



Ground Condition Consultants

FORMER SGN GASHOLDERS SITE, CANAL RD, GRAVESEND DA12 2PS

GROUND CONDITION DESK TOP STUDY

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0. EXECUTIVE SUMMARY

Brief	The brief was to use the information provided in an Environmental Database Search relating to the site to assess and report on the findings with respect to potential ground contamination and potential associated future liabilities in accordance with the Preliminary Risk Assessment procedure outlined in Land Contamination Risk Management (LCRM), published by the Environment Agency.
Current Site Status	The site is located to the east of Canal Road, some 225m south of the River Thames, to the east of Gravesend centre. The site is presently disused, formerly serving as Gravesend Gasholder Station, where two gasholders and associated plant were preset. The site presently comprises a broadly rectangular, largely vacant, plot, split into several areas by palisade fences. In the east of the site, a circular feature is present, likely the dumping of the former gas holder (Gasholder No.1) in this area of the site and in the west of the site several small structures remain. The central area of the site, where Gasholder 2 had been located, was vacant. The central and eastern areas of the site had a ground coverage of vegetation, while the western area was covered by predominantly tarmacadam hard standing.
Site History	Early records (1865) indicate that the site was undeveloped with what appears to be a pond in the southwest and apparent drainage channels surrounding the site. By 1888, Gasholder No.1 had been constructed in the east of the site. The demolition records indicate that the gasholder extended below ground. Earthworks are shown on the site during the late 1800s and early 1900s and are anticipated to be ground raising to provide improved access to the gas holder. By 1953, Gasholder No.2 was constructed to the west of Gasholder No.1 and was largely above ground. The gasholders were removed in 2021.
Geology	Ground conditions encountered during previous investigation works comprise Made Ground to depths of up to 3m, but generally to average depth of 2m. Made Ground and in ground structures are believed to extend to greater depths in the Gasholder No.1 area. Below the Made Ground, the natural superficial soils generally comprise a 3m layer of clay (Alluvium), over 1m of peat and organic clay (Alluvium), which in turn overlies a 1-4m thick band of granular soils (Taplow Gravel Formation) before the chalk is present at depths from 6-15m below current ground level.
Hydrogeology	The Environment Agency Groundwater Vulnerability Map extracts indicate the majority of the site to be underlain by bedrock Secondary Undifferentiated Aquifer, interpreted as the Alluvium, over a bedrock Principal Aquifer, interpreted as the Seaford Chalk Formation. The Taplow Gravel Formation is interpreted as a Secondary A Aquifer. Groundwater levels monitored by Advision in August 2016 indicate groundwater to be approximately 2.3-3.3m bgl and approximately 1.0-1.5m AOD. Initial inspection of the monitoring data suggests that groundwater generally flows from southwest to northeast with some likely distortion from remnant in-ground structures.
Hydrology	The closest identified surface water features to the site is a watercourse located 2m to the east.
Conclusions and Recommendations	The following potential sources of contamination were identified: - Reduced quality Made Ground and natural soils present across the site from the former gasholder use and apparent land raising and potential migration of contaminants from the former gasworks processing buildings adjacent to the north, including asbestos, heavy metals, PAH and BTEX compounds. - Potential for ground gas generation from thick Made Ground deposits on site and former off-site landfill to the north.

It should be noted that additional sources of contamination may become apparent during any future investigation and development of the site.

The risks to the health of future site users from contamination, in the context of the proposed commercial open storage end use of the site, have been assessed to be **moderate**. The primary risk driver is considered to be exposure to asbestos in soil with an additional risk from a variety of other contaminants. The placement of hard standing and other remediation measures are recommended to be put in place to separate the site users and impacted Made Ground.

In the absence of a detailed controlled waters risk assessment, the risks have been assessed as **low/moderate** in relation to the Secondary A Aquifer and **moderate** in relation to the Principal Aquifer, due to the higher sensitivity of the receptor. Further assessment of the risks to controlled waters is therefore recommended to determine if remediation is required.

While the risks to site users are not likely to be significant, due to the dilution in outdoor air, a potential risk of ground gas generation and off-site migration remains. Further investigation of the ground gas generation potential of the Made Ground and potential for off-site migration is therefore recommended.

The contaminant concentrations in the shallow soils are considered likely to cause damage to PE water supply pipes. This should be taken into account by the designers of buried services for the proposed development.

This sheet is intended to provide a summary only of the initial indicative assessment study of the site in relation to ground contamination. It does not provide a definitive engineering analysis for the purposes of costing or construction, and is subject to the limitation of the agreed brief.

1. INTRODUCTION

1.1 INSTRUCTION

Ground Condition Consultants Ltd. (GCC) was commissioned by JH (Milton) Ltd in March 2024 to undertake a Ground Condition Desk Top Study of a site, the former SGN Gasholders Site, Canal Rd, Gravesend, DA12 2PS.

The brief was to use the information provided in an Environmental Database Search relating to the site to assess and report on the findings with respect to potential ground contamination and potential associated future liabilities in accordance with the Preliminary Risk Assessment procedure outlined in Land Contamination Risk Management (LCRM), published by the Environment Agency.

This report is prepared in line with the agreed brief and is subject to the report conditions shown in Appendix 1.

1.2 LEGAL CONTEXT

Part IIA of the Environmental Protection Act 1990 (inserted by Section 57 of the Environment Act 1995) provides a regime for the control of specific threats to health or the environment from land contamination. In accordance with the Act and the statutory guidance document 'The Contaminated Land (England) Regulations 2000', the definition of contaminated land is intended to embody the concept of risk assessment. Within the meaning of the Act, land is only "contaminated land" where it appears to the Regulatory Authority, by reason of substances within or under the land, that:

- Significant harm is being caused, or there is a significant possibility of such harm being caused; or
- Pollution of controlled waters is being, or is likely to be, caused."

Inherent in this definition is the requirement for contamination risk assessment to be undertaken on a site specific basis, as the potential for harm is determined by the site's end use and its specific environmental setting.

The guidance defines "risk" as the combination of:

- The probability, or frequency, of occurrence of a defined hazard (for example, exposure of a property to a substance with the potential to cause harm); and
- The magnitude (including the seriousness) of the consequences.

While Part IIA of the Environmental Protection Act provides a risk based approach to the identification and remediation of land where contamination poses an unacceptable risk to human health or the environment, the regime does not take into account future uses. New developments are therefore controlled by the planning regime, with reference to the National Planning Policy Framework (NPPF), rather than directly by Part IIA of the Environmental Protection Act.

The NPPF is based on the principal that the site should be suitable for its new use, taking account of ground conditions, including from natural hazards or former activities and states that “Where a site is affected by contamination or land stability issues, responsibility for securing a safe development rests with the developer and/or landowner”. The NPPF also links the planning and Part IIA regimes by stating that “after remediation, as a minimum, land should not be capable of being determined as contaminated land under Part IIA of the Environmental Protection Act 1990”. Key components of the Part IIA regime, such as the definition of Contaminated Land and the associated risk based assessment approach, are therefore considered to also be applicable to the planning regime.

1.3 METHODOLOGY

This report has been prepared in accordance with published Environment Agency guidance (‘Land Contamination Risk Management (LCRM)’). LCRM provides the technical framework for structured decision making about land contamination and builds on previous work carried out under the Contaminated Land Research Programme (of the former Department of the Environment) and the Model Procedures for the Management of Land Contamination – Contaminated Land Report (CLR) 11. LCRM has adopted and refined the well recognised methodology and terminology that has been used in contaminated land risk assessment for a number of years.

1.3.1. Pollutant linkage concept

In the context of land contamination, there are three essential elements to any risk:

- A **contaminant source** – a substance that is in, on or under the land and has the potential to cause harm or to cause pollution of controlled waters.
- A **receptor** – in general terms, something that could be adversely affected by a contaminant, such as people, an ecological system, property, or a water body.
- A **pathway** – a route or means by which a receptor can be exposed to, or affected by, a contaminant.

Each of these elements can exist independently, but they create a risk only where they are linked together, so that a particular contaminant affects a particular receptor through a particular pathway. This kind of linked combination of contaminant–pathway–receptor is described as a pollutant linkage.

1.3.2. Conceptual model

An important thread throughout the overall process of risk assessment is the need to formulate and develop a **conceptual model** for the site, which supports the identification and assessment of pollutant linkages. A conceptual model represents the characteristics of the site in diagrammatic or written form that shows the possible relationships between contaminants, pathways and receptors (pollutant linkages).

1.3.3. Risk assessment

LCRM advocates a phased approach to risk assessment comprising the following in order, as necessary:

Preliminary Risk Assessment – a desk study consisting of a review of documentary, anecdotal and site walk over evidence.

Generic Quantitative Risk Assessment (GQRA) - comparison of contaminant concentrations obtained from site investigation with generic assessment criteria.

Detailed Quantitative Risk Assessment (DQRA) - comparison of contaminant concentrations obtained from site investigation with site-specific assessment criteria.

This document constitutes a Preliminary Risk Assessment.

1.4 PROPOSED USE

It is currently understood that the site is proposed for use as open storage.

A change in the site use from that currently proposed may result in the need for re-assessment of risk criteria and the conclusions and recommendations resulting from the risk assessment could therefore significantly change.

1.5 REPORT SCOPE AND LIMITATIONS

This report is based upon a site visit, review of readily available historical and current information, geological and hydrogeological maps and information from an environmental database search. The assessment is based on the proposed use stated in Section 1.4 and the outcomes of this assessment could change if the end uses change.

The information contained in this report is intended for the use of JH (Milton) Ltd. GCC can take no responsibility for the use of this information by any other party or for uses other than that described in this report.

1.6 PREVIOUS REPORTS REVIEWED

The Client provided a copy of the following reports:

- Advisian (February 2018), *Environmental Assessment Factual Site Investigation Report* (Ref: 305008-00031/51895-00).
- Advisian (February 2019), *Supplementary Soil Sampling And Groundwater Monitoring* Letter Report (Ref: none).
- Joseph Homes File Note (August 2020), *Email From Patrick Parsons re SGN* (Ref: none)
- Advisian (May 2021), *Environmental Assessment Factual Site Investigation Report- Final* (Ref: 305008-00031 00104).
- Technical Demolition Services Ltd (assumed June 2021), *Closeout Report* (Ref: none)
- SGN (June 2021), *Hazardous Substances Consent for Gravesend Gasholder Site Revocation Letter* (Ref: none)

While reliance may not be placed on all of these reports and the interpretations they contain, they have been used as reference to guide the Desk Top Study.

Interpretive assessment reports for the site investigations discussed in the factual reports above, if written, have not been made available for review by GCC.

2. PRELIMINARY RISK ASSESSMENT

2.1 SITE LOCATION AND DESCRIPTION

The site is located to the east of Canal Road, some 225m south of the River Thames, to the east of Gravesend centre. The site is presently disused, formerly serving as Gravesend Gasholder Station, where two gasholders and associated plant were preset. The former Gasholder 1 was located in the east of the site and former Gasholder 2 was located in the centre of the site.

The site presently comprises a broadly rectangular, largely vacant, plot, split into several areas by palisade fences. In the east of the site, a circular feature is present, likely the dumpling of the former gas holder (Gasholder No.1) in this area of the site and in the west of the site several small structures remain. The central area of the site, where Gasholder 2 had been located, was vacant. The central and eastern areas of the site had a ground coverage of vegetation, while the western area was covered by predominantly tarmacadam hard standing.

The topography of the site is generally level with the exception of the former Gasholder No.1 feature, which forms a circular depression, approximately 1.5m lower than the surrounding ground and partially filled with water, and smaller diameter circular mound at its centre (dumpling).

The site access is located in the west, via Canal Road, through a set of vehicular gates.

To the north of the site lies an area of open storage, presently utilised as a trailer and lorry park. To the east of the site lies a warehouse and open storage yard. To the south of the site is a car garage, plant suppliers and doner meat supply centre. To the west of the site, across Canal Road, is a residential area.

2.2 SITE HISTORY

Early records (1865) indicate that the site was undeveloped with what appears to be a pond in the southwest and apparent drainage channels surrounding the site. By 1888, Gasholder No.1 had been constructed in the east of the site. The demolition records indicate that the gasholder extended below ground. Earthworks are shown on the site during the late 1800s and early 1900s and are anticipated to be ground raising to provide improved access to the gas holder. By 1953, Gasholder No.2 was constructed to the west of Gasholder No.1 and was largely above ground.

The gasholders were removed in 2021 with the channel of Gasholder No.1 backfilled with class 6A and 6F5 material to the base of the dumping, the cast iron walls above this level removed and the surrounding soil battered to a safe angle of repose. The cast iron walls below this level, the cast iron floor of the channel and the concrete dumping are understood to remain in-situ.

The gasholders on site were originally associated with a gasworks located adjacent to the north of the site, which predated the 1865 map extract. The majority of gasworks related infrastructure was present beyond the northern boundary during the operational life of the gasworks. The gasworks buildings appear to have been removed by 1964.

The early map extracts indicate a railway line some 70 to the south and the Thames and Medway Canal some 80m to the north, beyond the gas works. Residential properties were constructed to the west of the site by the early 1900s and an electricity works was constructed some 50m to the northwest by 1909. Commercial development adjacent to the south took place during the early 1960s onwards. The former gasworks site to the north appears to have been in use for some time but no permanent structures are indicated on the historical maps after the removal of the gasworks buildings.

2.3 DOCUMENTATED GROUND CONDITIONS

Ground conditions recorded in readily available sources are summarised below.

2.3.1. Geology

Reference to the British Geological Survey (BGS) Map extracts (see Appendix 2) indicates the site to overlie the Made Ground over superficial Alluvium (silt) and possibly over the Taplow Gravel Formation over bedrock geology of the Seaford Chalk Formation.

Ground conditions encountered during previous investigation works comprise Made Ground to depths of up to 3m, but generally to average depth of 2m. Made Ground and inground structures are believed to extend to greater depths in the Gasholder No.1 area. Below the Made Ground, the natural superficial soils generally comprise a 3m layer of clay (Alluvium), over 1m of peat and organic clay (Alluvium), which in turn overlies a 1-4m thick band of granular soils (Taplow Gravel Formation) before the chalk is present at depths from 6-15m below current ground level.

2.3.2. Hydrogeology

The Environment Agency Groundwater Vulnerability Map extracts (see Appendix 2) indicate the majority of the site to be underlain by bedrock Secondary Undifferentiated Aquifer, interpreted as the Alluvium, over a bedrock Principal Aquifer, interpreted as the Seaford Chalk Formation. The Taplow Gravel Formation is interpreted as a Secondary A Aquifer.

Secondary Undifferentiated Aquifers are assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and nonaquifer in different locations due to the variable characteristics of the rock type.

Principal Aquifers are geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers.

Groundwater levels monitored by Advision in August 2016 indicate groundwater to be approximately 2.3-3.3m bgl and approximately 1.0-1.5m AOD. The monitoring wells installed in the Chalk recorded similar groundwater levels to the wells installed in the Taplow Gravel Formation, indicating that the Chalk and Taplow Gravel Formation are likely to be in hydraulic continuity. Groundwater also appears to have partially filled the depression left following the removal of Gasholder No.1.

Groundwater level modelling does not appear to have been presented in the available report. However, initial inspection of the monitoring data suggests that groundwater generally flows from southwest to northeast with some likely distortion from remnant in-ground structures.

The site is not located within Groundwater Source Protection Zone.

2.3.3. Hydrology

The closest identified surface water features to the site is a watercourse located 2m to the east.

2.3.4. Radon

Radon is a naturally occurring radioactive gas which may be harmful to human health. Radon is generally released into the atmosphere in areas underlain by granite and limestone. Harmful concentrations of radon may build up if it becomes trapped in an enclosed space such as a building.

BGS/Public Health England data presented within the Groundsure Report indicates that the percentage of houses exceeding the Action Levels for Radon is less than 1%. Therefore, the property is not in a Radon Affected Area, as defined by the Health Protection Agency (HPA), and radon protection measures are not necessary in new dwellings or extensions.

2.4 ENVIRONMENTAL DATA SEARCH

A search of an environmental database was undertaken together with information from various other organisations as part of the desk study and is summarised in the following sections. The following summary is generally limited to locations within 250m of the site boundaries unless it is considered that installations or activities beyond that range could potentially have an impact on the site or be affected by the redevelopment of the site.

Table 2.1. Data search results

Discharge consents	There are no recorded active discharge consents within 250m of the site.
Pollution incidents	There are 6no recorded pollution incidents to controlled waters within 250m of the site. The closest is 100m to northwest and all appear to be down hydraulic gradient from the site and are not considered to have a significant bearing on the site.
Water abstractions	There are no recorded groundwater abstractions within 500m of the site.
Fuel Stations	There are no recorded fuel station within 250m of the site.
Landfill Sites	The former gas works site adjacent to the north is identified as a historical landfill, which received inert and commercial waste from 1976 with no specified end date. The Groundsure report indicates refuse heaps to have been present on the site in the late 1800s but these references are considered likely to be associated with the ground working on the site as the available historical maps do not reference refuse.

2.5 MINING AND NATURAL GROUND HAZARDS

2.5.1. Mining

The site is located in an area that is not likely to have been affected by mining.

2.5.2. Natural Ground Hazards

The following ground hazards were identified:

Compressible ground stability hazards – Very Low hazard

BGS Notes: Compressibility and uneven settlement problems are not likely to be significant on the site for most land uses.

It is noted that this hazard may need to be assessed further, due to the presence of Made Ground and alluvial deposits including peat.

Collapsible ground stability hazards – Negligible hazard

BGS Notes: Deposits with potential to collapse when loaded and saturated are believed not to be present.

It is noted that this hazard may need to be assessed further, due to historical earthworks and more recent infilling of gas holders.

Ground dissolution stability hazards – Very Low hazard

BGS Notes: Soluble rocks are present within the ground. Few dissolution features are likely to be present. Potential for difficult ground conditions or localised subsidence are at a level where they need not be considered.

Landslide ground stability hazard – Very Low hazard

BGS Notes: Slope instability problems are not likely to occur but consideration to potential problems of adjacent areas impacting on the site should always be considered.

Shrinking or swelling clay ground stability hazard – Low hazard

BGS Notes: Ground conditions predominantly medium plasticity.

Running sand ground stability hazards – Very Low hazard

BGS Notes: Running sand conditions are unlikely. No identified constraints on land use due to running conditions unless water table rises rapidly.

2.6 DEPARTMENT OF ENVIRONMENT – INDUSTRY PROFILES

The Department of the Environment Industry Profiles for Gasworks Sites have been reviewed in relation to the use of the site.

As a result of this use, the following potential contaminants have a significant potential to be present:

- Metals and metalloids
- Asbestos
- Inorganic chemicals and ions including cyanide
- Organic chemicals including oil and fuel hydrocarbons, phenols and polycyclic aromatic hydrocarbons

2.7 UNEXPLODED ORDNANCE

A Zetica UXO Unexploded Bomb (UXB) Risk Map was obtained for the site and is presented in Appendix 2. This map indicates the potential for UXBs to be present because of World War Two (WWII) bombing and notes the site to be within an area of high density bombing. Zetica UXO typically recommend that a Detailed UXO Risk Assessment is undertaken for sites in an area with a moderate or high bombing density.

2.8 REGULATOR CONSULTATION

A request for environmental data was submitted to the Gravesham Borough Council Environmental Protection Team. A response had not been received at the time of issue of this report.

2.9 SUMMARY OF PREVIOUS REPORTS

2.9.1. Advision – Environmental Assessment Factual Site Investigation Report (February 2018)

Advisian has been commissioned by SGN to undertake a site investigation of the SGN land holding on the site located off Canal Road, Gravesend DA12 2RS. The aim of the site investigation is to identify the nature of ground and groundwater conditions at the site and supplement the findings of previous work. Previous work on the site includes three site investigations undertaken by Parsons Brinkerhoff in 2001, WS Atkins in 2001 and Harrison and Company in 1992 (not provided to GCC for review). The report is factual only and does not contain interpretation of the results.

The site investigation was undertaken on the SGN landholding, Canal Road, Gravesend, Kent, under the full time supervision of Advisian engineers. The works were carried out between the 27th June and 6th July 2016.

A total of eight boreholes were drilled as part of the investigation, to a maximum depth of 18.5m bgl, using percussive drilling techniques. All excavated boreholes were installed as groundwater monitoring wells. In addition eleven hand pits were dug to a maximum depth of 0.5m bgl. Soil samples were collected from the boreholes and analysed for various chemical constituents and well as physical properties.

All eight monitoring wells were subject to groundwater monitoring; in addition surface water sampling of the drain located adjacent to the site was undertaken on 2nd and 3rd August 2016, with an additional two monitoring rounds taking place on 9th and 15th August 2016. Hydraulic conductivity tests (slug tests) were conducted on the 2nd August 2016. Tidal monitoring was completed in the wells between the 6th July and 2nd August 2016.

The investigation encountered 0.5-2.2m of Made Ground over 2.7-4.1m of Clay (Alluvium) over 0.2-0.8m of peat (Alluvium) over 0.8-8.6m of sand and gravel (interpreted by Advisian as Alluvium but considered by GCC to probably be Taplow Gravel Formation) over Chalk.

Slight to strong hydrocarbon odours and visual evidence of slag, ash, clinker, coal, coke and greenish/blue staining were identified within the made ground across the site. Slight to strong hydrocarbon odours and dark grey to black hydrocarbon staining was identified within the upper 7m of the superficial deposits across the site.

Non-aqueous phase liquid (NAPL) entrained in soils was observed within the Alluvium in MW16-04G, located between Gasholder No. 1 and Gasholder No. 2, at depths between 3.2m and 4.7m bgl. Two boreholes installed within gravel in the centre of the site, between Gasholder No. 1 and Gasholder No. 2, recorded groundwater which was dark yellow in colour with sulphur or hydrocarbon odours. No NAPL was recorded within groundwater monitoring wells.

2.9.2. Advisian – Supplementary Soil Sampling and Groundwater Monitoring (February 2019)

Advisian was retained by SGN to carry out supplementary surface soil sampling and groundwater monitoring at the former gasworks located at Canal Road, Gravesend, Kent, DA12 2RS. This letter report detailed supplementary surface soil sampling and groundwater monitoring carried out at the site.

The supplementary sampling was undertaken on 17th July 2018 and included the following scope of work:

- Groundwater quality monitoring: groundwater samples were collected from boreholes MW16-01C and MW16-03C which are installed within the Seaford Chalk and Newhaven Chalk Formation, and from boreholes MW16-01G, MW16-03G and MW16- 04G, which were installed in the gravel.
- Collection of soil samples from 15 No. shallow handpits across the site. Soil samples were analysed for asbestos identification, and positive samples were subsequently analysed for gravimetric quantification and dustiness testing as appropriate.

Strong sulphur and hydrocarbon odours were locally reported in the groundwater samples.

9no of the 15no near surface soil samples tests were recorded to be positive for asbestos with both chrysotile and amosite forms recorded.

2.9.3. Joseph Homes File Note – Email from Patric Parsons re SGN (August 2020)

Factual site investigation data from SGN was reportedly provided to Patrick Parsons, who commented in an email dated 13th August 2020, which was then recorded in a File Note by Joseph Homes.

The Note references the ground conditions and visual and olfactory evidence of contamination encountered and discussed above then goes on to discuss potential remediation costs.

2.9.4. Advision – Environmental Assessment Factual Site Investigation Report (May 2021)

Advisian was commissioned by SGN to undertake a focused site investigation designed to identify the nature and chemistry of ground and groundwater conditions at the site and to investigate the nature and extent of underground structures. This report provides a factual summary of the works carried out, including records of ground conditions and chemical data.

The site investigation comprised the following principal elements:

- Excavation of two hand-dug trial pits to investigate shallow made ground conditions in the west of the site;
- Excavation of four hand-dug trial pits to investigate the composition of the bund material around Gasholder No. 1;

- Drilling of five boreholes to investigate deeper lithology and groundwater bearing zones;
- Collection and analysis of soil, groundwater and surface water samples to ascertain contaminant concentrations present; and,
- Identification of visual and olfactory evidence of contamination in soils and groundwater.

Made ground was encountered to a maximum depth of 3.50m bgl, overlying Alluvium and the Seaford Chalk Formation. Evidence of contamination in the form of black staining, odours and non-aqueous phase liquid (NAPL) entrained in soils (as NAPL coated gravels and pockets of NAPL within cohesive soils) and hydrocarbon odours were recorded in the made ground and Alluvium in Area A, between Gasholder No.1 and No.2.

Groundwater was encountered between 0.91 and 3.61m bgl during the monitoring rounds. Slight hydrocarbon odours were observed in groundwater from the Alluvium in Area A. Although there were observations of NAPL entrained in soils, there were no measurable thicknesses of NAPL recorded in groundwater monitoring wells between the two gasholders.

2.9.5. Technical Demolition Services – Closeout Report (assumed June 2021)

Works on the land forming the Gasholder Station at Canal Road, Gravesend, required the dismantling of all Gasholders and associated plant, along with buildings occupying the site. Following Gasholder dismantling the Gasholder tank and other pits required infilling. The report presents a description of these works. There is no date on the report but it is assumed to date from June 2021.

Both gasholders were de-oiled, de-watered and de-sludged prior to being dismantled. In total, 34,069.03m³ of water was removed from Gasholders No. 1 & 2.

There was an existing soil bund that surrounded Gasholder No. 1. An assessment was carried out on this material both to determine approximate volume and geochemical properties. Initial sampling was carried out on the 3rd March 2021 to determine the properties of the bund material. This incorporated 6no. trial pits. The samples were sent to the laboratory for chemical analysis in order to determine the chemical composition of the bund and the classification of the material for either onsite re-use or for offsite disposal. The assessment of the samples collected indicated that PAH, lead and asbestos exceeded the threshold for residential use setting.

Based on the sampling, additional sampling of the bund was required and instructed. This incorporated an additional 7no. trial pits. All 13 trial pit samples were classified for waste disposal with all samples coming back as 'non-hazardous' with the exception of TP1 which came back as 'hazardous'. The decision was then made to offsite the bund in its entirety.

It was discovered during the works that the dumping had been modified from the existing drawings, cast iron panels were present to the channel floor and run under the GH dumping.

Throughout the demolition process, water ingress was monitored, and the Gasholder channel was found to be filling with water. Infilling of GH1 was to proceed on the following basis:

- Placement of class 6A material in the GH1 channel.
- Placement of class 6F5 material to the top of GH channel.
- Removal of remaining cast-iron tank. Approx. two rings of cast iron floor remain within the channel.
- Battering of clay material to make a safe angle of repose.

Windowless sampling was conducted through the dumping of Gasholder No.1. Logs were provided separately but no other discussion of the findings was presented. The logs indicate 0.1m of concrete over Alluvium (clay).

The main material import for this project was to infill the annulus to GH1 (Below ground), both class 6A & 6F materials were used, imported from Gallagher Aggregates.

