml and 60ml Amber Glass Jars T: Plastic Tub (1Kg) SPT: Standard Penetration Test HSV: Hand Shear Vane PP: Pocket Penetrometer PID: Photo-Ionisation Detector	Plant: Archway Dart		
	Water observations: No groundwater was encountered.		
	General remarks: Borehole terminated at 4.5mbgl due to refusal on very dense sand.		
	Logged by: CH	Checked by: ET	Approved by: RE

DYNAMIC SAMPLING RECORD		 www.tecon.co.uk info@tecon.co.uk
Project Title: Royal Arsenal Riverside - Phase 18-19	Borehole: WS06	
Project No: 1508005.003	Dates: 05 March 2016	
Client: Berkeley Homes (East Thames) Limited		

Depth (m)	Description	Legend	Sample Details	Depth (m)	SPT Results		Remarks/ Data	Installation
					Blow Count	N Value		
0.00	Ground Surface			0.0				
0.10	MADE GROUND Tarmacadam hardstanding.						PID (ppm) Results	
0.80	MADE GROUND Light brown to pinkish brown locally reddish brown clayey sandy gravel of limestone, concrete, chert and red brick.						PID = 0.00	
1.90	MADE GROUND Reddish brown silty sandy gravel of red brick, clinker, concrete and yellow brick. Occasional cobble of red brick.		A	1.0	(1, 0) 1, 2, 1, 1	5	PID = 0.00	
3.50	Loose becoming medium dense greyish brown to light brown slightly gravelly silty SAND. Gravel of angular to sub-rounded chert. ...Localised pockets of black organic material.			2.0	(1, 0) 1, 0, 1, 0	2		
4.00	Very dense light brown to pale brown fine glauconitic SAND.			3.0	(1, 2) 3, 4, 5, 6	18		
	Borehole Terminated			4.0	(7, 7) 10, 12, 18, 20	>50		
				5.0				

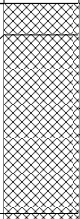
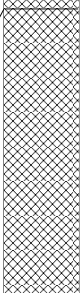

Notes: A: 250ml and 60ml Amber Glass Jars T: Plastic Tub (1Kg) SPT: Standard Penetration Test HSV: Hand Shear Vane PP: Pocket Penetrometer PID: Photo-Ionisation Detector	Plant: Archway Dart	
	Water observations: Minor groundwater ingress encountered at 2.5mbgl.	
	General remarks: Borehole terminated at 4.0mbgl due to refusal on very dense sand.	
	Logged by: CH	Checked by: ET

DYNAMIC SAMPLING RECORD		 www.tecon.co.uk info@tecon.co.uk
Project Title: Royal Arsenal Riverside - Phase 18-19	Borehole: WS07	
Project No: 1508005.003	Dates: 05 March 2016	
Client: Berkeley Homes (East Thames) Limited		


Depth (m)	Description	Legend	Sample Details	Depth (m)	SPT Results		Remarks/ Data	Installation
					Blow Count	N Value		
0.00	Ground Surface			0.0				
0.16	MADE GROUND Tarmacadam hardstanding.						<u>PID (ppm) Results</u> PID = 0.00	
0.40	MADE GROUND Greyish brown locally reddish brown and yellow slightly clayey sandy gravel and cobbles of red brick, yellow brick and concrete and gravel of sandstone, chert and black carbonaceous material.		A				PID = 0.00	
	MADE GROUND Brown to dark brown locally grey and light brown gravelly silty sand. Gravel of red brick, chalk, concrete, black carbonaceous material and chert.			1.0				
				2.0				
2.80	(Medium Dense) light brown to orangish brown gravelly fine to medium SAND. Gravel of sub-angular to rounded chert.			3.0				
3.35	(Dense) light brown to pale brown locally orange fine glauconitic SAND.							
4.00	Borehole Terminated			4.0				
				5.0				

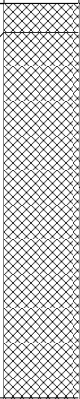
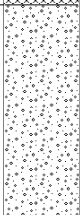
Notes: A: 250ml and 60ml Amber Glass Jars T: Plastic Tub (1Kg) SPT: Standard Penetration Test HSV: Hand Shear Vane PP: Pocket Penetrometer PID: Photo-Ionisation Detector	Plant: Archway Dart		
	Water observations: No groundwater was encountered.		
	General remarks: Densities are based upon field observations only. Borehole terminated at 4.0mbgl due to refusal on very dense sand.		
	Logged by: CH	Checked by: ET	Approved by: RE

DYNAMIC SAMPLING RECORD		 www.tecon.co.uk info@tecon.co.uk
Project Title: Royal Arsenal Riverside - Phase 18-19	Borehole: WS08	
Project No: 1508005.003	Dates: 05 March 2016	
Client: Berkeley Homes (East Thames) Limited		

Depth (m)	Description	Legend	Sample Details	Depth (m)	SPT Results		Remarks/ Data	Installation
					Blow Count	N Value		
0.00	Ground Surface			0.0				
0.12	MADE GROUND Tarmacadam hardstanding.		A				PID (ppm) Results PID = 0.00	
0.80	MADE GROUND Brown gravelly sandy clay. Gravel of reddish brown, concrete, black carbonaceous material and chert.							PID = 0.00
0.80	MADE GROUND Cobble of concrete.							
1.95	MADE GROUND Brown gravelly sandy clay. Gravel of chert, red brick and black carbonaceous material.							
1.95	Light brown to orangish brown gravelly SAND. Gravel of rounded to sub-angular chert.			2.0				
	Borehole Terminated			3.0				
				4.0				
				5.0				

Notes: A: 250ml and 60ml Amber Glass Jars T: Plastic Tub (1Kg) SPT: Standard Penetration Test HSV: Hand Shear Vane PP: Pocket Penetrometer PID: Photo-Ionisation Detector	Plant: Archway Dart	
	Water observations: No groundwater was encountered.	
	General remarks: Borehole terminated at 2.0mbgl once natural ground was encountered.	
	Logged by: CH	Checked by: ET

DYNAMIC SAMPLING RECORD		 <p>www.tecon.co.uk info@tecon.co.uk</p>
Project Title: Royal Arsenal Riverside - Phase 18-19	Borehole: WS09	
Project No: 1508005.003	Dates: 05 March 2016	
Client: Berkeley Homes (East Thames) Limited		

Depth (m)	Description	Legend	Sample Details	Depth (m)	SPT Results		Remarks/ Data	Installation
					Blow Count	N Value		
0.00	Ground Surface			0.0				
0.11	MADE GROUND Tarmacadam hardstanding.						<u>PID (ppm) Results</u> PID = 0.00	
	MADE GROUND Dark brown locally grey and black slightly clayey gravelly silty sand. Gravel of red brick, concrete, charcoal, sandstone, black carbonaceous material and chert.		A					PID = 0.00
1.50				1.0	(1, 0) 1, 0, 1, 0	2		
1.90	MADE GROUND Brown gravelly silty sand. Gravel of red brick and chert.							
2.70	Medium dense light brown to orangish brown gravelly SAND. Gravel of rounded to sub-angular chert.			2.0	(4, 6) 6, 6, 8, 8	28		
4.00	Medium dense to very dense light brown to pale brown locally orangish fine glauconitic SAND.			3.0	(4, 4) 4, 5, 5, 6	20		
	Borehole Terminated			4.0	(7, 9) 12, 16, 22	>50		
				5.0				

Notes: A: 250ml and 60ml Amber Glass Jars T: Plastic Tub (1Kg) SPT: Standard Penetration Test HSV: Hand Shear Vane PP: Pocket Penetrometer PID: Photo-Ionisation Detector	Plant: Archway Dart		
	Water observations: No groundwater was encountered.		
	General remarks: Borehole terminated at 4.0m bgl due to effective refusal on very dense sand.		
	Logged by: CH	Checked by: ET	Approved by: RE



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TRIAL PIT RECORD		TRIAL PIT: TPO1
Project Title: Waterfront Park, Royal Arsenal		
Project No: 1505016.001	Dates: 11th June 2015	
Client: Berkely Homes (East Thames) Ltd	Coordinates:	

Description	Legend Side B	Sample Details		Remarks
		Type	Depth	
Ground Surface				
MADE GROUND Brown gravelly cobbly sand with rare rootlets. Gravel is flint, brick, concrete and chalk with some brick and concrete cobbles. Rare fragments of metal, plastic, glass and potential ACM (cement sheet) noted.		J	0.2m 0.3m	PID at 0.4-0.5mbgl - 0ppm
Historic brick structure (possibly steps) noted at the eastern end of the pit.		J	0.5m 0.6m	
MADE GROUND Reddish-brown gravelly sand. Gravel is limestone, flint and brick.		J	0.9m	PID at 0.7-0.8mbgl - 0ppm
...becoming locally black, yellow-brown and pink fine sand between 0.5m and 0.7mbgl.		J	1.0m	
MADE GROUND Dark grey silt (possibly PFA).				
MADE GROUND Light brown locally brown gravelly and cobbly sand. Gravel and cobbles of brick and concrete.				
Orange-brown gravelly SAND. Gravel is sub-rounded to rounded flint.				
Trial Pit Terminated				

Excavation Details:	Dimensions:	Notes and Remarks:		
Date excavated: 11th June 2015 Date backfilled: 11th June 2015 Plant: JCB 3CX Shoring: None Stability: Good	B 1.3 A C 4.0 D	J - 60ml and 250ml glass amber jar		
		Groundwater observations: Dry		
		Logged by: ML	Checked by: RE	Approved by: ET



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TRIAL PIT RECORD		TRIAL PIT: TPO2
Project Title: Waterfront Park, Royal Arsenal		
Project No: 1505016.001	Dates: 11th June 2015	
Client: Berkely Homes (East Thames) Ltd	Coordinates:	

Description	Legend Side B	Sample Details		Remarks
		Type	Depth	
Ground Surface				
MADE GROUND Sand and gravel of flint with rare metal fragments. Geotextile noted at 0.4mbgl.			0.4m	PID at 0.7mbgl - 0ppm
MADE GROUND Sandy gravel of brick and flint and cobbles of concrete with rare metal fragments. Geotextile noted at 0.65mbgl.		J	0.65m	
MADE GROUND Orange-brown locally black very gravelly SAND. Gravel is predominantly sub-rounded to rounded flint and rare brick. Historic yellow brick structure noted at the eastern end of the pit between 1.0mbgl and 1.3mbgl.				
Orange-brown gravelly SAND. Gravel is sub-rounded to rounded flint.				
Pale yellow-grey to yellow-brown silty fine to medium SAND.				
Trial Pit Terminated				

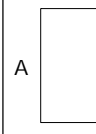
Excavation Details:	Dimensions:	Notes and Remarks:		
Date excavated: 11th June 2015 Date backfilled: 11th June 2015 Plant: JCB 3CX Shoring: None Stability: Good	B 1.3 A C 3.9 D	J - 60ml and 250ml glass amber jar		
		Groundwater observations: Dry		
		Logged by: ML	Checked by: RE	Approved by: ET



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TRIAL PIT RECORD		TRIAL PIT: TPO3
Project Title: Waterfront Park, Royal Arsenal		
Project No: 1505016.001	Dates: 11th June 2015	
Client: Berkely Homes (East Thames) Ltd	Coordinates:	

Description	Legend Side B	Sample Details		Remarks
		Type	Depth	
Ground Surface				
<p>MADE GROUND Brown cobbly very gravelly sand. Gravel of flint, brick and concrete. Rare pieces of rope noted.</p> <p>Geotextile noted at 0.15mbgl and 0.3mbgl and 0.65mbgl.</p>			0.05m 0.15m	PID at 0.7-0.8mbgl - Oppm
<p>MADE GROUND Very sandy cobbly gravel. Gravel and cobbles of flint, brick, concrete and clinker. Rare fragments of cable, wood and potential ACM noted.</p> <p>Geotextile noted at 1.15mbgl.</p>	0.65	J	0.65m 0.75m	
<p>MADE GROUND Brown very gravelly cobbly sand. Gravel and cobbles of flint, limestone, brick and concrete. Rare fragments of plasterboard and tile noted.</p> <p>Brick boulders at 2.8mbgl.</p> <p>Historic brick structure noted at the western end of the pit 1.9mbgl and in the eastern end at 3.2mbgl.</p>	1.15		2.6m	
<p>Excavator unable to progress below 3.2mbgl.</p> <p>Trial Pit Terminated</p>	3.20	J		

Excavation Details:	Dimensions:	Notes and Remarks:		
Date excavated: 11th June 2015 Date backfilled: 11th June 2015 Plant: JCB 3CX Shoring: None Stability: Good	B 1.3 A  C 3.9 D	J - 60ml and 250ml glass amber jar Groundwater observations: Dry		
		Logged by: ML	Checked by: RE	Approved by: ET

APPENDIX F

Geochemical Certificates of Analysis



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t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

Analytical Report Number : 15-73636

Project / Site name:	Waterfront Park, Royal Arsenal	Samples received on:	15/06/2015
Your job number:	1505016	Samples instructed on:	15/06/2015
Your order number:		Analysis completed by:	26/06/2015
Report Issue Number:	1	Report issued on:	26/06/2015
Samples Analysed:	3 soil samples		

Quality Manager
For & on behalf of i2 Analytical Ltd.

Reporting Manager
For & on behalf of i2 Analytical Ltd.

Other office located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Analytical Report Number: 15-73636

Project / Site name: Waterfront Park, Royal Arsenal

Lab Sample Number				455129	455130	455131		
Sample Reference				TP01	TP02	TP03		
Sample Number				None Supplied	None Supplied	None Supplied		
Depth (m)				0.20-0.30	0.40-0.65	0.65-0.75		
Date Sampled				11/06/2015	11/06/2015	11/06/2015		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Soil Analysis)								
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1		
Moisture Content	%	N/A	NONE	8.1	7.9	4.0		
Total mass of sample received	kg	0.001	NONE	0.44	0.45	0.46		

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	Amosite, Crocidolite-Insulation lagging	Chrysotile- Loose fibres	Chrysotile, Amosite-Insulation lagging		
Asbestos in Soil	Type	N/A	ISO 17025	Detected	Detected	Detected		

General Inorganics

pH	pH Units	N/A	MCERTS	9.0	9.5	10.0		
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1		
Total Sulphate as SO ₄	mg/kg	50	MCERTS	2400	5700	7400		
Water Soluble Sulphate (Soil Equivalent)	g/l	0.0025	MCERTS	0.51	2.0	2.8		
Water Soluble Sulphate as SO ₄ (2:1)	mg/kg	2.5	MCERTS	510	2000	2800		
Water Soluble SO ₄ (BRE SD 2:1 Leach Equivalent)	g/l	0.00125	MCERTS	0.26	1.0	1.4		
Sulphide	mg/kg	1	MCERTS	3.0	< 1.0	3.1		
Total Organic Carbon (TOC)	%	0.1	MCERTS	2.4	0.5	0.4		

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	1.1	< 1.0	< 1.0		
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.25		
Acenaphthylene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	1.5		
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	0.23		
Fluorene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	0.86		
Phenanthrene	mg/kg	0.1	MCERTS	2.9	2.5	11		
Anthracene	mg/kg	0.1	MCERTS	0.66	0.69	2.6		
Fluoranthene	mg/kg	0.1	MCERTS	5.8	4.8	14		
Pyrene	mg/kg	0.1	MCERTS	4.7	4.0	12		
Benzo(a)anthracene	mg/kg	0.1	MCERTS	2.2	2.0	5.4		
Chrysene	mg/kg	0.05	MCERTS	2.3	2.2	5.0		
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	2.9	2.6	6.0		
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	1.0	0.81	2.3		
Benzo(a)pyrene	mg/kg	0.1	MCERTS	2.0	1.7	4.5		
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	1.3	1.1	2.6		
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	0.24	0.27	0.53		
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	1.4	1.1	2.7		

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	27.3	23.8	71.8		
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	17	10	9.1		
Barium (aqua regia extractable)	mg/kg	1	MCERTS	150	200	120		
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.7	0.9	0.6		
Boron (water soluble)	mg/kg	0.2	MCERTS	1.0	2.3	3.1		
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.4	< 0.2	< 0.2		
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	< 1.2	< 1.2		
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	20	28	19		
Copper (aqua regia extractable)	mg/kg	1	MCERTS	330	70	68		
Lead (aqua regia extractable)	mg/kg	1	MCERTS	330	180	140		
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.3	0.4	< 0.3		
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	19	23	17		
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	35	37	26		
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	280	190	150		

Analytical Report Number: 15-73636

Project / Site name: Waterfront Park, Royal Arsenal

Lab Sample Number	455129	455130	455131		
Sample Reference	TP01	TP02	TP03		
Sample Number	None Supplied	None Supplied	None Supplied		
Depth (m)	0.20-0.30	0.40-0.65	0.65-0.75		
Date Sampled	11/06/2015	11/06/2015	11/06/2015		
Time Taken	None Supplied	None Supplied	None Supplied		
Analytical Parameter (Soil Analysis)					

Monoaromatics

Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		

Petroleum Hydrocarbons

TPH C10 - C40	mg/kg	10	MCERTS	180	170	350		
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TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1		
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1		
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1		
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0		
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0		
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	19	37	23		
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	19	37	23		

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1		
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1		
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1		
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	4.6	3.9	13		
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	41	24	110		
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	110	77	180		
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	150	100	300		

PCBs by GC-MS

PCB Congener 28	mg/kg	0.001	MCERTS	0.20	-	-		
PCB Congener 52	mg/kg	0.001	MCERTS	0.080	-	-		
PCB Congener 101	mg/kg	0.001	MCERTS	0.028	-	-		
PCB Congener 118	mg/kg	0.001	MCERTS	0.039	-	-		
PCB Congener 138	mg/kg	0.001	MCERTS	0.012	-	-		
PCB Congener 153	mg/kg	0.001	MCERTS	0.022	-	-		
PCB Congener 180	mg/kg	0.001	MCERTS	0.006	-	-		
Total PCBs	mg/kg	0.007	MCERTS	0.38	-	-		



Analytical Report Number : 15-73636

Project / Site name: Waterfront Park, Royal Arsenal

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
455129	TP01	None Supplied	0.20-0.30	Brown sandy loam with rubble and vegetation.
455130	TP02	None Supplied	0.40-0.65	Brown sandy loam with rubble and brick.
455131	TP03	None Supplied	0.65-0.75	Brown sandy loam with rubble and brick.

Analytical Report Number : 15-73636

Project / Site name: Waterfront Park, Royal Arsenal

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
BTEX and MTBE in soil	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073S-PL	W	MCERTS
Hexavalent chromium in soil (Lower Level)	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazine followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
PCB's By GC-MS in soil	Determination of PCB by extraction with acetone and hexane followed by GC-MS.	In-house method based on USEPA 8082	L027-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	D	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Sulphate, water soluble, in soil	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP-OES.	L038-PL	D	MCERTS
Sulphide in soil	Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode.	In-house method	L010-PL	D	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Total organic carbon in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L023-PL	D	MCERTS
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L038-PL	D	MCERTS
TPH Banding in Soil by FID	Determination of hexane extractable hydrocarbons in soil by GC-FID.	In-house method, TPH with carbon banding.	L076-PL	W	MCERTS



Analytical Report Number : 15-73636

Project / Site name: Waterfront Park, Royal Arsenal

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method	L076-PL	W	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.



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Analytical Report Number : 16-13640

Project / Site name:	Royal Arsenal Riverside - Phases 18-19	Samples received on:	07/03/2016
Your job number:	1508005-003-01	Samples instructed on:	17/03/2016
Your order number:		Analysis completed by:	01/04/2016
Report Issue Number:	1	Report issued on:	01/04/2016
Samples Analysed:	3 leachate samples - 8 soil samples		

Signed: _____

Rexona Rahman
 Reporting Manager
For & on behalf of i2 Analytical Ltd.