Technical Demolition Services Limited confirmed that based on the infill report by Site Remedial Services Limited that the geochemical results for the infill materials met the specification for the future use of the site (commercial). GCC has not been provided the Site Remedial Services Ltd report for review.

All the hardcore and concrete on site was crushed to a type 6F2 crushed concrete/hardcore specification and spread over the GH2 base.

In total ~1T of asbestos containing materials were removed from site.

2.9.6. SGN – Hazardous Substances Consent for Gravesend Gasholder Site Revocation Letter (June 2021)

A letter from SGN to Gravesend Borough Council (dated 25th June 2021) has been provided for review. It states that the subject storage facility for natural gas has been permanently decommissioned and purged and that SGN no longer require a Hazardous Substances Consent at this site for this or any other purpose.

2.10 INTERPRETATION OF PREVIOUS REPORTS REVIEWED

It is not clear if the factual site investigation reports prepared by Advision for SGN have been followed up with interpretive Generic Quantitative Risk Assessments and potentially a controlled waters Detailed Quantitative Risk Assessment to assess the factual data and determine if contamination on the site presents a significant risk to human health and/or controlled waters. Such reports have not been made available to GCC for review and the scope of this Desk Top Study does not include the reassessment of the available raw data to prepare a new interpretive report.

However, from initial inspection of the available data, it is apparent that significant contamination, in relation to human health, is present in the near surface soils, including asbestos, heavy metals, PAH and BTEX compounds. There is also evidence of localised penetration of contaminants through the superficial alluvial clay layers to the underlying groundwater in the gravel and Chalk.

The Technical Demolition Services Limited Closeout report notes water ingress to the gasholder channel in GH1 during the demolition works. It is unclear if this ingress is the result of the demolition works or if there was historically a migration pathway between the gasholder and the surrounding groundwater.

The Technical Demolition Services Limited Closeout Report makes reference to a report by Site Remedial Services Limited that reportedly states that the geochemical results for the infill materials met the specification for the future use of the site (commercial). The Site Remedial Services Limited report has not been made available to GCC and the extent to which the contamination risk on site have been remediated is not clear but the implication is that some remediation has taken place.

If the works undertaken by Technical Demolition services Limited were the only remedial works undertaken of contaminated soil, this appears to have been limited to the soil bund that surrounded Gasholder No. 1. If that is the case, the majority of the contamination identified by the Advision investigations in the soil and groundwater is anticipated to remain on site.

3. CONCEPTUAL SITE MODEL

3.1 SOURCES

The conceptual model, based on information obtained as part of the preliminary risk assessment, identified the following potential contaminant sources:

- Reduced quality Made Ground and natural soils present across the site from the former gasholder use and apparent land raising and potential migration of contaminants from the former gasworks processing buildings adjacent to the north, including asbestos, heavy metals, PAH and BTEX compounds.
- Potential for ground gas generation from thick Made Ground deposits on site and former off-site landfill to the north.

It should be noted that additional sources of contamination may become apparent during any future investigation and development of the site.

3.2 PATHWAYS

The key environmental pathways and exposure routes by which potentially toxic substances can reach the identified potential receptors are considered to be:

- Inhalation of vapours
- Inhalation of dust
- Direct contact
- Ingestion

3.3 RECEPTORS

Receptors that may be affected by the potential contamination are:

- Future site users
- Off-site land users
- Secondary A Aquifer (Taplow Gravel Formation)
- Principal Aquifer (Chalk)
- Adjacent watercourse to the east
- Building materials (including water pipes)

Construction workers have been excluded from this assessment on the basis that they are subject to health and safety at work regulations and are expected to use appropriate personal protective equipment (PPE).

4. RISK ASSESSMENT

4.1 RISK ASSESSMENT PROCEDURE

By considering the sources, pathways and receptors (pollutant linkages), an assessment of the human health/ environmental risks is made with reference to the significance and degree of the risk. This assessment is based on consideration of whether the source contamination can reach a receptor and hence whether it is of major or minor significance.

The risk assessment has been undertaken with reference to BS10175 and CIRIA Document C552: Contaminated Land Risk assessment 'A Guide to Good Practice'. The risk assessment has been carried out by assessing the severity of the potential consequence, taking into account both the potential magnitude of the hazard and the sensitivity of the target, based on the categories given overleaf.

Table 4.1. Sensitivity of receptor

Category	Examples
High	Residential with gardens/Groundwater Source Protection Zone
Medium	Residential without gardens/Principal (Major) Aquifer/sensitive watercourse
Low	Commercial and industrial use/Secondary (Minor) Aquifer
Very Low	Construction and maintenance workers/non-sensitive watercourse

Table 4.2. Magnitude of impact

Category	Examples
Gross Impact	Heavily contaminated gasworks or industrial site, hazardous waste landfill
Moderate Impact	Major leaks and spills from fuel infrastructure (e.g. petrol stations), domestic waste landfill
Slight Impact	Minor leaks and spills from fuel infrastructure, 'inert' waste landfills
No Impact	No identified or suspected contamination

Table 4.3. Level of severity for potential hazard

Magnitude of Impact	Sensitivity of receptor			
	High	Medium	Low	Very Low
Gross Impact	Severe	Medium	Mild	Minor
Moderate Impact	Medium	Mild	Minor	Minor
Slight Impact	Mild	Minor	Minor	Minor
No Impact	Minor	Minor	Minor	Minor

The likelihood of an event (probability) takes into account both the presence of the hazard and target and the integrity of the pathway and has been assessed based on the categories given below.

Table 4.4. Probability of risk definition

Category	Definition
High likelihood	Pollutant linkage may be present, and risk is almost certain to occur in long term, or there is evidence of harm to the receptor
Likely	Pollutant linkage may be present, and it is probable that the risk will occur over the long term
Low likelihood	Pollutant linkage may be present, and there is a possibility of the risk occurring, although there is no certainty that it will do so
Unlikely	Pollutant linkage may be present, but the circumstances under which harm would occur are improbable

The potential severity of the risk and the probability of the risk occurring have been combined in accordance with the following matrix in order to give a level of risk for each potential hazard.

Table 4.5. Level of risk for potential hazard definition

Probability of risk	Potential severity			
	Severe	Medium	Mild	Minor
High Likelihood	Very high	High	Moderate	Low/ Moderate
Likely	High	Moderate	Low/ Moderate	Low
Low likelihood	Moderate	Low/ Moderate	Low	Very low
Unlikely	Low/ Moderate	Low	Very low	Very low

The assessment is discussed below in terms of plausible pollutant linkages. A complete assessment of the pollutant linkages is presented in Table 4.6 overleaf.

A description of these risk classifications and likely action required are given in CIRIA 552 as:

Very high risk – 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 substantial liability. Urgent investigation and remediation are likely to be required.

High risk – Harm is likely to arise to a designated receptor from an identified hazard. This risk, if realised, is likely to result in substantial liability. Urgent investigation is required and remedial works may be necessary in the short term and are likely over the long 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 is normally required to clarify risks and to determine 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 – It is a low possibility that harm could arise to a designated receptor. In the event of such harm being realised it is not likely to be severe.

4.2 POLLUTANT LINKAGE ASSESSMENT

The following assessment is based on the proposed commercial open storage end use scenario.

Table 4.6. Pollutant Linkage Assessment

Source	Pathway	Receptor	Severity	Likelihood	Risk Level
Asbestos containing materials and fibres in on-site Made Ground	Inhalation	Future Users	Medium	Likely	Moderate
Reduced quality Made Ground and natural soils (ex. asbestos)	Direct contact Ingestion Inhalation	Future Users	Mild	Low Likelihood	Low
	Vertical migration	Secondary A Aquifer	Mild	Likely	Low/ Moderate
	Vertical migration	Principal Aquifer	Medium	Likely	Moderate

Source	Pathway	Receptor	Severity	Likelihood	Risk Level
	Lateral migration	Adjacent water course	Minor	Low Likelihood	Very low
	Direct contact	Water pipes	Minor	Likely	Low
Potential ground gas migration from thick Made Ground deposits	Lateral and vertical migration leading to inhalation	Future Users	Mild	Unlikely	Very Low
		Off-site users	Mild	Low Likelihood	Low

4.2.1. Asbestos in Soil

As the previous investigations have shown widespread chrysotile and amosite asbestos contamination in the shallow soils across the site and no evidence has been made available to GCC to indicate that remediation of this contamination has taken place, it is assumed that asbestos containing materials are still present within the Made Ground on the site.

The main exposure pathway will be in any areas of soft landscaping or unsurfaced areas via disturbance of the soil and inhalation of contaminated dust. The risk via this exposure pathway has been assessed to be moderate on the basis of the proposed site activities, including vehicle movements, taking place on the existing exposed site surface. However, where asbestos impacted Made Ground is covered by new hard standing, this would be considered to form a barrier separating the contaminated soil and future site users.

Due to the known presence of asbestos in the Made Ground, it is prudent to assume that all Made Ground (soil containing man-made material) on the site contains asbestos and is treated accordingly. The placement of hard standing and other remediation measures are recommended to be put in place to separate the site users and asbestos impacted Made Ground.

4.2.2. Reduced Quantity Made Ground and Natural Soils

Investigations undertaken to date have identified reduced quality Made Ground and natural soils across the site from the former gasholder use and apparent land raising and potential migration of contaminants from the former gasworks processing buildings adjacent to the north, including heavy metals, PAH and BTEX compounds.

The main exposure pathway will be in any areas of soft landscaping or unsurfaced areas via direct contact, ingestion and inhalation of dust and vapours. The risk via these exposure pathways has been assessed to be low on the basis of the proposed site activities, including vehicle movements, taking place on the existing exposed site surface. However, where impacted Made Ground is covered by new hard standing, this would be considered to form a barrier separating the contaminated soil and future site users. As no buildings are proposed as part of the proposed open storage space use, the vapour inhalation pathway is not considered to be significant as vapours will be diluted in outdoor air.

While the alluvial clay appears generally to be forming an effective separating layer between the near surface contamination and the underlying Taplow Gravel Formation Secondary A Aquifer and the Seaford Chalk Formation Principal Aquifer, the previous investigations indicate that contamination has locally penetrated this layer and has impacted the Aquifers, which appear to be in hydraulic continuity. In the absence of a detailed controlled waters risk assessment, the risks have been assessed as low/moderate in relation to the Secondary A Aquifer and moderate in relation to the Principal Aquifer, due to the higher sensitivity of the receptor.

The placement of hard standing and other remediation measures are recommended to be put in place to separate the site users and impacted Made Ground. Further assessment of the risks to controlled waters is also recommended to determine if remediation is required.

The contaminant concentrations in the shallow soils are considered likely to cause damage to PE water supply pipes. This should be taken into account by the designers of buried services for the proposed development.

4.2.3. Ground gas from Made Ground

Thick deposits of Made Ground are known to be present across the site from the previous development, demolition works and land raising. The organic matter contents of the Made Ground could potentially be a source of ground gas generation. The former gasworks, adjacent to the north of the site, is also a potential source of ground gas generation and migration onto the site. Ground gas monitoring data does not appear to have been included in the previous phases of investigation.

As no buildings are proposed as part of the proposed open storage space use, the ground gas inhalation pathway is not considered to be significant for the study site as gas will be diluted in outdoor air. However, the potential exists for ground gas generated on the site to migrate to off-site receptors.

Further investigation of the ground gas generation potential of the Made Ground and potential for off-site migration is therefore recommended.

5. CONCLUSIONS AND RECOMMENDATIONS

The following potential sources of contamination were identified in relation to the proposed commercial open storage end use:

- Reduced quality Made Ground and natural soils present across the site from the former gasholder use and apparent land raising and potential migration of contaminants from the former gasworks processing buildings adjacent to the north, including asbestos, heavy metals, PAH and BTEX compounds.
- Potential for ground gas generation from thick Made Ground deposits on site and former off-site landfill to the north.

It should be noted that additional sources of contamination may become apparent during any future investigation and development of the site.

The risks to the health of future site users from contamination, in the context of the proposed commercial open storage end use of the site, have been assessed to be **moderate**. The primary risk driver is considered to be exposure to asbestos in soil with an additional risk from a variety of other contaminants. The placement of hard standing and other remediation measures are recommended to be put in place to separate the site users and impacted Made Ground.

In the absence of a detailed controlled waters risk assessment, the risks have been assessed as **low/moderate** in relation to the Secondary A Aquifer and **moderate** in relation to the Principal Aquifer, due to the higher sensitivity of the receptor. Further assessment of the risks to controlled waters is therefore recommended to determine if remediation is required.

While the risks to site users are not likely to be significant, due to the dilution in outdoor air, a potential risk of ground gas generation and off-site migration remains. Further investigation of the ground gas generation potential of the Made Ground and potential for off-site migration is therefore recommended.

The contaminant concentrations in the shallow soils are considered likely to cause damage to PE water supply pipes. This should be taken into account by the designers of buried services for the proposed development.

While construction workers have been excluded from this assessment on the basis that they are subject to health and safety at work regulations and are expected to use appropriate personal protective equipment (PPE), any ground works contactors working on the site, including installing new underground services, should be made aware of the potential for contamination to be present within the ground underlying the site surfacing.

FIGURE 1: LOCATION PLAN



Ground Condition Consultants Ltd
10 Waldegrave Close Southampton SO19 9RY
Telephone 07971 450113
ask@groundcc.co.uk www.groundcc.co.uk

client JOSEPH HOMES

site GASHOLDER SITE, GRAVESEND

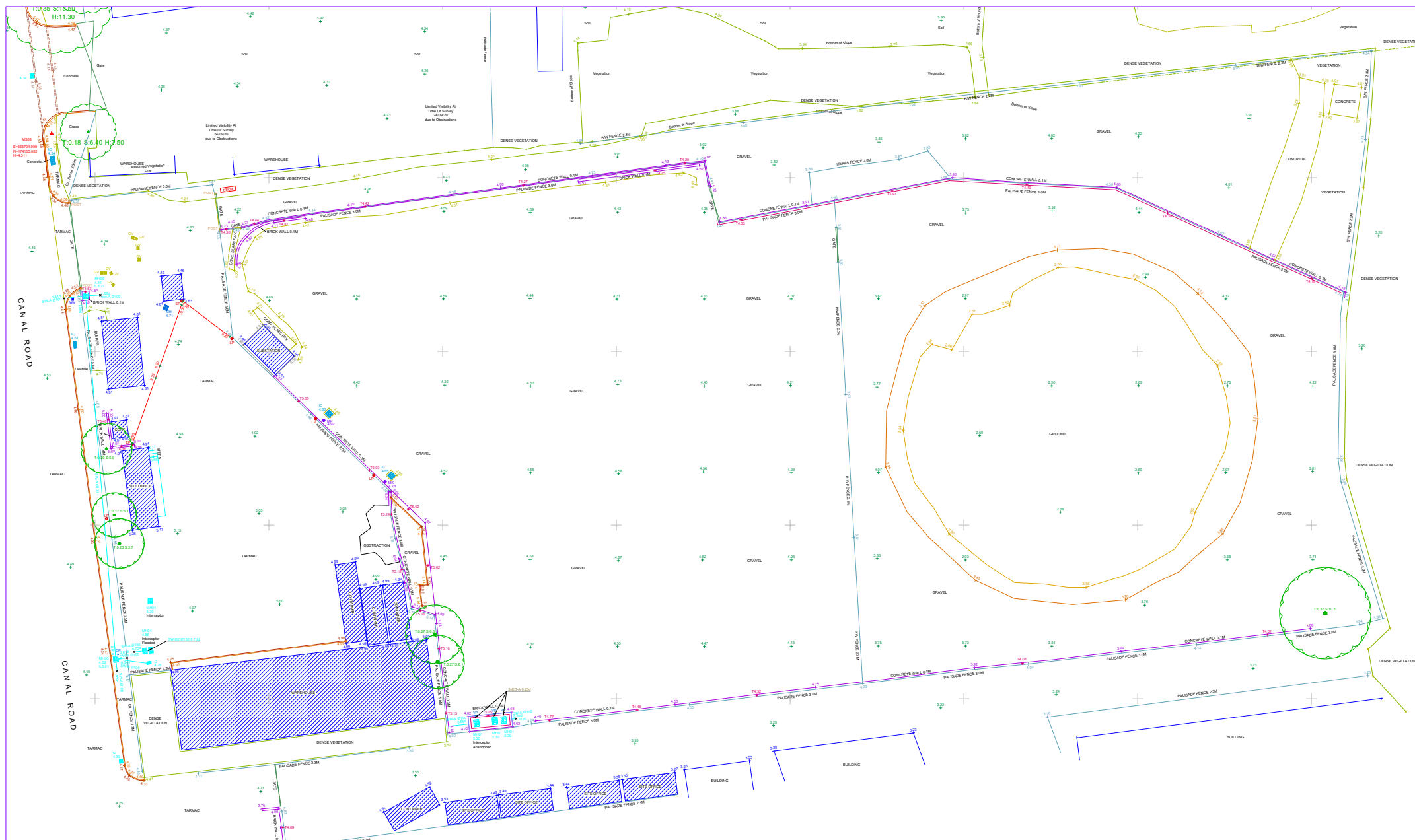
title SITE LOCATION PLAN

scale NTS | drawn by DP | checked by RP

date 19 MAR 2024 | job no J24-012

drawing number | rev. -
FIGURE 1

FIGURE 2: LAYOUT PLAN



Ground Condition Consultants Ltd
10 Waldegrave Close Southampton SO19 9RY
Telephone 07971 450113
ask@groundcc.co.uk www.groundcc.co.uk

client
JOSEPH HOMES

project
GASHOLDER SITE, GRAVESEND

title
EXISTING LAYOUT PLAN

scale **NTS** | drawn by **DP** | checked by **RP**

date **19 MAR 2024** | cad file **J24-012**

drawing number **FIGURE 2** | rev. **-**

APPENDIX 1: REPORT CONDITIONS

This report is produced solely for the benefit of **JH (Milton) Ltd** and no liability is accepted for any reliance placed on it by any other party unless specifically agreed in writing otherwise.

This report refers, within the limitations stated, to the condition of the Site at the time of the inspections. No warranty is given as to the possibility of future changes in the condition of the Site.

This report is based on a visual Site inspection, study of readily accessible referenced historical records, information supplied by those parties noted in the text and preliminary discussions with local and Statutory Authorities. Some of the opinions are based on unconfirmed data and information and are presented in good faith without exhaustive clarification. Where ground contamination is suspected but no physical Site test results are available to confirm this, the report must be regarded as initial advice only, and further assessment should be undertaken prior to detailed activities related to the Site. Where test results undertaken by others have been made available these can only be regarded as a limited sample. The possibility of the presence of contaminants, not revealed by this research cannot be discounted.

Whilst confident in the findings detailed within this report because there are no exact UK definitions of these matters, being subject to risk analysis, we are unable to give categorical assurances that they will be accepted by Authorities or Funds etc. without question, as such bodies may have unpublished, often more stringent objectives. This report is prepared for the proposed uses stated in the report and should not be used in a different context without reference to Ground Condition Consultants Ltd. In time improved practices or amended legislation may necessitate a re-assessment.

The report is necessarily limited to those aspects of land contamination specifically reported on and no liability is accepted for any other aspect especially concerning gradual or sudden pollution incidents that may occur. The opinions expressed cannot be absolute due to the limitations of time and resources within the context of the agreed brief and the possibility of unrecorded previous use and abuse of the Site and adjacent Sites. The report concentrates on the Site as defined in the report and provides an opinion on surrounding Sites. If migrating pollution or contamination (past or present) exists this can only practically be better assessed following extensive on and off Site intrusive investigations and monitoring.

APPENDIX 2: GROUNDSURE REPORT

CANAL INDUSTRIAL PARK, CANAL ROAD, GRAVESEND, KENT, DA12 2PA**Order Details**

Date: 18/03/2024
Your ref: J24-012 Gravesend
Our Ref: GS-H36-RRJ-NWG-ARD

Site Details

Location: 565873 174073
Area: 0.96 ha
Authority: [Gravesham Borough Council](#) ↗

[Summary of findings](#)[p. 2 > Aerial image](#)[p. 9 >](#)[OS MasterMap site plan](#)[p. 14 > \[groundsure.com/insightuserguide\]\(https://groundsure.com/insightuserguide\) ↗](#)

Contact us with any questions at:

info@groundsure.com ↗

01273 257 755

Summary of findings

Page	Section	Past land use >	On site	0-50m	50-250m	250-500m	500-2000m
15 >	1.1 >	Historical industrial land uses >	31	41	51	81	-
23 >	1.2 >	Historical tanks >	13	19	25	21	-
26 >	1.3 >	Historical energy features >	8	10	14	15	-
28	1.4	Historical petrol stations	0	0	0	0	-
28 >	1.5 >	Historical garages >	0	0	4	4	-
29	1.6	Historical military land	0	0	0	0	-
Page	Section	Past land use - un-grouped >	On site	0-50m	50-250m	250-500m	500-2000m
30 >	2.1 >	Historical industrial land uses >	49	48	74	115	-
41 >	2.2 >	Historical tanks >	19	28	39	36	-
45 >	2.3 >	Historical energy features >	16	13	20	30	-
49	2.4	Historical petrol stations	0	0	0	0	-
49 >	2.5 >	Historical garages >	0	0	9	7	-
Page	Section	Waste and landfill >	On site	0-50m	50-250m	250-500m	500-2000m
50	3.1	Active or recent landfill	0	0	0	0	-
50	3.2	Historical landfill (BGS records)	0	0	0	0	-
51	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
51 >	3.4 >	Historical landfill (EA/NRW records) >	0	1	1	2	-
52 >	3.5 >	Historical waste sites >	0	1	0	2	-
52 >	3.6 >	Licensed waste sites >	0	0	0	4	-
54 >	3.7 >	Waste exemptions >	0	0	9	4	-
Page	Section	Current industrial land use >	On site	0-50m	50-250m	250-500m	500-2000m
56 >	4.1 >	Recent industrial land uses >	1	11	33	-	-
59	4.2	Current or recent petrol stations	0	0	0	0	-
59	4.3	Electricity cables	0	0	0	0	-
60	4.4	Gas pipelines	0	0	0	0	-
60	4.5	Sites determined as Contaminated Land	0	0	0	0	-



60 >	4.6 >	Control of Major Accident Hazards (COMAH) >	1	0	0	0	-
60	4.7	Regulated explosive sites	0	0	0	0	-
61 >	4.8 >	Hazardous substance storage/usage >	2	0	0	0	-
61	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
61	4.10	Licensed industrial activities (Part A(1))	0	0	0	0	-
62 >	4.11 >	Licensed pollutant release (Part A(2)/B) >	0	0	1	1	-
62 >	4.12 >	Radioactive Substance Authorisations >	0	0	2	0	-
63 >	4.13 >	Licensed Discharges to controlled waters >	0	4	2	0	-
64	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
64	4.15	Pollutant release to public sewer	0	0	0	0	-
64	4.16	List 1 Dangerous Substances	0	0	0	0	-
64	4.17	List 2 Dangerous Substances	0	0	0	0	-
64 >	4.18 >	Pollution Incidents (EA/NRW) >	0	0	8	10	-
66	4.19	Pollution inventory substances	0	0	0	0	-
67	4.20	Pollution inventory waste transfers	0	0	0	0	-
67	4.21	Pollution inventory radioactive waste	0	0	0	0	-
Page	Section	Hydrogeology >	On site	0-50m	50-250m	250-500m	500-2000m
68 >	5.1 >	Superficial aquifer >	Identified (within 500m)				
70 >	5.2 >	Bedrock aquifer >	Identified (within 500m)				
72 >	5.3 >	Groundwater vulnerability >	Identified (within 50m)				
73 >	5.4 >	Groundwater vulnerability- soluble rock risk >	Identified (within 0m)				
73 >	5.5 >	Groundwater vulnerability- local information >	Identified (within 0m)				
75 >	5.6 >	Groundwater abstractions >	0	0	0	0	6
77 >	5.7 >	Surface water abstractions >	0	0	0	0	2
78 >	5.8 >	Potable abstractions >	0	0	0	0	1
78	5.9	Source Protection Zones	0	0	0	0	-
79	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-
Page	Section	Hydrology >	On site	0-50m	50-250m	250-500m	500-2000m
80 >	6.1 >	Water Network (OS MasterMap) >	0	2	7	-	-



81 >	6.2 >	Surface water features >	0	0	3	-	-
82 >	6.3 >	WFD Surface water body catchments >	1	-	-	-	-
82 >	6.4 >	WFD Surface water bodies >	0	0	1	-	-
82 >	6.5 >	WFD Groundwater bodies >	1	-	-	-	-
Page	Section	River and coastal flooding >	On site	0-50m	50-250m	250-500m	500-2000m
84 >	7.1 >	Risk of flooding from rivers and the sea >	Low (within 50m)				
85 >	7.2 >	Historical Flood Events >	0	0	2	-	-
85 >	7.3 >	Flood Defences >	0	0	4	-	-
86 >	7.4 >	Areas Benefiting from Flood Defences >	1	0	0	-	-
86	7.5	Flood Storage Areas	0	0	0	-	-
87 >	7.6 >	Flood Zone 2 >	Identified (within 50m)				
88 >	7.7 >	Flood Zone 3 >	Identified (within 50m)				
Page	Section	Surface water flooding >					
89 >	8.1 >	Surface water flooding >	1 in 30 year, 0.3m - 1.0m (within 50m)				
Page	Section	Groundwater flooding >					
91 >	9.1 >	Groundwater flooding >	High (within 50m)				
Page	Section	Environmental designations >	On site	0-50m	50-250m	250-500m	500-2000m
92 >	10.1 >	Sites of Special Scientific Interest (SSSI) >	0	0	0	0	1
93 >	10.2 >	Conserved wetland sites (Ramsar sites) >	0	0	0	0	1
93	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
93	10.4	Special Protection Areas (SPA)	0	0	0	0	0
94	10.5	National Nature Reserves (NNR)	0	0	0	0	0
94	10.6	Local Nature Reserves (LNR)	0	0	0	0	0
94	10.7	Designated Ancient Woodland	0	0	0	0	0
94	10.8	Biosphere Reserves	0	0	0	0	0
95	10.9	Forest Parks	0	0	0	0	0
95	10.10	Marine Conservation Zones	0	0	0	0	0
95 >	10.11 >	Green Belt >	0	0	0	0	2
95	10.12	Proposed Ramsar sites	0	0	0	0	0



96	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
96	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
96	10.15	Nitrate Sensitive Areas	0	0	0	0	0
96 >	10.16 >	Nitrate Vulnerable Zones >	2	0	0	0	0
98 >	10.17 >	SSSI Impact Risk Zones >	2	-	-	-	-
100 >	10.18 >	SSSI Units >	0	0	0	0	1
Page	Section	Visual and cultural designations >	On site	0-50m	50-250m	250-500m	500-2000m
102	11.1	World Heritage Sites	0	0	0	-	-
103	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
103	11.3	National Parks	0	0	0	-	-
103 >	11.4 >	Listed Buildings >	0	0	4	-	-
104 >	11.5 >	Conservation Areas >	0	0	1	-	-
104	11.6	Scheduled Ancient Monuments	0	0	0	-	-
104	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations >	On site	0-50m	50-250m	250-500m	500-2000m
105 >	12.1 >	Agricultural Land Classification >	Urban (within 250m)				
106	12.2	Open Access Land	0	0	0	-	-
106	12.3	Tree Felling Licences	0	0	0	-	-
106	12.4	Environmental Stewardship Schemes	0	0	0	-	-
106	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations >	On site	0-50m	50-250m	250-500m	500-2000m
107 >	13.1 >	Priority Habitat Inventory >	0	0	1	-	-
108 >	13.2 >	Habitat Networks >	1	0	3	-	-
108	13.3	Open Mosaic Habitat	0	0	0	-	-
108	13.4	Limestone Pavement Orders	0	0	0	-	-
Page	Section	Geology 1:10,000 scale >	On site	0-50m	50-250m	250-500m	500-2000m
109 >	14.1 >	10k Availability >	Identified (within 500m)				
110 >	14.2 >	Artificial and made ground (10k) >	1	0	4	7	-
112 >	14.3 >	Superficial geology (10k) >	1	0	3	2	-

113	14.4	Landslip (10k)	0	0	0	0	-
114 >	14.5 >	Bedrock geology (10k) >	1	0	1	0	-
115	14.6	Bedrock faults and other linear features (10k)	0	0	0	0	-
Page	Section	Geology 1:50,000 scale >	On site	0-50m	50-250m	250-500m	500-2000m
116 >	15.1 >	50k Availability >	Identified (within 500m)				
117 >	15.2 >	Artificial and made ground (50k) >	1	0	4	4	-
118 >	15.3 >	Artificial ground permeability (50k) >	1	0	-	-	-
119 >	15.4 >	Superficial geology (50k) >	1	0	3	2	-
120 >	15.5 >	Superficial permeability (50k) >	Identified (within 50m)				
120	15.6	Landslip (50k)	0	0	0	0	-
120	15.7	Landslip permeability (50k)	None (within 50m)				
121 >	15.8 >	Bedrock geology (50k) >	1	0	1	0	-
122 >	15.9 >	Bedrock permeability (50k) >	Identified (within 50m)				
122	15.10	Bedrock faults and other linear features (50k)	0	0	0	0	-
Page	Section	Boreholes >	On site	0-50m	50-250m	250-500m	500-2000m
123 >	16.1 >	BGS Boreholes >	0	6	63	-	-
Page	Section	Natural ground subsidence >					
127 >	17.1 >	Shrink swell clays >	Low (within 50m)				
128 >	17.2 >	Running sands >	Very low (within 50m)				
129 >	17.3 >	Compressible deposits >	Very low (within 50m)				
130 >	17.4 >	Collapsible deposits >	Negligible (within 50m)				
131 >	17.5 >	Landslides >	Very low (within 50m)				
132 >	17.6 >	Ground dissolution of soluble rocks >	Very low (within 50m)				
Page	Section	Mining and ground workings >	On site	0-50m	50-250m	250-500m	500-2000m
134	18.1	BritPits	0	0	0	0	-
135 >	18.2 >	Surface ground workings >	14	0	33	-	-
137	18.3	Underground workings	0	0	0	0	0
137	18.4	Underground mining extents	0	0	0	0	-
137	18.5	Historical Mineral Planning Areas	0	0	0	0	-



137 >	18.6 >	Non-coal mining >	0	0	1	0	4
138	18.7	JPB mining areas	None (within 0m)				
138	18.8	The Coal Authority non-coal mining	0	0	0	0	-
139	18.9	Researched mining	0	0	0	0	-
139	18.10	Mining record office plans	0	0	0	0	-
139	18.11	BGS mine plans	0	0	0	0	-
139	18.12	Coal mining	None (within 0m)				
139	18.13	Brine areas	None (within 0m)				
140	18.14	Gypsum areas	None (within 0m)				
140	18.15	Tin mining	None (within 0m)				
140	18.16	Clay mining	None (within 0m)				
Page	Section	Ground cavities and sinkholes >	On site	0-50m	50-250m	250-500m	500-2000m
141	19.1	Natural cavities	0	0	0	0	-
142 >	19.2 >	Mining cavities >	0	0	0	0	1
142	19.3	Reported recent incidents	0	0	0	0	-
142	19.4	Historical incidents	0	0	0	0	-
143	19.5	National karst database	0	0	0	0	-
Page	Section	Radon >					
144 >	20.1 >	Radon >	Less than 1% (within 0m)				
Page	Section	Soil chemistry >	On site	0-50m	50-250m	250-500m	500-2000m
146 >	21.1 >	BGS Estimated Background Soil Chemistry >	1	1	-	-	-
146	21.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
146	21.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-
Page	Section	Railway infrastructure and projects >	On site	0-50m	50-250m	250-500m	500-2000m
147	22.1	Underground railways (London)	0	0	0	-	-
147	22.2	Underground railways (Non-London)	0	0	0	-	-
148	22.3	Railway tunnels	0	0	0	-	-
148 >	22.4 >	Historical railway and tunnel features >	0	0	18	-	-
149	22.5	Royal Mail tunnels	0	0	0	-	-



149	22.6	Historical railways	0	0	0	-	-
149 >	22.7 >	Railways >	0	0	9	-	-
150	22.8	Crossrail 1	0	0	0	0	-
150	22.9	Crossrail 2	0	0	0	0	-
150	22.10	HS2	0	0	0	0	-

Recent aerial photograph

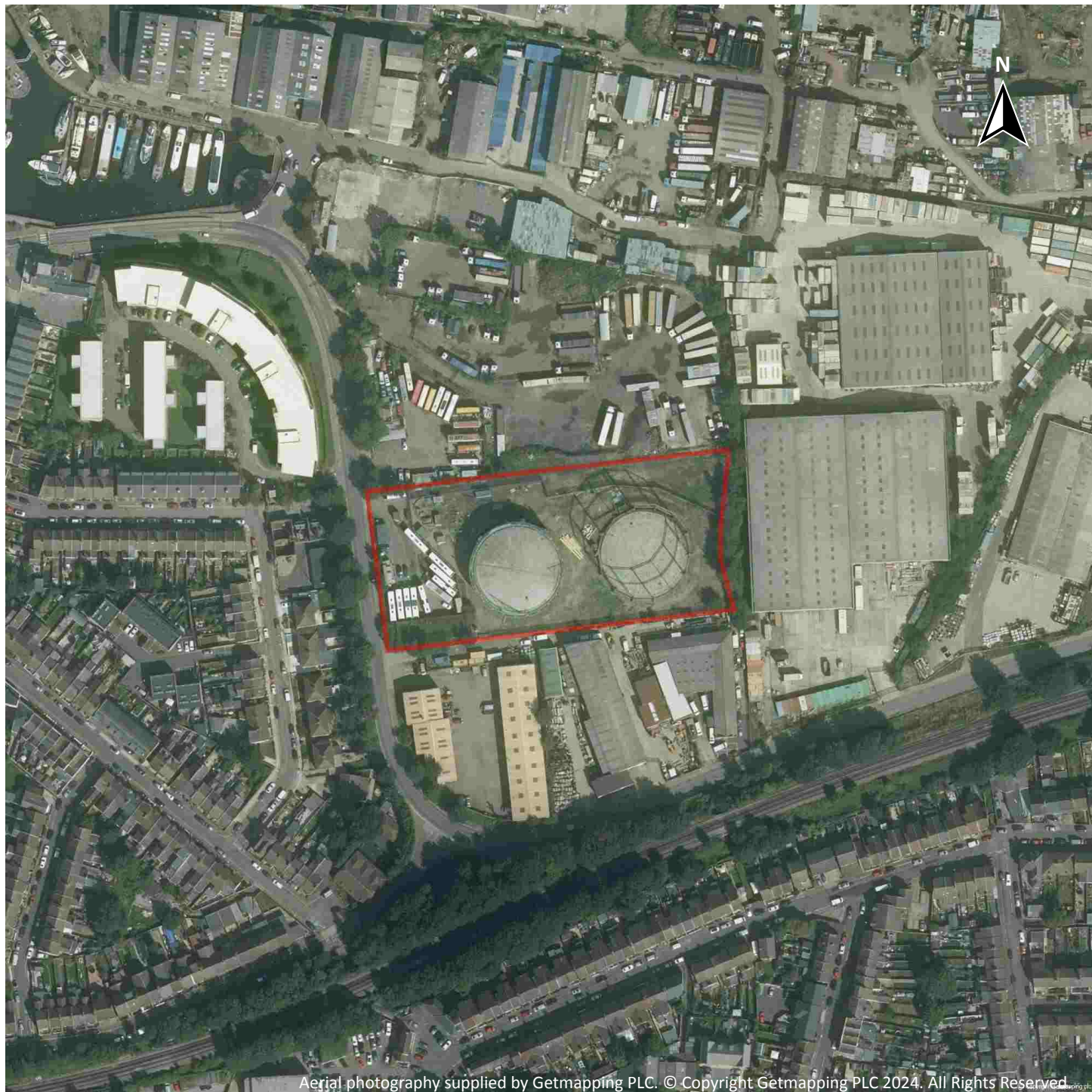


Capture Date: 31/05/2021

Site Area: 0.96ha



Recent site history - 2018 aerial photograph



Capture Date: 01/09/2018

Site Area: 0.96ha



Recent site history - 2014 aerial photograph

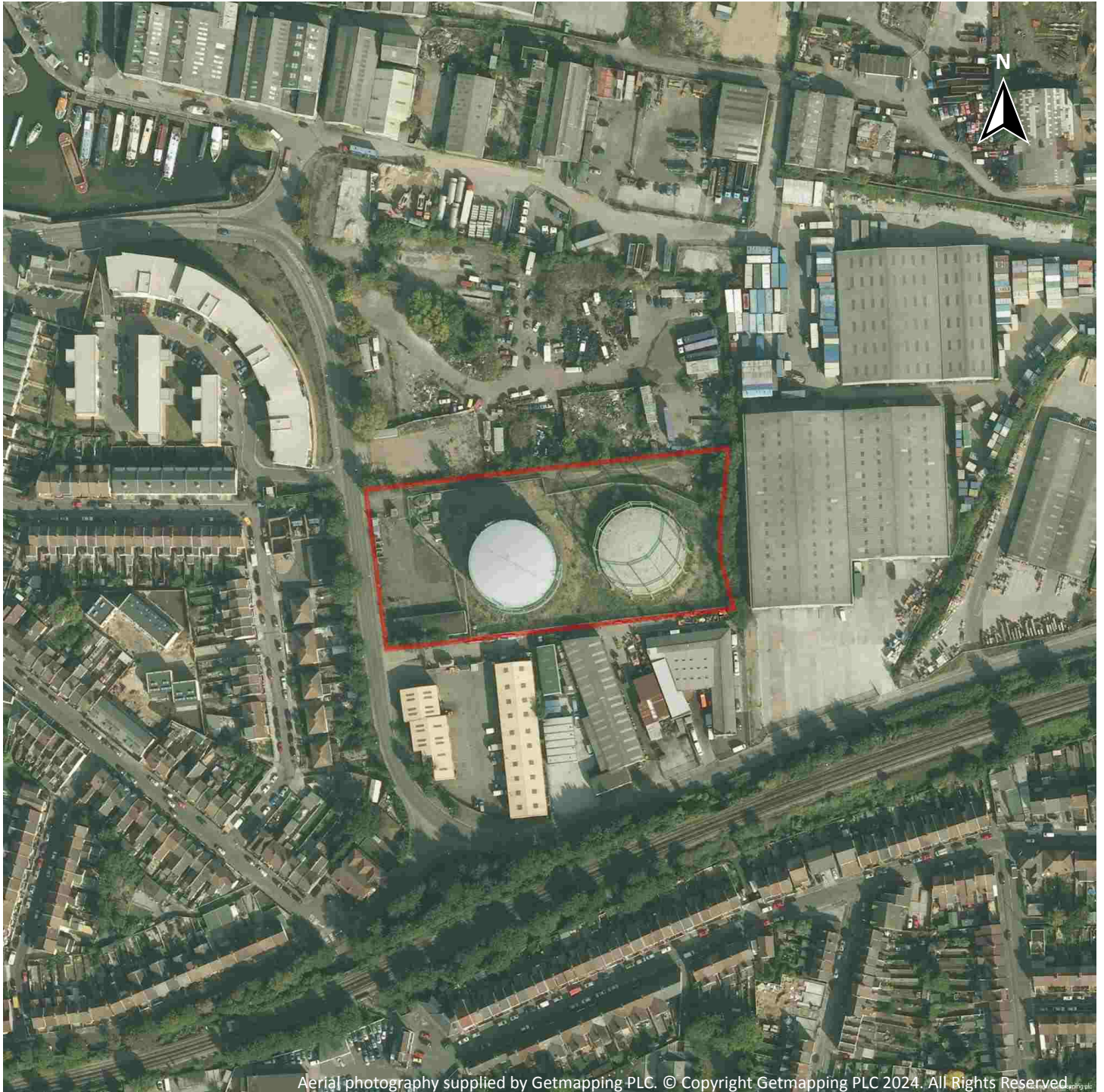


Capture Date: 31/07/2014

Site Area: 0.96ha



Recent site history - 2009 aerial photograph



Capture Date: 27/09/2009

Site Area: 0.96ha



Recent site history - 1999 aerial photograph



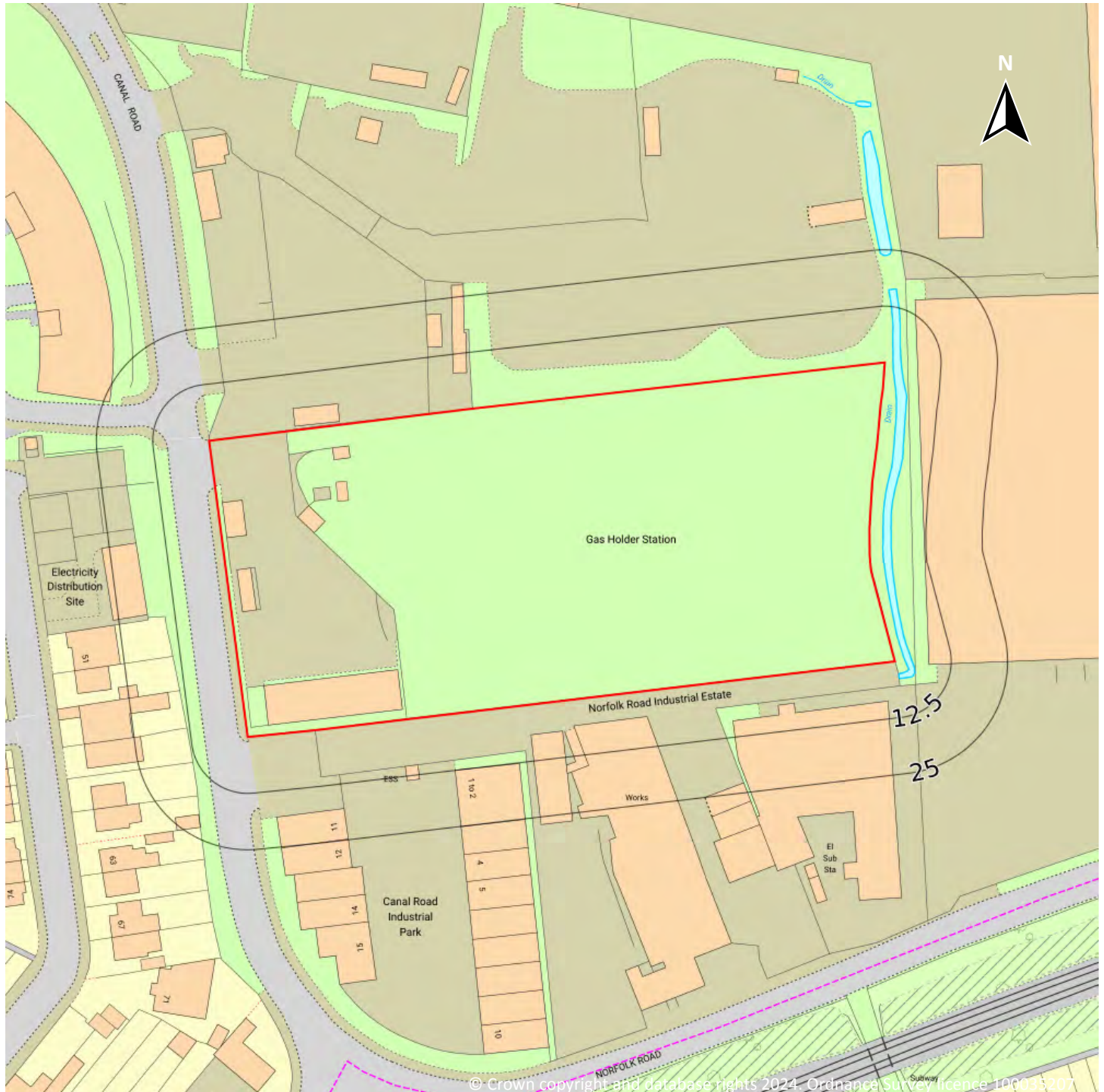
Aerial photography supplied by Getmapping PLC. © Copyright Getmapping PLC 2024. All Rights Reserved.

Capture Date: 03/09/1999

Site Area: 0.96ha



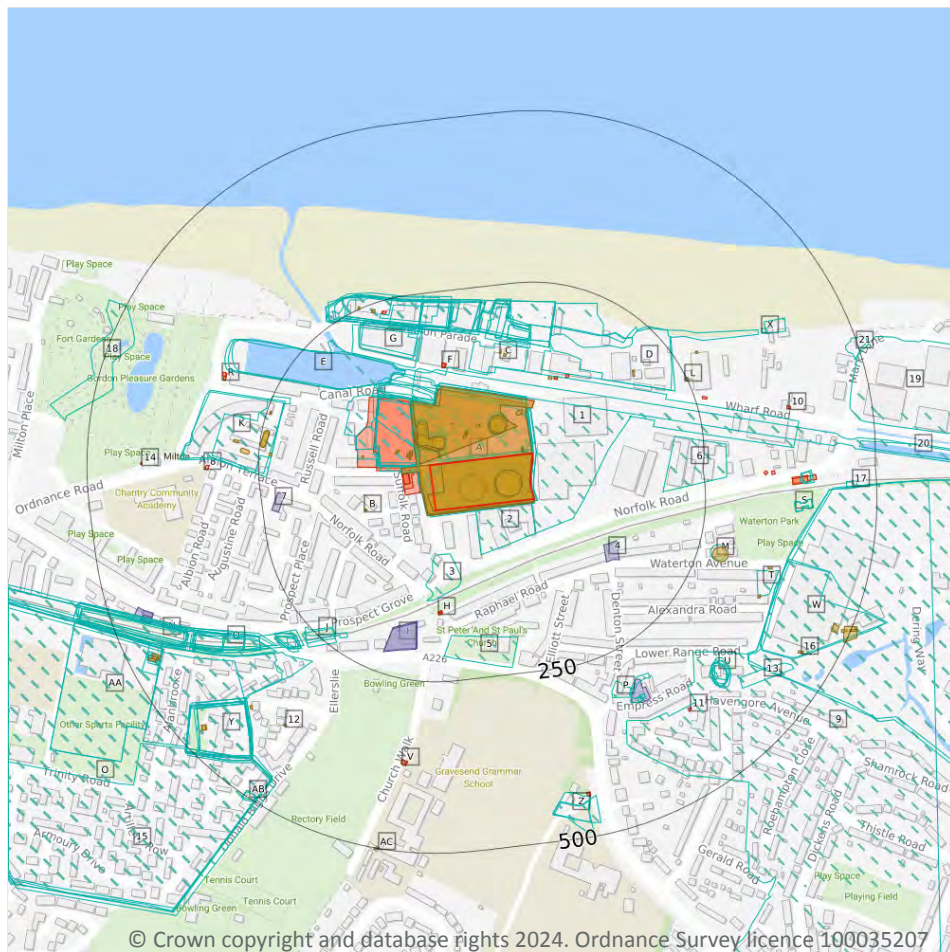
OS MasterMap site plan



Site Area: 0.96ha



1 Past land use



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

1.1 Historical industrial land uses

Records within 500m

204

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

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

ID	Location	Land use	Dates present	Group ID
1	On site	Timber Yard	1973 - 1981	2275517



ID	Location	Land use	Dates present	Group ID
A	On site	Unspecified Works	1955	2160146
A	On site	Gasometer	1916 - 1923	2170569
A	On site	Gasometer	1895	2171180
A	On site	Unspecified Heap	1932	2172770
A	On site	Gas Works	1888 - 1895	2178868
A	On site	Unspecified Commercial/Industrial	1938	2190442
A	On site	Unspecified Tank	1863 - 1938	2194001
A	On site	Unspecified Tanks	1973 - 1981	2195132
A	On site	Unspecified Commercial/Industrial	1932	2205468
A	On site	Unspecified Heap	1916	2211311
A	On site	Unspecified Tank	1955 - 1966	2216910
A	On site	Unspecified Tank	1932	2218159
A	On site	Unspecified Commercial/Industrial	1938	2225513
A	On site	Unspecified Ground Workings	1863 - 1938	2238590
A	On site	Refuse Heap	1888	2239536
A	On site	Refuse Heap	1895	2240572
A	On site	Refuse Heap	1899	2243299
A	On site	Unspecified Commercial/Industrial	1966	2249820
A	On site	Unspecified Tank	1899	2256009
A	On site	Gasometer	1907	2259887
A	On site	Unspecified Commercial/Industrial	1863 - 1938	2260903
A	On site	Unspecified Heap	1888	2276581
A	On site	Unspecified Tank	1938	2281902
A	On site	Unspecified Tank	1938	2282757
A	On site	Unspecified Heap	1899	2282869
A	On site	Unspecified Tank	1863 - 1938	2283758
A	On site	Gasometer	1888 - 1895	2285608
A	On site	Refuse Heap	1895	2288213



ID	Location	Land use	Dates present	Group ID
A	On site	Gas Works	1907 - 1923	2292116
A	On site	Gas Holder Station	1973 - 1981	2292424
A	3m NE	Unspecified Tank	1932	2211265
2	4m SE	Unspecified Works	1981	2160147
A	5m N	Gas Works	1899	2259484
A	7m NW	Unspecified Tank	1938	2185854
A	7m NW	Unspecified Tank	1863	2217550
A	9m NW	Unspecified Tank	1932	2266421
A	14m W	Power Station	1973	2151641
A	15m NW	Gasometer	1923	2262242
A	16m W	Electricity Works	1923	2135627
A	17m W	Electric Works	1916	2142899
A	18m NW	Unspecified Tanks	1907	2233285
A	18m NW	Unspecified Tank	1938	2235811
A	18m NW	Unspecified Tanks	1863	2251924
A	20m NW	Gas Works	1865	2178441
A	21m NW	Gasometers	1865	2276643
A	21m NW	Unspecified Tank	1932	2283939
A	21m NW	Gasometers	1888	2217737
A	22m NW	Gasometers	1923	2280259
A	23m NW	Unspecified Tank	1938	2293568
A	23m NW	Gasometers	1899	2217031
A	24m NW	Unspecified Tanks	1938	2189611
A	25m NW	Unspecified Tank	1895	2200222
A	26m NW	Gasometers	1916	2229679
A	28m NW	Gasometer	1895	2280150
A	29m N	Gasometer	1907 - 1923	2237954
A	30m NW	Gasometers	1865	2261857



ID	Location	Land use	Dates present	Group ID
A	31m NW	Coal Store	1865	2157595
A	32m NW	Unspecified Tank	1938	2196491
A	33m N	Gasometer	1895	2222913
A	33m N	Unspecified Tank	1863 - 1938	2279350
A	34m NW	Unspecified Tanks	1895	2177166
A	34m N	Gasometer	1888 - 1895	2174438
A	35m N	Unspecified Tank	1932	2215635
A	36m N	Unspecified Tank	1938	2266774
A	37m N	Unspecified Tank	1938	2202706
A	38m NW	Gasometer	1895	2139970
A	38m N	Gasometer	1899	2206703
A	39m N	Unspecified Tank	1955 - 1966	2213119
A	41m N	Gasometer	1916	2175350
A	47m NW	Gasometers	1865	2169720
A	49m NW	Unspecified Tank	1907	2179113
A	50m NW	Unspecified Tank	1938	2177017
A	57m NW	Gasometer	1895	2139971
A	58m NE	Unspecified Tank	1863 - 1938	2232149
3	65m SW	Unspecified Heap	1865	2137204
A	67m NW	Railway Sidings	1923 - 1932	2263199
A	74m NW	Railway Sidings	1863 - 1966	2283561
A	79m NE	Disused Canal	1966	2254151
A	80m NW	Railway Sidings	1938	2294743
C	121m N	Unspecified Works	1966	2160148
D	123m NE	Unspecified Works	1955	2240728
E	134m NW	Canal Basin	1899	2179089
E	136m NW	Canal Basin	1888	2257346
D	141m NE	Unspecified Works	1973 - 1981	2275968



ID	Location	Land use	Dates present	Group ID
G	144m NW	Soap Works	1865 - 1888	2220829
G	153m NW	Soap Works	1895 - 1899	2184880
C	154m N	Unspecified Wharves	1923	2282764
C	157m NE	Unspecified Wharves	1863	2235255
C	157m NE	Unspecified Wharves	1938	2182486
G	157m NW	Unspecified Works	1966 - 1981	2275689
C	158m N	Unspecified Wharves	1907	2177245
G	161m NW	Soap Works	1895	2215212
C	163m N	Unspecified Wharves	1938	2259487
C	164m N	Unspecified Wharves	1938	2195143
C	165m NE	Unspecified Wharves	1966	2251971
C	165m NE	Unspecified Wharves	1955	2254024
C	167m N	Wharves	1916	2143218
D	171m NE	Refuse Heap	1966	2158973
C	173m N	Unspecified Wharves	1932	2217599
C	173m N	Unspecified Wharves	1932	2233507
G	181m N	Iron Works	1863 - 1938	2276732
5	184m S	Grave Yard	1865	2145772
G	185m N	Iron Works	1932	2269708
G	185m N	Unspecified Works	1966 - 1973	2205900
6	188m E	Unspecified Works	1973 - 1981	2285001
G	188m N	Unspecified Works	1955	2196431
G	190m N	Iron Works	1923	2227598
G	191m N	Iron Works	1899	2188856
G	191m N	Iron Works	1899	2241736
G	191m N	Iron Works	1888	2257189
G	192m N	Iron Works	1895 - 1907	2257358
G	195m N	Unspecified Works	1981	2207382