Signed: _____

Emma Winter
 Assistant Reporting Manager
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

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Analytical Report Number: 16-13640

Project / Site name: Royal Arsenal Riverside - Phases 18-19

Lab Sample Number	550931				550932		550933		550934		550935	
Sample Reference	WS01				WS03		WS04		WS04		WS05	
Sample Number	None Supplied				None Supplied		None Supplied		None Supplied		None Supplied	
Depth (m)	0.40-0.50				0.30-0.40		0.10-0.20		0.80-0.90		0.50-0.60	
Date Sampled	02/03/2016				03/03/2016		03/03/2016		03/03/2016		03/03/2016	
Time Taken	None Supplied				None Supplied		None Supplied		None Supplied		None Supplied	
Analytical Parameter (Soil Analysis)												
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	3.6	6.5	5.5	5.6	2.0				
Total mass of sample received	kg	0.001	NONE	0.54	0.51	0.46	0.52	0.52				

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	Chrysotile, Amosite- Loose Fibres	Amosite- Loose Fibres	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Detected	Detected	Not-detected	Not-detected

General Inorganics

pH	pH Units	N/A	MCERTS	8.4	9.1	10.1	5.9	8.6
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Total Sulphate as SO ₄	mg/kg	50	MCERTS	580	2700	11000	4400	280
Water Soluble Sulphate (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.054	0.51	0.47	1.2	0.046
Sulphide	mg/kg	1	MCERTS	< 1.0	5.0	18	130	< 1.0
Total Organic Carbon (TOC)	%	0.1	MCERTS	< 0.1	0.5	1.1	0.3	0.2

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	0.19
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	0.40	< 0.10	< 0.10
Fluorene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	0.23	< 0.10	< 0.10
Phenanthrene	mg/kg	0.1	MCERTS	< 0.10	0.42	2.8	< 0.10	0.64
Anthracene	mg/kg	0.1	MCERTS	< 0.10	0.18	0.68	< 0.10	0.31
Fluoranthene	mg/kg	0.1	MCERTS	< 0.10	1.1	4.3	< 0.10	2.0
Pyrene	mg/kg	0.1	MCERTS	< 0.10	1.3	3.8	< 0.10	1.8
Benzo(a)anthracene	mg/kg	0.1	MCERTS	< 0.10	0.69	1.9	< 0.10	0.97
Chrysene	mg/kg	0.05	MCERTS	< 0.05	0.63	1.9	< 0.05	0.86
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	< 0.10	0.62	1.8	< 0.10	0.93
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	< 0.10	0.48	1.1	< 0.10	0.61
Benzo(a)pyrene	mg/kg	0.1	MCERTS	< 0.10	0.58	1.7	< 0.10	0.88
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	< 0.10	0.37	1.0	< 0.10	0.45
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	0.23	< 0.10	< 0.10
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	0.46	1.4	< 0.05	0.45

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	< 1.60	6.78	23.2	< 1.60	10.1
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	6.9	8.0	9.1	29	4.6
Barium (aqua regia extractable)	mg/kg	1	MCERTS	27	76	190	100	33
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.4	0.5	0.7	0.4	0.3
Boron (water soluble)	mg/kg	0.2	MCERTS	1.4	1.4	1.0	1.7	< 0.2
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	14	18	24	31	9.4
Copper (aqua regia extractable)	mg/kg	1	MCERTS	20	120	37	85	33
Lead (aqua regia extractable)	mg/kg	1	MCERTS	66	160	150	300	110
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	11	14	18	44	8.3
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	26	28	37	69	18
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	32	110	150	17	25



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Analytical Report Number: 16-13640

Project / Site name: Royal Arsenal Riverside - Phases 18-19

Lab Sample Number	550931			550932		550933		550934		550935	
Sample Reference	WS01			WS03		WS04		WS04		WS05	
Sample Number	None Supplied			None Supplied		None Supplied		None Supplied		None Supplied	
Depth (m)	0.40-0.50			0.30-0.40		0.10-0.20		0.80-0.90		0.50-0.60	
Date Sampled	02/03/2016			03/03/2016		03/03/2016		03/03/2016		03/03/2016	
Time Taken	None Supplied			None Supplied		None Supplied		None Supplied		None Supplied	
Analytical Parameter (Soil Analysis)											

Monoaromatics

Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH C10 - C40	mg/kg	10	MCERTS	< 10	440	310	54	24
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TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	12	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	3.6	3.7	17	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	34	17	10	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	210	97	8.5	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	250	120	48	< 10

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	1.6	2.3	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	6.1	3.0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	17	33	< 10	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	99	94	< 10	14
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	120	140	< 10	21

PCBs

PCB Congener 077	mg/kg	0.001	NONE	-	< 0.001	-	-	-
PCB Congener 081	mg/kg	0.001	NONE	-	< 0.001	-	-	-
PCB Congener 105	mg/kg	0.001	NONE	-	< 0.001	-	-	-
PCB Congener 114	mg/kg	0.001	NONE	-	< 0.001	-	-	-
PCB Congener 118	mg/kg	0.001	NONE	-	< 0.001	-	-	-
PCB Congener 123	mg/kg	0.001	NONE	-	< 0.001	-	-	-
PCB Congener 126	mg/kg	0.001	NONE	-	< 0.001	-	-	-
PCB Congener 156	mg/kg	0.001	NONE	-	< 0.001	-	-	-
PCB Congener 157	mg/kg	0.001	NONE	-	< 0.001	-	-	-
PCB Congener 167	mg/kg	0.001	NONE	-	< 0.001	-	-	-
PCB Congener 169	mg/kg	0.001	NONE	-	< 0.001	-	-	-
PCB Congener 189	mg/kg	0.001	NONE	-	< 0.001	-	-	-
Total PCBs	mg/kg	0.012	NONE	-	< 0.012	-	-	-



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Analytical Report Number: 16-13640

Project / Site name: Royal Arsenal Riverside - Phases 18-19

Lab Sample Number				550936	550937	550938		
Sample Reference				WS06	WS07	WS08		
Sample Number				None Supplied	None Supplied	None Supplied		
Depth (m)				0.80-1.00	0.50-0.60	0.40-0.50		
Date Sampled				04/03/2016	04/03/2016	04/03/2016		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Soil Analysis)								
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1		
Moisture Content	%	N/A	NONE	15	17	6.3		
Total mass of sample received	kg	0.001	NONE	0.48	0.49	0.46		

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	Chrysotile - Loose Fibres		
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Detected		

General Inorganics

pH	pH Units	N/A	MCERTS	8.6	8.2	9.0		
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1		
Total Sulphate as SO ₄	mg/kg	50	MCERTS	740	670	7200		
Water Soluble Sulphate (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.053	0.042	1.2		
Sulphide	mg/kg	1	MCERTS	< 1.0	1.1	13		
Total Organic Carbon (TOC)	%	0.1	MCERTS	< 0.1	0.9	0.8		

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05		
Acenaphthylene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	0.19		
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	0.44		
Fluorene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	0.34		
Phenanthrene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	3.8		
Anthracene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	1.4		
Fluoranthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	7.9		
Pyrene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	7.2		
Benzo(a)anthracene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	3.4		
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	3.6		
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	3.0		
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	2.2		
Benzo(a)pyrene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	3.0		
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	1.5		
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	0.27		
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	1.8		

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	< 1.60	< 1.60	40.0		
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	11	9.3	24		
Barium (aqua regia extractable)	mg/kg	1	MCERTS	74	220	140		
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	1.3	0.6	0.4		
Boron (water soluble)	mg/kg	0.2	MCERTS	0.5	0.8	1.5		
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2		
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	< 1.2	< 1.2		
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	21	9.2	24		
Copper (aqua regia extractable)	mg/kg	1	MCERTS	40	120	53		
Lead (aqua regia extractable)	mg/kg	1	MCERTS	270	290	230		
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	0.6	< 0.3		
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	22	11	19		
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	49	34	28		
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	53	72	110		



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MCERTS



Analytical Report Number: 16-13640

Project / Site name: Royal Arsenal Riverside - Phases 18-19

Lab Sample Number				550936	550937	550938		
Sample Reference				WS06	WS07	WS08		
Sample Number				None Supplied	None Supplied	None Supplied		
Depth (m)				0.80-1.00	0.50-0.60	0.40-0.50		
Date Sampled				04/03/2016	04/03/2016	04/03/2016		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Soil Analysis)								
Monoaromatics								
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		

Petroleum Hydrocarbons

TPH C10 - C40	mg/kg	10	MCERTS	< 10	< 10	730		
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1		
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1		
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1		
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	1.5		
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	26		
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	45		
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	< 8.0	310		
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10	380		
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1		
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1		
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1		
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	2.2		
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	10		
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	< 10	45		
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	< 10	170		
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10	230		

PCBs

PCB Congener 077	mg/kg	0.001	NONE	< 0.001	-	< 0.001		
PCB Congener 081	mg/kg	0.001	NONE	< 0.001	-	< 0.001		
PCB Congener 105	mg/kg	0.001	NONE	< 0.001	-	< 0.001		
PCB Congener 114	mg/kg	0.001	NONE	< 0.001	-	< 0.001		
PCB Congener 118	mg/kg	0.001	NONE	< 0.001	-	< 0.001		
PCB Congener 123	mg/kg	0.001	NONE	< 0.001	-	< 0.001		
PCB Congener 126	mg/kg	0.001	NONE	< 0.001	-	< 0.001		
PCB Congener 156	mg/kg	0.001	NONE	< 0.001	-	< 0.001		
PCB Congener 157	mg/kg	0.001	NONE	< 0.001	-	< 0.001		
PCB Congener 167	mg/kg	0.001	NONE	< 0.001	-	< 0.001		
PCB Congener 169	mg/kg	0.001	NONE	< 0.001	-	< 0.001		
PCB Congener 189	mg/kg	0.001	NONE	< 0.001	-	< 0.001		
Total PCBs	mg/kg	0.012	NONE	< 0.012	-	< 0.012		



Analytical Report Number: 16-13640

Project / Site name: Royal Arsenal Riverside - Phases 18-19

Lab Sample Number	550939	550940	550941		
Sample Reference	WS04	WS06	WS08		
Sample Number	None Supplied	None Supplied	None Supplied		
Depth (m)	0.80-0.90	0.80-1.00	0.40-0.50		
Date Sampled	03/03/2016	04/03/2016	04/03/2016		
Time Taken	None Supplied	None Supplied	None Supplied		
Analytical Parameter (Leachate Analysis)					

General Inorganics

pH	pH Units	N/A	ISO 17025	7.7	8.0	8.9		
Total Cyanide	µg/l	10	ISO 17025	< 10	< 10	< 10		
Sulphate as SO ₄	µg/l	100	ISO 17025	39300	7890	62100		
Sulphide	µg/l	5	NONE	< 5.0	< 5.0	< 5.0		
Total Organic Carbon (TOC)	mg/l	0.1	NONE	2.23	2.68	7.78		

Total Phenols

Total Phenols (monohydric)	µg/l	10	ISO 17025	< 10	< 10	< 10		
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Speciated PAHs

Naphthalene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01		
Acenaphthylene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01		
Acenaphthene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01		
Fluorene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01		
Phenanthrene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01		
Anthracene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01		
Fluoranthene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01		
Pyrene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01		
Benzo(a)anthracene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01		
Chrysene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01		
Benzo(b)fluoranthene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01		
Benzo(k)fluoranthene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01		
Benzo(a)pyrene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01		
Indeno(1,2,3-cd)pyrene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01		
Dibenz(a,h)anthracene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01		
Benzo(ghi)perylene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01		

Total PAH

Total EPA-16 PAHs	µg/l	0.2	NONE	< 0.2	< 0.2	< 0.2		
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Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	1.1	ISO 17025	1.7	12	8.0		
Barium (dissolved)	µg/l	0.05	ISO 17025	170	16	46		
Beryllium (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 0.2	< 0.2		
Boron (dissolved)	µg/l	10	ISO 17025	48	< 10	11		
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08	< 0.08		
Chromium (dissolved)	µg/l	0.4	ISO 17025	< 0.4	1.1	3.0		
Copper (dissolved)	µg/l	0.7	ISO 17025	3.4	3.3	28		
Lead (dissolved)	µg/l	1	ISO 17025	4.0	19	15		
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5	< 0.5		
Nickel (dissolved)	µg/l	0.3	ISO 17025	8.8	< 0.3	4.7		
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	< 4.0	< 4.0		
Vanadium (dissolved)	µg/l	1.7	ISO 17025	< 1.7	17	34		
Zinc (dissolved)	µg/l	0.4	ISO 17025	< 0.4	< 0.4	< 0.4		



Analytical Report Number : 16-13640

Project / Site name: Royal Arsenal Riverside - Phases 18-19

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
550931	WS01	None Supplied	0.40-0.50	Light brown sandy loam with gravel.
550932	WS03	None Supplied	0.30-0.40	Brown loam and sand with gravel.
550933	WS04	None Supplied	0.10-0.20	Light brown sandy loam with gravel and rubble.
550934	WS04	None Supplied	0.80-0.90	Brown clay and sand.
550935	WS05	None Supplied	0.50-0.60	Light brown sandy loam with gravel.
550936	WS06	None Supplied	0.80-1.00	Light brown sandy loam with gravel and brick.
550937	WS07	None Supplied	0.50-0.60	Brown loam and clay with gravel.
550938	WS08	None Supplied	0.40-0.50	Brown loam and clay with gravel and rubble.



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Analytical Report Number : 16-13640

Project / Site name: Royal Arsenal Riverside - Phases 18-19

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Boron in leachate	Determination of boron by acidification followed by ICP-OES.	In-house method based on MEWAM	L039-PL	W	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Hexavalent chromium in soil (Lower Level)	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Metals by ICP-OES in leachate	Determination of metals in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
Monohydric phenols in leachate	Determination of phenols in leachate by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	ISO 17025
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
PCBs WHO 12 in soil	Determination of PCBs (WHO-12 Congeners) by GC-MS.	In-house method based on USEPA 8082	L027-PL	D	NONE
pH in leachate	Determination of pH in leachate by electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	ISO 17025
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	D	MCERTS
Speciated EPA-16 PAHs in leachate	Determination of PAH compounds in leachate by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L070-PL	W	NONE
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Sulphate in leachates	Determination of sulphate in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025

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The results included within the report are representative of the samples submitted for analysis.

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MCERTS



Analytical Report Number : 16-13640

Project / Site name: Royal Arsenal Riverside - Phases 18-19

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphate, water soluble, in soil	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP-OES.	L038-PL	D	MCERTS
Sulphide in leachate	Determination of sulphide in leachate by ion selective electrode.	In-house method	L010-PL	W	NONE
Sulphide in soil	Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode.	In-house method	L010-PL	D	MCERTS
Total cyanide in leachate	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	ISO 17025
Total organic carbon in leachate	Determination of dissolved organic carbon in leachate by TOC/DOC NDIR analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	NONE
Total organic carbon in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L023-PL	D	MCERTS
Total sulphate (as SO ₄ in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L038-PL	D	MCERTS
TPH Banding in Soil by FID	Determination of hexane extractable hydrocarbons in soil by GC-FID.	In-house method, TPH with carbon banding.	L076-PL	W	MCERTS
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method	L076-PL	W	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30°C.



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Analytical Report Number : 16-13980

Project / Site name:	RAR - Linear Park	Samples received on:	24/03/2016
Your job number:	1508005.005	Samples instructed on:	24/03/2016
Your order number:		Analysis completed by:	30/03/2016
Report Issue Number:	1	Report issued on:	30/03/2016
Samples Analysed:	4 soil samples		


Reporting Manager
For & on behalf of i2 Analytical Ltd.


Assistant Reporting Manager
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

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Analytical Report Number: 16-13980
 Project / Site name: RAR - Linear Park

Lab Sample Number	553269			553270			553271			553272		
Sample Reference	TP05			TP05			TP07			TP08		
Sample Number	None Supplied			None Supplied			None Supplied			None Supplied		
Depth (m)	0.50-0.70			1.30-1.50			3.30-3.50			1.00-1.20		
Date Sampled	22/03/2016			22/03/2016			22/03/2016			22/03/2016		
Time Taken	None Supplied			None Supplied			None Supplied			None Supplied		
Analytical Parameter (Soil Analysis)												
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected	



Analytical Report Number : 16-13980

Project / Site name: RAR - Linear Park

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.



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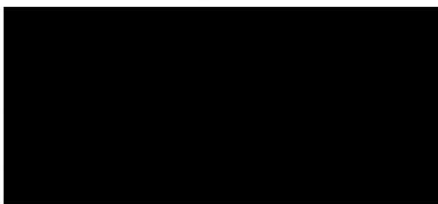


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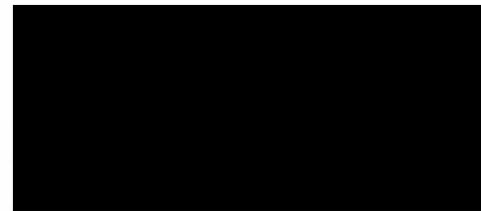
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Analytical Report Number : 16-13981

Project / Site name:	RAR - Linear Park	Samples received on:	24/03/2016
Your job number:	1508005.005	Samples instructed on:	24/03/2016
Your order number:		Analysis completed by:	08/04/2016
Report Issue Number:	1	Report issued on:	08/04/2016
Samples Analysed:	3 leachate samples - 8 soil samples		



Reporting Manager
For & on behalf of i2 Analytical Ltd.



Assistant Reporting Manager
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

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Analytical Report Number: 16-13981

Project / Site name: RAR - Linear Park

Lab Sample Number			553273	553274	553275	553276	553277
Sample Reference			TP01	TP01	TP02	TP02	TP03
Sample Number			None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)			0.20-0.40	0.80-1.00	0.20-0.40	0.80-1.00	0.60-0.80
Date Sampled			21/03/2016	21/03/2016	21/03/2016	21/03/2016	21/03/2016
Time Taken			None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)							
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	12	7.7	14	12
Total mass of sample received	kg	0.001	NONE	0.51	0.53	0.52	0.53

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	Chrysotile- Loose fibres	Chrysotile- Insulation lagging	Chrysotile- Loose fibres	Chrysotile- Loose fibres	-
Asbestos in Soil	Type	N/A	ISO 17025	Detected	Detected	Detected	Detected	Not-detected

General Inorganics

pH	pH Units	N/A	MCERTS	7.5	8.7	8.2	8.6	8.2
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Total Sulphate as SO ₄	mg/kg	50	MCERTS	4600	1000	790	830	160
Water Soluble Sulphate (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	1.4	0.15	0.040	0.035	0.011
Sulphide	mg/kg	1	MCERTS	3.6	22	3.3	2.5	< 1.0
Total Organic Carbon (TOC)	%	0.1	MCERTS	1.5	0.6	2.1	0.7	0.3

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.15	0.43	0.19	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	0.26	< 0.10	< 0.10
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	0.60	0.16	< 0.10	< 0.10
Fluorene	mg/kg	0.1	MCERTS	0.19	0.41	0.19	< 0.10	< 0.10
Phenanthrene	mg/kg	0.1	MCERTS	2.3	4.9	3.4	1.3	< 0.10
Anthracene	mg/kg	0.1	MCERTS	0.50	0.87	0.68	0.32	< 0.10
Fluoranthene	mg/kg	0.1	MCERTS	5.1	7.7	7.3	2.0	< 0.10
Pyrene	mg/kg	0.1	MCERTS	4.3	6.6	5.9	1.7	< 0.10
Benzo(a)anthracene	mg/kg	0.1	MCERTS	3.6	5.4	4.0	1.4	< 0.10
Chrysene	mg/kg	0.05	MCERTS	2.2	3.4	3.4	1.1	< 0.05
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	4.1	6.2	4.8	1.6	< 0.10
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	1.2	1.8	1.9	0.42	< 0.10
Benzo(a)pyrene	mg/kg	0.1	MCERTS	3.0	4.6	3.7	1.2	< 0.10
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	1.8	2.7	2.2	0.68	< 0.10
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	0.31	0.45	0.35	< 0.10	< 0.10
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	1.9	3.0	2.2	0.76	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	30.7	48.9	40.8	12.4	< 1.60
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Analytical Report Number: 16-13981

Project / Site name: RAR - Linear Park

Lab Sample Number	553273		553274		553275		553276		553277	
Sample Reference	TP01		TP01		TP02		TP02		TP03	
Sample Number	None Supplied		None Supplied		None Supplied		None Supplied		None Supplied	
Depth (m)	0.20-0.40		0.80-1.00		0.20-0.40		0.80-1.00		0.60-0.80	
Date Sampled	21/03/2016		21/03/2016		21/03/2016		21/03/2016		21/03/2016	
Time Taken	None Supplied		None Supplied		None Supplied		None Supplied		None Supplied	
Analytical Parameter (Soil Analysis)										

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	21	7.3	15	18	6.7
Barium (aqua regia extractable)	mg/kg	1	MCERTS	150	120	180	180	46
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.8	0.7	1.0	1.6	0.9
Boron (water soluble)	mg/kg	0.2	MCERTS	2.2	1.1	1.1	2.0	0.8
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.3	< 0.2	0.4	0.3	< 0.2
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	23	23	24	26	24
Copper (aqua regia extractable)	mg/kg	1	MCERTS	74	66	80	110	24
Lead (aqua regia extractable)	mg/kg	1	MCERTS	180	170	170	250	16
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	24	15	23	31	21
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	41	34	47	65	42
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	210	100	200	160	49

Monoaromatics

Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH C10 - C40	mg/kg	10	MCERTS	170	170	130	120	< 10
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	3.6	< 2.0	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	29	27	< 8.0	45	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	36	35	14	53	< 10
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	2.9	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	4.4	7.0	4.5	2.4	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	40	38	37	15	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	75	68	66	35	< 10
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	120	120	110	53	< 10



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MCERTS



Analytical Report Number: 16-13981

Project / Site name: RAR - Linear Park

Lab Sample Number				553278	553279	553280		
Sample Reference				TP04	TP07	TP07		
Sample Number				None Supplied	None Supplied	None Supplied		
Depth (m)				0.50-0.70	0.50-0.60	1.00-1.20		
Date Sampled				21/03/2016	22/03/2016	22/03/2016		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Soil Analysis)								
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1		
Moisture Content	%	N/A	NONE	10	14	11		
Total mass of sample received	kg	0.001	NONE	0.34	0.39	0.54		

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	Chrysotile, Amosite- Loose fibres	Amosite- Loose fibres	-		
Asbestos in Soil	Type	N/A	ISO 17025	Detected	Detected	Not-detected		

General Inorganics

pH	pH Units	N/A	MCERTS	8.6	7.6	8.5		
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1		
Total Sulphate as SO ₄	mg/kg	50	MCERTS	770	770	1100		
Water Soluble Sulphate (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.10	0.14	0.045		
Sulphide	mg/kg	1	MCERTS	1.3	5.2	< 1.0		
Total Organic Carbon (TOC)	%	0.1	MCERTS	0.8	5.8	0.6		