ID	Location	Land use	Dates present	Group ID
G	197m N	Iron Works	1938	2190538
G	197m N	Iron Works	1895	2195924
G	201m N	Iron Works	1888	2244326
G	206m N	Iron Works	1916	2278087
J	220m SW	Railway Station	1916	2242981
K	223m W	Sawmill	1932	2262363
K	228m W	Sawmill	1863 - 1938	2202544
K	228m W	Unspecified Works	1981	2160145
J	229m SW	Railway Station	1938	2288384
J	233m SW	Railway Building	1923	2150265
J	268m SW	Cuttings	1916	2259417
M	268m E	Unspecified Tank	1932	2155343
J	273m SW	Cuttings	1938	2290997
N	274m SW	Cuttings	1938	2260951
J	276m SW	Cuttings	1923	2239169
J	278m SW	Cuttings	1907	2194333
J	278m SW	Cuttings	1938	2264777
J	278m SW	Cuttings	1863	2292849
O	284m SW	Barracks	1938	2201978
P	291m SE	Smithy	1895	2167567
P	300m SE	Unspecified Ground Workings	1863 - 1938	2228382
N	304m SW	Cuttings	1895	2256354
Q	308m SW	Cuttings	1938	2268579
Q	310m SW	Cuttings	1923	2192129
Q	314m SW	Cuttings	1888 - 1895	2174904
O	315m SW	Barracks	1932 - 1938	2224406
N	317m SW	Cuttings	1899	2201233
N	317m SW	Cuttings	1899	2244720



ID	Location	Land use	Dates present	Group ID
9	322m SE	Marshes	1916	2202888
P	322m SE	Smithy	1895	2272542
P	325m SE	Smithy	1899	2219690
P	328m SE	Smithy	1888	2276006
N	330m SW	Cuttings	1916	2204762
Q	334m SW	Cuttings	1907	2279008
T	342m E	Laundry	1863	2132387
U	353m SE	Unspecified Pit	1895	2267024
U	354m SE	Unspecified Pit	1899	2294818
U	355m SE	Unspecified Pit	1895	2229958
N	355m SW	Cuttings	1932	2214881
U	355m SE	Unspecified Pit	1888	2192522
U	356m SE	Unspecified Pit	1916 - 1923	2259253
U	359m SE	Unspecified Pit	1907	2216847
Q	360m SW	Cuttings	1938	2239204
Q	360m SW	Cuttings	1863	2275443
O	366m SW	Barracks	1923	2268764
W	375m E	Unspecified Works	1981	2176343
W	375m E	Unspecified Works	1966 - 1973	2282338
W	378m E	Marshes	1888	2237477
X	378m NE	Boat House	1863 - 1938	2193883
W	378m E	Marshes	1899	2229748
S	380m E	Hospital	1932	2233213
S	380m E	Hospital	1863 - 1938	2199828
X	382m NE	Unspecified Wharf	1955 - 1966	2222927
Y	389m SW	Hospital	1895	2204111
S	390m E	Railway Building	1955 - 1973	2170858
Y	390m SW	Military Hospital	1916	2235975



ID	Location	Land use	Dates present	Group ID
Y	391m SW	Station Hospital	1899	2292444
S	392m E	Railway Building	1981	2199202
Y	393m SW	Hospital	1932	2217448
Y	393m SW	Military Hospital	1938	2200274
Y	395m SW	Hospital	1907 - 1938	2273179
Y	396m SW	Station Hospital	1888	2179468
Y	396m SW	Hospital	1863	2230183
Y	396m SW	Hospital	1895	2234241
13	397m SE	Unspecified Heap	1863	2137206
N	402m SW	Cuttings	1938 - 1981	2240104
N	403m SW	Cuttings	1923	2262251
N	404m SW	Cuttings	1863	2170983
N	404m SW	Cuttings	1907 - 1938	2283333
N	404m SW	Cuttings	1895	2288361
N	407m SW	Cuttings	1888	2245580
Z	431m S	Dairy	1863 - 1938	2183038
Z	441m S	Dairy	1938	2180773
Z	444m S	Dairy	1907	2243853
15	444m SW	Barracks	1916	2264698
AA	446m SW	Barracks	1938	2212604
AA	446m SW	Barracks	1863	2241030
O	447m SW	Barracks	1955 - 1973	2249454
17	456m E	Railway Building	1955	2150255
N	457m SW	Unspecified Tanks	1938	2289635
N	458m SW	Tanks	1916	2162285
N	458m SW	Unspecified Tanks	1907	2238149
N	458m SW	Unspecified Tanks	1863	2280523
N	458m SW	Unspecified Tanks	1923	2244689



ID	Location	Land use	Dates present	Group ID
N	459m SW	Unspecified Tanks	1932	2284740
18	466m W	Unspecified Ground Workings	1955 - 1981	2189419
19	467m E	Unspecified Commercial/Industrial	1973 - 1981	2192060
20	477m E	Disused Canal	1981	2168643
21	482m E	Corn Windmill	1865	2138238
AB	491m SW	Unspecified Heap	1932	2229753
AB	492m SW	Unspecified Pit	1863	2126192

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m

78

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

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

ID	Location	Land use	Dates present	Group ID
A	On site	Gasholder Station	1967 - 1980	382959
A	On site	Gasholder	1964 - 1976	386053
A	On site	Gasholder	1980	387615
A	On site	Gas Works	1897 - 1909	399058
A	On site	Gasholder	1964	399806
A	On site	Unspecified Tank	1953	400124
A	On site	Gasholder Station	1964	401300
A	On site	Gasholder	1967 - 1976	404420
A	On site	Unspecified Tank	1932	404803
A	On site	Unspecified Tank	1953	405227
A	On site	Gasometer	1897 - 1909	408927



ID	Location	Land use	Dates present	Group ID
A	On site	Gasholder Station	1976	409940
A	On site	Gasholder	1980	410034
A	2m NE	Unspecified Tank	1932	369160
A	7m W	Gas Works	1866	381750
A	10m NW	Unspecified Tank	1932	369161
A	19m NW	Gasometers	1897 - 1909	409653
A	20m NW	Tanks	1932	378157
A	22m NW	Unspecified Tank	1953	385751
A	22m NW	Gasometers	1866	403431
A	29m W	Unspecified Tank	1964 - 1967	389740
A	29m W	Tanks	1932	378161
A	30m W	Tanks	1932	378160
A	33m N	Tanks	1897 - 1932	386677
A	34m N	Unspecified Tank	1932	385467
A	34m N	Gasometer	1897 - 1909	411160
A	34m W	Tanks	1932	378159
A	35m N	Unspecified Tank	1953	384241
A	37m N	Tanks	1953	395804
A	46m NW	Unspecified Tank	1932	369157
A	47m N	Unspecified Tank	1953	400886
A	49m W	Tanks	1932	378158
A	51m W	Unspecified Tank	1953	391433
A	51m W	Unspecified Tank	1967	404917
A	51m W	Unspecified Tank	1953	403775
A	51m W	Unspecified Tank	1964	410162
A	52m W	Tanks	1932	378182
A	55m NW	Unspecified Tank	1866	369156
A	58m NE	Unspecified Tank	1909 - 1953	403539



ID	Location	Land use	Dates present	Group ID
A	85m NW	Unspecified Tank	1866	369155
A	97m W	Unspecified Tank	1953 - 1967	408382
B	99m W	Unspecified Tank	1980	395651
B	100m W	Unspecified Tank	1976	387040
B	100m W	Unspecified Tank	1967	390019
B	100m W	Unspecified Tank	1964	386386
A	111m NE	Unspecified Tank	1976 - 1980	386483
C	145m N	Unspecified Tank	1976	369149
C	150m N	Unspecified Tank	1980	369150
D	185m NE	Unspecified Tank	1953	396016
K	231m W	Unspecified Tank	1964 - 1980	400267
G	236m NW	Unspecified Tank	1980	369154
K	238m W	Tanks	1980	381989
K	239m W	Tanks	1964 - 1976	395086
K	243m W	Unspecified Tank	1980	396715
K	244m W	Unspecified Tank	1976	402801
L	248m NE	Unspecified Tank	1973	369158
G	250m NW	Unspecified Tank	1976 - 1980	391865
K	264m W	Tanks	1964 - 1980	397556
M	272m E	Unspecified Tank	1932	369168
L	279m NE	Unspecified Tank	1973 - 1993	392988
K	280m W	Unspecified Tank	1976 - 1980	410135
T	355m E	Unspecified Tank	1978 - 1988	384173
T	356m E	Unspecified Tank	1897	369167
12	380m SW	Unspecified Tank	1897 - 1932	391011
Y	390m SW	Unspecified Tank	1953	386721
16	445m SE	Unspecified Tank	1978 - 1988	397685
N	454m SW	Tanks	1953	408988



ID	Location	Land use	Dates present	Group ID
N	457m SW	Tanks	1953	403313
Y	458m SW	Unspecified Tank	1953 - 1970	404515
Y	459m SW	Unspecified Tank	1953	384503
N	462m SW	Tanks	1953	383399
N	463m SW	Tanks	1909 - 1932	397131
W	473m E	Tanks	1993	378162
W	487m E	Tanks	1978 - 1988	394709
W	489m E	Tanks	1993	397842
AC	497m S	Unspecified Tank	1953	395420
W	498m E	Tanks	1978 - 1988	383313
AC	499m S	Unspecified Tank	1932	369297

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m	47
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Energy features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

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

ID	Location	Land use	Dates present	Group ID
A	On site	Gasholder	1980	259275
A	On site	Gasholder	1964	261364
A	On site	Gas Works	1897 - 1909	272208
A	On site	Gasometer	1897 - 1909	274354
A	On site	Gasholder Station	1967 - 1980	279862
A	On site	Gasholder Station	1964 - 1976	285005
A	On site	Gasholder	1967 - 1980	290614



ID	Location	Land use	Dates present	Group ID
A	On site	Gasholder	1964 - 1976	291431
A	7m W	Gas Works	1866	274858
A	16m W	Power Station	1964 - 1967	280443
A	18m W	Electricity Transformers	1967	254349
A	19m NW	Gasometers	1897 - 1909	278212
A	19m W	Electricity Works	1909	251227
A	22m NW	Gasometers	1866	287191
A	25m W	Electricity Transformers	1964	276268
A	32m W	Electricity Substation	1980	247412
A	32m W	Electricity Transformers	1976	252332
A	34m N	Gasometer	1897 - 1909	265330
A	113m NE	Electricity Substation	1980	247406
A	114m NE	Electricity Transformer	1976	250895
A	121m NE	Electricity Substation	1964 - 1967	280238
F	139m N	Electricity Substation	1980	276034
F	139m N	Electricity Substation	1953 - 1967	263295
F	140m N	Electricity Transformer	1976	250894
H	146m S	Electricity Substation	1994	252133
H	146m S	Electricity Substation	1993	254582
H	148m S	Electricity Substation	1953	254732
H	148m S	Electricity Substation	1983 - 1992	271929
H	149m S	Electricity Substation	1953	253057
H	149m S	Electricity Substation	1976	253456
G	230m NW	Electricity Substation	1976	286609
G	232m NW	Electricity Substation	1980	262110
L	260m E	Electricity Substation	1973 - 1993	276278
8	322m W	Electricity Substation	1976 - 1993	284344
R	323m W	Electricity Substation	1993	247411



ID	Location	Land use	Dates present	Group ID
R	324m W	Electricity Substation	1980	247413
R	324m W	Electricity Substation	1980 - 1986	272393
S	337m E	Electricity Substation	1973	247408
S	349m E	Electricity Substation	1993	247409
V	366m S	Electricity Substation	1953 - 1992	287216
V	368m S	Electricity Substation	1993 - 1994	284078
10	377m E	Electricity Substation	1993	247410
S	377m E	Electricity Substation	1953 - 1973	287990
S	378m E	Electricity Substation	1993	278482
11	379m SE	Electricity Substation	1993	247428
14	420m W	Electricity Substation	1953	247427
Z	435m S	Electricity Substation	1978 - 1993	267842

This data is sourced from Ordnance Survey / Groundsure.

1.4 Historical petrol stations

Records within 500m

0

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

This data is sourced from Ordnance Survey / Groundsure.

1.5 Historical garages

Records within 500m

8

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

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



ID	Location	Land use	Dates present	Group ID
4	122m SE	Garage	1953 - 1961	85689
I	163m SW	Garage	1993 - 1994	82014
I	166m SW	Garage	1992	77616
7	216m W	Garage	1953	84889
P	302m SE	Garage	1953	82404
N	438m W	Garage	1953 - 1981	80695
N	438m W	Garage	1953 - 1970	81942
N	443m W	Garage	1952	79031

This data is sourced from Ordnance Survey / Groundsure.

1.6 Historical military land

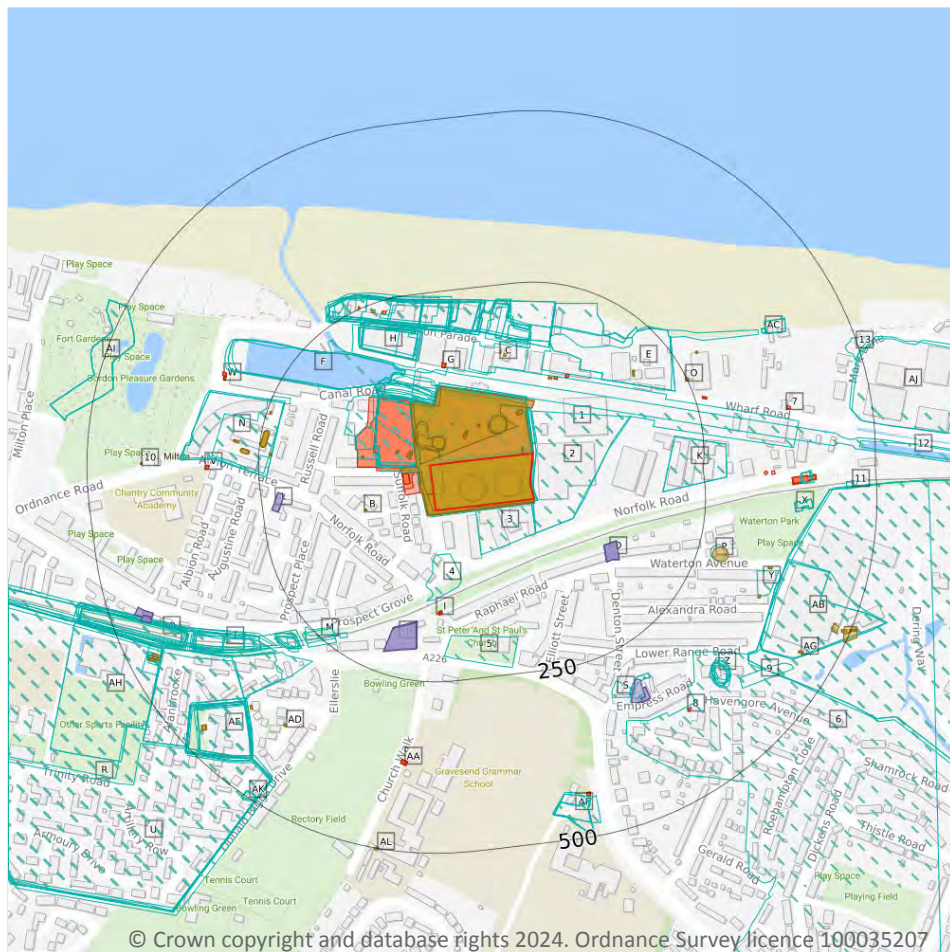
Records within 500m

0

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

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

2 Past land use - un-grouped



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

2.1 Historical industrial land uses

Records within 500m

286

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

Features are displayed on the Past land use - un-grouped map on [page 30](#) >

ID	Location	Land Use	Date	Group ID
1	On site	Timber Yard	1981	2275517
2	On site	Timber Yard	1973	2275517
A	On site	Refuse Heap	1895	2288213



ID	Location	Land Use	Date	Group ID
A	On site	Gasometer	1923	2170569
A	On site	Gasometer	1907	2259887
A	On site	Gasometer	1895	2171180
A	On site	Gas Works	1923	2292116
A	On site	Gas Works	1895	2178868
A	On site	Gasometer	1895	2285608
A	On site	Refuse Heap	1895	2240572
A	On site	Unspecified Tank	1938	2194001
A	On site	Unspecified Ground Workings	1938	2238590
A	On site	Unspecified Tank	1938	2283758
A	On site	Unspecified Commercial/Industrial	1938	2260903
A	On site	Unspecified Tank	1863	2194001
A	On site	Unspecified Tank	1863	2283758
A	On site	Unspecified Commercial/Industrial	1863	2260903
A	On site	Unspecified Ground Workings	1863	2238590
A	On site	Gas Works	1907	2292116
A	On site	Gas Works	1895	2178868
A	On site	Gas Works	1916	2292116
A	On site	Unspecified Heap	1916	2211311
A	On site	Gasometer	1916	2170569
A	On site	Gas Holder Station	1981	2292424
A	On site	Gas Holder Station	1973	2292424
A	On site	Gas Works	1888	2178868
A	On site	Refuse Heap	1888	2239536
A	On site	Gasometer	1888	2285608
A	On site	Unspecified Heap	1888	2276581
A	On site	Unspecified Tank	1938	2281902
A	On site	Unspecified Commercial/Industrial	1938	2190442



ID	Location	Land Use	Date	Group ID
A	On site	Refuse Heap	1899	2243299
A	On site	Unspecified Tank	1899	2256009
A	On site	Unspecified Heap	1899	2282869
A	On site	Refuse Heap	1899	2243299
A	On site	Unspecified Tank	1899	2256009
A	On site	Unspecified Heap	1899	2282869
A	On site	Unspecified Commercial/Industrial	1938	2225513
A	On site	Unspecified Tank	1938	2282757
A	On site	Unspecified Tanks	1981	2195132
A	On site	Unspecified Tanks	1973	2195132
A	On site	Unspecified Works	1955	2160146
A	On site	Unspecified Tank	1955	2216910
A	On site	Unspecified Tank	1966	2216910
A	On site	Unspecified Commercial/Industrial	1966	2249820
A	On site	Unspecified Tank	1932	2218159
A	On site	Unspecified Commercial/Industrial	1932	2205468
A	On site	Unspecified Heap	1932	2172770
A	On site	Unspecified Heap	1932	2172770
A	3m NE	Unspecified Tank	1932	2211265
3	4m SE	Unspecified Works	1981	2160147
A	5m N	Gas Works	1899	2259484
A	5m N	Gas Works	1899	2259484
A	7m NW	Unspecified Tank	1938	2185854
A	7m NW	Unspecified Tank	1863	2217550
A	9m NW	Unspecified Tank	1932	2266421
A	14m W	Power Station	1973	2151641
A	15m NW	Gasometer	1923	2262242
A	16m W	Electricity Works	1923	2135627



ID	Location	Land Use	Date	Group ID
A	17m W	Electric Works	1916	2142899
A	18m NW	Unspecified Tank	1938	2235811
A	18m NW	Unspecified Tanks	1863	2251924
A	18m NW	Unspecified Tanks	1907	2233285
A	20m NW	Gas Works	1865	2178441
A	21m NW	Gasometers	1865	2276643
A	21m NW	Unspecified Tank	1932	2283939
A	21m NW	Gasometers	1888	2217737
A	22m NW	Gasometers	1923	2280259
A	23m NW	Unspecified Tank	1938	2293568
A	23m NW	Gasometers	1899	2217031
A	23m NW	Gasometers	1899	2217031
A	24m NW	Unspecified Tanks	1938	2189611
A	25m NW	Unspecified Tank	1895	2200222
A	26m NW	Gasometers	1916	2229679
A	28m NW	Gasometer	1895	2280150
A	29m N	Gasometer	1923	2237954
A	30m NW	Gasometers	1865	2261857
A	31m NW	Coal Store	1865	2157595
A	32m NW	Unspecified Tank	1938	2196491
A	33m N	Gasometer	1907	2237954
A	33m N	Gasometer	1895	2222913
A	33m N	Unspecified Tank	1938	2279350
A	33m N	Unspecified Tank	1863	2279350
A	34m NW	Unspecified Tanks	1895	2177166
A	34m N	Gasometer	1888	2174438
A	35m N	Unspecified Tank	1932	2215635
A	36m N	Unspecified Tank	1938	2266774



ID	Location	Land Use	Date	Group ID
A	37m N	Unspecified Tank	1938	2202706
A	38m NW	Gasometer	1895	2139970
A	38m N	Gasometer	1899	2206703
A	38m N	Gasometer	1899	2206703
A	39m N	Unspecified Tank	1955	2213119
A	39m N	Unspecified Tank	1966	2213119
A	41m N	Gasometer	1916	2175350
A	42m N	Gasometer	1895	2174438
A	47m NW	Gasometers	1865	2169720
A	49m NW	Unspecified Tank	1907	2179113
A	50m NW	Unspecified Tank	1938	2177017
A	57m NW	Gasometer	1895	2139971
A	58m NE	Unspecified Tank	1938	2232149
A	58m NE	Unspecified Tank	1863	2232149
4	65m SW	Unspecified Heap	1865	2137204
A	67m NW	Railway Sidings	1923	2263199
A	74m NW	Railway Sidings	1938	2283561
A	74m NW	Railway Sidings	1863	2283561
A	74m NW	Railway Sidings	1907	2283561
A	77m NW	Railway Sidings	1938	2283561
A	79m NE	Disused Canal	1966	2254151
A	80m NW	Railway Sidings	1938	2294743
A	80m NW	Railway Sidings	1932	2263199
A	88m NW	Railway Sidings	1966	2283561
C	121m N	Unspecified Works	1966	2160148
E	123m NE	Unspecified Works	1955	2240728
F	134m NW	Canal Basin	1899	2179089
F	134m NW	Canal Basin	1899	2179089



ID	Location	Land Use	Date	Group ID
F	136m NW	Canal Basin	1888	2257346
E	141m NE	Unspecified Works	1981	2275968
E	141m NE	Unspecified Works	1973	2275968
H	144m NW	Soap Works	1888	2220829
H	153m NW	Soap Works	1899	2184880
H	153m NW	Soap Works	1899	2184880
C	154m N	Unspecified Wharves	1923	2282764
H	156m NW	Soap Works	1895	2184880
C	157m NE	Unspecified Wharves	1938	2182486
C	157m NE	Unspecified Wharves	1863	2235255
H	157m NW	Unspecified Works	1981	2275689
H	157m NW	Unspecified Works	1973	2275689
H	157m NW	Unspecified Works	1966	2275689
C	158m N	Unspecified Wharves	1907	2177245
H	161m NW	Soap Works	1895	2215212
C	163m N	Unspecified Wharves	1938	2259487
C	164m N	Unspecified Wharves	1938	2195143
C	164m N	Unspecified Wharves	1938	2195143
C	165m NE	Unspecified Wharves	1955	2254024
C	165m NE	Unspecified Wharves	1966	2251971
H	167m NW	Soap Works	1865	2220829
C	167m N	Wharves	1916	2143218
E	171m NE	Refuse Heap	1966	2158973
C	173m N	Unspecified Wharves	1932	2233507
C	173m N	Unspecified Wharves	1932	2217599
H	181m N	Iron Works	1938	2276732
H	181m N	Iron Works	1863	2276732
5	184m S	Grave Yard	1865	2145772



ID	Location	Land Use	Date	Group ID
H	185m N	Iron Works	1932	2269708
H	185m N	Unspecified Works	1973	2205900
H	185m N	Unspecified Works	1966	2205900
K	188m E	Unspecified Works	1981	2285001
K	188m E	Unspecified Works	1973	2285001
H	188m N	Unspecified Works	1955	2196431
H	190m N	Iron Works	1923	2227598
H	191m N	Iron Works	1899	2241736
H	191m N	Iron Works	1899	2188856
H	191m N	Iron Works	1888	2257189
H	192m N	Iron Works	1907	2257358
H	192m N	Iron Works	1895	2276732
H	195m N	Unspecified Works	1981	2207382
H	197m N	Iron Works	1938	2190538
H	197m N	Iron Works	1895	2195924
H	198m N	Iron Works	1938	2190538
H	200m N	Iron Works	1899	2257358
H	200m N	Iron Works	1899	2257358
H	201m N	Iron Works	1888	2244326
H	206m N	Iron Works	1916	2278087
H	207m N	Iron Works	1895	2257358
M	220m SW	Railway Station	1916	2242981
N	223m W	Sawmill	1932	2262363
N	228m W	Sawmill	1938	2202544
N	228m W	Sawmill	1863	2202544
N	228m W	Unspecified Works	1981	2160145
M	229m SW	Railway Station	1938	2288384
M	233m SW	Railway Building	1923	2150265



ID	Location	Land Use	Date	Group ID
M	268m SW	Cuttings	1916	2259417
P	268m E	Unspecified Tank	1932	2155343
M	273m SW	Cuttings	1938	2290997
Q	274m SW	Cuttings	1938	2260951
M	276m SW	Cuttings	1923	2239169
M	278m SW	Cuttings	1938	2264777
M	278m SW	Cuttings	1863	2292849
M	278m SW	Cuttings	1907	2194333
R	284m SW	Barracks	1938	2201978
S	291m SE	Smithy	1895	2167567
S	300m SE	Unspecified Ground Workings	1938	2228382
S	300m SE	Unspecified Ground Workings	1863	2228382
Q	304m SW	Cuttings	1895	2256354
T	308m SW	Cuttings	1938	2268579
T	310m SW	Cuttings	1923	2192129
T	314m SW	Cuttings	1888	2174904
U	315m SW	Barracks	1938	2224406
Q	317m SW	Cuttings	1899	2244720
Q	317m SW	Cuttings	1899	2201233
6	322m SE	Marshes	1916	2202888
S	322m SE	Smithy	1895	2272542
S	325m SE	Smithy	1899	2219690
S	325m SE	Smithy	1899	2219690
T	326m SW	Cuttings	1895	2174904
S	328m SE	Smithy	1888	2276006
Q	330m SW	Cuttings	1916	2204762
T	334m SW	Cuttings	1907	2279008
Y	342m E	Laundry	1863	2132387



ID	Location	Land Use	Date	Group ID
Z	353m SE	Unspecified Pit	1895	2267024
Z	354m SE	Unspecified Pit	1899	2294818
Z	354m SE	Unspecified Pit	1899	2294818
Z	355m SE	Unspecified Pit	1895	2229958
Q	355m SW	Cuttings	1932	2214881
Z	355m SE	Unspecified Pit	1888	2192522
Z	356m SE	Unspecified Pit	1916	2259253
Z	359m SE	Unspecified Pit	1907	2216847
T	360m SW	Cuttings	1938	2239204
T	360m SW	Cuttings	1863	2275443
Z	362m SE	Unspecified Pit	1923	2259253
R	366m SW	Barracks	1932	2224406
R	366m SW	Barracks	1923	2268764
AB	375m E	Unspecified Works	1981	2176343
AB	375m E	Unspecified Works	1973	2282338
AB	375m E	Unspecified Works	1966	2282338
AB	378m E	Marshes	1888	2237477
AC	378m NE	Boat House	1938	2193883
AC	378m NE	Boat House	1863	2193883
AB	378m E	Marshes	1899	2229748
AB	378m E	Marshes	1899	2229748
AC	378m NE	Boat House	1932	2193883
X	380m E	Hospital	1932	2233213
X	380m E	Hospital	1938	2199828
X	380m E	Hospital	1863	2199828
AC	382m NE	Unspecified Wharf	1955	2222927
AC	382m NE	Unspecified Wharf	1966	2222927
AE	389m SW	Hospital	1895	2204111