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	0.55	< 0.05		
Acenaphthylene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10		
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10		
Fluorene	mg/kg	0.1	MCERTS	< 0.10	0.71	< 0.10		
Phenanthrene	mg/kg	0.1	MCERTS	0.47	4.4	< 0.10		
Anthracene	mg/kg	0.1	MCERTS	< 0.10	0.71	< 0.10		
Fluoranthene	mg/kg	0.1	MCERTS	0.88	0.86	0.25		
Pyrene	mg/kg	0.1	MCERTS	0.77	0.96	0.21		
Benzo(a)anthracene	mg/kg	0.1	MCERTS	0.67	1.0	0.42		
Chrysene	mg/kg	0.05	MCERTS	0.56	0.92	0.26		
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	0.81	0.48	0.43		
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	0.43	0.16	0.22		
Benzo(a)pyrene	mg/kg	0.1	MCERTS	0.69	0.39	0.34		
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	0.42	< 0.10	< 0.10		
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10		
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.47	< 0.05	< 0.05		

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	6.17	11.1	2.13		
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Analytical Report Number: 16-13981

Project / Site name: RAR - Linear Park

Lab Sample Number	553278	553279	553280		
Sample Reference	TP04	TP07	TP07		
Sample Number	None Supplied	None Supplied	None Supplied		
Depth (m)	0.50-0.70	0.50-0.60	1.00-1.20		
Date Sampled	21/03/2016	22/03/2016	22/03/2016		
Time Taken	None Supplied	None Supplied	None Supplied		

Analytical Parameter (Soil Analysis)							
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Heavy Metals / Metalloids							
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	9.9	11	7.1	
Barium (aqua regia extractable)	mg/kg	1	MCERTS	82	52	60	
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.8	1.3	0.4	
Boron (water soluble)	mg/kg	0.2	MCERTS	0.3	3.3	0.3	
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	< 1.2	< 1.2	
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	22	11	12	
Copper (aqua regia extractable)	mg/kg	1	MCERTS	52	85	52	
Lead (aqua regia extractable)	mg/kg	1	MCERTS	91	46	240	
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	22	34	13	
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	40	53	22	
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	87	35	37	

Monoaromatics							
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	

Petroleum Hydrocarbons							
TPH C10 - C40	mg/kg	10	MCERTS	68	68	17	
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	5.3	< 1.0	
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	2.3	11	< 2.0	
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	13	< 8.0	
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	40	15	< 8.0	
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	50	44	< 10	
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	8.3	< 2.0	
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	11	< 10	
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	< 10	15	
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	24	17	



Analytical Report Number: 16-13981
 Project / Site name: RAR - Linear Park

Lab Sample Number	553281			553282	553283		
Sample Reference	TP02			TP04	TP07		
Sample Number	None Supplied			None Supplied	None Supplied		
Depth (m)	0.80-1.00			0.50-0.70	0.50-0.60		
Date Sampled	21/03/2016			21/03/2016	22/03/2016		
Time Taken	None Supplied			None Supplied	None Supplied		
Analytical Parameter (Leachate Analysis)							

General Inorganics

pH	pH Units	N/A	ISO 17025	8.3	8.4	8.2		
Total Cyanide	µg/l	10	ISO 17025	< 10	< 10	< 10		
Sulphate as SO ₄	µg/l	100	ISO 17025	3840	3130	15200		
Sulphide	µg/l	5	NONE	< 5.0	< 5.0	< 5.0		
Total Organic Carbon (TOC)	mg/l	0.1	NONE	3.55	2.44	2.57		

Total Phenols

Total Phenols (monohydric)	µg/l	10	ISO 17025	< 10	< 10	< 10		
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Speciated PAHs

Naphthalene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01		
Acenaphthylene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01		
Acenaphthene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01		
Fluorene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01		
Phenanthrene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01		
Anthracene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01		
Fluoranthene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01		
Pyrene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01		
Benzo(a)anthracene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01		
Chrysene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01		
Benzo(b)fluoranthene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01		
Benzo(k)fluoranthene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01		
Benzo(a)pyrene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01		
Indeno(1,2,3-cd)pyrene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01		
Dibenz(a,h)anthracene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01		
Benzo(ghi)perylene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01		

Total PAH

Total EPA-16 PAHs	µg/l	0.2	NONE	< 0.2	< 0.2	< 0.2		
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Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	1.1	ISO 17025	3.8	13	2.0		
Barium (dissolved)	µg/l	0.05	ISO 17025	78	85	150		
Beryllium (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 0.2	< 0.2		
Boron (dissolved)	µg/l	10	ISO 17025	17	19	19		
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08	< 0.08		
Chromium (dissolved)	µg/l	0.4	ISO 17025	3.4	2.9	1.0		
Copper (dissolved)	µg/l	0.7	ISO 17025	11	7.2	1.9		
Lead (dissolved)	µg/l	1	ISO 17025	18	6.0	< 1.0		
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5	< 0.5		
Nickel (dissolved)	µg/l	0.3	ISO 17025	2.0	1.5	4.3		
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	< 4.0	< 4.0		
Vanadium (dissolved)	µg/l	1.7	ISO 17025	8.7	27	3.1		
Zinc (dissolved)	µg/l	0.4	ISO 17025	12	11	8.5		



Analytical Report Number : 16-13981

Project / Site name: RAR - Linear Park

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
553273	TP01	None Supplied	0.20-0.40	Brown loam and clay with gravel and vegetation.
553274	TP01	None Supplied	0.80-1.00	Light brown loam and sand with gravel and brick.
553275	TP02	None Supplied	0.20-0.40	Brown loam and clay with gravel and vegetation.
553276	TP02	None Supplied	0.80-1.00	Grey clay and loam with gravel and vegetation.
553277	TP03	None Supplied	0.60-0.80	Light brown loam and sand with gravel.
553278	TP04	None Supplied	0.50-0.70	Brown loam and clay with gravel and brick.
553279	TP07	None Supplied	0.50-0.60	Black gravelly loam.
553280	TP07	None Supplied	1.00-1.20	Brown loam and sand with gravel.



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Analytical Report Number : 16-13981

Project / Site name: RAR - Linear Park

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Boron in leachate	Determination of boron by acidification followed by ICP-OES.	In-house method based on MEWAM	L039-PL	W	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Hexavalent chromium in soil (Lower Level)	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Metals by ICP-OES in leachate	Determination of metals in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
Monohydric phenols in leachate	Determination of phenols in leachate by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	ISO 17025
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
pH in leachate	Determination of pH in leachate by electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	ISO 17025
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	D	MCERTS
Speciated EPA-16 PAHs in leachate	Determination of PAH compounds in leachate by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L070-PL	W	NONE
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Sulphate in leachates	Determination of sulphate in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Sulphate, water soluble, in soil	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP-OES.	L038-PL	D	MCERTS

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The results included within the report are representative of the samples submitted for analysis.

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MCERTS



Analytical Report Number : 16-13981

Project / Site name: RAR - Linear Park

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphide in leachate	Determination of sulphide in leachate by ion selective electrode.	In-house method	L010-PL	W	NONE
Sulphide in soil	Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode.	In-house method	L010-PL	D	MCERTS
Total cyanide in leachate	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	ISO 17025
Total organic carbon in leachate	Determination of dissolved organic carbon in leachate by TOC/DOC NDIR analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	NONE
Total organic carbon in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L023-PL	D	MCERTS
Total sulphate (as SO ₄ in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L038-PL	D	MCERTS
TPH Banding in Soil by FID	Determination of hexane extractable hydrocarbons in soil by GC-FID.	In-house method, TPH with carbon banding.	L076-PL	W	MCERTS
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method	L076-PL	W	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30°C.



Claire Hooley

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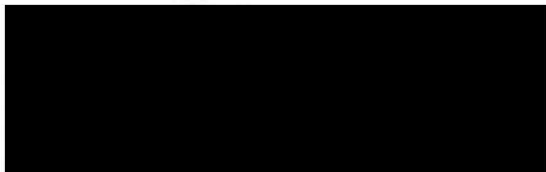
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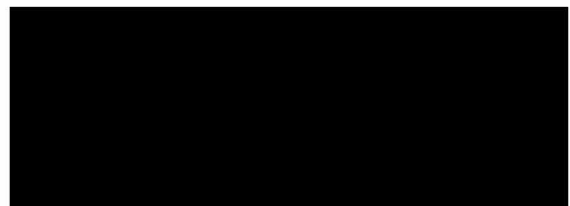
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Analytical Report Number : 16-13984

Project / Site name:	RAR - Linear Park	Samples received on:	24/03/2016
Your job number:	1508005.005	Samples instructed on:	24/03/2016
Your order number:		Analysis completed by:	08/04/2016
Report Issue Number:	1	Report issued on:	08/04/2016
Samples Analysed:	2 soil samples		



Reporting Manager
For & on behalf of i2 Analytical Ltd.



Assistant Reporting Manager
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

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Analytical Report Number: 16-13984
 Project / Site name: RAR - Linear Park

Lab Sample Number				553300	553301			
Sample Reference				TP07	TP08			
Sample Number				None Supplied	None Supplied			
Depth (m)				3.30-3.50	1.00-1.20			
Date Sampled				22/03/2016	22/03/2016			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Soil Analysis)								
Stone Content	%	0.1	NONE	< 0.1	< 0.1			
Moisture Content	%	N/A	NONE	12	12			
Total mass of sample received	kg	0.001	NONE	0.32	0.51			

General Inorganics

pH	pH Units	N/A	MCERTS	7.8	7.9			
Total Sulphate as SO ₄	mg/kg	50	MCERTS	1200	1900			
Water Soluble Sulphate (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.026	0.019			
Total Sulphur	mg/kg	50	NONE	400	690			



Analytical Report Number : 16-13984

Project / Site name: RAR - Linear Park

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
553300	TP07	None Supplied	3.30-3.50	Light brown sandy clay.
553301	TP08	None Supplied	1.00-1.20	Beige sandy clay.



Analytical Report Number : 16-13984

Project / Site name: RAR - Linear Park

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Sulphate, water soluble, in soil	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP-OES.	L038-PL	D	MCERTS
Total sulphate (as SO ₄ in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L038-PL	D	MCERTS
Total Sulphur in soil	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, and MEWAM 2006 Methods for the Determination of Metals in Soil	L038-PL	D	NONE

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30°C.



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Analytical Report Number : 16-14058

Project / Site name:	RAR - Linear Park	Samples received on:	29/03/2016
Your job number:	1508005.005	Samples instructed on:	29/03/2016
Your order number:		Analysis completed by:	31/03/2016
Report Issue Number:	1	Report issued on:	31/03/2016
Samples Analysed:	1 soil sample		

Quality Manager

For & on behalf of i2 Analytical Ltd.

Assistant Reporting Manager

For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

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Analytical Report Number: 16-14058
 Project / Site name: RAR - Linear Park

Lab Sample Number				553773				
Sample Reference				TP05				
Sample Number				None Supplied				
Depth (m)				2.40-2.60				
Date Sampled				22/03/2016				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)								
Asbestos in Soil				Type	N/A	ISO 17025	Not-detected	



Analytical Report Number : 16-14058

Project / Site name: RAR - Linear Park

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.



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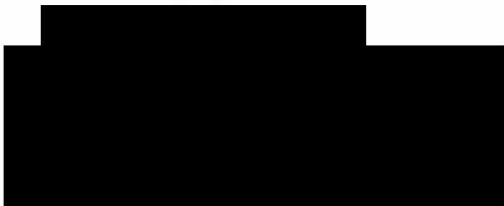
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Analytical Report Number : 16-14060

Project / Site name:	RAR - Linear Park	Samples received on:	29/03/2016
Your job number:	1508005.005	Samples instructed on:	29/03/2016
Your order number:		Analysis completed by:	11/04/2016
Report Issue Number:	1	Report issued on:	11/04/2016
Samples Analysed:	1 soil sample		



Reporting Manager
For & on behalf of i2 Analytical Ltd.



Assistant Reporting Manager
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

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soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

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Analytical Report Number: 16-14060
 Project / Site name: RAR - Linear Park

Lab Sample Number				553777				
Sample Reference				TP05				
Sample Number				None Supplied				
Depth (m)				2.40-2.60				
Date Sampled				22/03/2016				
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)								
Stone Content	%	0.1	NONE	< 0.1				
Moisture Content	%	N/A	NONE	13				
Total mass of sample received	kg	0.001	NONE	0.49				

General Inorganics

pH	pH Units	N/A	MCERTS	7.9				
Total Sulphate as SO ₄	mg/kg	50	MCERTS	820				
Water Soluble Sulphate (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.012				
Total Sulphur	mg/kg	50	NONE	360				



Analytical Report Number : 16-14060

Project / Site name: RAR - Linear Park

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
553777	TP05	None Supplied	2.40-2.60	Beige sand.



4041



Analytical Report Number : 16-14060

Project / Site name: RAR - Linear Park

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Sulphate, water soluble, in soil	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP-OES.	L038-PL	D	MCERTS
Total sulphate (as SO ₄ in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L038-PL	D	MCERTS
Total Sulphur in soil	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, and MEWAM 2006 Methods for the Determination of Metals in Soil	L038-PL	D	NONE

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30°C.



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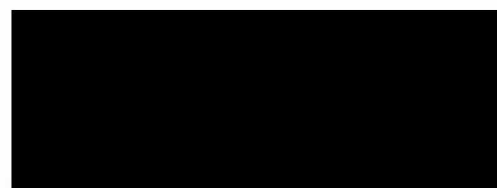
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Analytical Report Number : 16-14889

Project / Site name:	Royal Arsenal Riverside - Linear Park	Samples received on:	07/04/2016
Your job number:	1508005.005	Samples instructed on:	07/04/2016
Your order number:		Analysis completed by:	11/04/2016
Report Issue Number:	1	Report issued on:	11/04/2016
Samples Analysed:	3 soil samples		



Reporting Manager
For & on behalf of i2 Analytical Ltd.



Assistant Reporting Manager
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

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Analytical Report Number: 16-14889

Project / Site name: Royal Arsenal Riverside - Linear Park

Lab Sample Number	558469			558470	558471		
Sample Reference	TP09			TP12	TP12		
Sample Number	None Supplied			None Supplied	None Supplied		
Depth (m)	3.60-3.80			2.00-2.20	3.40-3.60		
Date Sampled	05/04/2016			05/04/2016	05/04/2016		
Time Taken	None Supplied			None Supplied	None Supplied		
Analytical Parameter (Soil Analysis)							

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	Amosite- Loose fibres	Amosite- Insulation lagging		
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Detected	Detected		



Analytical Report Number : 16-14889

Project / Site name: Royal Arsenal Riverside - Linear Park

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.



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Analytical Report Number : 16-17780

Project / Site name:	Royal Arsenal Riverside - Phase 18-19	Samples received on:	16/05/2016
Your job number:	1508005-003	Samples instructed on:	17/05/2016
Your order number:		Analysis completed by:	23/05/2016
Report Issue Number:	1	Report issued on:	23/05/2016
Samples Analysed:	1 water sample		

Reporting Manager
For & on behalf of i2 Analytical Ltd.

Assistant Reporting Manager
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Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

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Analytical Report Number: 16-17780

Project / Site name: Royal Arsenal Riverside - Phase 18-19

Lab Sample Number	574563							
Sample Reference	BH01a							
Sample Number	None Supplied							
Depth (m)	None Supplied							
Date Sampled	16/05/2016							
Time Taken	None Supplied							
Analytical Parameter (Water Analysis)								

General Inorganics

pH	pH Units	N/A	ISO 17025	7.2				
Total Cyanide	µg/l	10	ISO 17025	< 10				
Sulphate as SO ₄	µg/l	45	ISO 17025	444000				
Sulphide	µg/l	5	NONE	< 5.0				
Total Organic Carbon (TOC)	mg/l	0.1	ISO 17025	6.95				

Total Phenols

Total Phenols (monohydric)	µg/l	10	ISO 17025	< 10				
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Speciated PAHs

Naphthalene	µg/l	0.01	ISO 17025	< 0.01				
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01				
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01				
Fluorene	µg/l	0.01	ISO 17025	< 0.01				
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01				
Anthracene	µg/l	0.01	ISO 17025	< 0.01				
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01				
Pyrene	µg/l	0.01	ISO 17025	< 0.01				
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01				
Chrysene	µg/l	0.01	ISO 17025	< 0.01				
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01				
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01				
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01				
Indeno(1,2,3-cd)pyrene	µg/l	0.01	NONE	< 0.01				
Dibenz(a,h)anthracene	µg/l	0.01	NONE	< 0.01				
Benzo(ghi)perylene	µg/l	0.01	NONE	< 0.01				

Total PAH

Total EPA-16 PAHs	µg/l	0.16	NONE	< 0.16				
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Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	0.15	ISO 17025	9.97				
Barium (dissolved)	µg/l	0.06	ISO 17025	43				
Beryllium (dissolved)	µg/l	0.1	ISO 17025	0.1				
Boron (dissolved)	µg/l	10	ISO 17025	160				
Cadmium (dissolved)	µg/l	0.02	ISO 17025	< 0.02				
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0				
Chromium (dissolved)	µg/l	0.2	ISO 17025	< 0.2				
Copper (dissolved)	µg/l	0.5	ISO 17025	< 0.5				
Lead (dissolved)	µg/l	0.2	ISO 17025	0.2				
Mercury (dissolved)	µg/l	0.05	ISO 17025	0.17				
Nickel (dissolved)	µg/l	0.5	ISO 17025	9.9				
Selenium (dissolved)	µg/l	0.6	ISO 17025	0.9				
Vanadium (dissolved)	µg/l	0.2	ISO 17025	0.2				
Zinc (dissolved)	µg/l	0.5	ISO 17025	2.2				



Analytical Report Number: 16-17780

Project / Site name: Royal Arsenal Riverside - Phase 18-19

Lab Sample Number	574563						
Sample Reference	BH01a						
Sample Number	None Supplied						
Depth (m)	None Supplied						
Date Sampled	16/05/2016						
Time Taken	None Supplied						
Analytical Parameter (Water Analysis)							

Monoaromatics

Benzene	µg/l	1	ISO 17025	< 1.0			
Toluene	µg/l	1	ISO 17025	< 1.0			
Ethylbenzene	µg/l	1	ISO 17025	< 1.0			
p & m-xylene	µg/l	1	ISO 17025	< 1.0			
o-xylene	µg/l	1	ISO 17025	< 1.0			
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0			

Petroleum Hydrocarbons

TPH1 (C10 - C40)	µg/l	10	NONE	< 10			
TPH-CWG - Aliphatic >C5 - C6	µg/l	10	NONE	< 10			
TPH-CWG - Aliphatic >C6 - C8	µg/l	10	NONE	< 10			
TPH-CWG - Aliphatic >C8 - C10	µg/l	10	NONE	< 10			
TPH-CWG - Aliphatic >C10 - C12	µg/l	10	NONE	< 10			
TPH-CWG - Aliphatic >C12 - C16	µg/l	10	NONE	< 10			
TPH-CWG - Aliphatic >C16 - C21	µg/l	10	NONE	< 10			
TPH-CWG - Aliphatic >C21 - C35	µg/l	10	NONE	< 10			
TPH-CWG - Aliphatic (C5 - C35)	µg/l	10	NONE	< 10			
TPH-CWG - Aromatic >C5 - C7	µg/l	10	NONE	< 10			
TPH-CWG - Aromatic >C7 - C8	µg/l	10	NONE	< 10			
TPH-CWG - Aromatic >C8 - C10	µg/l	10	NONE	< 10			
TPH-CWG - Aromatic >C10 - C12	µg/l	10	NONE	< 10			
TPH-CWG - Aromatic >C12 - C16	µg/l	10	NONE	< 10			
TPH-CWG - Aromatic >C16 - C21	µg/l	10	NONE	< 10			
TPH-CWG - Aromatic >C21 - C35	µg/l	10	NONE	< 10			
TPH-CWG - Aromatic (C5 - C35)	µg/l	10	NONE	< 10			

U/S = Unsuitable Sample I/S = Insufficient Sample



Analytical Report Number : 16-17780

Project / Site name: Royal Arsenal Riverside - Phase 18-19

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Boron in water	Determination of boron in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW	In-house method based on MEWAM	L039-PL	W	ISO 17025
BTEX and MTBE in water (Monoaromatics)	Determination of BTEX and MTBE in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025
Hexavalent chromium in water	Determination of hexavalent chromium in water by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method by continuous flow analyser. Accredited Matrices SW, GW, PW.	L080-PL	W	ISO 17025
Metals in water by ICP-MS (dissolved)	Determination of metals in water by acidification followed by ICP-MS. Accredited Matrices: SW, GW, PW except B=SW,GW, Hg=SW,PW, Al=SW,PW.	In-house method based on USEPA Method 6020 & 200.8 "for the determination of trace elements in water by ICP-MS.	L012-PL	W	ISO 17025
Monohydric phenols in water	Determination of phenols in water by continuous flow analyser. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	ISO 17025
pH in water	Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	ISO 17025
Speciated EPA-16 PAHs in water	Determination of PAH compounds in water by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L0102B-PL	W	NONE
Sulphate in water	Determination of sulphate in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Sulphide in water	Determination of sulphide in water by ion selective electrode.	In-house method	L010-PL	W	NONE
Total cyanide in water	Determination of total cyanide by distillation followed by colorimetry. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	ISO 17025
Total organic carbon in water	Determination of dissolved organic carbon in water by TOC/DOC NDIR analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	ISO 17025
TPH1 (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS.	In-house method	L070-PL	W	NONE
TPHCWG (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation.	In-house method	L070-PL	W	NONE

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30°C.



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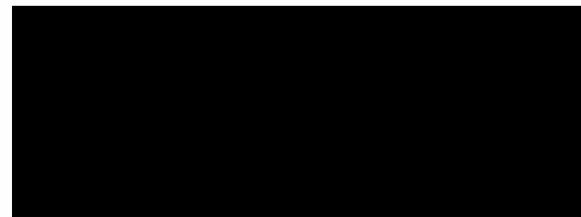
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Analytical Report Number : 17-70019

Project / Site name:	Royal Arsenal Riverside - Linear Park	Samples received on:	06/12/2017
Your job number:	1508005.014	Samples instructed on:	07/12/2017
Your order number:		Analysis completed by:	21/12/2017
Report Issue Number:	1	Report issued on:	21/12/2017
Samples Analysed:	7 soil samples		



Reporting Manager
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

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Analytical Report Number: 17-70019

Project / Site name: Royal Arsenal Riverside - Linear Park

Lab Sample Number	871614		871615		871616		871617		871618	
Sample Reference	TH01		TH01		TH02		TH02		TH03	
Sample Number	None Supplied		None Supplied		None Supplied		None Supplied		None Supplied	
Depth (m)	0.30		0.70		1.60		2.80		0.85	
Date Sampled	05/12/2017		05/12/2017		05/12/2017		05/12/2017		05/12/2017	
Time Taken	None Supplied		None Supplied		None Supplied		None Supplied		None Supplied	
Analytical Parameter (Soil Analysis)										
Stone Content	%	0.1	NONE	< 0.1	27	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	12	7.0	7.5	17	13	13	13
Total mass of sample received	kg	0.001	NONE	0.45	0.34	0.56	0.50	0.50	0.51	0.51

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	-	-	-	-
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General Inorganics

pH - Automated	pH Units	N/A	MCERTS	7.9	8.4	9.3	9.2	9.4
Total Cyanide	mg/kg	1	MCERTS	1	< 1	< 1	< 1	< 1
Total Sulphate as SO ₄	mg/kg	50	MCERTS	700	1300	1800	3000	5000
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.061	0.16	0.20	0.19	1.3
Sulphide	mg/kg	1	MCERTS	1.2	6.9	2.0	< 1.0	2.0
Total Organic Carbon (TOC)	%	0.1	MCERTS	2.0	1.2	0.6	0.3	0.6

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	0.15	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	0.44	1.2	0.20	< 0.05	1.0
Anthracene	mg/kg	0.05	MCERTS	0.17	0.31	< 0.05	< 0.05	0.14
Fluoranthene	mg/kg	0.05	MCERTS	1.5	3.4	0.46	< 0.05	1.7
Pyrene	mg/kg	0.05	MCERTS	1.6	3.1	0.48	< 0.05	1.5
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.99	2.1	0.34	< 0.05	0.97
Chrysene	mg/kg	0.05	MCERTS	0.89	1.9	0.29	< 0.05	0.83
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	0.86	1.8	0.31	< 0.05	0.84
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.86	1.4	0.33	< 0.05	0.76
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.94	2.5	0.41	< 0.05	0.93
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.38	1.2	< 0.05	< 0.05	0.41
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	0.32	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.57	1.3	< 0.05	< 0.05	0.47

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	9.23	20.8	2.82	< 0.80	9.66
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	20	12	8.3	8.1	12
Barium (aqua regia extractable)	mg/kg	1	MCERTS	55	110	74	87	190
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.54	0.54	0.27	0.32	0.48
Boron (water soluble)	mg/kg	0.2	MCERTS	2.7	1.9	1.0	0.9	1.9
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	22	20	15	17	17
Copper (aqua regia extractable)	mg/kg	1	MCERTS	28	82	40	22	110
Lead (aqua regia extractable)	mg/kg	1	MCERTS	74	260	170	150	320
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.6	0.8	< 0.3	< 0.3	1.5
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	13	15	14	9.8	15
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	26	29	24	22	31
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	88	160	210	31	140



Analytical Report Number: 17-70019

Project / Site name: Royal Arsenal Riverside - Linear Park

Lab Sample Number	871614		871615		871616		871617		871618	
Sample Reference	TH01		TH01		TH02		TH02		TH03	
Sample Number	None Supplied		None Supplied		None Supplied		None Supplied		None Supplied	
Depth (m)	0.30		0.70		1.60		2.80		0.85	
Date Sampled	05/12/2017		05/12/2017		05/12/2017		05/12/2017		05/12/2017	
Time Taken	None Supplied		None Supplied		None Supplied		None Supplied		None Supplied	
Analytical Parameter (Soil Analysis)										

Monoaromatics

Benzene	ug/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	ug/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	ug/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	ug/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	ug/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	ug/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH C10 - C40	mg/kg	10	MCERTS	< 10	98	170	< 10	78
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TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	< 8.0	23	< 8.0	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10	26	< 10	< 10

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	2.7	< 2.0	3.3
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	13	12	< 10	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	65	73	< 10	40
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	77	88	< 10	54



Analytical Report Number: 17-70019

Project / Site name: Royal Arsenal Riverside - Linear Park

Lab Sample Number			871619	871620			
Sample Reference			TH04	TH04			
Sample Number			None Supplied	None Supplied			
Depth (m)			0.50	1.50			
Date Sampled			05/12/2017	05/12/2017			
Time Taken			None Supplied	None Supplied			
Analytical Parameter (Soil Analysis)							
Stone Content	%	0.1	NONE	< 0.1	< 0.1		
Moisture Content	%	N/A	NONE	7.9	5.5		
Total mass of sample received	kg	0.001	NONE	0.50	0.56		

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	-		
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General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.1	9.2		
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1		
Total Sulphate as SO ₄	mg/kg	50	MCERTS	1500	1400		
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.15	0.22		
Sulphide	mg/kg	1	MCERTS	6.4	8.2		
Total Organic Carbon (TOC)	%	0.1	MCERTS	1.6	1.2		

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0		
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	0.71		
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05		
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05		
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05		
Phenanthrene	mg/kg	0.05	MCERTS	0.68	4.2		
Anthracene	mg/kg	0.05	MCERTS	0.16	0.35		
Fluoranthene	mg/kg	0.05	MCERTS	1.5	4.4		
Pyrene	mg/kg	0.05	MCERTS	1.4	3.3		
Benzo(a)anthracene	mg/kg	0.05	MCERTS	1.1	1.8		
Chrysene	mg/kg	0.05	MCERTS	0.77	1.5		
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	1.2	1.4		
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.72	1.5		
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.90	1.8		
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.45	0.87		
Dibenzo(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05		
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.54	0.98		

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	9.39	22.8		
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	6.5	8.9		
Barium (aqua regia extractable)	mg/kg	1	MCERTS	84	80		
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.39	< 0.06		
Boron (water soluble)	mg/kg	0.2	MCERTS	1.7	1.2		
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2		
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	< 1.2		
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	20	26		
Copper (aqua regia extractable)	mg/kg	1	MCERTS	69	300		
Lead (aqua regia extractable)	mg/kg	1	MCERTS	110	240		
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.5	1.1		
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	14	25		
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0		
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	26	59		
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	82	220		



Analytical Report Number: 17-70019

Project / Site name: Royal Arsenal Riverside - Linear Park

Lab Sample Number				871619	871620			
Sample Reference				TH04	TH04			
Sample Number				None Supplied	None Supplied			
Depth (m)				0.50	1.50			
Date Sampled				05/12/2017	05/12/2017			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Soil Analysis)								

Monoaromatics

Benzene	ug/kg	1	MCERTS	< 1.0	< 1.0			
Toluene	ug/kg	1	MCERTS	< 1.0	< 1.0			
Ethylbenzene	ug/kg	1	MCERTS	< 1.0	< 1.0			
p & m-xylene	ug/kg	1	MCERTS	< 1.0	< 1.0			
o-xylene	ug/kg	1	MCERTS	< 1.0	< 1.0			
MTBE (Methyl Tertiary Butyl Ether)	ug/kg	1	MCERTS	< 1.0	< 1.0			

Petroleum Hydrocarbons

TPH C10 - C40	mg/kg	10	MCERTS	17	640			
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TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	< 0.001	< 0.001			
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001			
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001			
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0			
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0			
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0			
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	140			
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	140			

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0.001	< 0.001			
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001			
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001			
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0			
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	8.2			
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	31			
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	12	270			
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	17	310			



Analytical Report Number : 17-70019

Project / Site name: Royal Arsenal Riverside - Linear Park

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
871614	TH01	None Supplied	0.30	Brown loam and clay with gravel.
871615	TH01	None Supplied	0.70	Brown loam and clay with gravel and stones.
871616	TH02	None Supplied	1.60	Brown loam and clay with rubble and gravel
871617	TH02	None Supplied	2.80	Brown clay and sand with rubble and brick.
871618	TH03	None Supplied	0.85	Brown clay and sand with rubble and gravel
871619	TH04	None Supplied	0.50	Brown loam with gravel and vegetation.
871620	TH04	None Supplied	1.50	Brown clay and sand with rubble and gravel



Analytical Report Number : 17-70019

Project / Site name: Royal Arsenal Riverside - Linear Park

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Hexavalent chromium in soil (Lower Level)	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 2, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	D	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP-OES.	L038-PL	D	MCERTS
Sulphide in soil	Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode.	In-house method	L010-PL	D	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests"	L009-PL	D	MCERTS
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L038-PL	D	MCERTS
TPH Banding in Soil by FID	Determination of hexane extractable hydrocarbons in soil by GC-FID.	In-house method, TPH with carbon banding.	L076-PL	W	MCERTS
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method	L088/76-PL	W	MCERTS

Iss No 17-70019-1 Royal Arsenal Riverside - Linear Park 1508005.014

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The results included within the report are representative of the samples submitted for analysis.



Analytical Report Number : 17-70019

Project / Site name: Royal Arsenal Riverside - Linear Park

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
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For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.



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Analytical Report Number : 17-70020

Replaces Analytical Report Number : 17-70020, issue no. 1

Project / Site name:	Royal Arsenal Riverside - Linear Park	Samples received on:	06/12/2017
Your job number:	1508005.014	Samples instructed on:	07/12/2017
Your order number:		Analysis completed by:	15/12/2017
Report Issue Number:	2	Report issued on:	18/12/2017
Samples Analysed:	6 soil samples		

Reporting Manager
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

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Analytical Report Number: 17-70020

Project / Site name: Royal Arsenal Riverside - Linear Park

Lab Sample Number	871621	871622	871623	871624	871625
Sample Reference	TH01	TH02	TH02	TH03	TH03
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.70	1.60	2.80	0.50	0.85
Date Sampled	05/12/2017	05/12/2017	05/12/2017	05/12/2017	05/12/2017
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)					

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	Amosite
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	-	0.014
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	-	0.014



Analytical Report Number: 17-70020

Project / Site name: Royal Arsenal Riverside - Linear Park

Lab Sample Number	871626						
Sample Reference	TH04						
Sample Number	None Supplied						
Depth (m)	1.50						
Date Sampled	05/12/2017						
Time Taken	None Supplied						
Analytical Parameter (Soil Analysis)							

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-			
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected			
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-			
Asbestos Quantification Total	%	0.001	ISO 17025	-			



Analytical Report Number: 17-70020
Project / Site name: Royal Arsenal Riverside - Linear Park
Your Order No:

Certificate of Analysis - Asbestos Quantification

Methods:

Qualitative Analysis

The samples were analysed qualitatively for asbestos by polarising light and dispersion staining as described by the Health and Safety Executive in HSG 248.

Quantitative Analysis

The analysis was carried out using our documented in-house method A006 based on HSE Contract Research Report No: 83/1996: Development and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies et al, 1996) and HSG 248. Our method includes initial examination of the entire representative sample, then fractionation and detailed analysis of each fraction, with quantification by hand picking and weighing.

The limit of detection (reporting limit) of this method is 0.001 %.

The method has been validated using samples of at least 100 g, results for samples smaller than this should be interpreted with caution.

Both Qualitative and Quantitative Analyses are UKAS accredited.

Sample Number	Sample ID	Sample Depth (m)	Sample Weight (g)	Asbestos Containing Material Types Detected (ACM)	PLM Results	Asbestos by hand picking/weighing (%)	Total % Asbestos in Sample
871625	TH03	0.85	110	Loose Fibres & Loose Fibrous Debris	Amosite	0.014	0.014

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.



Analytical Report Number : 17-70020

Project / Site name: Royal Arsenal Riverside - Linear Park

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Asbestos Quantification - Gravimetric	Asbestos quantification by gravimetric method - in house method based on references.	HSE Report No: 83/1996, HSG 248, HSG 264 & SCA Blue Book (draft).	A006-PL	D	ISO 17025

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30°C.

APPENDIX G

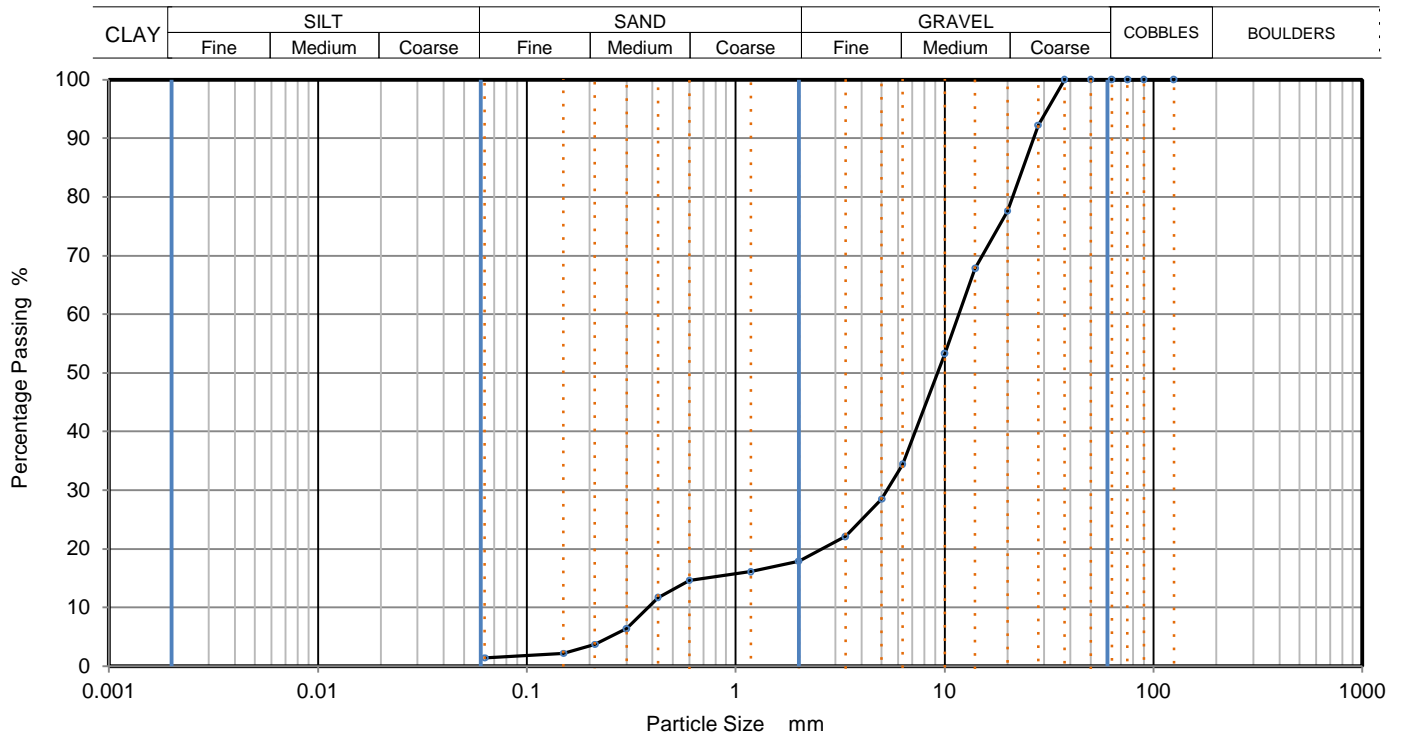
Soil Geotechnical Certificates of Analysis



PARTICLE SIZE DISTRIBUTION

Job Ref	20591
Borehole/Pit No.	BH01a
Sample No.	
Depth	2.20 m
Sample Type	B
Samples received	17/03/2016
Schedules received	17/03/2016
Project started	18/03/2016
Date tested	07/04/2016

Site Name	Royal Arsenal Riverside Phase 18-19		
Project No.	1508005.003	Client	TEC
Soil Description	Brown sandy GRAVEL (gravel is fmc and sub-rounded to sub-angular)		
Test Method	BS1377:Part 2: 1990, clause 9.0		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	92		
20	78		
14	68		
10	53		
6.3	34		
5	29		
3.35	22		
2	18		
1.18	16		
0.6	15		
0.425	12		
0.3	6		
0.212	4		
0.15	2		
0.063	1		

Dry Mass of sample, g 2617

Sample Proportions	% dry mass
Very coarse	0.0
Gravel	82.1
Sand	16.5
Fines <0.063mm	1.4

Grading Analysis	
D100	mm
D60	mm 11.7
D30	mm 5.31
D10	mm 0.38
Uniformity Coefficient	31
Curvature Coefficient	6.3

Remarks
Preparation and testing in accordance with BS1377 unless noted below



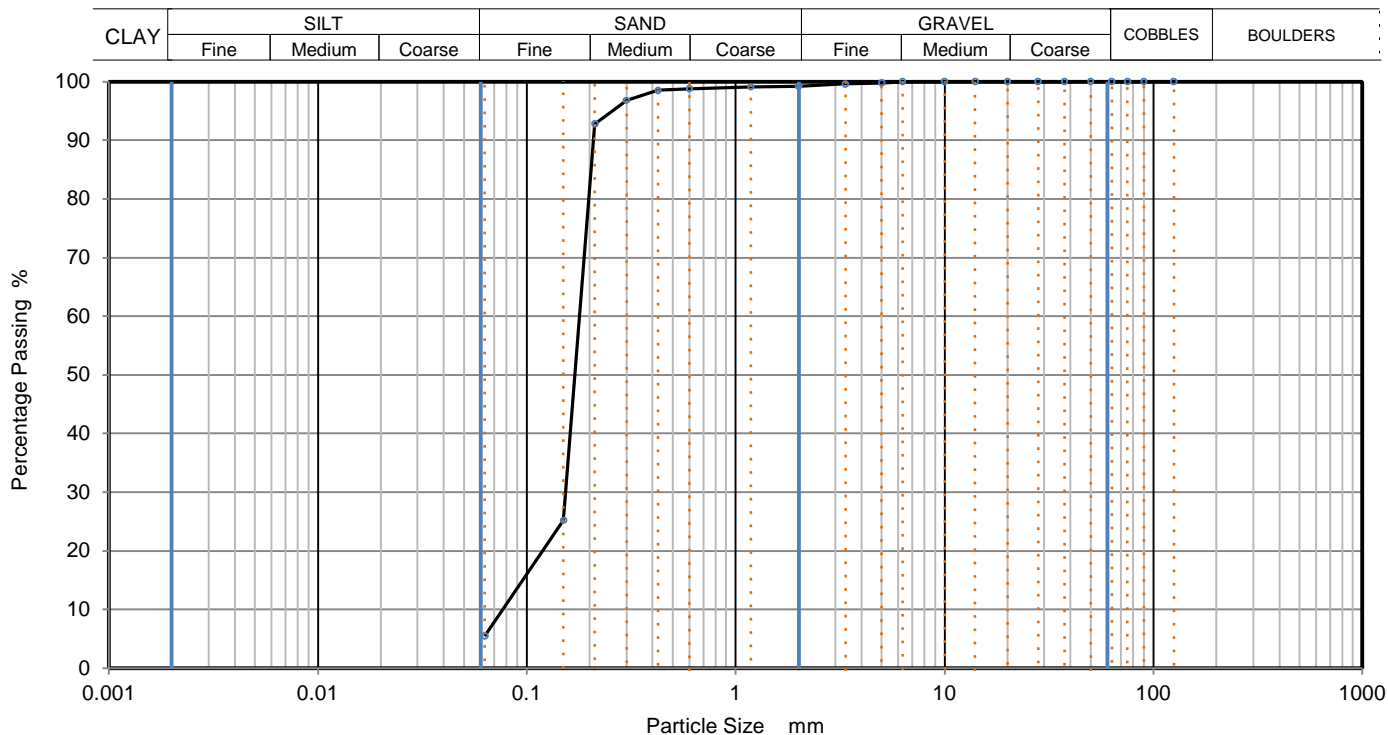
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 Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)

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 Initials: **kp**
 Date: 08/04/2016
 MSF-5-R3



PARTICLE SIZE DISTRIBUTION

		Job Ref		20591		
		Borehole/Pit No.		BH01a		
Site Name		Royal Arsenal Riverside Phase 18-19		Sample No.		
Project No.	1508005.003	Client	TEC	Depth	3.50 m	
Soil Description	Pale brown silty SAND with rare fine gravel			Sample Type		B
				Samples received		17/03/2016
				Schedules received		17/03/2016
Test Method		BS1377:Part 2: 1990, clause 9.0		Project started		18/03/2016
				Date tested		07/04/2016



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	99		
1.18	99		
0.6	99		
0.425	99		
0.3	97		
0.212	93		
0.15	25		
0.063	6		

Dry Mass of sample, g

600

Sample Proportions	% dry mass
Very coarse	0.0
Gravel	0.8
Sand	93.7
Fines <0.063mm	5.5

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	2.3
Curvature Coefficient	1.7