ID	Location	Land Use	Date	Group ID
X	390m E	Railway Building	1973	2170858
X	390m E	Railway Building	1955	2170858
X	390m E	Railway Building	1966	2170858
AE	390m SW	Military Hospital	1916	2235975
AE	391m SW	Station Hospital	1899	2292444
AE	391m SW	Station Hospital	1899	2292444
X	392m E	Railway Building	1981	2199202
AE	393m SW	Hospital	1932	2217448
AE	393m SW	Military Hospital	1938	2200274
AE	395m SW	Hospital	1938	2273179
AE	396m SW	Station Hospital	1888	2179468
AE	396m SW	Hospital	1938	2273179
AE	396m SW	Hospital	1863	2230183
AE	396m SW	Hospital	1907	2273179
AE	396m SW	Hospital	1895	2234241
AE	396m SW	Hospital	1923	2273179
9	397m SE	Unspecified Heap	1863	2137206
Q	402m SW	Cuttings	1938	2240104
Q	403m SW	Cuttings	1923	2262251
Q	404m SW	Cuttings	1938	2283333
Q	404m SW	Cuttings	1863	2170983
Q	404m SW	Cuttings	1907	2283333
Q	404m SW	Cuttings	1895	2288361
Q	407m SW	Cuttings	1888	2245580
Q	409m SW	Cuttings	1981	2240104
Q	409m SW	Cuttings	1973	2240104
Q	409m SW	Cuttings	1955	2240104
Q	409m SW	Cuttings	1966	2240104



ID	Location	Land Use	Date	Group ID
AF	431m S	Dairy	1932	2183038
AF	433m S	Dairy	1938	2183038
AF	433m S	Dairy	1863	2183038
AF	441m S	Dairy	1938	2180773
AF	444m S	Dairy	1907	2243853
U	444m SW	Barracks	1916	2264698
AH	446m SW	Barracks	1938	2212604
AH	446m SW	Barracks	1863	2241030
R	447m SW	Barracks	1973	2249454
R	447m SW	Barracks	1955	2249454
R	447m SW	Barracks	1966	2249454
11	456m E	Railway Building	1955	2150255
Q	457m SW	Unspecified Tanks	1938	2289635
Q	458m SW	Tanks	1916	2162285
Q	458m SW	Unspecified Tanks	1938	2289635
Q	458m SW	Unspecified Tanks	1863	2280523
Q	458m SW	Unspecified Tanks	1907	2238149
Q	458m SW	Unspecified Tanks	1938	2289635
Q	458m SW	Unspecified Tanks	1923	2244689
Q	459m SW	Unspecified Tanks	1932	2284740
AI	466m W	Unspecified Ground Workings	1981	2189419
AI	466m W	Unspecified Ground Workings	1973	2189419
AI	466m W	Unspecified Ground Workings	1955	2189419
AI	466m W	Unspecified Ground Workings	1966	2189419
AJ	467m E	Unspecified Commercial/Industrial	1981	2192060
AJ	470m E	Unspecified Commercial/Industrial	1973	2192060
12	477m E	Disused Canal	1981	2168643
13	482m E	Corn Windmill	1865	2138238



ID	Location	Land Use	Date	Group ID
AK	491m SW	Unspecified Heap	1932	2229753
AK	491m SW	Unspecified Heap	1932	2229753
AK	492m SW	Unspecified Pit	1863	2126192

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m

122

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

Features are displayed on the Past land use - un-grouped map on [page 30 >](#)

ID	Location	Land Use	Date	Group ID
A	On site	Unspecified Tank	1953	405227
A	On site	Gasholder	1964	386053
A	On site	Gasholder	1964	399806
A	On site	Gasholder Station	1964	401300
A	On site	Gasometer	1897	408927
A	On site	Gas Works	1897	399058
A	On site	Gas Works	1909	399058
A	On site	Gasometer	1909	408927
A	On site	Unspecified Tank	1932	404803
A	On site	Unspecified Tank	1953	400124
A	On site	Gasholder	1967	404420
A	On site	Gasholder	1967	386053
A	On site	Gasholder Station	1967	382959
A	On site	Gasholder	1976	404420
A	On site	Gasholder	1976	386053
A	On site	Gasholder Station	1976	409940
A	On site	Gasholder	1980	387615



ID	Location	Land Use	Date	Group ID
A	On site	Gasholder	1980	410034
A	On site	Gasholder Station	1980	382959
A	2m NE	Unspecified Tank	1932	369160
A	7m W	Gas Works	1866	381750
A	10m NW	Unspecified Tank	1932	369161
A	19m NW	Gasometers	1897	409653
A	19m NW	Gasometers	1909	409653
A	20m NW	Tanks	1932	378157
A	22m NW	Unspecified Tank	1953	385751
A	22m NW	Gasometers	1866	403431
A	22m NW	Unspecified Tank	1953	385751
A	29m W	Unspecified Tank	1967	389740
A	29m W	Unspecified Tank	1964	389740
A	29m W	Tanks	1932	378161
A	30m W	Tanks	1932	378160
A	33m N	Tanks	1897	386677
A	33m N	Tanks	1909	386677
A	33m N	Tanks	1932	386677
A	34m N	Gasometer	1897	411160
A	34m N	Gasometer	1909	411160
A	34m N	Unspecified Tank	1932	385467
A	34m W	Tanks	1932	378159
A	35m N	Unspecified Tank	1953	384241
A	36m N	Unspecified Tank	1953	384241
A	37m N	Tanks	1953	395804
A	38m N	Tanks	1953	395804
A	46m NW	Unspecified Tank	1932	369157
A	47m N	Unspecified Tank	1953	400886



ID	Location	Land Use	Date	Group ID
A	47m N	Unspecified Tank	1953	400886
A	49m W	Tanks	1932	378158
A	51m W	Unspecified Tank	1953	391433
A	51m W	Unspecified Tank	1967	404917
A	51m W	Unspecified Tank	1953	403775
A	51m W	Unspecified Tank	1964	410162
A	52m W	Tanks	1932	378182
A	55m NW	Unspecified Tank	1866	369156
A	58m NE	Unspecified Tank	1909	403539
A	58m NE	Unspecified Tank	1932	403539
A	59m NE	Unspecified Tank	1953	403539
A	60m NE	Unspecified Tank	1953	403539
A	85m NW	Unspecified Tank	1866	369155
A	97m W	Unspecified Tank	1953	408382
A	97m W	Unspecified Tank	1964	408382
A	97m W	Unspecified Tank	1953	408382
A	97m W	Unspecified Tank	1967	408382
B	99m W	Unspecified Tank	1980	395651
B	100m W	Unspecified Tank	1967	390019
B	100m W	Unspecified Tank	1976	387040
B	100m W	Unspecified Tank	1964	386386
A	111m NE	Unspecified Tank	1980	386483
A	112m NE	Unspecified Tank	1976	386483
C	145m N	Unspecified Tank	1976	369149
C	150m N	Unspecified Tank	1980	369150
E	185m NE	Unspecified Tank	1953	396016
E	185m NE	Unspecified Tank	1953	396016
N	231m W	Unspecified Tank	1980	400267



ID	Location	Land Use	Date	Group ID
N	231m W	Unspecified Tank	1964	400267
N	231m W	Unspecified Tank	1967	400267
N	231m W	Unspecified Tank	1976	400267
H	236m NW	Unspecified Tank	1980	369154
N	238m W	Tanks	1980	381989
N	239m W	Tanks	1964	395086
N	239m W	Tanks	1967	395086
N	239m W	Tanks	1976	395086
N	243m W	Unspecified Tank	1980	396715
N	244m W	Unspecified Tank	1976	402801
O	248m NE	Unspecified Tank	1973	369158
H	250m NW	Unspecified Tank	1980	391865
H	250m NW	Unspecified Tank	1976	391865
N	264m W	Tanks	1980	397556
N	264m W	Tanks	1964	397556
N	264m W	Tanks	1967	397556
N	264m W	Tanks	1976	397556
P	272m E	Unspecified Tank	1932	369168
O	279m NE	Unspecified Tank	1993	392988
O	280m NE	Unspecified Tank	1973	392988
N	280m W	Unspecified Tank	1976	410135
N	280m W	Unspecified Tank	1980	410135
Y	355m E	Unspecified Tank	1988	384173
Y	356m E	Unspecified Tank	1897	369167
Y	357m E	Unspecified Tank	1978	384173
AD	380m SW	Unspecified Tank	1897	391011
AD	380m SW	Unspecified Tank	1932	391011
AE	390m SW	Unspecified Tank	1953	386721



ID	Location	Land Use	Date	Group ID
AE	391m SW	Unspecified Tank	1953	386721
AG	445m SE	Unspecified Tank	1988	397685
AG	446m SE	Unspecified Tank	1978	397685
Q	454m SW	Tanks	1953	408988
Q	457m SW	Tanks	1953	403313
AE	458m SW	Unspecified Tank	1953	404515
AE	458m SW	Unspecified Tank	1970	404515
AE	459m SW	Unspecified Tank	1953	384503
Q	462m SW	Tanks	1953	383399
Q	463m SW	Tanks	1932	397131
Q	463m SW	Tanks	1909	397131
AB	473m E	Tanks	1993	378162
AB	487m E	Tanks	1988	394709
AB	488m E	Tanks	1978	394709
AB	489m E	Tanks	1993	397842
AB	493m SE	Tanks	1993	397842
AL	497m S	Unspecified Tank	1953	395420
AL	498m S	Unspecified Tank	1953	395420
AB	498m E	Tanks	1988	383313
AB	499m E	Tanks	1978	383313
AL	499m S	Unspecified Tank	1932	369297

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m

79

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

Features are displayed on the Past land use - un-grouped map on [page 30](#) >



ID	Location	Land Use	Date	Group ID
A	On site	Gasholder	1964	291431
A	On site	Gasholder	1964	261364
A	On site	Gasholder Station	1964	285005
A	On site	Gasometer	1897	274354
A	On site	Gas Works	1897	272208
A	On site	Gas Works	1909	272208
A	On site	Gasometer	1909	274354
A	On site	Gasholder	1967	290614
A	On site	Gasholder	1967	291431
A	On site	Gasholder Station	1967	279862
A	On site	Gasholder	1976	290614
A	On site	Gasholder	1976	291431
A	On site	Gasholder Station	1976	285005
A	On site	Gasholder	1980	290614
A	On site	Gasholder	1980	259275
A	On site	Gasholder Station	1980	279862
A	7m W	Gas Works	1866	274858
A	16m W	Power Station	1964	280443
A	16m W	Power Station	1967	280443
A	18m W	Electricity Transformers	1967	254349
A	19m NW	Gasometers	1897	278212
A	19m NW	Gasometers	1909	278212
A	19m W	Electricity Works	1909	251227
A	22m NW	Gasometers	1866	287191
A	25m W	Electricity Transformers	1964	276268
A	32m W	Electricity Substation	1980	247412
A	32m W	Electricity Transformers	1976	252332
A	34m N	Gasometer	1897	265330



ID	Location	Land Use	Date	Group ID
A	34m N	Gasometer	1909	265330
A	113m NE	Electricity Substation	1980	247406
A	114m NE	Electricity Transformer	1976	250895
A	121m NE	Electricity Substation	1967	280238
A	122m NE	Electricity Substation	1964	280238
G	139m N	Electricity Substation	1980	276034
G	139m N	Electricity Substation	1953	263295
G	139m N	Electricity Substation	1964	263295
G	140m N	Electricity Substation	1953	263295
G	140m N	Electricity Substation	1967	263295
G	140m N	Electricity Transformer	1976	250894
I	146m S	Electricity Substation	1994	252133
I	146m S	Electricity Substation	1993	254582
I	148m S	Electricity Substation	1953	254732
I	148m S	Electricity Substation	1983	271929
I	148m S	Electricity Substation	1983	271929
I	148m S	Electricity Substation	1992	271929
I	149m S	Electricity Substation	1976	253456
I	149m S	Electricity Substation	1953	253057
H	230m NW	Electricity Substation	1976	286609
H	232m NW	Electricity Substation	1980	262110
O	260m E	Electricity Substation	1973	276278
O	260m E	Electricity Substation	1993	276278
V	322m W	Electricity Substation	1980	284344
V	322m W	Electricity Substation	1986	284344
V	322m W	Electricity Substation	1993	284344
V	322m W	Electricity Substation	1976	284344
W	323m W	Electricity Substation	1993	247411



ID	Location	Land Use	Date	Group ID
W	324m W	Electricity Substation	1980	247413
W	324m W	Electricity Substation	1980	272393
W	324m W	Electricity Substation	1986	272393
X	337m E	Electricity Substation	1973	247408
X	349m E	Electricity Substation	1993	247409
AA	366m S	Electricity Substation	1983	287216
AA	366m S	Electricity Substation	1983	287216
AA	366m S	Electricity Substation	1992	287216
AA	367m S	Electricity Substation	1953	287216
AA	367m S	Electricity Substation	1976	287216
AA	367m S	Electricity Substation	1953	287216
AA	368m S	Electricity Substation	1994	284078
AA	368m S	Electricity Substation	1993	284078
7	377m E	Electricity Substation	1993	247410
X	377m E	Electricity Substation	1953	287990
X	378m E	Electricity Substation	1993	278482
X	378m E	Electricity Substation	1973	287990
X	378m E	Electricity Substation	1953	287990
8	379m SE	Electricity Substation	1993	247428
10	420m W	Electricity Substation	1953	247427
AF	435m S	Electricity Substation	1988	267842
AF	435m S	Electricity Substation	1978	267842
AF	436m S	Electricity Substation	1993	267842

This data is sourced from Ordnance Survey / Groundsure.



2.4 Historical petrol stations

Records within 500m

0

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

This data is sourced from Ordnance Survey / Groundsure.

2.5 Historical garages

Records within 500m

16

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

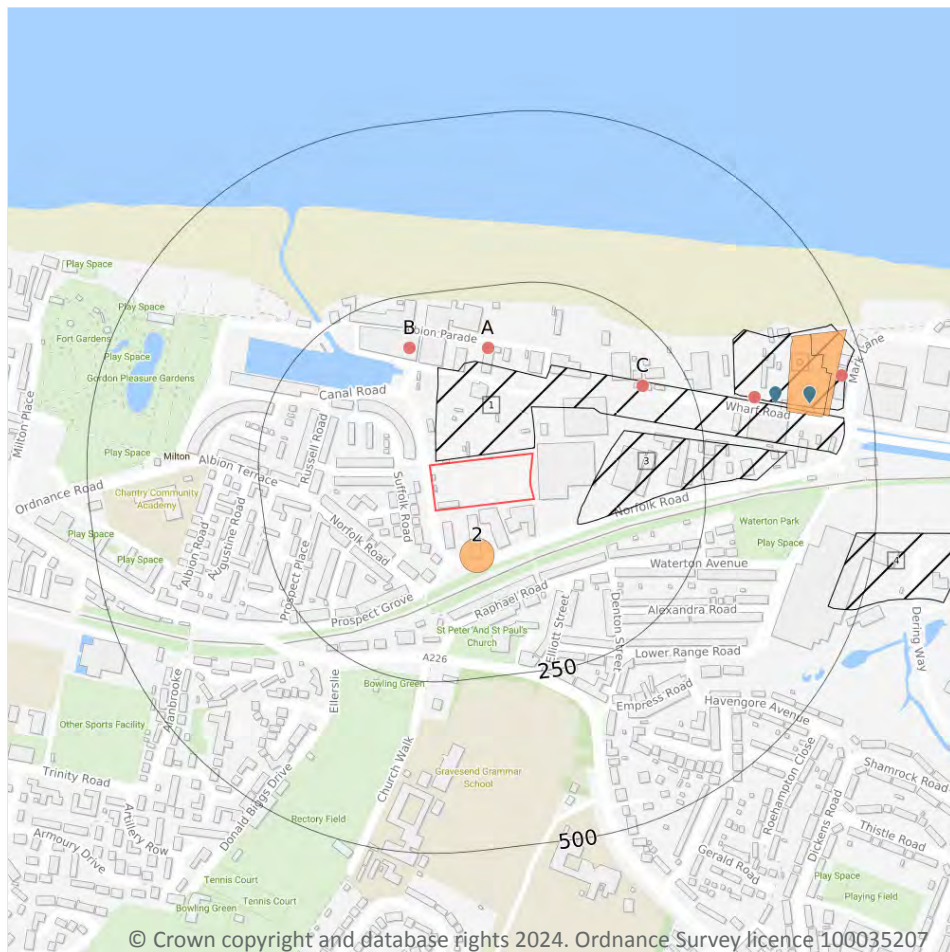
Features are displayed on the Past land use - un-grouped map on [page 30 >](#)

ID	Location	Land Use	Date	Group ID
D	122m SE	Garage	1960	85689
D	122m SE	Garage	1953	85689
D	122m SE	Garage	1961	85689
D	123m SE	Garage	1953	85689
J	163m SW	Garage	1993	82014
J	163m SW	Garage	1994	82014
J	166m SW	Garage	1992	77616
L	216m W	Garage	1953	84889
L	216m W	Garage	1953	84889
S	302m SE	Garage	1953	82404
S	318m SE	Garage	1953	82404
Q	438m W	Garage	1953	80695
Q	438m W	Garage	1953	81942
Q	438m W	Garage	1970	81942
Q	443m W	Garage	1952	79031
Q	443m W	Garage	1981	80695

This data is sourced from Ordnance Survey / Groundsure.



3 Waste and landfill



- Site Outline
- Search buffers in metres (m)
- Historical landfill (EA/NRW)
- Historical waste sites
- Licensed waste sites
- Waste exemptions

3.1 Active or recent landfill

Records within 500m

0

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

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

3.2 Historical landfill (BGS records)

Records within 500m

0

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

This data is sourced from the British Geological Survey.



3.3 Historical landfill (LA/mapping records)

Records within 500m

0

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

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

3.4 Historical landfill (EA/NRW records)

Records within 500m

4

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

Features are displayed on the Waste and landfill map on [page 50 >](#)

ID	Location	Details		
1	5m NW	Site Address: Gas Works - Canal, Gravesend, Kent Licence Holder Address: -	Waste Licence: Yes Site Reference: GR12 Waste Type: Inert, Commercial Environmental Permitting Regulations (Waste) Reference: - Licence Issue: 01/01/1976 Licence Surrender: -	Operator: - Licence Holder: - First Recorded - Last Recorded: -
3	69m E	Site Address: Gas Works - Canal, Gravesend, Kent Licence Holder Address: -	Waste Licence: Yes Site Reference: GR12 Waste Type: Inert, Commercial Environmental Permitting Regulations (Waste) Reference: - Licence Issue: 01/01/1976 Licence Surrender: -	Operator: - Licence Holder: - First Recorded - Last Recorded: -
D	307m E	Site Address: Norfolk Road, Denton, Kent Licence Holder Address: -	Waste Licence: - Site Reference: GR4 Waste Type: Inert, Commercial Environmental Permitting Regulations (Waste) Reference: - Licence Issue: - Licence Surrender: -	Operator: - Licence Holder: - First Recorded - Last Recorded: -
4	456m E	Site Address: Denton-Comma Oil, Denton, Kent Licence Holder Address: -	Waste Licence: Yes Site Reference: GR11 Waste Type: Inert Environmental Permitting Regulations (Waste) Reference: - Licence Issue: 01/01/1976 Licence Surrender: -	Operator: - Licence Holder: J Clubb Limited First Recorded - Last Recorded: -



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

3.5 Historical waste sites

Records within 500m	3
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Waste site records derived from Local Authority planning records and high detail historical mapping.

Features are displayed on the Waste and landfill map on [page 50 >](#)

ID	Location	Address	Further Details	Date
2	46m S	Site Address: Nuralite Industrial Estate, Canal Road, Higham, Rochester, Kent, ME3 7JA	Type of Site: Land Reclamation Planning application reference: 20160637 Description: Scheme comprises land reclamation scheme to cover landfill site, including SUDS. Data source: Historic Planning Application Data Type: Point	-
D	375m E	Site Address: N/A	Type of Site: Scrap Yard Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1993
D	428m E	Site Address: N/A	Type of Site: Scrap Yard Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1993

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

3.6 Licensed waste sites

Records within 500m	4
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Active or recently closed waste sites under Environment Agency/Natural Resources Wales regulation.

Features are displayed on the Waste and landfill map on [page 50 >](#)

ID	Location	Details		
D	363m E	Site Name: Waste Transfer Station Site Address: Off Mark Lane, Denton, Gravesend, Kent, DA12 2RU Correspondence Address: -	Type of Site: Household, Commercial & Industrial Waste T Stn Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: 648041 EPR reference: EA/EPR/TP3698HD Operator: Gurbinder Sall Waste Management licence No: 19391 Annual Tonnage: 10000	Issue Date: 25/04/1997 Effective Date: 25/04/1997 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Revoked
D	412m E	Site Name: Gravesend Metals And Recycling Ltd Site Address: Denton Industrial Estate, Wharf Road, Gravesend, Kent, DA12 2RU Correspondence Address: Denton Industrial Estate, Wharf Road, Gravesend, Kent, DA12 2RU	Type of Site: Metal Recycling Site (mixed MRS's) Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: GRA001 EPR reference: - Operator: Gravesend Metals And Recycling Ltd Waste Management licence No: 19390 Annual Tonnage: 0	Issue Date: 18/12/1996 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued
D	412m E	Site Name: Gravesend Metals And Recycling Ltd Site Address: Denton Industrial Estate, Wharf Road, Gravesend, Kent, DA12 2RU Correspondence Address: -	Type of Site: Metal Recycling Site (mixed MRS's) Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: GRA001 EPR reference: EA/EPR/TP3298HC/A001 Operator: Gravesend Metals And Recycling Limited Waste Management licence No: 19390 Annual Tonnage: 11000	Issue Date: 18/12/1996 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued
D	412m E	Site Name: G M R (Kent) Limited Site Address: Denton Industrial Estate, Wharf Road, Gravesend, Kent, DA12 2RU Correspondence Address: -	Type of Site: Metal Recycling Site (mixed MRS's) Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: 657502 EPR reference: EA/EPR/EB3700UE Operator: G M R (Kent) Limited Waste Management licence No: 19390 Annual Tonnage: 11000	Issue Date: 18/12/1996 Effective Date: 18/12/1996 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Revoked



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

3.7 Waste exemptions

Records within 500m	13
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Activities involving the storage, treatment, use or disposal of waste that are exempt from needing a permit. Exemptions have specific limits and conditions that must be adhered to.

Features are displayed on the Waste and landfill map on [page 50 >](#)

ID	Location	Site	Reference	Category	Sub-Category	Description
A	160m N	UNIT 1, Albion Parade, Canal Basin, Gravesend, DA12 2RN	WEX287571	Treating waste exemption	Not on a farm	Mechanical treatment of end-of-life tyres
A	160m N	MOBILE MINI, ALBIAN PARADE, CANAL ROAD, GRAVESEND, DA12 2RN	WEX247716	Storing waste exemption	Not on a farm	Storage of waste in a secure place
A	160m N	MOBILE MINI, ALBIAN PARADE, CANAL ROAD, GRAVESEND, DA12 2RN	WEX247716	Using waste exemption	Not on a farm	Use of waste in construction
B	173m NW	FEABREX HOUSE, ALBION PARADE, GRAVESEND, DA12 2RN	WEX312075	Using waste exemption	Not on a farm	Use of baled end-of-life tyres in construction
B	173m NW	ALBION PARADE, GRAVESEND, DA12 2RN	WEX289569	Treating waste exemption	Not on a farm	Mechanical treatment of end-of-life tyres
B	173m NW	FEABREX HOUSE, ALBION PARADE, GRAVESEND, DA12 2RN	WEX164539	Treating waste exemption	Not on a Farm	Mechanical treatment of end-of-life tyres
B	173m NW	FEABREX HOUSE, ALBION PARADE, GRAVESEND, DA12 2RN	WEX164539	Using waste exemption	Not on a Farm	Use of baled end-of-life tyres in construction
C	188m NE	-	WEX285577	Treating waste exemption	Not on a farm	Recovery of scrap metal
C	188m NE	UNIT 7B, WHARF ROAD, GRAVESEND, DA12 2RU	WEX322252	Treating waste exemption	Not on a farm	Recovery of scrap metal
D	333m E	7, Wharf Road, Gravesend, Kent, DA12 2RU	WEX148618	Storing waste exemption	Not on a farm	Storage of waste in a secure place
D	333m E	7, Wharf Road, Gravesend, Kent, DA12 2RU	WEX148618	Storing waste exemption	Not on a farm	Storage of waste in secure containers

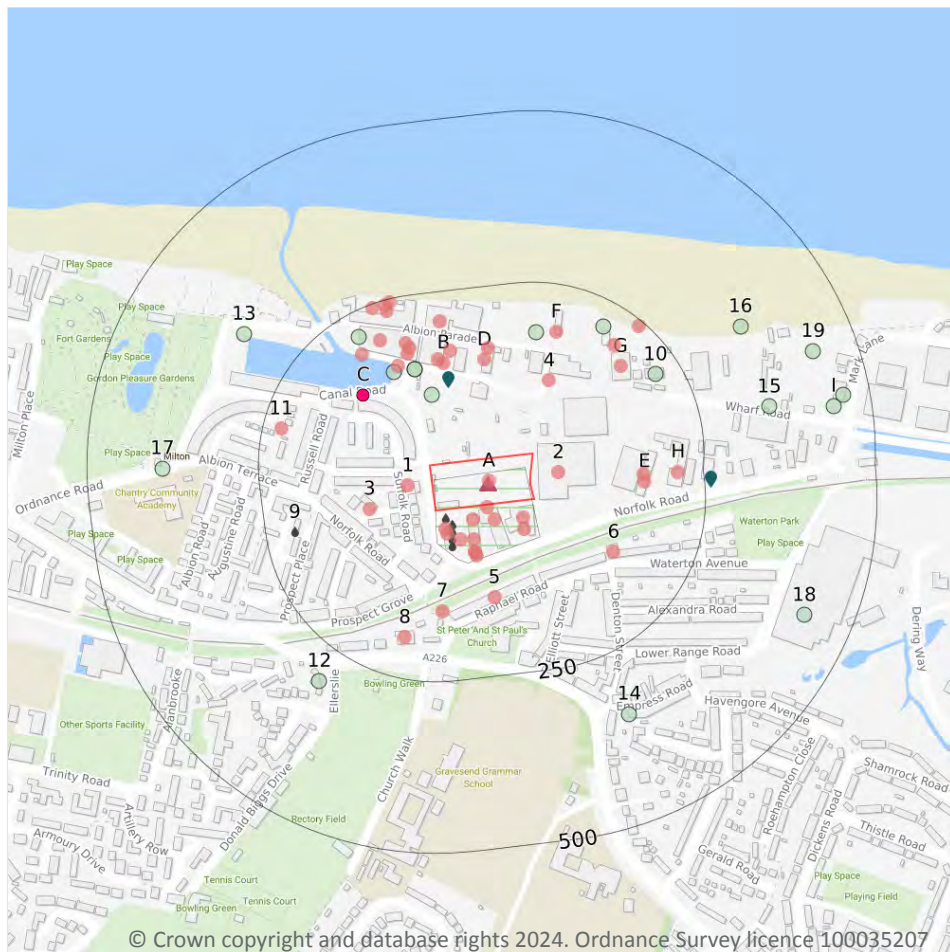


ID	Location	Site	Reference	Category	Sub-Category	Description
D	333m E	7, Wharf Road, Gravesend, Kent, DA12 2RU	WEX148618	Treating waste exemption	Not on a farm	Recovery of scrap metal
D	464m E	WHARF ROAD, GRAVESEND, DA12 2RU	WEX271461	Treating waste exemption	Not on a farm	Mechanical treatment of end-of-life tyres