Remarks

Preparation and testing in accordance with BS1377 unless noted below



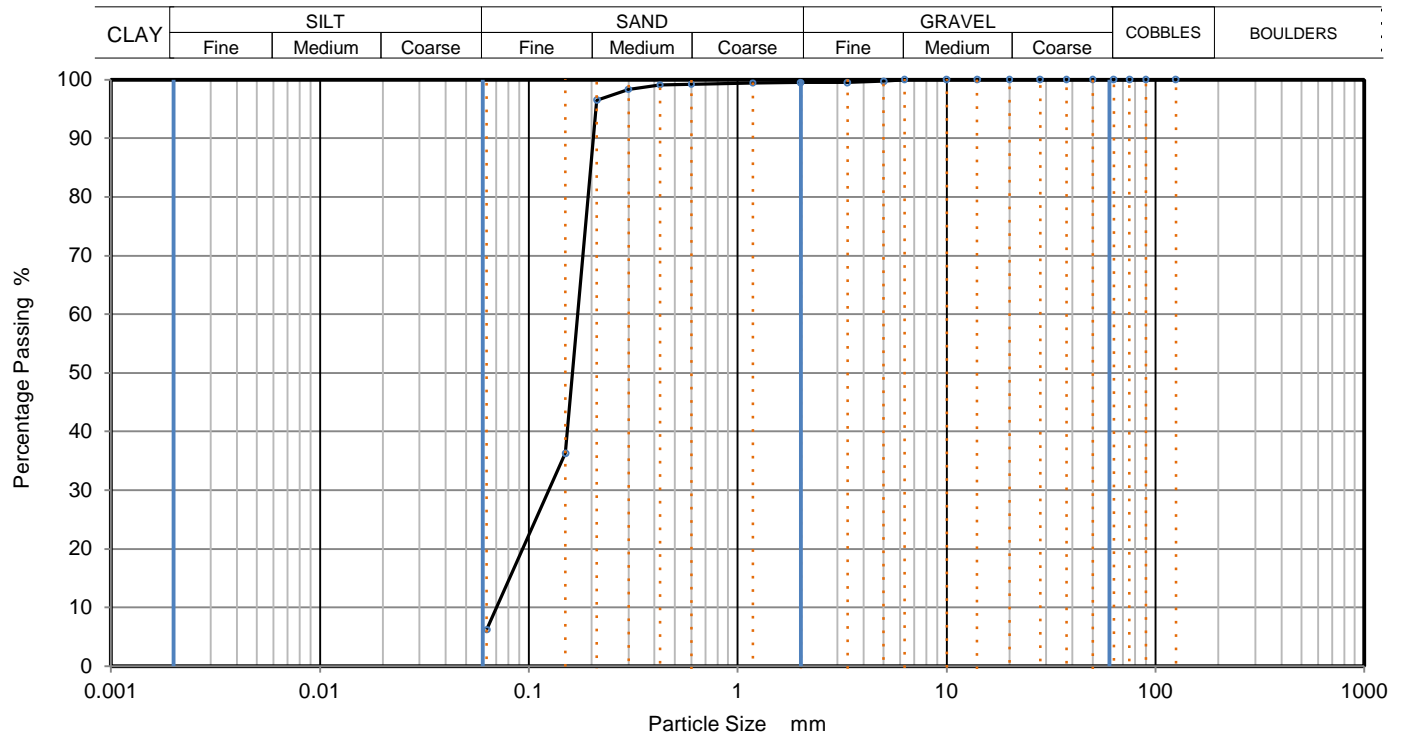
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PARTICLE SIZE DISTRIBUTION

		Job Ref		20591		
		Borehole/Pit No.		BH01a		
Site Name		Royal Arsenal Riverside Phase 18-19		Sample No.		
Project No.	1508005.003	Client	TEC	Depth	8.00 m	
Soil Description	Brown silty SAND			Sample Type		B
				Samples received		17/03/2016
				Schedules received		17/03/2016
Test Method		BS1377:Part 2: 1990, clause 9.0		Project started		18/03/2016
				Date tested		07/04/2016



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	99		
0.6	99		
0.425	99		
0.3	98		
0.212	97		
0.15	36		
0.063	6		

Dry Mass of sample, g 481

Sample Proportions	% dry mass
Very coarse	0.0
Gravel	0.5
Sand	93.3
Fines <0.063mm	6.2

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	2.4
Curvature Coefficient	1.3

Remarks
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Determination of shear strength using the Small Shearbox Apparatus

Job Ref	20591
Borehole/Pit No.	BH01a
Sample No.	
Depth m	2.20
Sample Type	B
Sample received	17/03/2016
Schedule received	17/03/2016
Date test started	18/03/2016
Date completed	07/04/2016

Site Name	Royal Arsenal Riverside Phase 18-19		
Soil Description	Brown sandy GRAVEL (gravel is fmc and sub-rounded to sub-angular)		
Project No.	1508005.003	Client	TEC
Test Method	BS1377 : Part 7 : 1990, clause 4		

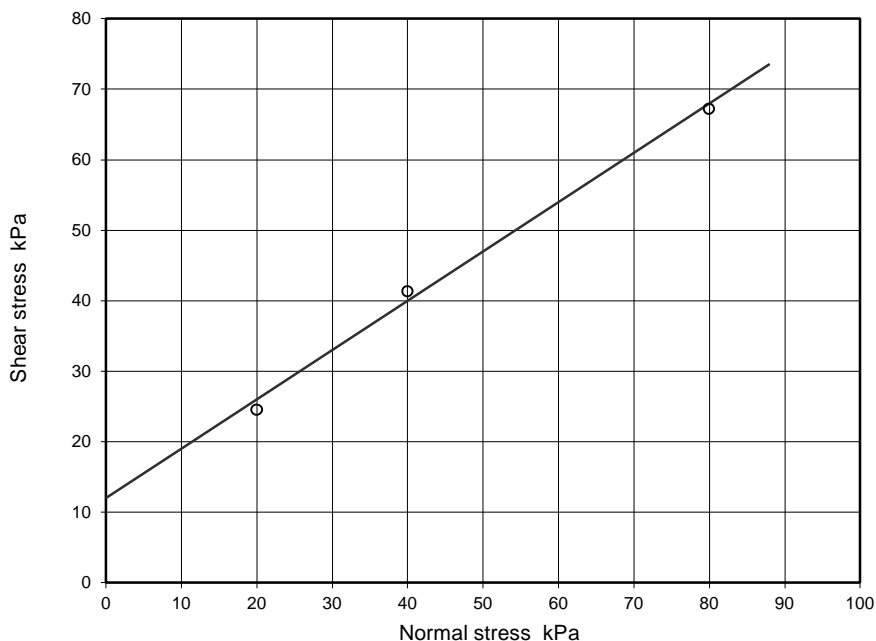
Preparation Details

Specimen Details

		Test No.						
Initial	Height	20.0	20.0	20.0				mm
	Bulk Density	1.91	1.91	1.91				Mg/m ³
	Moisture Content	13.2	13.2	13.2				%
	Dry density	1.69	1.69	1.69				Mg/m ³
	Voids ratio	0.580	0.598	0.598				
	Degree of Saturation	61	60	60				%
Consolidation	Consolidation / Normal Stress applied	20	40	80				kPa
	Change in height during consolidation*	-0.088	-0.100	-0.120				mm
	Voids ratio after consolidation	0.573	0.590	0.588				
After test	Final Moisture content	10.9	10.9	10.9				

Shearing stage(s)

Rate of displacement	Peak	1.14000	1.14000	1.14000				mm/min
	Residual							mm/min
Peak values, (o)	Relative horizontal displacement	1.50	1.75	3.00				mm
	Shear stress	24.5	41.3	67.2				kPa
	Vertical Movement at peak shear stress*	0.09	0.14	-0.06				mm
Residual values, (x)	No. of traverses (including peak run)	1	1	1				
	Relative horizontal displacement							mm
	Shear stress							kPa
	Vertical movement at residual shear stress*							mm



Shear Strength Parameters

Peak strength, (o)		Regression	Manual
c'	kPa	12	-
Ø'	degrees	35	-

Residual strength, (x)		Regression	Manual
c'R	kPa	[0.0]	-
Ø'R	degrees	[]	-

Remarks :



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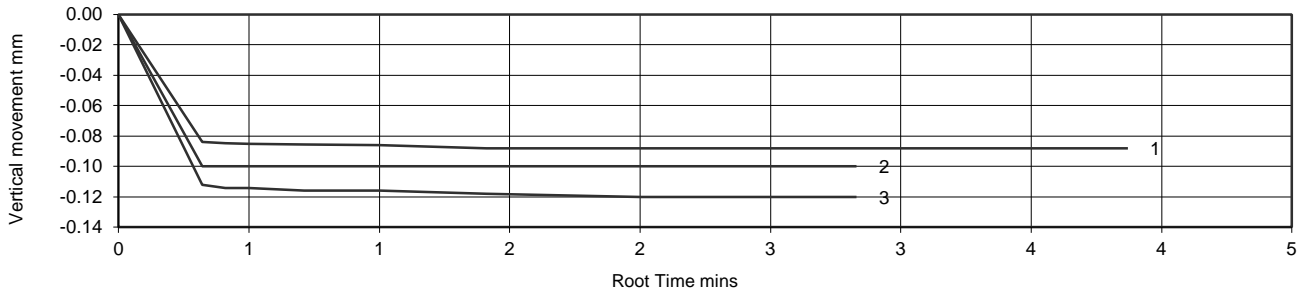
Checked and Approved
Initials kp
Date 08/04/2016



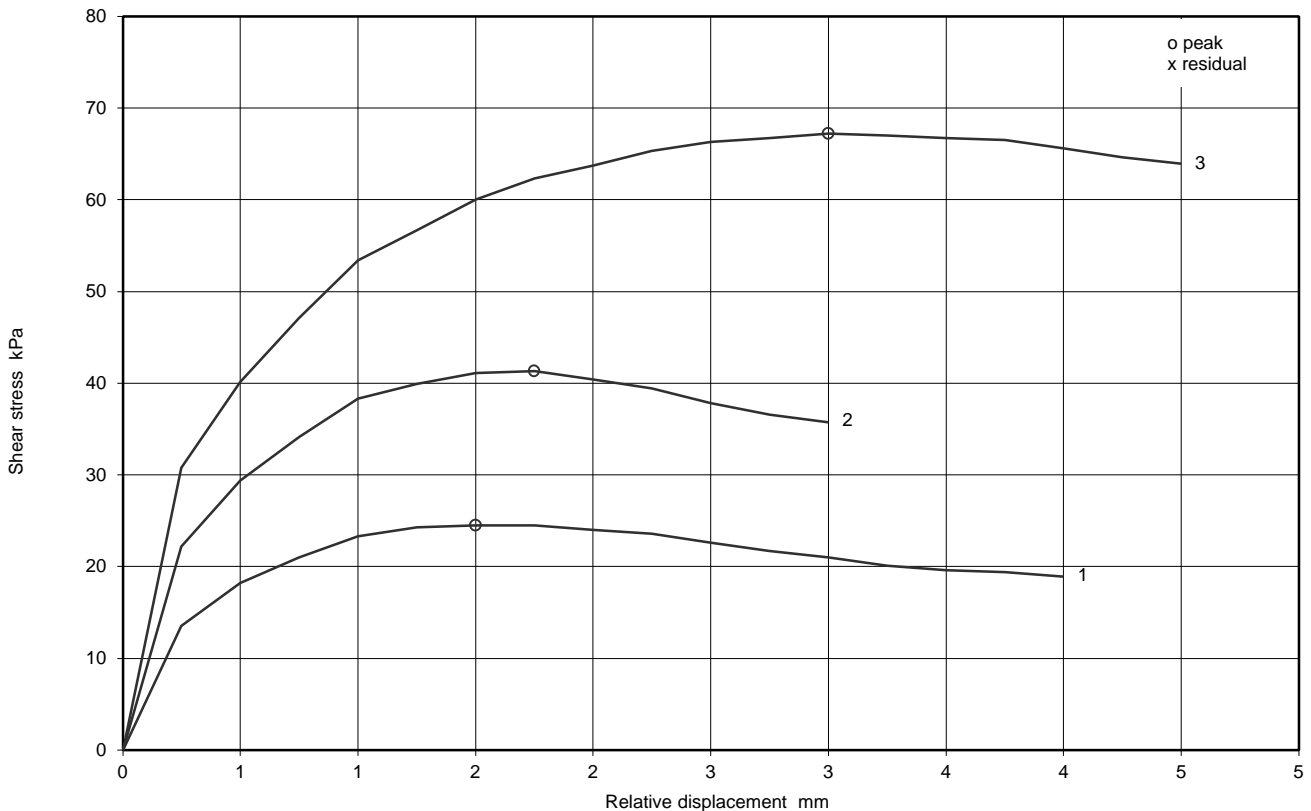
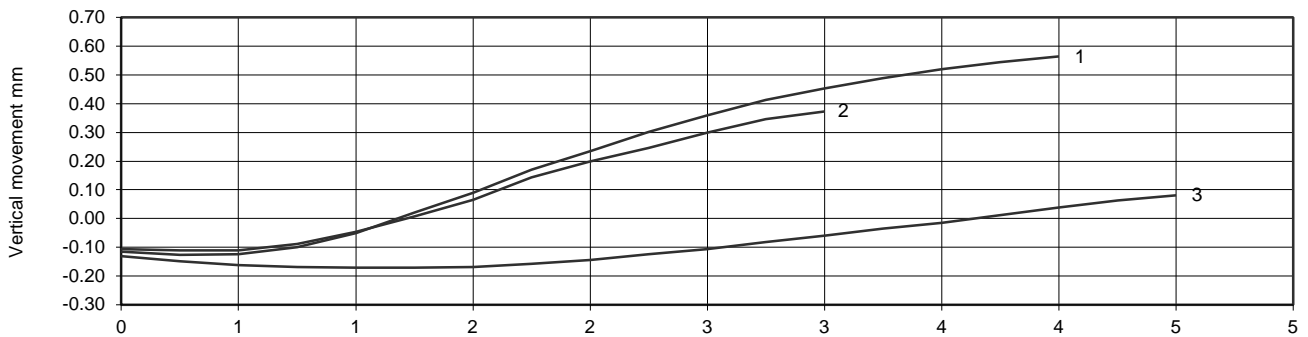
Determination of shear strength using the Small Shearbox Apparatus

Site Name	Royal Arsenal Riverside Phase 18-19		Job Ref	20591	
			Borehole/Pit No.	BH01a	
Soil Description	Brown sandy GRAVEL (gravel is fmc and sub-rounded to sub-angular)		Sample No.	-	
			Depth m	2.20	
Project No.	1508005.003	Client	TEC	Date of Test	07/04/2016

Consolidation stage(s)



Shearing stage(s)



*Note : Vertical movement/change in height is recorded as negative for reduced height (settlement) and positive for increased height (swell).



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Sheet 2 of 2

MSF-5-R14



Determination of shear strength using the Small Shearbox Apparatus

Job Ref	20591
Borehole/Pit No.	BH01a
Sample No.	
Depth m	8.00
Sample Type	B
Sample received	17/03/2016
Schedule received	17/03/2016
Date test started	08/03/2016
Date completed	07/04/2016

Site Name	Royal Arsenal Riverside Phase 18-19		
Soil Description	Brown silty SAND		
Project No.	1508005.003	Client	TEC
Test Method	BS1377 : Part 7 : 1990, clause 4		

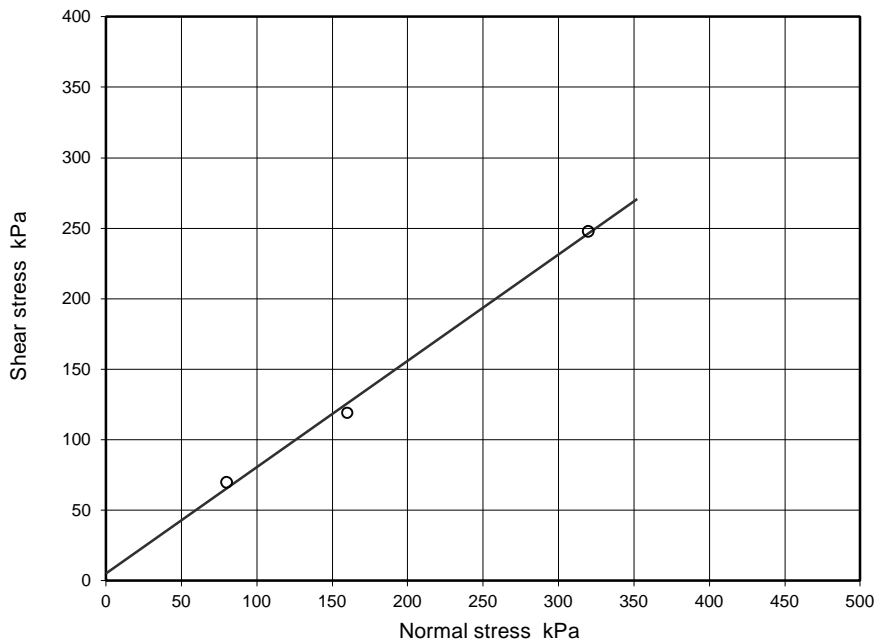
Preparation Details

Specimen Details

		Test No.						
Initial	Height	20.0	20.0	20.0				mm
	Bulk Density	1.81	1.81	1.81				Mg/m ³
	Moisture Content	24.8	24.8	24.8				%
	Dry density	1.45	1.45	1.45				Mg/m ³
	Voids ratio	0.862	0.862	0.862				
	Degree of Saturation	78	78	78				%
Consolidation	Consolidation / Normal Stress applied	80	160	320				kPa
	Change in height during consolidation*	-0.278	-0.300	-0.328				mm
	Voids ratio after consolidation	0.836	0.834	0.831				
After test	Final Moisture content	21.8	21.8	21.8				

Shearing stage(s)

Rate of displacement	Peak	1.14000	1.14000	1.14000				mm/min
	Residual							mm/min
Peak values, (o)	Relative horizontal displacement	2.50	3.25	3.25				mm
	Shear stress	69.6	119.0	247.7				kPa
	Vertical Movement at peak shear stress*	-0.14	-0.39	-0.27				mm
Residual values, (x)	No. of traverses (including peak run)	1	1	1				
	Relative horizontal displacement							mm
	Shear stress							kPa
	Vertical movement at residual shear stress*							mm



Shear Strength Parameters

Peak strength, (o)		Regression	Manual
c'	kPa	5.3	-
Ø'	degrees	37	-

Residual strength, (x)		Regression	Manual
c'R	kPa	[0.0]	-
Ø'R	degrees	[]	-

Remarks :



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Sheet 1 of 2

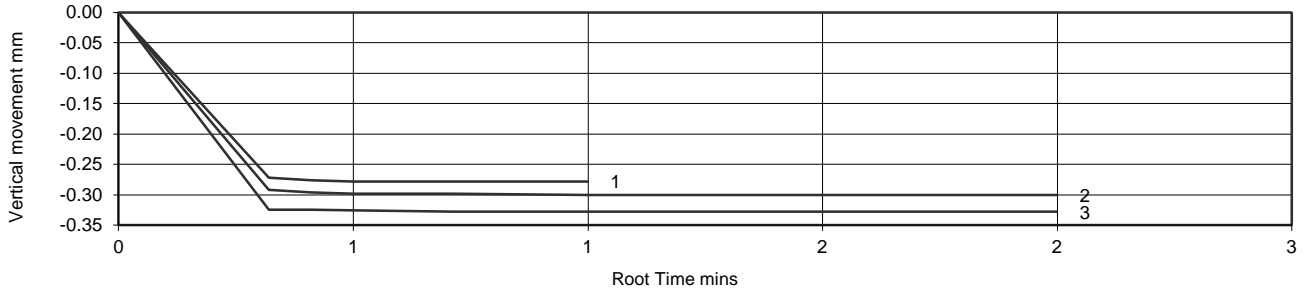
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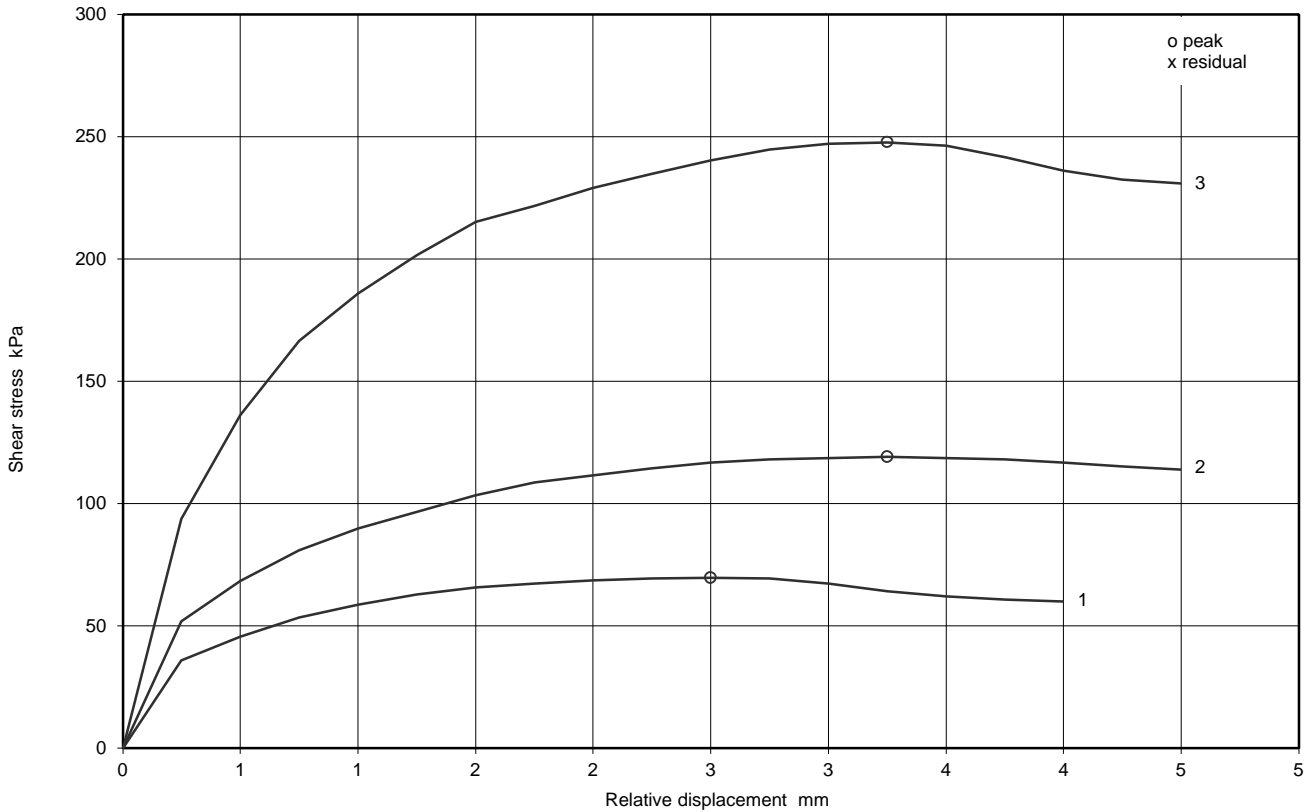
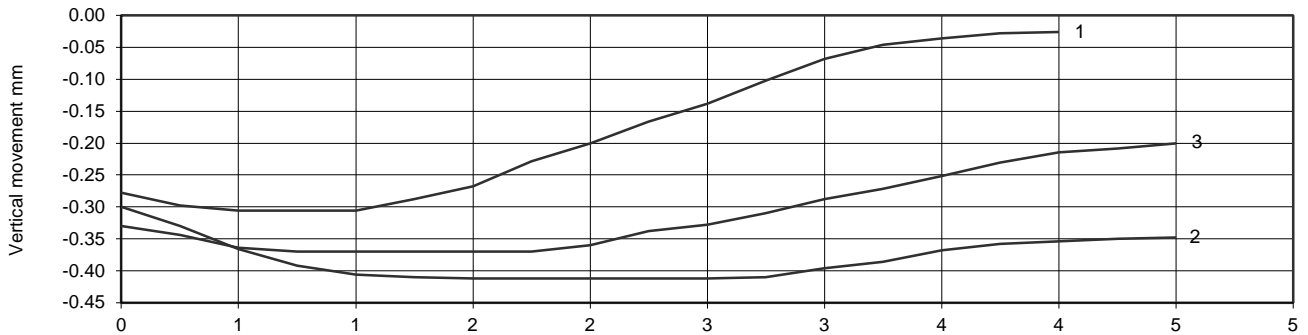
Determination of shear strength using the Small Shearbox Apparatus

		Job Ref	20591
Site Name	Royal Arsenal Riverside Phase 18-19	Borehole/Pit No.	BH01a
Soil Description	Brown silty SAND	Sample No.	-
		Depth m	8.00
		Sample Type	B
Project No.	1508005.003	Client	TEC
		Date of Test	07/04/2016

Consolidation stage(s)



Shearing stage(s)



*Note : Vertical movement/change in height is recorded as negative for reduced height (settlement) and positive for increased height (swell).



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MSF-5-R14

2519

Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)



Sulphate Content (Gravimetric Method) for 2:1 Soil: Water Extract and pH Value - Summary of Results
Tested in accordance with BS1377 : Part 3 : 1990, clause 5.3 and clause 9

Job No. 20591	Project Name Royal Arsenal Riverside Phase 18-19	Programme	
		Samples received	17/03/2016
Project No. 1508005.003	Client TEC	Project started	18/03/2016
		Testing Started	04/04/2016

Hole No.	Sample				Soil description	Dry Mass passing 2mm %	SO3 Content g/l	SO4 Content g/l	pH	Remarks
	Ref	Top	Base	Type						
BH01a		2.20		B	Brown sandy GRAVEL (gravel is fmc and sub-rounded to sub-angular)	18	0.17	0.21	7.38	
BH01a		3.50		B	Pale brown silty SAND with rare fine gravel	99	0.24	0.29	7.38	
BH01a		12.50		B	Brown silty SAND	100	0.19	0.23	7.42	
BH01a		16.20		D	Fmc sub-angular to rounded GRAVEL in a off white chalk and dark grey clay matrix	20	0.37	0.44	7.22	
BH01a		20.00		D	Fmc sub-angular to rounded GRAVEL in a off white chalk and dark grey clay matrix	20	0.48	0.57	7.28	

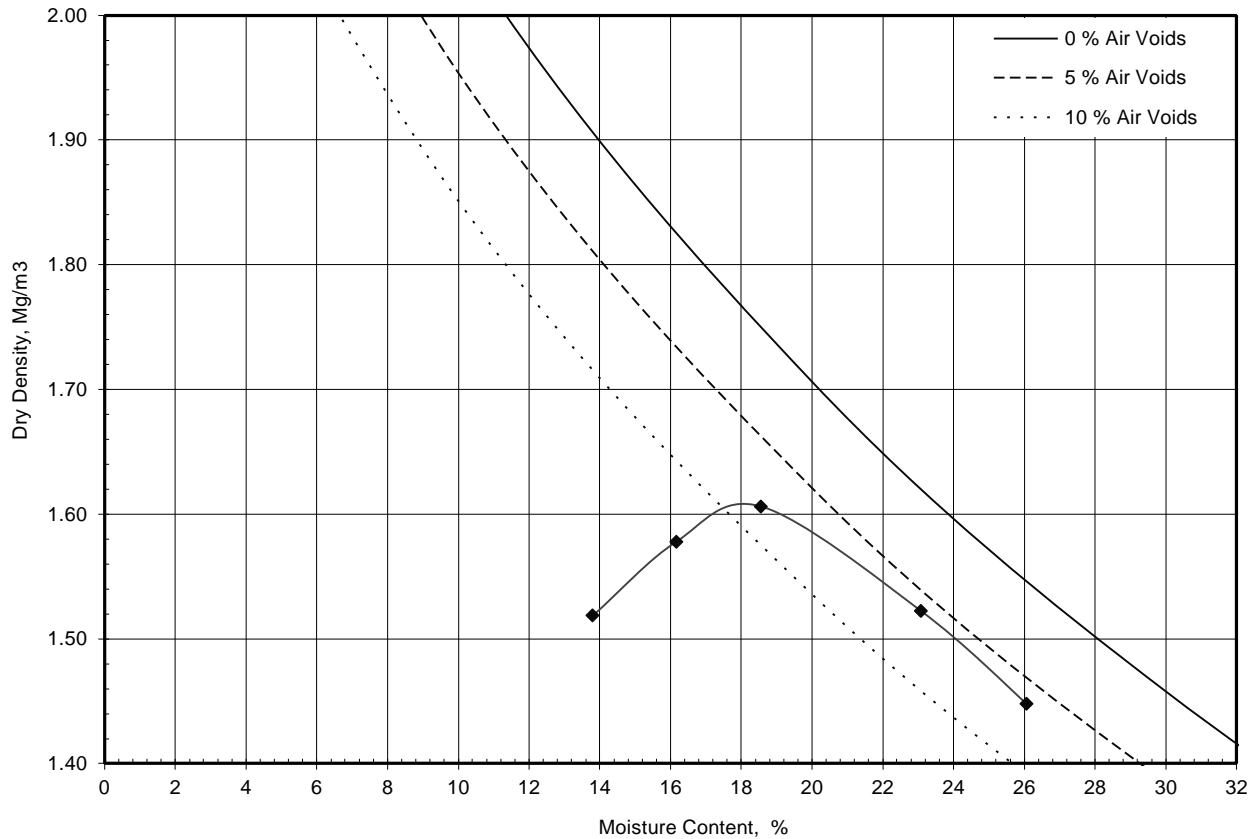
	Test Report by K4 SOILS LABORATORY Unit 8 Olds Close Olds Approach Watford Herts WD18 9RU Tel: 01923 711 288 Email: James@k4soils.com	Checked and Approved Initials kp Date: 08/04/2016
	Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)	MSF-5-R29



**Dry Density / Moisture Content Relationship
Light Compaction**

Job Ref	20657
Borehole / Pit No	TP05
Sample No	B
Depth	1.30 m
Sample Type	B
Samples received	01/04/2016
Schedule received	01/04/2016
Project Started	04/04/2016

Site Name	Royal Arsenal Riverside - Linear Park		
Project No.	1508005.005	Client	TEC
Soil Description	Greenish brown slightly clayey slightly gravelly SAND (gravel is fmc and angular to sub-angular)		
Test Method	BS1377:Part 4:1990, clause 3.3, 2.5kg rammer		



Test Started	12/04/2016	
Preparation	Material used was natural	
Mould Type	One Litre	
Samples Used	Single sample tested	
Material Retained on 37.5 mm Sieve	%	0
Material Retained on 20.0 mm Sieve	%	3
Particle Density - Assumed	Mg/m³	2.59

Maximum Dry Density	Mg/m³	1.61
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Optimum Moisture Content	%	19
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Remarks	
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Test Report by **K4 SOILS LABORATORY**
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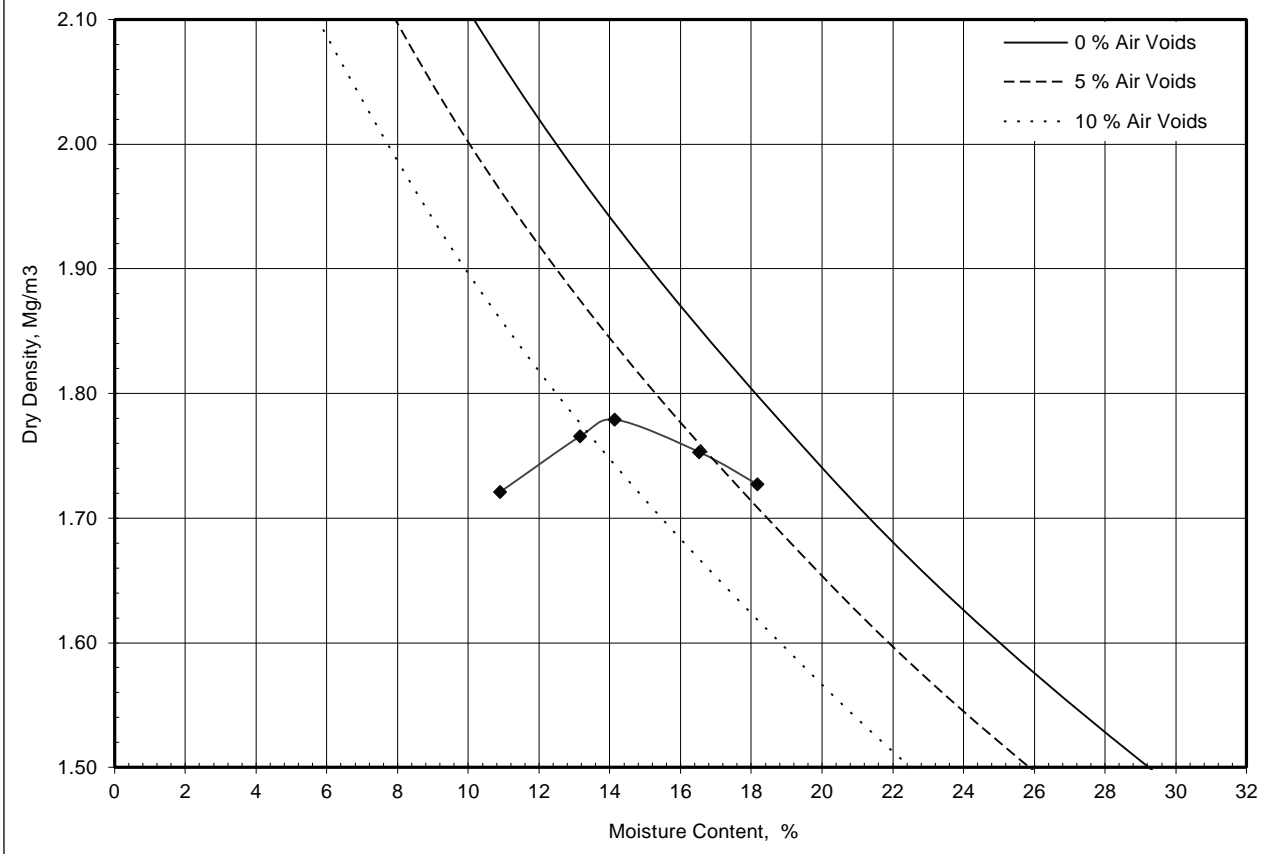
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 Date: **18/04/2016**
 MSF-5-R5(a)



Dry Density / Moisture Content Relationship Light Compaction

Job Ref	20657
Borehole / Pit No	TP08
Sample No	B
Depth	1.00 m
Sample Type	B
Samples received	01/04/2016
Schedule received	01/04/2016
Project Started	04/04/2016

Site Name	Royal Arsenal Riverside - Linear Park		
Project No.	1508005.005	Client	TEC
Soil Description	Dark brown slightly clayey gravelly SAND with occasional brick and tile fragments (gravel is fmc and rounded to angular)		
Test Method	BS1377:Part 4:1990, clause 3.3, 2.5kg rammer		



Test Started	12/04/2016
Preparation	Material used was natural
Mould Type	One Litre
Samples Used	Single sample tested
Material Retained on 37.5 mm Sieve	% 4
Material Retained on 20.0 mm Sieve	% 15
Particle Density - Assumed	Mg/m³ 2.67

Maximum Dry Density	Mg/m³	1.78
Optimum Moisture Content	%	14

Remarks	
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Test Report by K4 SOILS LABORATORY
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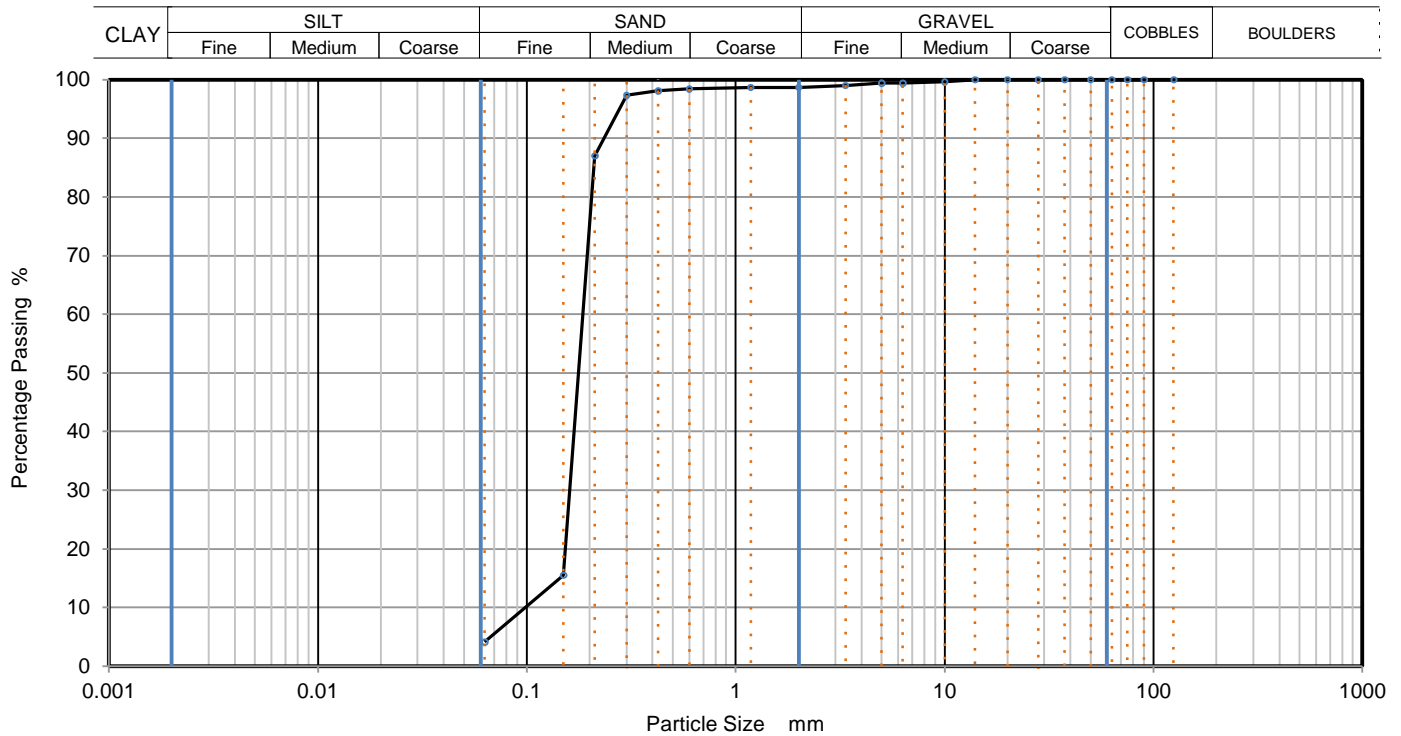
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 MSF-5-R5(a)



PARTICLE SIZE DISTRIBUTION

Job Ref	20657
Borehole/Pit No.	TP05
Sample No.	B
Depth	2.40 m
Sample Type	B
Samples received	01/04/2016
Schedules received	01/04/2016
Project started	04/04/2016
Date tested	13/04/2016

Site Name	Royal Arsenal Riverside - Linear Park		
Project No.	1508005.005	Client	TEC
Soil Description	Greenish brown slightly gravelly slightly silty SAND (gravel is fm and rounded)		
Test Method	BS1377:Part 2: 1990, clause 9.0		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	99		
5	99		
3.35	99		
2	99		
1.18	99		
0.6	98		
0.425	98		
0.3	97		
0.212	87		
0.15	16		
0.063	4		

Dry Mass of sample, g 755

Sample Proportions	% dry mass
Very coarse	0.0
Gravel	1.3
Sand	94.7
Fines <0.063mm	4.1

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	1.9
Curvature Coefficient	1.4

Remarks
Preparation and testing in accordance with BS1377 unless noted below



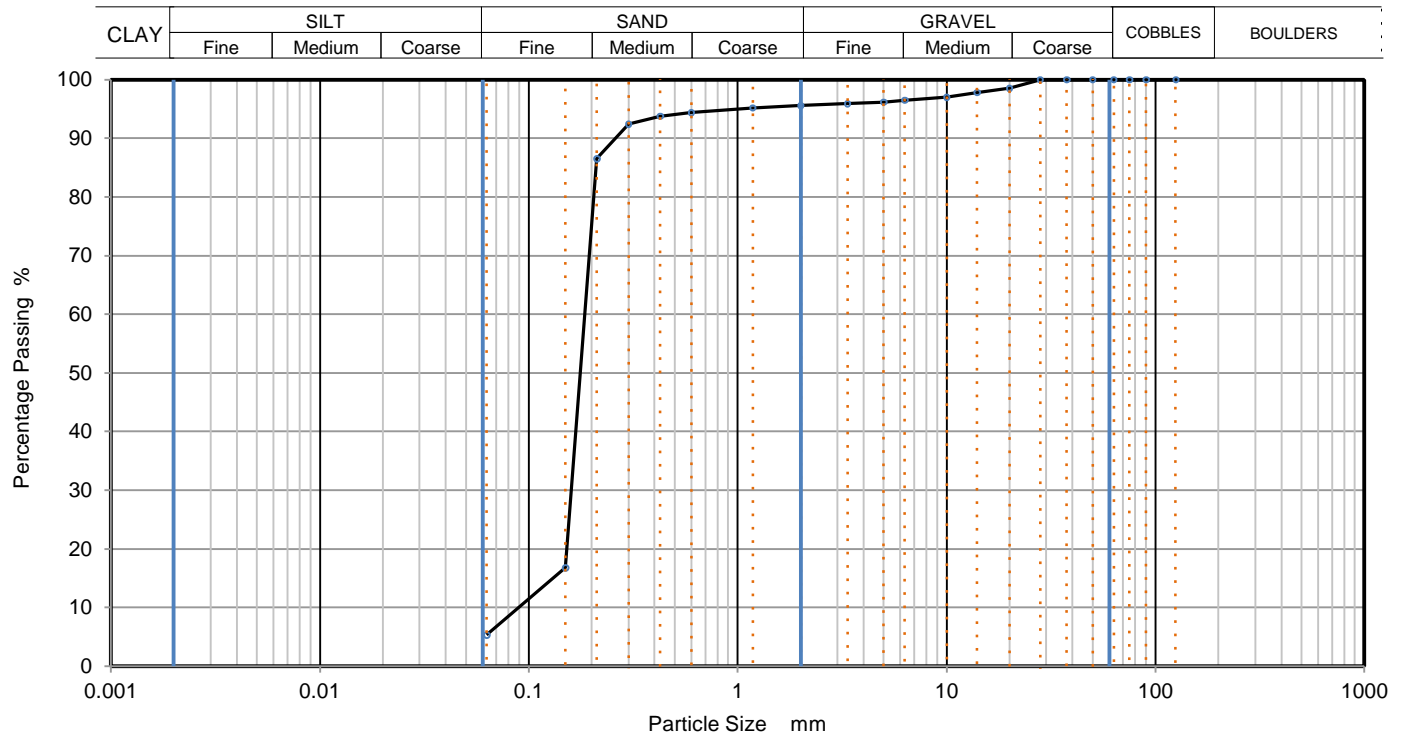
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Checked and Approved
Initials: J.P
Date: 18/04/2016