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



4 Current industrial land use



- Site Outline
- Search buffers in metres (m)
- Recent industrial land uses
- Control of Major Accident Hazards
- ▲ Hazardous substance storage/usage
- ◆ Licensed pollutant release (Part A(2)/B)
- Radioactive Substance Authorisations
- ◆ Licensed Discharges to controlled waters
- Pollution Incidents (EA/NRW)

4.1 Recent industrial land uses

Records within 250m

45

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on [page 56](#) >

ID	Location	Company	Address	Activity	Category
A	On site	Gas Holder Station	Kent, DA12	Gas Features	Infrastructure and Facilities
A	4m S	Norfolk Road Industrial Estate	Kent, DA12	Business Parks and Industrial Estates	Industrial Features



ID	Location	Company	Address	Activity	Category
A	20m S	Thames Hose & Couplings Ltd	Unit 1-2 Canal Industrial Park, Canal Road, Gravesend, Kent, DA12 2PA	Industrial Repairs and Servicing	Repair and Servicing
A	23m S	Works	Kent, DA12	Unspecified Works Or Factories	Industrial Features
A	25m SE	K T M Meats Ltd	-, Norfolk Road, Gravesend, Kent, DA12 2PS	Fish, Meat and Poultry Products	Foodstuffs
A	29m SW	Tecweld	Unit 12 Canal Industrial Park, Canal Road, Gravesend, Kent, DA12 2PA	Tools Including Machine Shops	Industrial Products
A	35m SW	N B Tool Services	Unit 13 Canal Industrial Park, Canal Road, Gravesend, Kent, DA12 2PA	Industrial Repairs and Servicing	Repair and Servicing
1	36m W	Electricity Sub Station	Kent, DA12	Electrical Features	Infrastructure and Facilities
2	40m E	Phoenix Data Manageme nt Ltd	Unit 1 and 2, Norfolk Road, Gravesend, Kent, DA12 2PS	Printing Related Machinery	Industrial Products
A	42m SE	Electricity Sub Station	Kent, DA12	Electrical Features	Infrastructure and Facilities
A	46m S	Canal Road Industrial Park	Kent, DA12	Business Parks and Industrial Estates	Industrial Features
A	48m S	Norfolk Road M O T Centre	Units 6-7 Canal Industrial Park, Canal Road, Gravesend, Kent, DA12 2PA	Vehicle Repair, Testing and Servicing	Repair and Servicing
A	67m S	T S Autos	Unit 9 Canal Industrial Park, Canal Road, Gravesend, Kent, DA12 2PA	Vehicle Repair, Testing and Servicing	Repair and Servicing
A	67m S	Recycling 4 Rehoming	Unit 9 Canal Industrial Park, Canal Road, Gravesend, Kent, DA12 2PA	Clearance and Salvage Dealers	Recycling Services
A	72m S	Barrett Print	Unit 10 Canal Industrial Park, Canal Road, Gravesend, Kent, DA12 2PA	Published Goods	Industrial Products
3	95m W	Tank	Kent, DA12	Tanks (Generic)	Industrial Features
4	109m NE	Tank	Kent, DA12	Tanks (Generic)	Industrial Features
5	135m S	Astra Cars Kent	29, Raphael Road, Gravesend, Kent, DA12 2PN	Airlines and Airline Services	Transport, Storage and Delivery



ID	Location	Company	Address	Activity	Category
6	139m SE	Gravesend Motor Services	1, Waterton Avenue, Gravesend, Kent, DA12 2PY	Vehicle Repair, Testing and Servicing	Repair and Servicing
D	144m N	Feabrex Ltd	Feabrex Ltd (Lhs), Albion Parade, Gravesend, Kent, DA12 2RN	Container and Storage	Transport, Storage and Delivery
B	146m N	Electricity Sub Station	Kent, DA12	Electrical Features	Infrastructure and Facilities
7	147m S	Electricity Sub Station	Kent, DA12	Electrical Features	Infrastructure and Facilities
B	152m NW	Mooring Posts	Kent, DA12	Moorings and Unloading Facilities	Water
B	152m N	J S L Auto Tech	Albion Parade, -, Gravesend, Kent, DA12 2RN	Vehicle Repair, Testing and Servicing	Repair and Servicing
D	160m N	Vaux Parts UK	Feabrex Ltd Factory and Premises, Albion Parade, Gravesend, Kent, DA12 2RN	Vehicle Parts and Accessories	Motoring
B	162m N	Works	Kent, DA12	Unspecified Works Or Factories	Industrial Features
E	163m E	N S P Coatings Ltd	Plot 2 Industrial Estate, Norfolk Road, Gravesend, Kent, DA12 2PS	Industrial Coatings and Finishings	Industrial Products
E	164m E	Factory	Kent, DA12	Unspecified Works Or Factories	Industrial Features
B	167m NW	Crimson Wing Repair Centre	Albion Parade, -, Gravesend, Kent, DA12 2RN	Vehicle Repair, Testing and Servicing	Repair and Servicing
B	173m NW	Luke's Tyres	Feabrex Limited Feabrex House, Albion Parade, Gravesend, Kent, DA12 2RN	Vehicle Parts and Accessories	Motoring
G	181m NE	Works	Kent, DA12	Unspecified Works Or Factories	Industrial Features
F	181m NE	Davies Preparation s	Unit 3 Denton Slipways Site, Wharf Road, Gravesend, Kent, DA12 2RU	Vehicle Repair, Testing and Servicing	Repair and Servicing
B	182m NW	Works	Kent, DA12	Unspecified Works Or Factories	Industrial Features
B	190m NW	Mooring Posts	Kent, DA12	Moorings and Unloading Facilities	Water
8	190m SW	G & M Motors	85, Milton Road, Gravesend, Kent, DA12 2PP	New Vehicles	Motoring



ID	Location	Company	Address	Activity	Category
B	197m NW	Works	Kent, DA12	Unspecified Works Or Factories	Industrial Features
G	198m NE	Mechanical Removals & Installations Ltd	Denton Slipways Site, Wharf Road, Gravesend, Kent, DA12 2RU	Lifting and Handling Equipment	Industrial Products
B	206m N	Works	Kent, DA12	Unspecified Works Or Factories	Industrial Features
H	214m E	Opal Fabrication Ltd	Plot 3 Industrial Estate, Norfolk Road, Gravesend, Kent, DA12 2PS	Car Ports and Steel Buildings	Industrial Products
11	224m W	Electricity Sub Station	Kent, DA12	Electrical Features	Infrastructure and Facilities
B	234m NW	Electricity Sub Station	Kent, DA12	Electrical Features	Infrastructure and Facilities
G	242m NE	Crane	Kent, DA12	Travelling Cranes and Gantries	Industrial Features
B	243m NW	Crane	Kent, DA12	Travelling Cranes and Gantries	Industrial Features
B	244m NW	Tank	Kent, DA12	Tanks (Generic)	Industrial Features
B	245m NW	Works	Kent, DA12	Unspecified Works Or Factories	Industrial Features

This data is sourced from Ordnance Survey.

4.2 Current or recent petrol stations

Records within 500m

0

Open, closed, under development and obsolete petrol stations.

This data is sourced from Experian.

4.3 Electricity cables

Records within 500m

0

High voltage underground electricity transmission cables.

This data is sourced from National Grid.



4.4 Gas pipelines

Records within 500m**0**

High pressure underground gas transmission pipelines.

This data is sourced from National Grid.

4.5 Sites determined as Contaminated Land

Records within 500m**0**

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

This data is sourced from Local Authority records.

4.6 Control of Major Accident Hazards (COMAH)

Records within 500m**1**

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

Features are displayed on the Current industrial land use map on [page 56 >](#)

ID	Location	Company	Address	Operational status	Tier
A	On site	British Gas	British Gas, Gravesend Holder Station, Suffolk Road, Gravesend	Historical NIHHS Site	-

This data is sourced from the Health and Safety Executive.

4.7 Regulated explosive sites

Records within 500m**0**

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

This data is sourced from the Health and Safety Executive.



4.8 Hazardous substance storage/usage

Records within 500m

2

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

Features are displayed on the Current industrial land use map on [page 56](#) >

ID	Location	Details	
A	On site	Application reference number: 20000242 Application status: Historical Consent Application date: 04/04/2000 Address: Gas Holder, Canal Road, Gravesend, Kent, DA12 2AT	Details: Storage and distribution of natural gas. Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified
A	On site	Application reference number: 19920645 Application status: Historical Consent Application date: 05/11/1992 Address: Gas Holder, Canal Road, Gravesend, Kent, DA12 2AT	Details: Storage and distribution of natural gas. Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified

This data is sourced from Local Authority records.

4.9 Historical licensed industrial activities (IPC)

Records within 500m

0

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

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

4.10 Licensed industrial activities (Part A(1))

Records within 500m

0

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

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



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

Records within 500m

2

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

Features are displayed on the Current industrial land use map on [page 56 >](#)

ID	Location	Address	Details	
B	120m N	Volumetric Concrete Ltd, Albion Parade, Gravesend, Kent, DA12 2RN	Process: Use of Bulk Cement Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of enforcement: No Enforcements Notified Comment: No Enforcements Notified
H	258m E	R.S.Dawe, Norfolk Road Industrial Estate, Norfolk Road, Gravesend, Kent, DA12 2PS	Process: Respraying of Road Vehicles Status: Surrendered Permit Type: Part B	Enforcement: No Enforcements Notified Date of enforcement: No Enforcements Notified Comment: No Enforcements Notified

This data is sourced from Local Authority records.

4.12 Radioactive Substance Authorisations

Records within 500m

2

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

Features are displayed on the Current industrial land use map on [page 56 >](#)

ID	Location	Address	Details	
C	141m NW	Magnox Electric Ltd, Canal Road, Gravesend, Kent, DA12 2RS	Operator: Magnox Electric Ltd Type: Disposal Of Radioactive Waste (was Rsa60 Section 6). Permission number: AD7591 Date of approval: 31/03/1991	Effective from: 31/03/1991 Last date of update: 01/01/2015 Status: Revoked/cancelled
C	141m NW	Magnox Electric Ltd, Canal Road, Gravesend, Kent, DA12 2RS	Operator: Magnox Electric Ltd Type: Disposal Of Radioactive Waste (was Rsa60 Section 6). Permission number: AD7605 Date of approval: 31/03/1991	Effective from: 31/03/1991 Last date of update: 01/01/2015 Status: Revoked/cancelled

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



4.13 Licensed Discharges to controlled waters

Records within 500m

6

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

Features are displayed on the Current industrial land use map on [page 56 >](#)

ID	Location	Address	Details	
A	12m SW	CANAL ROAD IND. PARK, CANAL ROAD IND. PARK, GRAVESEND, KENT	Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: P03509 Permit Version: 1 Receiving Water: INTO LAND	Status: POST NRA LEGISLATION WHERE ISSUE DATE > 31-AUG-89 (HISTORIC ONLY) Issue date: 19/03/1991 Effective Date: 19/03/1991 Revocation Date: 01/07/1991
A	24m SW	CANAL ROAD IND. PARK, CANAL ROAD IND. PARK, GRAVESEND, KENT	Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: P03509 Permit Version: 1 Receiving Water: INTO LAND	Status: POST NRA LEGISLATION WHERE ISSUE DATE > 31-AUG-89 (HISTORIC ONLY) Issue date: 19/03/1991 Effective Date: 19/03/1991 Revocation Date: 01/07/1991
A	33m SW	CANAL ROAD IND. PARK, CANAL ROAD IND. PARK, GRAVESEND, KENT	Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: P03509 Permit Version: 1 Receiving Water: INTO LAND	Status: POST NRA LEGISLATION WHERE ISSUE DATE > 31-AUG-89 (HISTORIC ONLY) Issue date: 19/03/1991 Effective Date: 19/03/1991 Revocation Date: 01/07/1991
A	43m SW	CANAL ROAD IND. PARK, CANAL ROAD IND. PARK, GRAVESEND, KENT	Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: P03509 Permit Version: 1 Receiving Water: INTO LAND	Status: POST NRA LEGISLATION WHERE ISSUE DATE > 31-AUG-89 (HISTORIC ONLY) Issue date: 19/03/1991 Effective Date: 19/03/1991 Revocation Date: 01/07/1991
A	53m SW	CANAL ROAD IND. PARK, CANAL ROAD IND. PARK, GRAVESEND, KENT	Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: P03509 Permit Version: 1 Receiving Water: INTO LAND	Status: POST NRA LEGISLATION WHERE ISSUE DATE > 31-AUG-89 (HISTORIC ONLY) Issue date: 19/03/1991 Effective Date: 19/03/1991 Revocation Date: 01/07/1991
9	207m W	SCIENTIFIC SERVICES DEPARTMENT, SUF, SCIENTIFIC SERVICES DEPARTMENT, SUFFOLK ROAD, GRAVESEND, KENT	Effluent Type: TRADE DISCHARGES - COOLING WATER Permit Number: CTMR.0160 Permit Version: 1 Receiving Water: THAMES	Status: REVOKED - UNSPECIFIED Issue date: 31/07/1974 Effective Date: 01/11/1978 Revocation Date: 27/09/1993

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



4.14 Pollutant release to surface waters (Red List)

Records within 500m**0**

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

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

4.15 Pollutant release to public sewer

Records within 500m**0**

Discharges of Special Category Effluents to the public sewer.

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

4.16 List 1 Dangerous Substances

Records within 500m**0**

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

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

4.17 List 2 Dangerous Substances

Records within 500m**0**

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

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

4.18 Pollution Incidents (EA/NRW)

Records within 500m**18**

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

Features are displayed on the Current industrial land use map on [page 56 >](#)

ID	Location	Details	
B	101m NW	Incident Date: 06/04/2001 Incident Identification: 15205 Pollutant: Contaminated Water Pollutant Description: Other Contaminated Water	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
B	142m NW	Incident Date: 29/03/2003 Incident Identification: 147063 Pollutant: Specific Waste Materials Pollutant Description: Household Waste	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
B	142m NW	Incident Date: 29/03/2003 Incident Identification: 147063 Pollutant: Specific Waste Materials Pollutant Description: Household Waste	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
B	145m NW	Incident Date: 13/07/2001 Incident Identification: 16232 Pollutant: Oils and Fuel Pollutant Description: Diesel	Water Impact: Category 3 (Minor) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
F	176m N	Incident Date: 12/07/2002 Incident Identification: 91034 Pollutant: Specific Waste Materials Pollutant Description: Commercial Waste	Water Impact: Category 3 (Minor) Land Impact: Category 3 (Minor) Air Impact: Category 3 (Minor)
G	212m NE	Incident Date: 10/04/2003 Incident Identification: 150109 Pollutant: Inert Materials and Wastes Pollutant Description: Other Inert Material or Waste	Water Impact: Category 3 (Minor) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
10	213m NE	Incident Date: 29/10/2003 Incident Identification: 198812 Pollutant: Contaminated Water Pollutant Description: Firefighting Run-Off	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)
B	213m NW	Incident Date: 19/09/2002 Incident Identification: 108953 Pollutant: Oils and Fuel Pollutant Description: Cutting Oils	Water Impact: Category 3 (Minor) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
12	300m SW	Incident Date: 02/11/2003 Incident Identification: 199459 Pollutant: Oils and Fuel Pollutant Description: Petrol	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
13	332m NW	Incident Date: 22/07/2003 Incident Identification: 175727 Pollutant: Specific Waste Materials Pollutant Description: Other Specific Waste Material	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)



ID	Location	Details	
14	342m SE	Incident Date: 07/05/2003 Incident Identification: 156500 Pollutant: Sewage Materials Pollutant Description: Crude Sewage	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
15	351m E	Incident Date: 08/04/2002 Incident Identification: 69772 Pollutant: Specific Waste Materials Pollutant Description: Other Non-Metal Wastes	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 3 (Minor)
16	355m NE	Incident Date: 01/08/2003 Incident Identification: 178273 Pollutant: Inert Materials and Wastes Pollutant Description: Other Inert Material or Waste	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
17	390m W	Incident Date: 19/06/2002 Incident Identification: 85967 Pollutant: Oils and Fuel Pollutant Description: Diesel	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
18	428m E	Incident Date: 23/02/2004 Incident Identification: 218671 Pollutant: Specific Waste Materials Pollutant Description: Other Specific Waste Material	Water Impact: Category 4 (No Impact) Land Impact: Category 2 (Significant) Air Impact: Category 4 (No Impact)
19	435m E	Incident Date: 17/01/2003 Incident Identification: 131602 Pollutant: Oils and Fuel Pollutant Description: Other Oil or Fuel	Water Impact: Category 3 (Minor) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
I	444m E	Incident Date: 30/04/2003 Incident Identification: 155229 Pollutant: Contaminated Water Pollutant Description: Firefighting Run-Off	Water Impact: Category 3 (Minor) Land Impact: Category 3 (Minor) Air Impact: Category 3 (Minor)
I	461m E	Incident Date: 28/04/2001 Incident Identification: 9628 Pollutant: Contaminated Water Pollutant Description: Firefighting Run-Off	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)

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

4.19 Pollution inventory substances

Records within 500m

0

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

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



4.20 Pollution inventory waste transfers

Records within 500m**0**

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

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

4.21 Pollution inventory radioactive waste

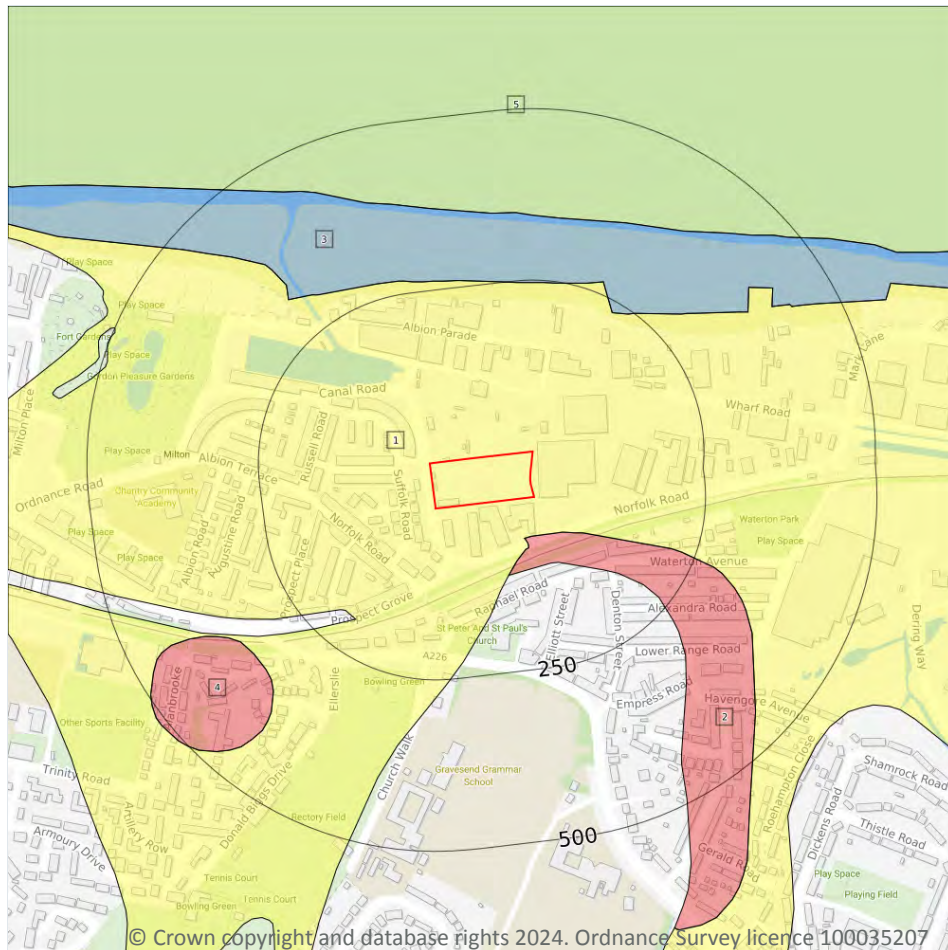
Records within 500m**0**

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

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



5 Hydrogeology - Superficial aquifer



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

5.1 Superficial aquifer

Records within 500m

5

Aquifer status of groundwater held within superficial geology.

Features are displayed on the Hydrogeology map on [page 68](#) >

ID	Location	Designation	Description
1	On site	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type
2	56m SE	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

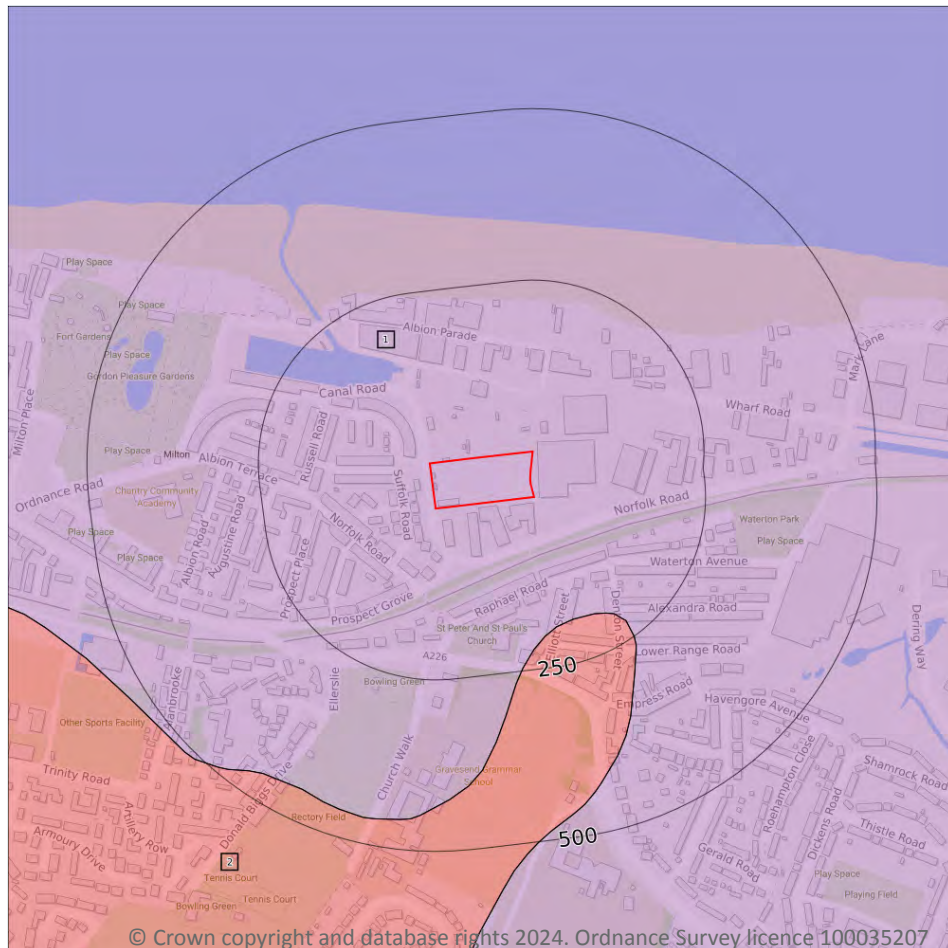


ID	Location	Designation	Description
3	233m NE	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow
4	340m SW	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
5	343m N	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type

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



Bedrock aquifer



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

5.2 Bedrock aquifer

Records within 500m

2

Aquifer status of groundwater held within bedrock geology.