PARTICLE SIZE DISTRIBUTION

		Job Ref		20657					
		Borehole/Pit No.		TP05					
Site Name		Royal Arsenal Riverside - Linear Park		Sample No.		B			
Project No.	1508005.005	Client	TEC	Depth	3.30	m			
Soil Description		Greenish brown slightly gravelly silty SAND (gravel is fmc and rounded)				Sample Type		B	
						Samples received			
						Schedules received		00/01/1900	
Test Method		BS1377:Part 2: 1990, clause 9.0				Project started		04/04/2016	
						Date tested		13/04/2016	



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	99		
14	98		
10	97		
6.3	97		
5	96		
3.35	96		
2	96		
1.18	95		
0.6	94		
0.425	94		
0.3	92		
0.212	87		
0.15	17		
0.063	5		

Dry Mass of sample, g 887

Sample Proportions	% dry mass
Very coarse	0.0
Gravel	4.4
Sand	90.2
Fines <0.063mm	5.3

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	2.1
Curvature Coefficient	1.5

Remarks
Preparation and testing in accordance with BS1377 unless noted below



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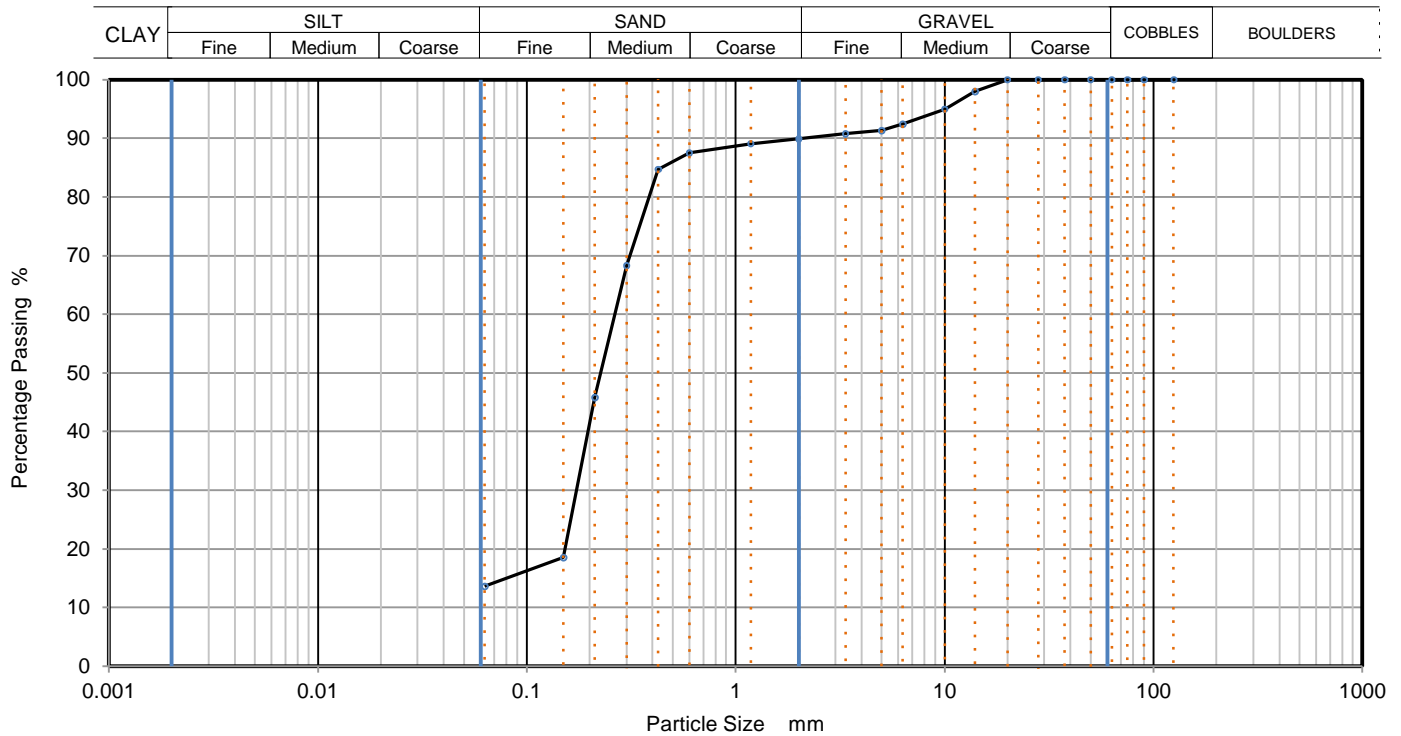
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 Initials: J.P
 Date: 18/04/2016
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PARTICLE SIZE DISTRIBUTION

Job Ref	20657
Borehole/Pit No.	TP07
Sample No.	B
Depth	3.30 m
Sample Type	B
Samples received	01/04/2016
Schedules received	01/04/2016
Project started	04/04/2016
Date tested	14/03/2016

Site Name	Royal Arsenal Riverside - Linear Park		
Project No.	1508005.005	Client	TEC
Soil Description	Dark grey brown and brown gravelly clayey SAND (gravel is fm and sub-angular to rounded)		
Test Method	BS1377:Part 2: 1990, clause 9.0		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	98		
10	95		
6.3	92		
5	91		
3.35	91		
2	90		
1.18	89		
0.6	88		
0.425	85		
0.3	68		
0.212	46		
0.15	19		
0.063	14		

Dry Mass of sample, g 1664

Sample Proportions	% dry mass
Very coarse	0.0
Gravel	10.1
Sand	76.3
Fines <0.063mm	13.6

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	
Curvature Coefficient	

Remarks
Preparation and testing in accordance with BS1377 unless noted below



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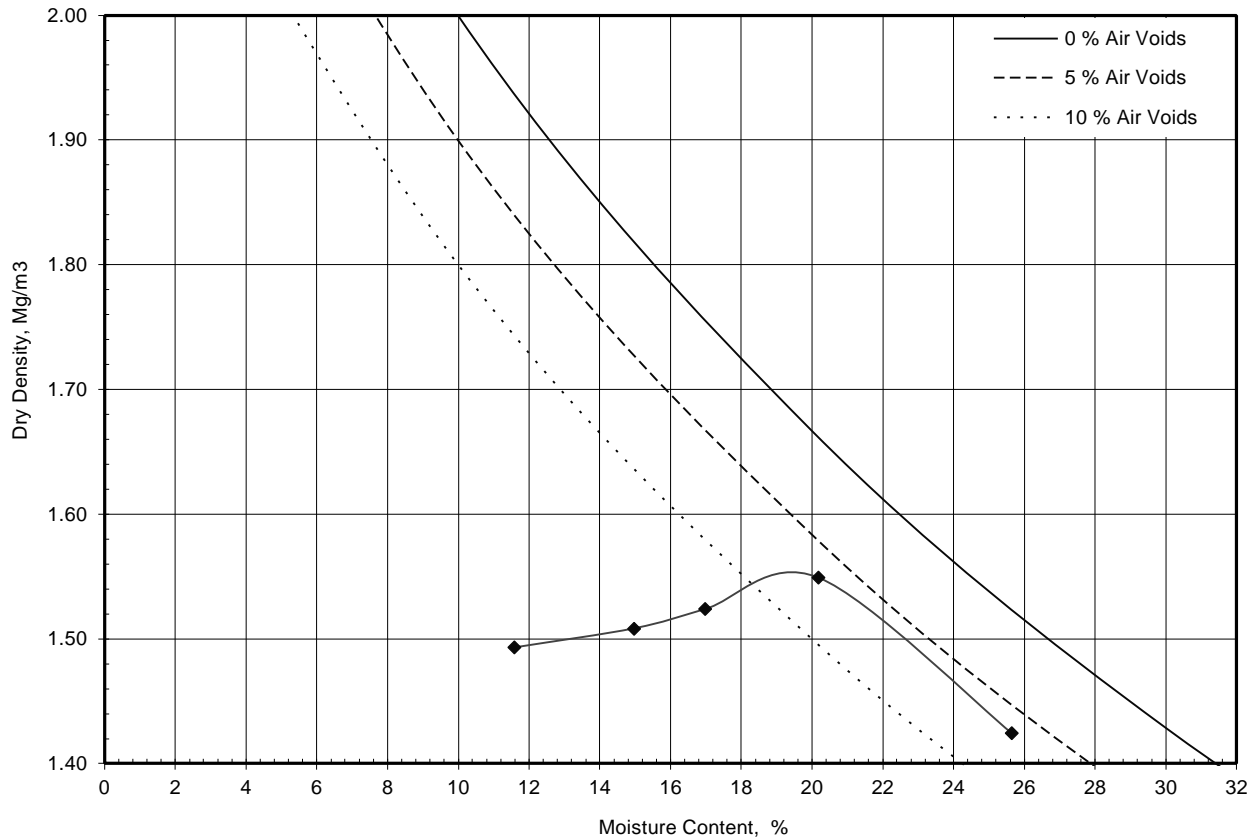
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Date: 18/04/2016



**Dry Density / Moisture Content Relationship
Light Compaction**

Job Ref	20739
Borehole / Pit No	TP11
Sample No	-
Depth	4.40 m
Sample Type	D
Samples received	12/04/2016
Schedule received	14/04/2016
Project Started	28/04/2016

Site Name	Royal Arsenal Riverside - Linear Park		
Project No.	1508005.005	Client	TEC
Soil Description	Pale greyish brown SAND		
Test Method	BS1377:Part 4:1990, clause 3.3, 2.5kg rammer		



Test Started	28/04/2016
Preparation	Material used was natural
Mould Type	One Litre
Samples Used	Single sample tested
Material Retained on 37.5 mm Sieve	% 0
Material Retained on 20.0 mm Sieve	% 0
Particle Density - Assumed	Mg/m³ 2.50

Maximum Dry Density	Mg/m³	1.55
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Optimum Moisture Content	%	19
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Remarks	
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Test Report by K4 SOILS LABORATORY

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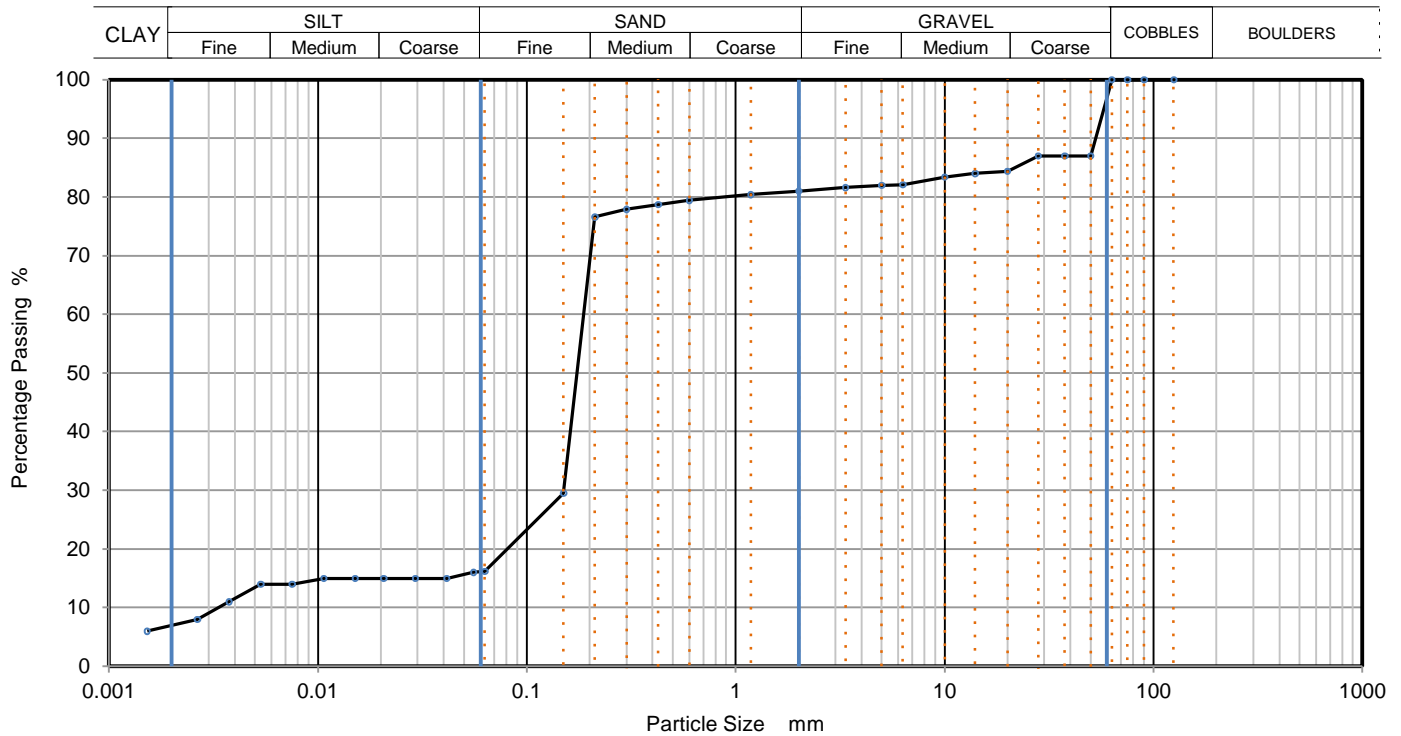
Date: 04/05/2016



PARTICLE SIZE DISTRIBUTION

Job Ref	20739
Borehole/Pit No.	TP09
Sample No.	-
Depth	3.60 m
Sample Type	D
Samples received	12/04/2016
Schedules received	14/04/2016
Project started	15/04/2016
Date tested	29/03/2016

Site Name	Royal Arsenal Riverside - Linear Park		
Project No.	1508005.005	Client	TEC
Soil Description	Pale brown silty gravelly silty SAND with occasional dark grey clay lumps (gravel is fmc and sub-rounded to sub-angular)		
Test Method	BS1377:Part 2: 1990, clause 9.0		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0557	16
90	100	0.0413	15
75	100	0.0292	15
63	100	0.0207	15
50	87	0.0151	15
37.5	87	0.0107	15
28	87	0.0075	14
20	84	0.0053	14
14	84	0.0038	11
10	83	0.0026	8
6.3	82	0.0015	6
5	82		
3.35	82		
2	81		
1.18	80		
0.6	79	Particle density (assumed) 2.70 Mg/m ³	
0.425	79		
0.3	78		
0.212	77		
0.15	30		
0.063	16		

Dry Mass of sample, g 1830

Sample Proportions	% dry mass
Very coarse	0.0
Gravel	19.0
Sand	64.8
Silt	9.3
Clay	6.9

Grading Analysis	
D100	mm
D60	mm 0.188
D30	mm 0.151
D10	mm 0.00343
Uniformity Coefficient	55
Curvature Coefficient	35

Remarks
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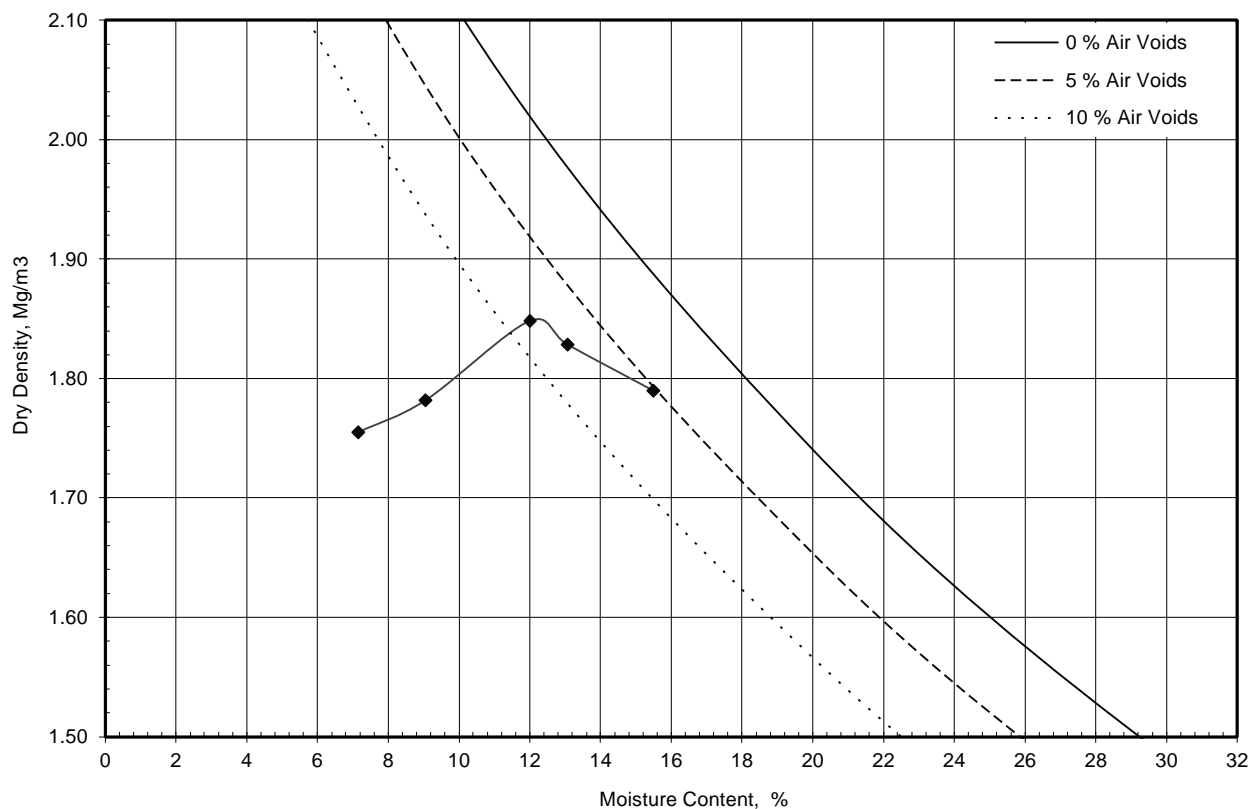
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**Dry Density / Moisture Content Relationship
Light Compaction**

Job Ref	23837
Borehole / Pit No	TH01
Sample No	-
Depth Top	0.70 m
Depth Base	- m
Sample Type	B
Samples received	18/12/2017
Schedule received	14/12/2017
Project Started	18/12/2017

Site Name	Linear Park, RAR		
Project No.	1608005.014	Client	TEC
Soil Description	Dark brown slightly clayey silty very sandy GRAVEL with numerous brick and tarmac fragments (gravel is fmc and angular to rounded)		
Test Method	BS1377:Part 4:1990, clause 3.4, 2.5kg rammer		



Test Started	12/01/2018
Preparation	Material used was natural
Mould Type	CBR
Samples Used	Single sample tested
Material Retained on 37.5 mm Sieve	% 20
Material Retained on 20.0 mm Sieve	% 15
Particle Density - Assumed	Mg/m³ 2.67

Maximum Dry Density	Mg/m³	1.85
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Optimum Moisture Content	%	12
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Remarks	
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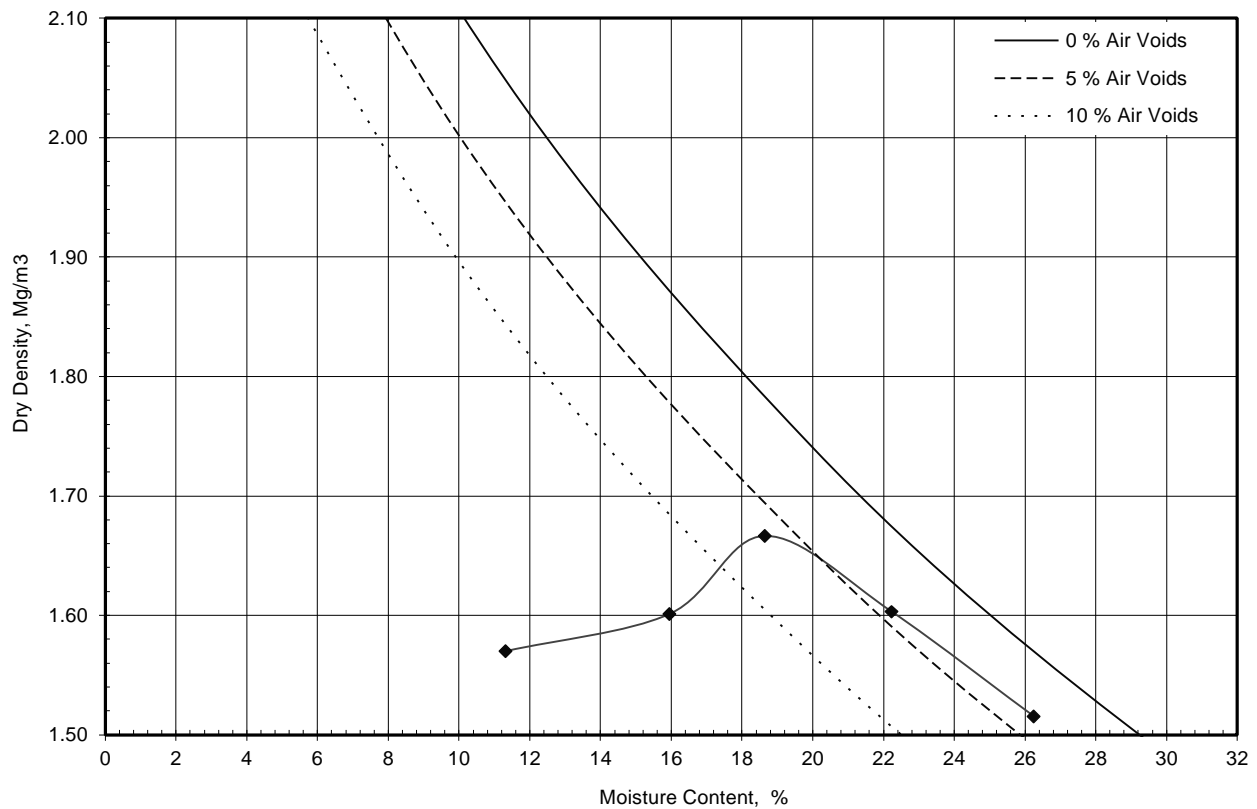
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MSF-5-R5(a)



**Dry Density / Moisture Content Relationship
Light Compaction**

Job Ref	23837
Borehole / Pit No	TH02
Sample No	-
Depth Top	2.80 m
Depth Base	- m
Sample Type	B
Samples received	18/12/2017
Schedule received	14/12/2017
Project Started	18/12/2017

Site Name	Linear Park, RAR		
Project No.	1608005.014	Client	TEC
Soil Description	Brown clayey gravelly SAND with fmc brick and concrete fragments (gravel is fmc and rounded to angular)		
Test Method	BS1377:Part 4:1990, clause 3.3, 2.5kg rammer		



Test Started	12/01/2018
Preparation	Material used was natural
Mould Type	One Litre
Samples Used	Single sample tested
Material Retained on 37.5 mm Sieve	% 28
Material Retained on 20.0 mm Sieve	% 19
Particle Density - Assumed	Mg/m³ 2.67

Maximum Dry Density	Mg/m³	1.67
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Optimum Moisture Content	%	19
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Remarks	
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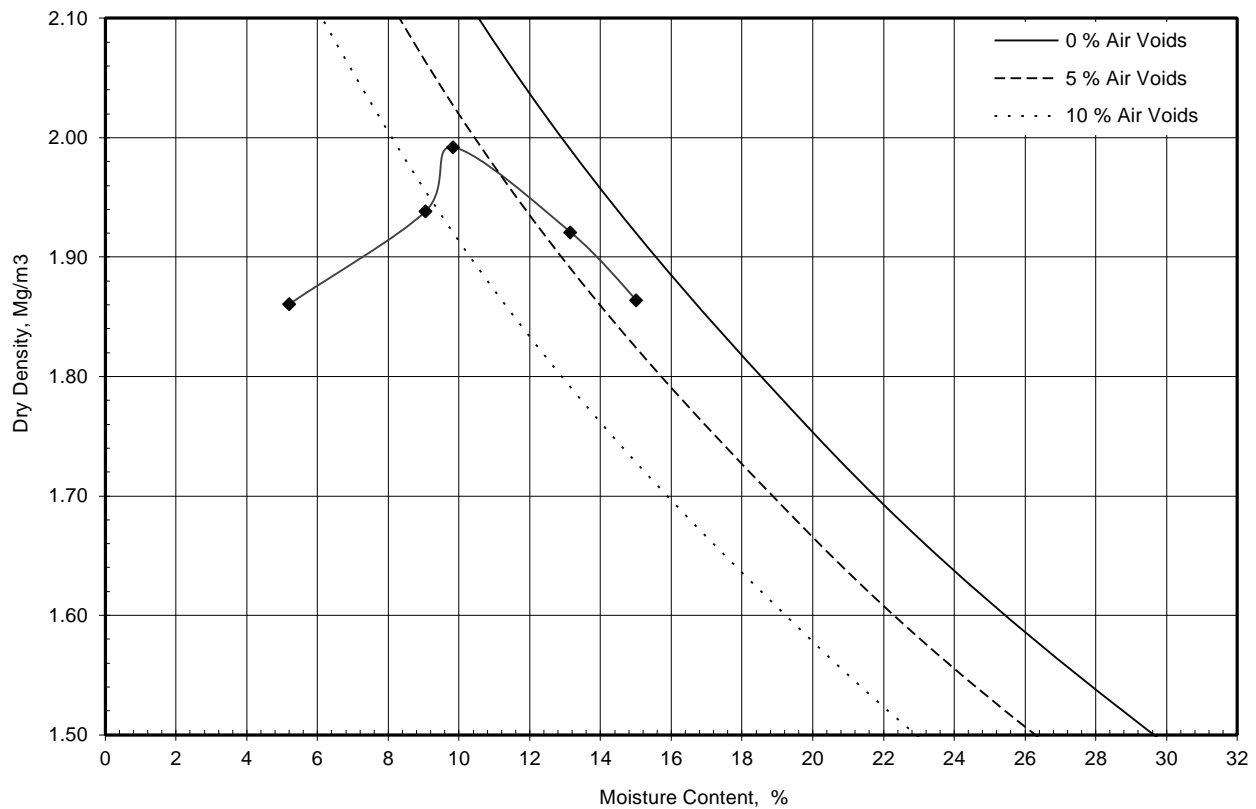
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Date: 18/01/2018
MSF-5-R5(a)



Dry Density / Moisture Content Relationship Light Compaction

Job Ref	23837
Borehole / Pit No	TH04
Sample No	-
Depth Top	1.50 m
Depth Base	- m
Sample Type	B
Samples received	18/12/2017
Schedule received	14/12/2017
Project Started	18/12/2017

Site Name	Linear Park, RAR		
Project No.	1608005.014	Client	TEC
Soil Description	Brown slightly clayey silty very sandy GRAVEL with numerous tarmac and concrete fragments (gravel is fmc and rounded to angular)		
Test Method	BS1377:Part 4:1990, clause 3.4, 2.5kg rammer		



Test Started	12/01/2018
Preparation	Material used was natural
Mould Type	CBR
Samples Used	Single sample tested
Material Retained on 37.5 mm Sieve	% 15
Material Retained on 20.0 mm Sieve	% 19
Particle Density - Assumed	Mg/m³ 2.70

Maximum Dry Density	Mg/m³	1.99
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Optimum Moisture Content	%	10
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Remarks	
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Test Report by **K4 SOILS LABORATORY**
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Checked and Approved
 Initials: **K.P**
 Date: **18/01/2018**
 MSF-5-R5(a)



Summary of Natural Moisture Content, Liquid Limit and Plastic Limit Results

Job No. 23837	Project Name Linear Park, RAR	Programme	
		Samples received	18/12/2017
Project No. 1608005.014	Client TEC	Schedule received	14/12/2017
		Project started	18/12/2017
		Testing Started	12/01/2018

Hole No.	Sample				Soil Description	NMC Of whole sample %	Passing 425µm %	LL %	PL %	PI %	NMC from first point of compaction on material passing 20mm sieve
	Ref	Top m	Base m	Type							
TH01	-	0.70	-	B	Dark brown slightly clayey silty very sandy GRAVEL with numerous brick and tarmac fragments (gravel is fmc and angular to rounded)	12	-	-	-	-	12%
TH02	-	1.60	-	B	Brown slightly clayey silty very sandy GRAVEL with occasional brick and slate fragments (gravel is fmc and sub-angular to rounded)	12	-	-	-	-	12%
TH02	-	2.80	-	B	Brown clayey gravelly SAND with fmc brick and concrete fragments (gravel is fmc and rounded to angular)	-	-	-	-	-	26%
TH04	-	1.50	-	B	Brown slightly clayey silty very sandy GRAVEL with numerous tarmac and concrete fragments (gravel is fmc and rounded to angular)	7.7	-	-	-	-	9.6%

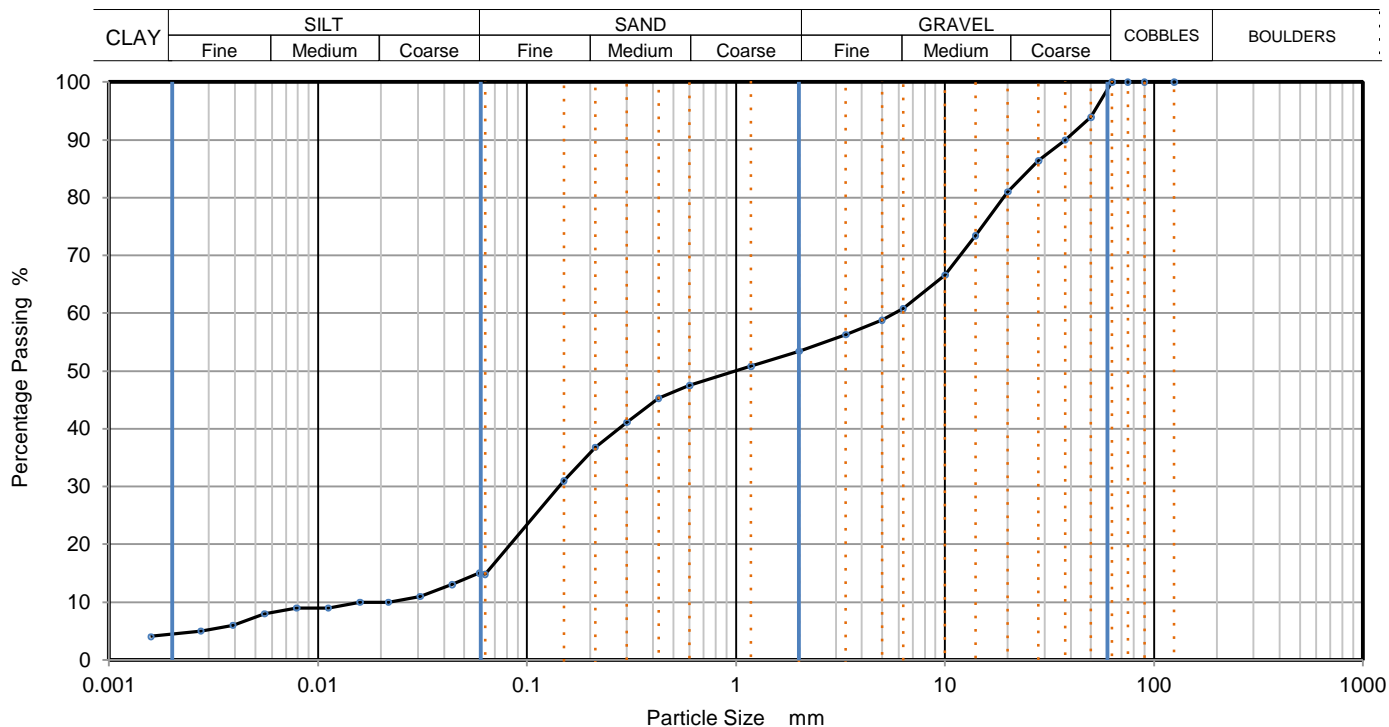
Test Methods: BS1377: Part 2: 1990: Natural Moisture Content : clause 3.2 Atterberg Limits: clause 4.3 and 5.0	Test Report by K4 SOILS LABORATORY Unit 8 Olds Close Olds Approach Watford Herts WD18 9RU Tel: 01923 711 288 Email: James@k4soils.com	Checked and Approved Initials J.P Date: 18/01/2018
Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)		MSF-5-R1(b)



PARTICLE SIZE DISTRIBUTION

Job Ref	23837
Borehole/Pit No.	TH01
Sample No.	-
Depth Top	0.70 m
Depth Base	- m
Sample Type	B
Samples received	18/12/2017
Schedules received	14/12/2017
Project started	18/12/2017
Date tested	18/01/2018

Site Name	Linear Park, RAR		
Project No.	1608005.014	Client	TEC
Soil Description	Dark brown slightly clayey silty very sandy GRAVEL with numerous brick and tarmac fragments (gravel is fmc and angular to rounded)		
Test Method	BS1377:Part 2: 1990, clause 9.0		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0591	15
90	100	0.0438	13
75	100	0.0307	11
63	100	0.0217	10
50	94	0.0158	10
37.5	90	0.0112	9
28	86	0.0079	9
20	81	0.0055	8
14	73	0.0039	6
10	67	0.0027	5
6.3	61	0.0016	4
5	59		
3.35	56		
2	53		
1.18	51		
0.6	48	Particle density (assumed)	
0.425	45	2.70	Mg/m ³
0.3	41		
0.212	37		
0.15	31		
0.063	15		

Dry Mass of sample, g 2382

Sample Proportions	% dry mass
Very coarse	0.0
Gravel	46.6
Sand	38.6
Silt	10.7
Clay	4.1

Grading Analysis		
D100	mm	
D60	mm	5.74
D30	mm	0.142
D10	mm	0.0135
Uniformity Coefficient		430
Curvature Coefficient		0.26

Remarks
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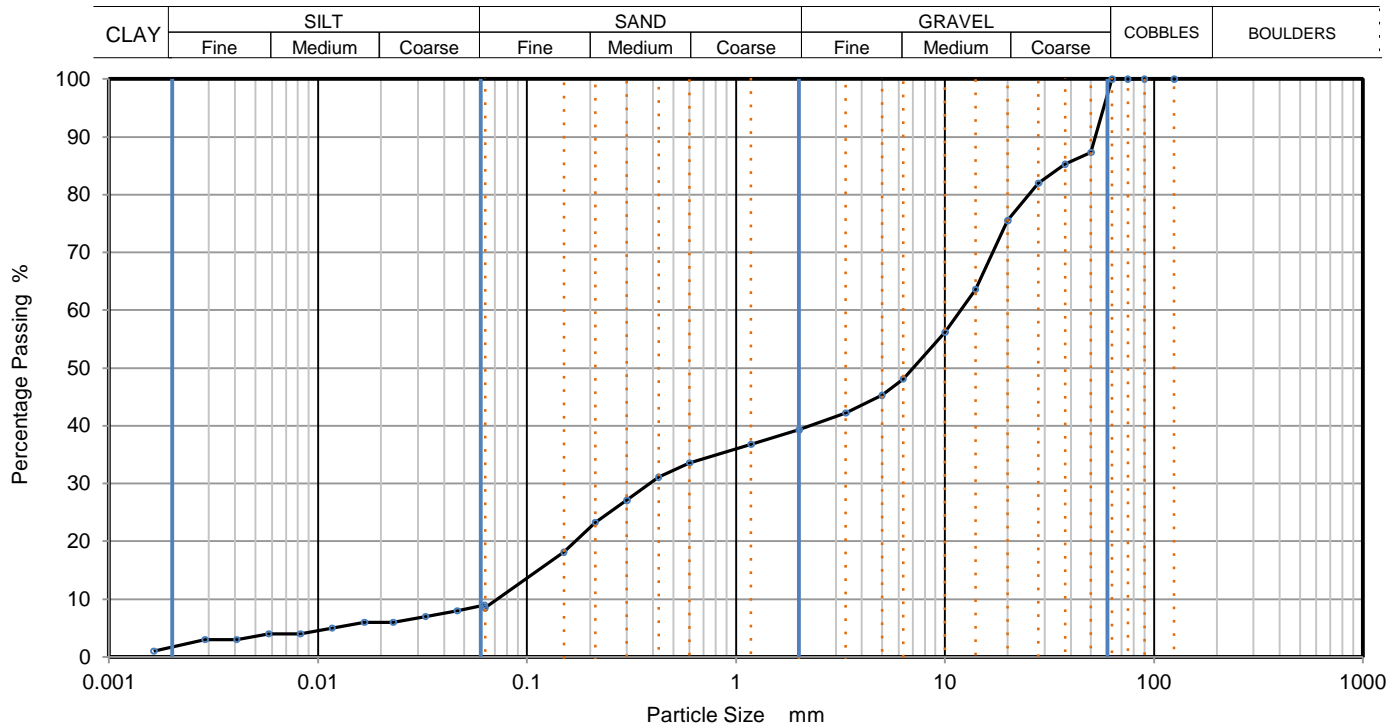
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PARTICLE SIZE DISTRIBUTION

Job Ref	23837
Borehole/Pit No.	TH02
Sample No.	-
Depth Top	1.60 m
Depth Base	- m
Sample Type	B
Samples received	18/12/2017
Schedules received	14/12/2017
Project started	18/12/2017
Date tested	09/01/2018

Site Name	Linear Park, RAR		
Project No.	1608005.014	Client	TEC
Soil Description	Brown slightly clayey silty very sandy GRAVEL with occasional brick and slate fragments (gravel is fmc and sub-angular to rounded)		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0625	9
90	100	0.0462	8
75	100	0.0326	7
63	100	0.0229	6
50	87	0.0166	6
37.5	85	0.0117	5
28	82	0.0082	4
20	76	0.0058	4
14	64	0.0041	3
10	56	0.0029	3
6.3	48	0.0016	1
5	45		
3.35	42		
2	39		
1.18	37		
0.6	34		
0.425	31		
0.3	27		
0.212	23		
0.15	18		
0.063	9		
		Particle density (assumed)	
		2.70 Mg/m ³	

Dry Mass of sample, g 4043

Sample Proportions	% dry mass
Very coarse	0.0
Gravel	60.7
Sand	30.9
Silt	6.8
Clay	1.6

Grading Analysis		
D100	mm	
D60	mm	11.9
D30	mm	0.386
D10	mm	0.0724
Uniformity Coefficient		160
Curvature Coefficient		0.17

Remarks
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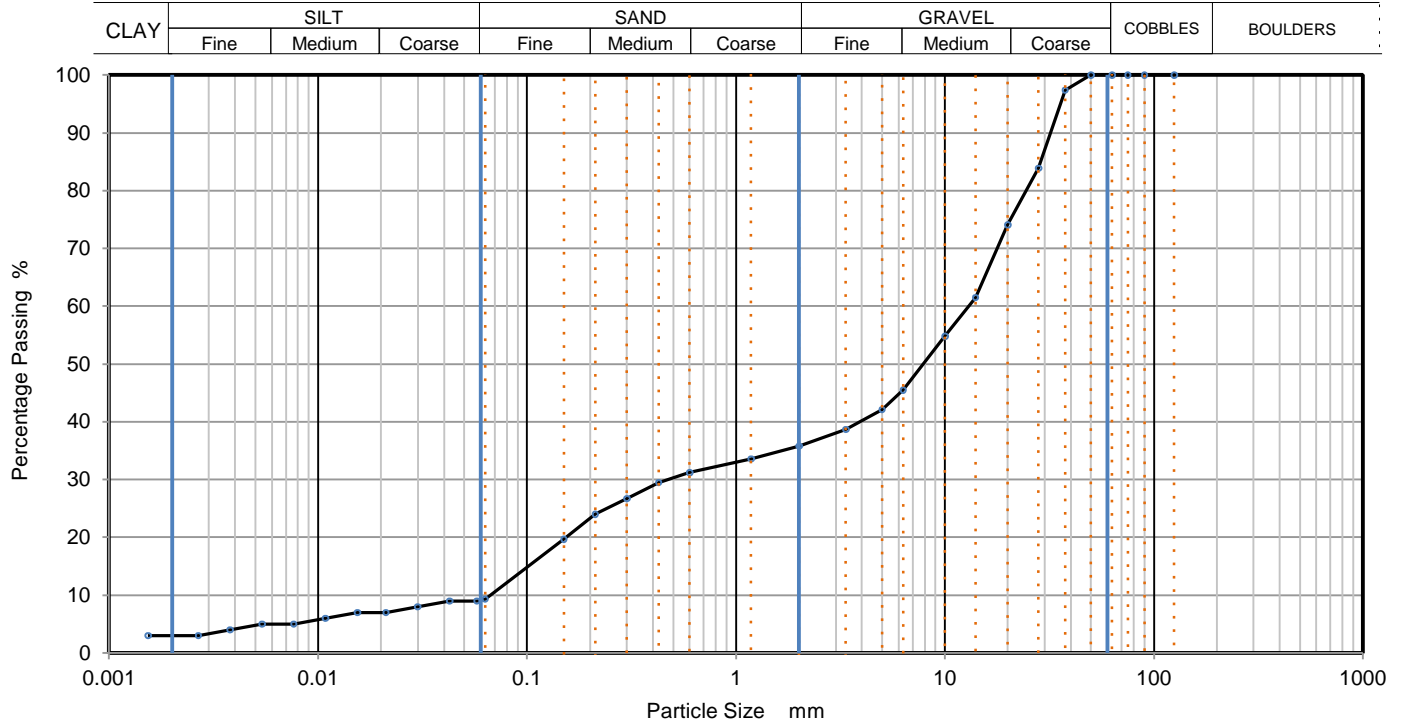
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Date: 18/01/2018



PARTICLE SIZE DISTRIBUTION

Job Ref	23837
Borehole/Pit No.	TH04
Sample No.	-
Depth Top	1.50 m
Depth Base	- m
Sample Type	B
Samples received	18/12/2017
Schedules received	14/12/2017
Project started	18/12/2017
Date tested	17/01/2018

Site Name	Linear Park, RAR		
Project No.	1608005.014	Client	TEC
Soil Description	Brown slightly clayey silty very sandy GRAVEL with numerous tarmac and concrete fragments (gravel is fmc and rounded to angular)		
Test Method	BS1377:Part 2: 1990, clause 9.0		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0573	9
90	100	0.0425	9
75	100	0.0299	8
63	100	0.0211	7
50	100	0.0154	7
37.5	97	0.0108	6
28	84	0.0076	5
20	74	0.0054	5
14	62	0.0038	4
10	55	0.0027	3
6.3	46	0.0015	3
5	42		
3.35	39		
2	36		
1.18	34		
0.6	31		
0.425	30		
0.3	27		
0.212	24		
0.15	20		
0.063	9		

Dry Mass of sample, g 2814

Sample Proportions	% dry mass
Very coarse	0.0
Gravel	64.2
Sand	26.5
Silt	6.2
Clay	3.1

Grading Analysis		
D100	mm	
D60	mm	13
D30	mm	0.469
D10	mm	0.067
Uniformity Coefficient		190
Curvature Coefficient		0.25

Remarks
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