Features are displayed on the Bedrock aquifer map on [page 70](#) >

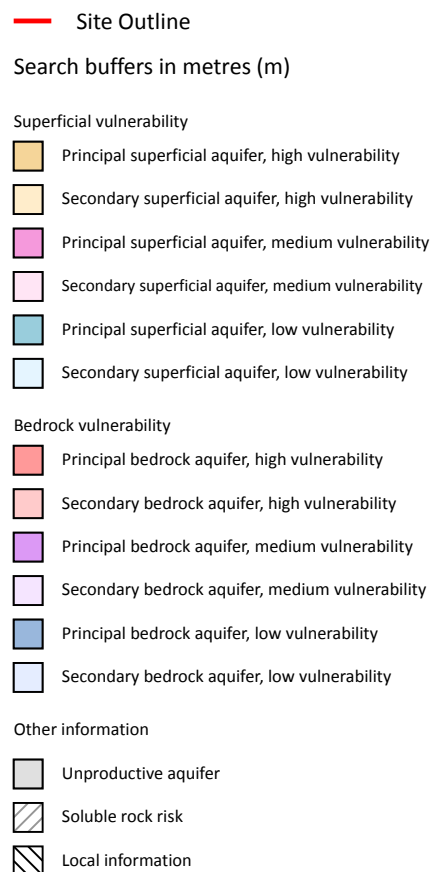
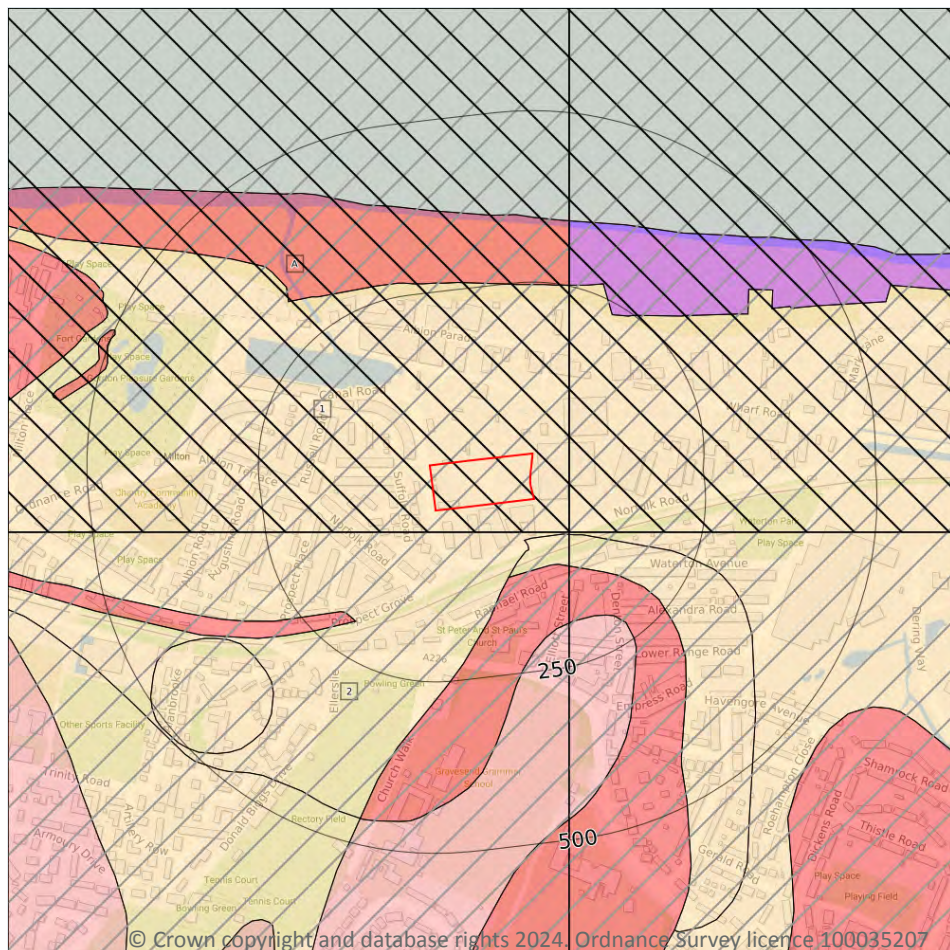
ID	Location	Designation	Description
1	On site	Principal	Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers
2	187m SE	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers



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



Groundwater vulnerability



5.3 Groundwater vulnerability

Records within 50m

2

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

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

Features are displayed on the Groundwater vulnerability map on [page 72](#) >



ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	On site	Summary Classification: Secondary superficial aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: High Infiltration value: >70% Dilution value: <300mm/year	Vulnerability: High Aquifer type: Secondary Thickness: >10m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Principal Flow mechanism: Well connected fractures
2	31m SW	Summary Classification: Secondary superficial aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Intermediate Infiltration value: >70% Dilution value: <300mm/year	Vulnerability: High Aquifer type: Secondary Thickness: <3m Patchiness value: <90% Recharge potential: Medium	Vulnerability: High Aquifer type: Principal Flow mechanism: Well connected fractures

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

5.4 Groundwater vulnerability- soluble rock risk

Records on site	1
------------------------	----------

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

ID	Maximum soluble risk category	Percentage of grid square covered by maximum risk
A	Very significant soluble rocks are likely to be present with a high possibility of localised subsidence or dissolution-related degradation of bedrock occurring naturally, especially in adverse conditions such as concentrated surface or subsurface water flow.	0.0%

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

5.5 Groundwater vulnerability- local information

Records on site	1
------------------------	----------

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

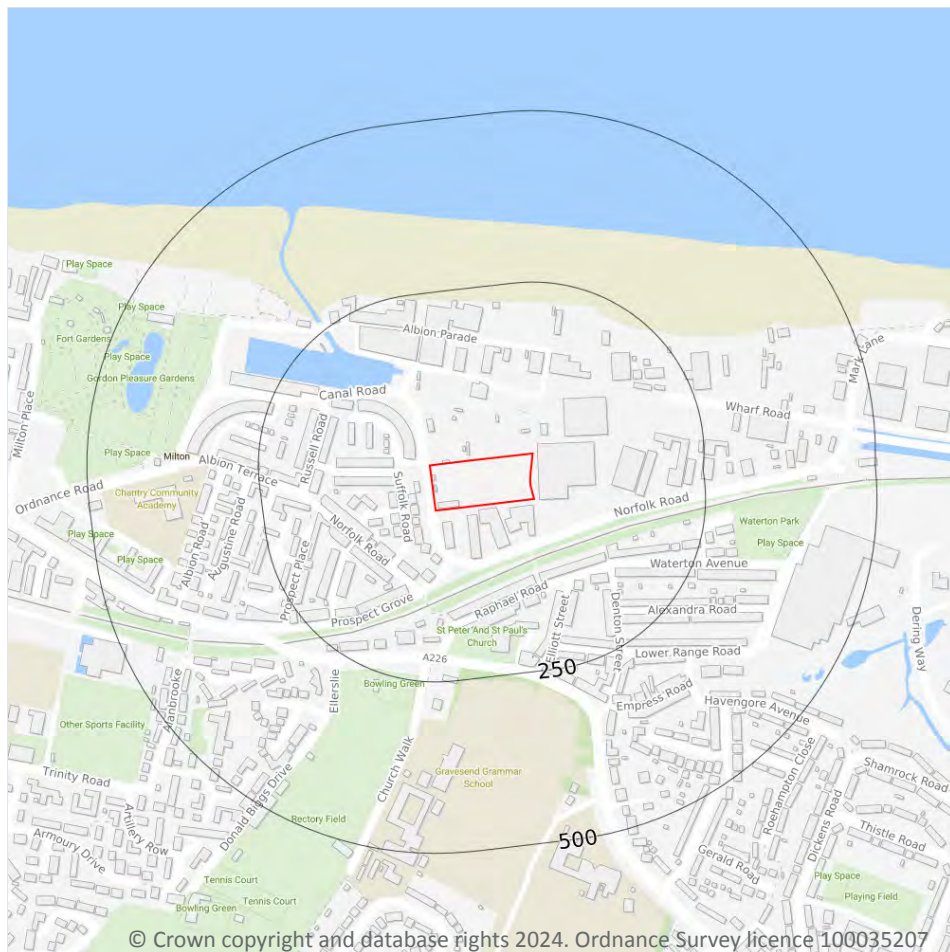


ID	Summary	Additional information
A	Potentially increased vulnerability of the bedrock aquifer due to limited cover by superficial deposits	Removal of, or limited cover of, superficial deposits within the River Thames

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



Abstractions and Source Protection Zones



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

5.6 Groundwater abstractions

Records within 2000m

6

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

Features are displayed on the Abstractions and Source Protection Zones map on [page 75 >](#)



ID	Location	Details	
-	722m E	Status: Active Licence No: 9/40/01/0508/G Details: General Washing/Process Washing Direct Source: Southern Region Groundwater Point: POINT 1, BOREHOLE AT GRAVESEND SEWAGE WORKS IN KENT. Data Type: Point Name: Southern Water Services Ltd Easting: 566670 Northing: 174000	Annual Volume (m ³): 55000 Max Daily Volume (m ³): 340 Original Application No: 169/0449 Original Start Date: 23/03/1989 Expiry Date: - Issue No: 100 Version Start Date: 27/11/2006 Version End Date: -
-	978m E	Status: Active Licence No: 9/40/01/0498/G Details: Mineral Washing Direct Source: Southern Region Groundwater Point: POINT A, S DRIFT, UNDERGROUND GRAVEL STRATA (THAMES BALLAST) Data Type: Point Name: J Clubb Ltd Easting: 566925 Northing: 174152	Annual Volume (m ³): 83969 Max Daily Volume (m ³): 336 Original Application No: NPS/WR/022001 Original Start Date: 03/05/1976 Expiry Date: - Issue No: 101 Version Start Date: 26/05/2016 Version End Date: -
-	982m E	Status: Active Licence No: 9/40/01/0498/G Details: Mineral Washing Direct Source: Southern Region Groundwater Point: BOREHOLE B, UNDERGROUND STRATA RIVER TERRACE GRAVELS Data Type: Point Name: J Clubb Ltd Easting: 566929 Northing: 174152	Annual Volume (m ³): 83969 Max Daily Volume (m ³): 336 Original Application No: NPS/WR/022001 Original Start Date: 03/05/1976 Expiry Date: - Issue No: 101 Version Start Date: 26/05/2016 Version End Date: -
-	1013m E	Status: Historical Licence No: 9/40/01/0498/G Details: Mineral Washing Direct Source: Southern Region Groundwater Point: POINT A, S DRIFT, UNDERGROUND GRAVEL STRATA (THAMES BALLAST) Data Type: Point Name: J Clubb Ltd Easting: 566960 Northing: 174120	Annual Volume (m ³): 33186 Max Daily Volume (m ³): 91 Original Application No: - Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 01/04/2008 Version End Date: -



ID	Location	Details	
-	1065m SW	Status: Active Licence No: 9/40/01/0511/G Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: BOREHOLES, ADITS AND CATCHPITS AT WINDMILL HILL PS Data Type: Poly4 Name: Southern Water Services Ltd Easting: 565060 Northing: 173270	Annual Volume (m ³): 17700000 Max Daily Volume (m ³): 92000 Original Application No: 169/0639D Original Start Date: 24/03/1986 Expiry Date: - Issue No: 100 Version Start Date: 27/11/2006 Version End Date: -
-	1904m N	Status: Historical Licence No: 8/37/56/*G/0084 Details: Make-Up or Top Up Water Direct Source: GROUND WATER SOURCE OF SUPPLY Point: BOREHOLE AT TILBURY POWER STN Data Type: Point Name: RWE INNOGY PLC Easting: 565760 Northing: 176010	Annual Volume (m ³): 4000 Max Daily Volume (m ³): 18 Original Application No: - Original Start Date: 16/09/1996 Expiry Date: - Issue No: 103 Version Start Date: 01/10/2003 Version End Date: -

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

5.7 Surface water abstractions

Records within 2000m	2
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Licensed surface water abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, a stretch of watercourse or a larger area.

Features are displayed on the Abstractions and Source Protection Zones map on [page 75 >](#)

ID	Location	Details	
-	1519m E	Status: Active Licence No: SO/040/0001/001/R01 Details: General Use Relating To Secondary Category (Very Low Loss) Direct Source: Southern Region Surface Waters Point: DENTON NEW CUT-CANAL RESTORATION Data Type: Point Name: GRAVESHAM BOROUGH COUNCIL Easting: 567468 Northing: 174076	Annual Volume (m ³): 50000 Max Daily Volume (m ³): 1728 Original Application No: NPS/WR/017300 Original Start Date: 01/04/2015 Expiry Date: 31/03/2024 Issue No: 1 Version Start Date: 01/04/2015 Version End Date: -



ID	Location	Details	
-	1519m E	Status: Historical Licence No: SO/040/0001/001 Details: General Use Relating To Secondary Category (Very Low Loss) Direct Source: Southern Region Surface Waters Point: DENTON NEW CUT-CANAL RESTORATION Data Type: Point Name: GRAVESHAM BOROUGH COUNCIL Easting: 567468 Northing: 174076	Annual Volume (m ³): 175000 Max Daily Volume (m ³): 1728 Original Application No: - Original Start Date: 18/12/2009 Expiry Date: 31/03/2015 Issue No: 1 Version Start Date: 18/12/2009 Version End Date: -

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

5.8 Potable abstractions

Records within 2000m	1
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Licensed potable water abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, a stretch of watercourse or a larger area.

Features are displayed on the Abstractions and Source Protection Zones map on [page 75 >](#)

ID	Location	Details	
-	1065m SW	Status: Active Licence No: 9/40/01/0511/G Details: Potable Water Supply - Direct Direct Source: Southern Region Groundwater Point: BOREHOLES, ADITS AND CATCHPITS AT WINDMILL HILL PS Data Type: Poly4 Name: Southern Water Services Ltd Easting: 565060 Northing: 173270	Annual Volume (m ³): 17700000 Max Daily Volume (m ³): 92000 Original Application No: 169/0639D Original Start Date: 24/03/1986 Expiry Date: - Issue No: 100 Version Start Date: 27/11/2006 Version End Date: -

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

5.9 Source Protection Zones

Records within 500m	0
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Source Protection Zones define the sensitivity of an area around a potable abstraction site to contamination.

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



5.10 Source Protection Zones (confined aquifer)

Records within 500m

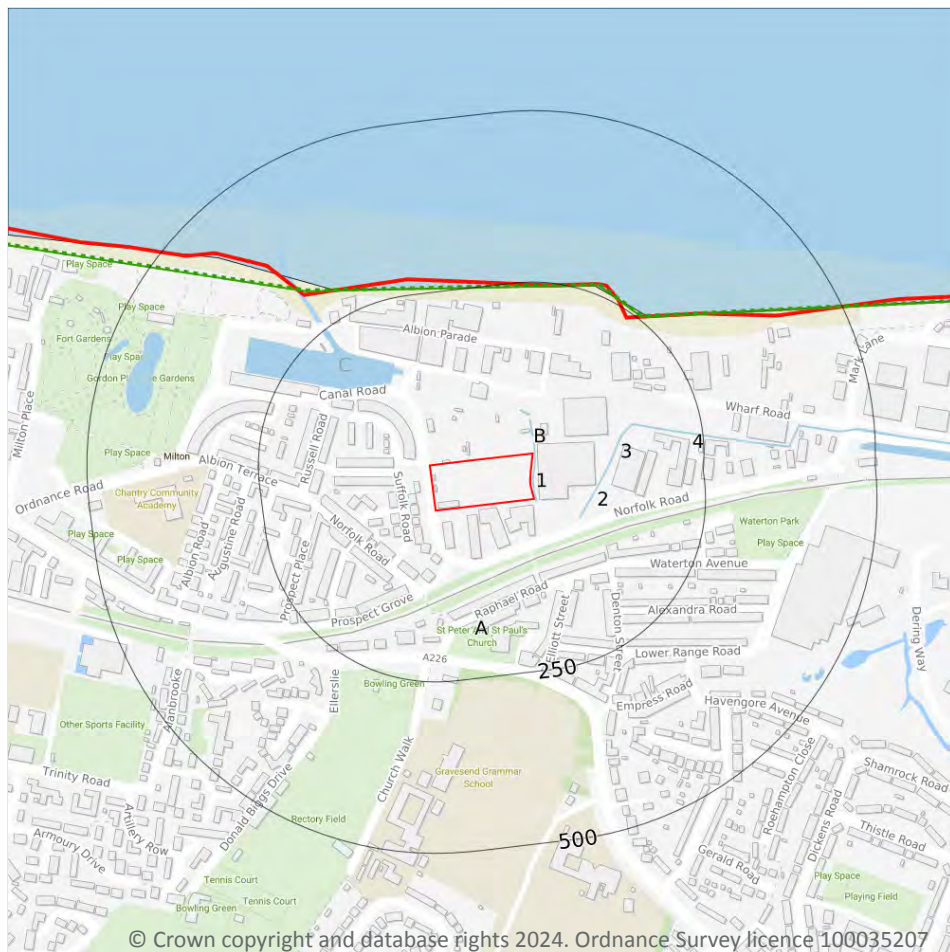
0

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

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



6 Hydrology



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

6.1 Water Network (OS MasterMap)

Records within 250m

9

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

Features are displayed on the Hydrology map on [page 80 >](#)

ID	Location	Type of water feature	Ground level	Permanence	Name
1	2m E	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-



ID	Location	Type of water feature	Ground level	Permanence	Name
B	24m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
B	57m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
B	57m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse may not contain water all year round	-
2	71m E	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
3	113m E	Inland river not influenced by normal tidal action.	Not provided	Watercourse contains water year round (in normal circumstances)	-
4	151m E	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
C	191m NW	Lake, loch or reservoir.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
C	228m NW	Lock or flight of locks. An enclosure in a canal or navigable river with gates and sluices at either end.	On ground surface	Watercourse contains water year round (in normal circumstances)	-

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m

3

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

Features are displayed on the Hydrology map on [page 80](#) >

This data is sourced from the Ordnance Survey.



6.3 WFD Surface water body catchments

Records on site

1

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

Features are displayed on the Hydrology map on [page 80 >](#)

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
A	On site	Coastal Catchment	Not part of a river WB catchment	130	Lower Medway	Medway

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

6.4 WFD Surface water bodies

Records identified

1

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

Features are displayed on the Hydrology map on [page 80 >](#)

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
5	243m N	Transi	THAMES MIDDLE	GB530603911402 ↗	Moderate	Fail	Moderate	2019

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

6.5 WFD Groundwater bodies

Records on site

1

Groundwater bodies are also covered by the Directive and the same regime of objectives and reporting detailed in the previous section is in place. Click on the water body ID in the table to visit the EA Catchment Explorer to find out more about each groundwater body listed.

Features are displayed on the Hydrology map on [page 80 >](#)

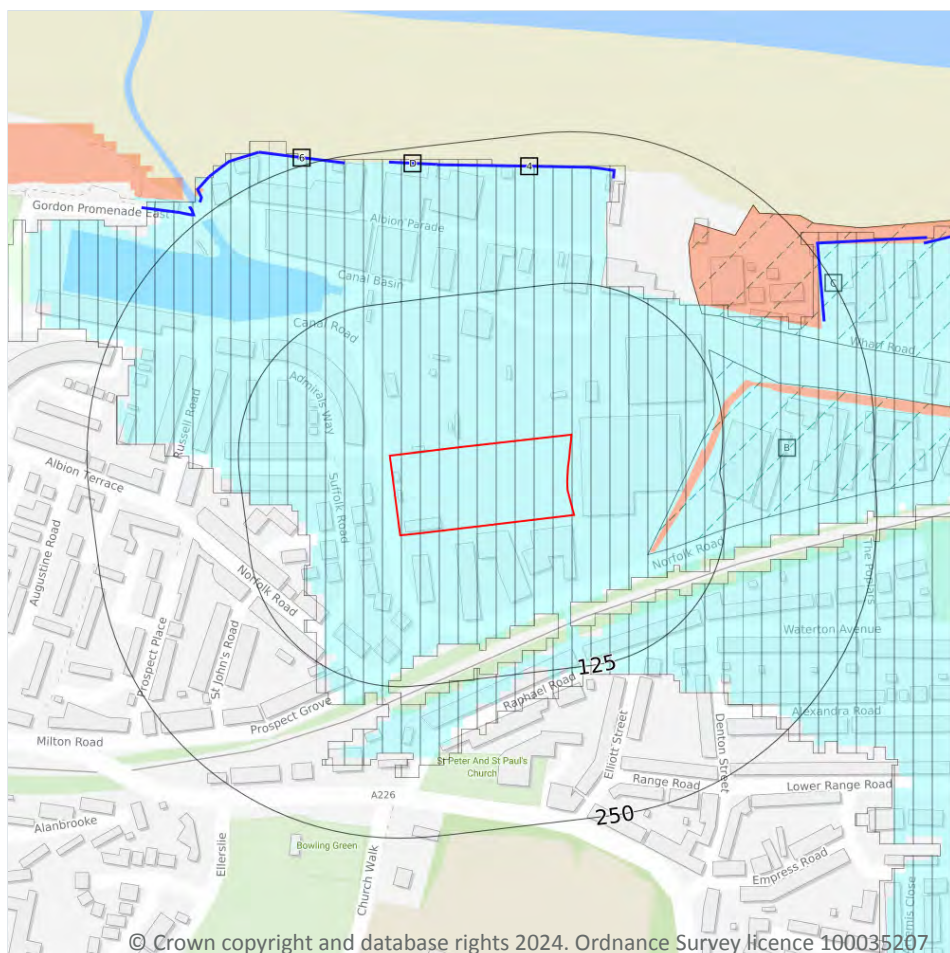


ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
A	On site	North Kent Medway Chalk	GB40601G500300 ↗	Poor	Poor	Poor	2019

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



7 River and coastal flooding



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

7.1 Risk of flooding from rivers and the sea

Records within 50m

1

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

Features are displayed on the River and coastal flooding map on [page 84 >](#)



Distance	Flood risk category
On site	Low
0 - 50m	Low

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

7.2 Historical Flood Events

Records within 250m	2
----------------------------	----------

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

Features are displayed on the River and coastal flooding map on [page 84](#) >

ID	Location	Event name	Date of flood	Flood source	Flood cause	Type of flood
B	69m E	07337e200_Sept1968_Darent_Dartford	1968-09-14 1968-09-14	Main river	Channel capacity exceeded (no raised defences)	Fluvial
C	147m NE	07301e900_Feb1953_Dartford Creek_Denton	1953-01-31 1953-02-01	Sea	Overtopping of defences	Tidal

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

7.3 Flood Defences

Records within 250m	4
----------------------------	----------

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

Features are displayed on the River and coastal flooding map on [page 84](#) >

ID	Location	Update
4	214m NE	08/11/2022
C	229m NE	08/11/2022
D	234m N	08/11/2022
6	244m NW	08/11/2022



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

7.4 Areas Benefiting from Flood Defences

Records within 250m

1

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

Features are displayed on the River and coastal flooding map on [page 84](#) >

ID	Location	
A	On site	Area benefiting from flood defences

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

7.5 Flood Storage Areas

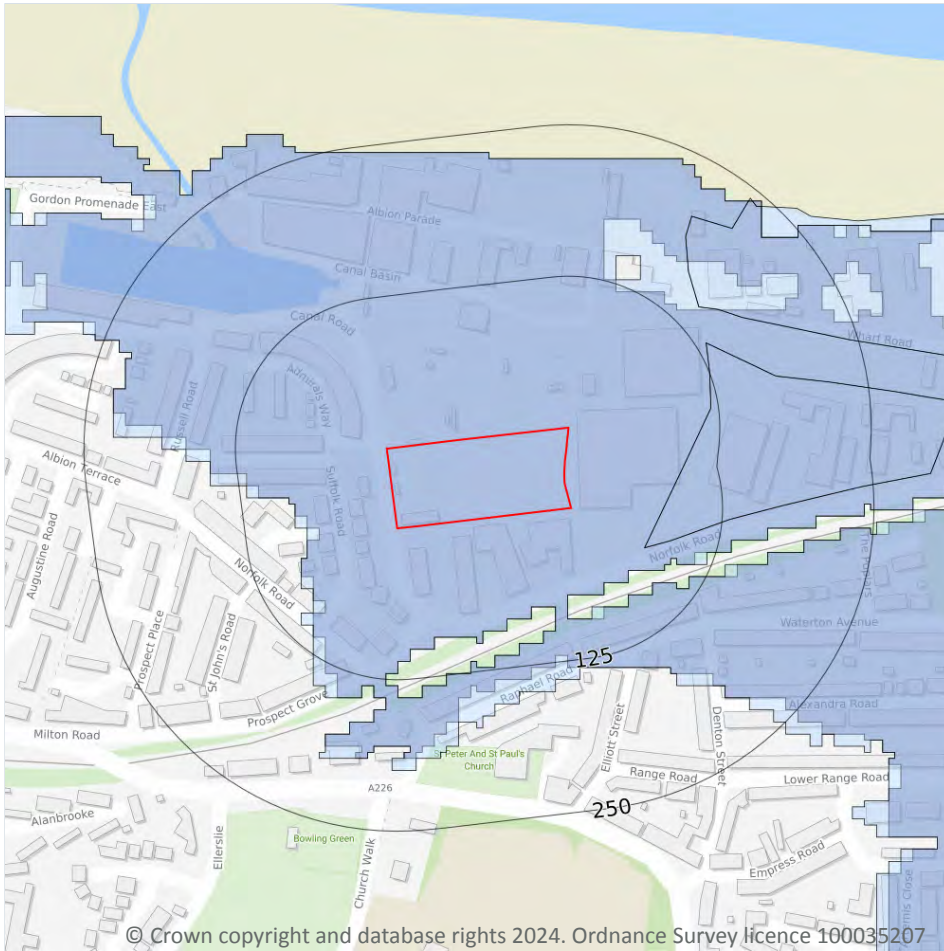
Records within 250m

0

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

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

River and coastal flooding - Flood Zones



- Site Outline
- Search buffers in metres (m)
- Flood zone 2
- Flood zone 3

7.6 Flood Zone 2

Records within 50m

1

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

Features are displayed on the River and coastal flooding map on [page 84](#) >

Location	Type
On site	Zone 2 - (Fluvial /Tidal Models)

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

7.7 Flood Zone 3

Records within 50m

1

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

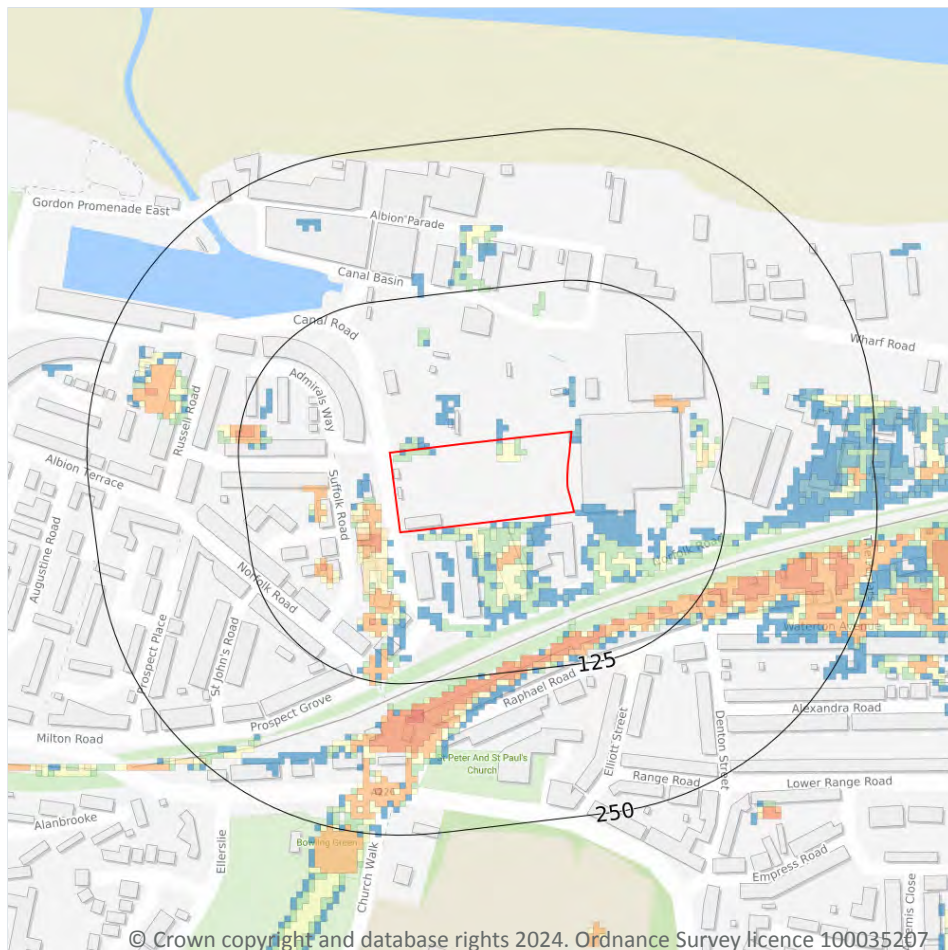
Features are displayed on the River and coastal flooding map on [page 84](#) >

Location	Type
On site	Zone 3 - (Fluvial Models)

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



8 Surface water flooding



— Site Outline

Search buffers in metres (m)

1 in 1000 return period

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

1 in 250 return period

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

1 in 100 return period

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

1 in 30 return period

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

8.1 Surface water flooding

Highest risk on site

1 in 100 year, 0.1m - 0.3m

Highest risk within 50m

1 in 30 year, 0.3m - 1.0m

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

Features are displayed on the Surface water flooding map on [page 89](#) >

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

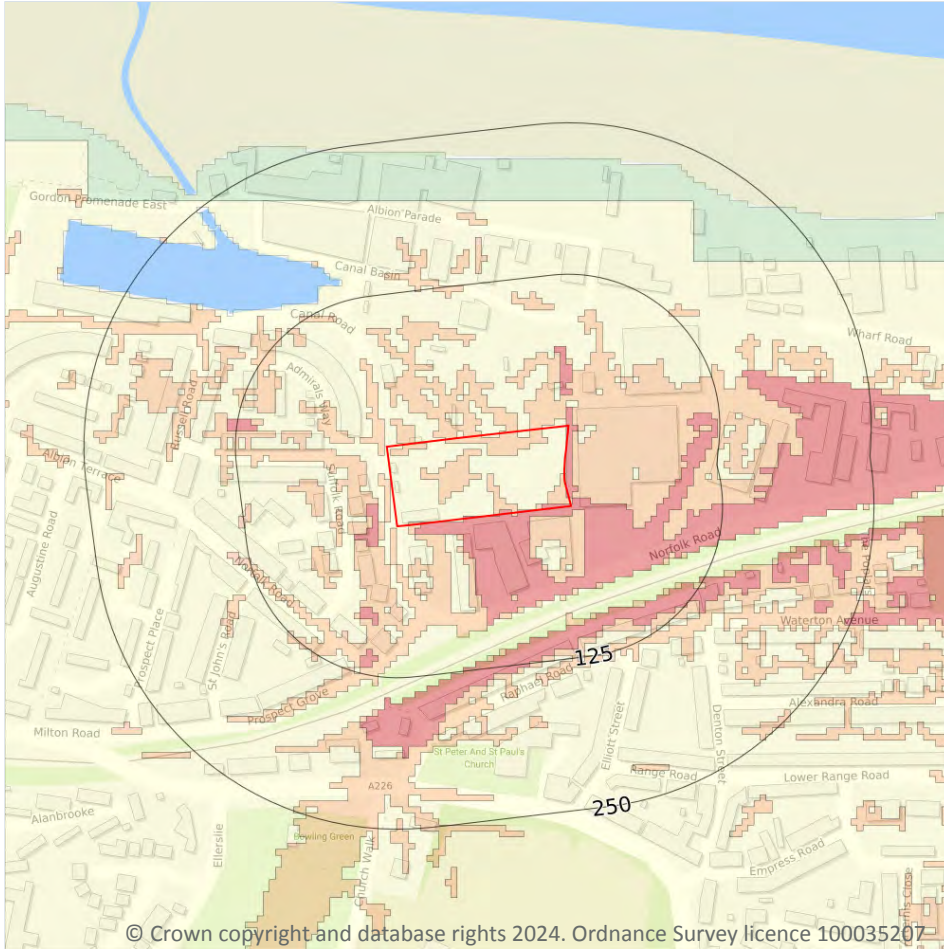
The table below shows the maximum flood depths for a range of return periods for the site.

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

This data is sourced from Ambiantal Risk Analytics.



9 Groundwater flooding



— Site Outline
Search buffers in metres (m)

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

9.1 Groundwater flooding

Highest risk on site

High

Highest risk within 50m

High

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

Features are displayed on the Groundwater flooding map on [page 91](#) >

This data is sourced from Ambiental Risk Analytics.

10 Environmental designations



- Site Outline
- Search buffers in metres (m)
- Sites of Special Scientific Interest (SSSI)
- X Conserved wetland sites (Ramsar sites)
- Green Belt

10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m

1

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

Features are displayed on the Environmental designations map on [page 92](#) >

ID	Location	Name	Data source
1	1130m E	South Thames Estuary and Marshes	Natural England



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

10.2 Conserved wetland sites (Ramsar sites)

Records within 2000m

1

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

Features are displayed on the Environmental designations map on [page 92 >](#)

ID	Location	Site	Details
-	1345m E	Name: Thames Estuary & Marshes Site status: Listed Data source: Natural England	Overview: A complex of brackish, floodplain grazing marsh ditches, saline lagoons and intertidal saltmarsh and mudflat. These habitats together support internationally important numbers of wintering waterfowl. The saltmarsh and grazing marsh are of international importance for their diverse assemblages of wetland plants and invertebrates. Ramsar criteria: Ramsar criterion 2 The site supports one endangered plant species and at least 14 nationally scarce plants of wetland habitats. The site also supports more than 20 British Red Data Book invertebrates.

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

10.3 Special Areas of Conservation (SAC)

Records within 2000m

0

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

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

10.4 Special Protection Areas (SPA)

Records within 2000m

0

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

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



10.5 National Nature Reserves (NNR)

Records within 2000m

0

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

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

10.6 Local Nature Reserves (LNR)

Records within 2000m

0

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

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

10.7 Designated Ancient Woodland

Records within 2000m

0

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

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

10.8 Biosphere Reserves

Records within 2000m

0

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

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

10.9 Forest Parks

Records within 2000m**0**

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

This data is sourced from the Forestry Commission.

10.10 Marine Conservation Zones

Records within 2000m**0**

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

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

10.11 Green Belt

Records within 2000m**2**

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

Features are displayed on the Environmental designations map on [page 92 >](#)

ID	Location	Name	Local Authority name
2	1324m N	London	Thurrock
4	1360m E	London	Gravesham

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

10.12 Proposed Ramsar sites

Records within 2000m**0**

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

This data is sourced from Natural England.



10.13 Possible Special Areas of Conservation (pSAC)

Records within 2000m

0

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

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

10.14 Potential Special Protection Areas (pSPA)

Records within 2000m

0

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

This data is sourced from Natural England.

10.15 Nitrate Sensitive Areas

Records within 2000m

0

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

This data is sourced from Natural England.

10.16 Nitrate Vulnerable Zones

Records within 2000m

2

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

Location	Name	Type	NVZ ID	Status
On site	COASTAL STREAMS TO LOWER THAMES NVZ	Surface Water	665	Existing

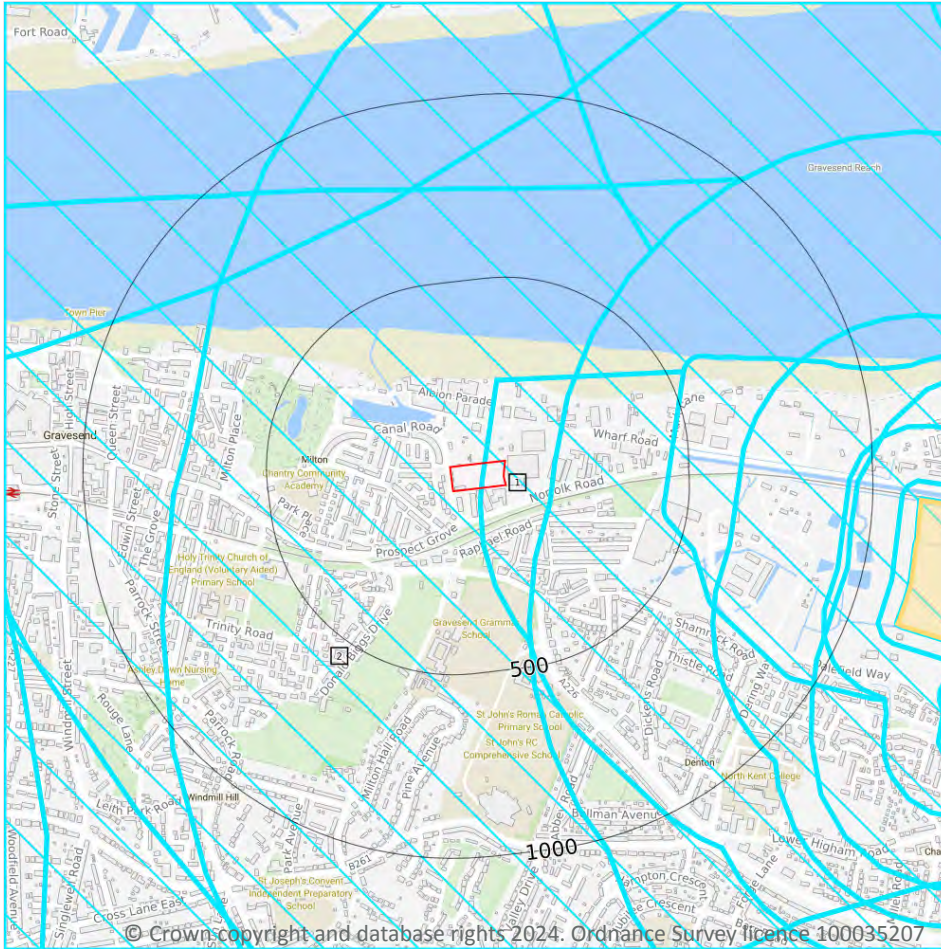


Location	Name	Type	NVZ ID	Status
On site	North Kent	Groundwater	65	Existing

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



SSSI Impact Zones and Units



- Site Outline
- Search buffers in metres (m)
- SSSI Impact Risk Zones
- SSSI Units
- Not recorded
- Favourable
- Unfavourable - Recovering
- Unfavourable - No change
- Unfavourable - Declining
- Partially destroyed
- Destroyed

10.17 SSSI Impact Risk Zones

Records on site

2

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

Features are displayed on the SSSI Impact Zones and Units map on [page 98](#) >

ID	Location	Type of developments requiring consultation
1	On site	Infrastructure - Pipelines and underground cables, pylons and overhead cables. Any transport proposal including road, rail and by water (excluding routine maintenance). Airports, helipads and other aviation proposals. Wind and Solar - Wind turbines. Minerals, Oil and Gas - Planning applications for quarries, including: new proposals, Review of Minerals Permissions (ROMP), extensions, variations to conditions etc. Oil & gas exploration/extraction. Rural non-residential - Large non residential developments outside existing settlements/urban areas where footprint exceeds 1ha. Residential - Residential development of 50 units or more. Rural residential - Any residential development of 10 or more houses outside existing settlements/urban areas. Air pollution - Any industrial/agricultural development that could cause AIR POLLUTION (incl: industrial processes, livestock & poultry units with floorspace > 500m², slurry lagoons & digestate stores > 750m², manure stores > 3500t). Combustion - General combustion processes >50MW energy input. Incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion. Waste - Landfill. Incl: inert landfill, non-hazardous landfill, hazardous landfill. Discharges - Any discharge of water or liquid waste of more than 5m³/day to ground (ie to seep away) or to surface water, such as a beck or stream. Water supply - Large infrastructure such as warehousing / industry where total net additional gross internal floorspace following development is 1,000m² or more. Notes: Strategic solutions for recreational impacts are in place. Please contact your Local Planning Authority as they have the information to advise on specific requirements.
2	On site	Infrastructure - Pipelines and underground cables, pylons and overhead cables. Any transport proposal including road, rail and by water (excluding routine maintenance). Airports, helipads and other aviation proposals. Minerals, Oil and Gas - Planning applications for quarries, including: new proposals, Review of Minerals Permissions (ROMP), extensions, variations to conditions etc. Oil & gas exploration/extraction. Rural non-residential - Large non residential developments outside existing settlements/urban areas where footprint exceeds 1ha. Rural residential - Any residential development of 100 or more houses outside existing settlements/urban areas. Air pollution - Any industrial/agricultural development that could cause AIR POLLUTION (incl: industrial processes, livestock & poultry units with floorspace > 500m², slurry lagoons & digestate stores > 750m², manure stores > 3500t). Combustion - General combustion processes >50MW energy input. Incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion. Waste - Landfill. Incl: inert landfill, non-hazardous landfill, hazardous landfill. Discharges - Any discharge of water or liquid waste of more than 5m³/day to ground (ie to seep away) or to surface water, such as a beck or stream. Water supply - Large infrastructure such as warehousing / industry where total net additional gross internal floorspace following development is 1,000m² or more. Notes: Strategic solutions for recreational impacts are in place. Please contact your Local Planning Authority as they have the information to advise on specific requirements.

This data is sourced from Natural England.



10.18 SSSI Units

Records within 2000m

1

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

Features are displayed on the SSSI Impact Zones and Units map on [page 98](#) >

ID: 23
 Location: 1130m E
 SSSI name: South Thames Estuary and Marshes
 Unit name: Westcourt And Great Clane Marshes
 Broad habitat: Neutral Grassland - Lowland
 Condition: Unfavourable - No change
 Reportable features:

Feature name	Feature condition	Date of assessment
Aggregations of breeding birds - Bearded tit, <i>Panurus biarmicus</i>	Not Recorded	01/01/1900
Aggregations of breeding birds - Garganey, <i>Anas querquedula</i>	Not Recorded	01/01/1900
Aggregations of breeding birds - Pintail, <i>Anas acuta</i>	Unfavourable - Declining	03/03/2021
Aggregations of breeding birds - Shoveler, <i>Anas clypeata</i>	Not Recorded	01/01/1900
Aggregations of non-breeding birds - Avocet, <i>Recurvirostra avosetta</i>	Favourable	02/03/2021
Aggregations of non-breeding birds - Black-tailed godwit, <i>Limosa limosa islandica</i>	Favourable	03/03/2021
Aggregations of non-breeding birds - Curlew, <i>Numenius arquata</i>	Not Recorded	01/01/1900
Aggregations of non-breeding birds - Dunlin, <i>Calidris alpina alpina</i>	Not Recorded	01/01/1900
Aggregations of non-breeding birds - Gadwall, <i>Mareca strepera</i>	Favourable	03/03/2021
Aggregations of non-breeding birds - Greenshank, <i>Tringa nebularia</i>	Not Recorded	01/01/1900
Aggregations of non-breeding birds - Grey plover, <i>Pluvialis squatarola</i>	Not Recorded	01/01/1900
Aggregations of non-breeding birds - Hen harrier, <i>Circus cyaneus</i>	Not Recorded	01/01/1900
Aggregations of non-breeding birds - Knot, <i>Calidris canutus</i>	Not Recorded	01/01/1900
Aggregations of non-breeding birds - Pintail, <i>Anas acuta</i>	Not Recorded	01/01/1900
Aggregations of non-breeding birds - Redshank, <i>Tringa totanus</i>	Unfavourable - Declining	03/03/2021
Aggregations of non-breeding birds - Ringed plover, <i>Charadrius hiaticula</i>	Favourable	03/03/2021
Aggregations of non-breeding birds - Shelduck, <i>Tadorna tadorna</i>	Not Recorded	01/01/1900

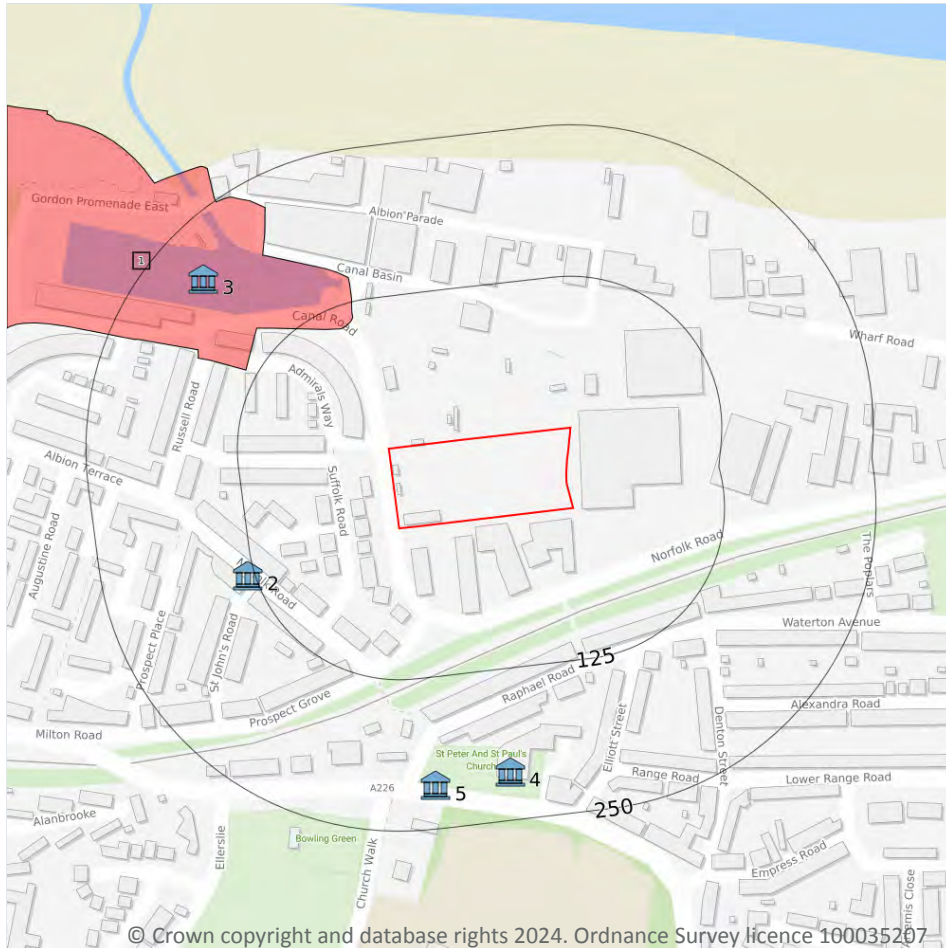


Feature name	Feature condition	Date of assessment
Aggregations of non-breeding birds - Shoveler, <i>Anas clypeata</i>	Favourable	03/03/2021
Aggregations of non-breeding birds - Teal, <i>Anas crecca</i>	Favourable	03/03/2021
Aggregations of non-breeding birds - White-fronted goose, <i>Anser albifrons</i>	Unfavourable - Declining	03/03/2021
Assemblages of breeding birds - Lowland damp grasslands	Not Recorded	01/01/1900
Ditches	Not Recorded	01/01/1900
Vascular plant assemblage	Not Recorded	01/01/1900

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



11 Visual and cultural designations



- Site Outline
- Search buffers in metres (m)
- Listed buildings
- Conservation areas
- Conservation areas - no data
- National Parks
- Areas of Outstanding Natural Beauty
- Registered parks and gardens
- Scheduled Monuments
- World Heritage Sites

11.1 World Heritage Sites

Records within 250m

0

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

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

11.2 Area of Outstanding Natural Beauty

Records within 250m**0**

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

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

11.3 National Parks

Records within 250m**0**

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

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

11.4 Listed Buildings

Records within 250m**4**

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

Features are displayed on the Visual and cultural designations map on [page 102 >](#)

ID	Location	Name	Grade	Reference Number	Listed date
2	131m SW	Pillar Box At The Junction Of Norfolk Road And St John's Road	II	1341486	03/07/1975
3	208m NW	Barrelled Lock Chamber, Sea Walls, Swing Bridge, Locks And Canal Basin	II	1393973	17/09/2010
4	210m S	Church Of St Peter And St Paul	II*	1341484	23/01/1952
5	214m S	Milton War Memorial	II	1441607	10/02/2017

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



11.5 Conservation Areas

Records within 250m

1

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

Features are displayed on the Visual and cultural designations map on [page 102 >](#)

ID	Location	Name	District	Date of designation
1	107m NW	Riverside, Gravesend	Gravesham	18/12/1980

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

11.6 Scheduled Ancient Monuments

Records within 250m

0

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

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

11.7 Registered Parks and Gardens

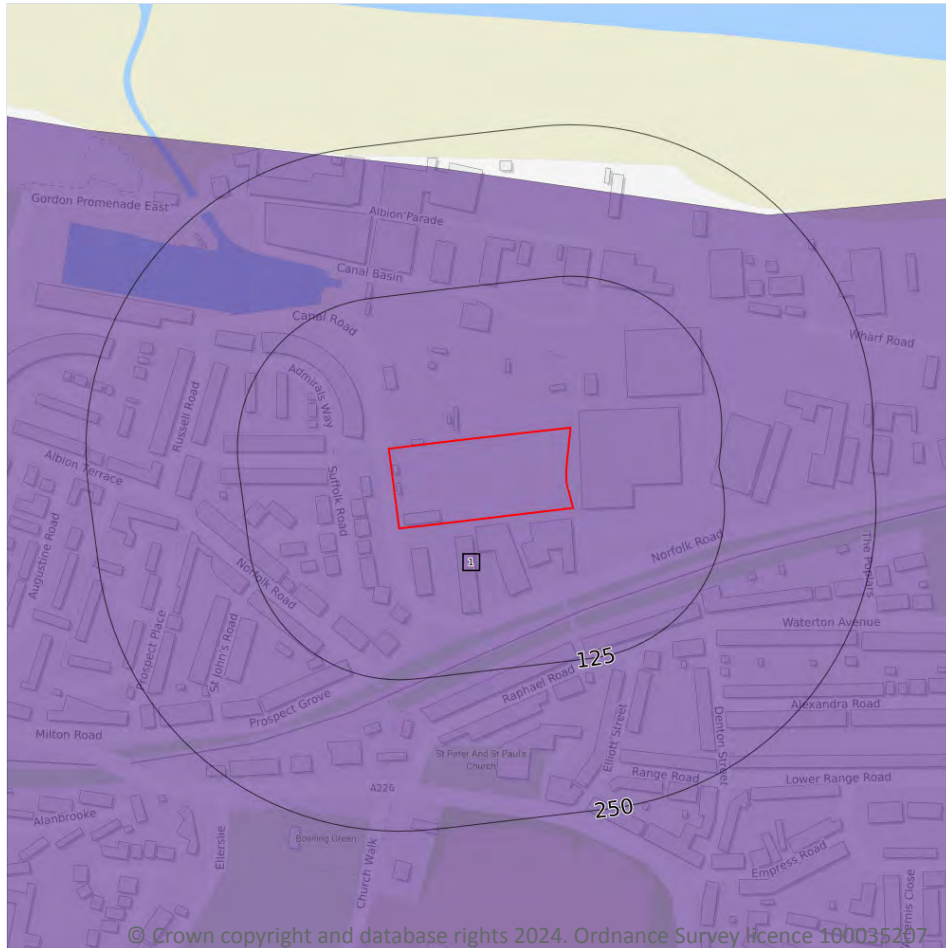
Records within 250m

0

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

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

12 Agricultural designations



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

12.1 Agricultural Land Classification

Records within 250m

1

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

Features are displayed on the Agricultural designations map on [page 105 >](#)

ID	Location	Classification	Description
1	On site	Urban	-

This data is sourced from Natural England.



12.2 Open Access Land

Records within 250m

0

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

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

12.3 Tree Felling Licences

Records within 250m

0

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

This data is sourced from the Forestry Commission.

12.4 Environmental Stewardship Schemes

Records within 250m

0

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

This data is sourced from Natural England.

12.5 Countryside Stewardship Schemes

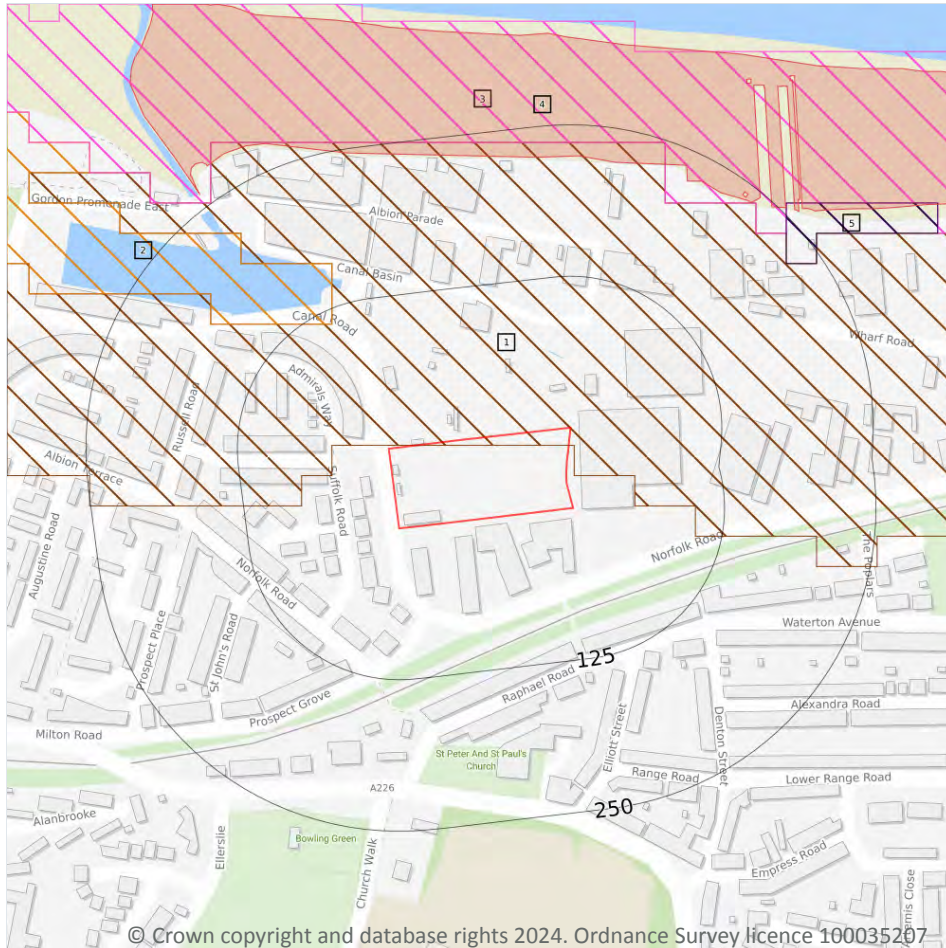
Records within 250m

0

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

This data is sourced from Natural England.

13 Habitat designations



- Site Outline
- Search buffers in metres (m)
- Priority Habitat Inventory
- Open Mosaic Habitat
- Limestone Pavement Orders
- Habitat Networks
- Primary Habitat
- Restorable Habitat
- Associated Habitats
- Habitat Restoration-Creation
- Network Enhancement Zone 1
- Network Enhancement Zone 2

13.1 Priority Habitat Inventory

Records within 250m

1

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

Features are displayed on the Habitat designations map on [page 107 >](#)

ID	Location	Main Habitat	Other habitats
4	222m NE	Mudflats	Main habitat: MUDFL (INV > 50%)

This data is sourced from Natural England.



13.2 Habitat Networks

Records within 250m**4**

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

Features are displayed on the Habitat designations map on [page 107 >](#)

ID	Location	Type	Habitat
1	On site	Network Enhancement Zone 2	Not specified
2	113m NW	Network Enhancement Zone 1	Not specified
3	201m NE	Associated Habitats	Other associated habitats
5	224m NE	Primary Habitat	Saltmarsh

This data is sourced from Natural England.

13.3 Open Mosaic Habitat

Records within 250m**0**

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

This data is sourced from Natural England.

13.4 Limestone Pavement Orders

Records within 250m**0**

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

This data is sourced from Natural England.



14 Geology 1:10,000 scale - Availability



- Site Outline**
- Search buffers in metres (m)
- Full coverage
 - Partial coverage
 - No coverage

14.1 10k Availability

Records within 500m

1

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

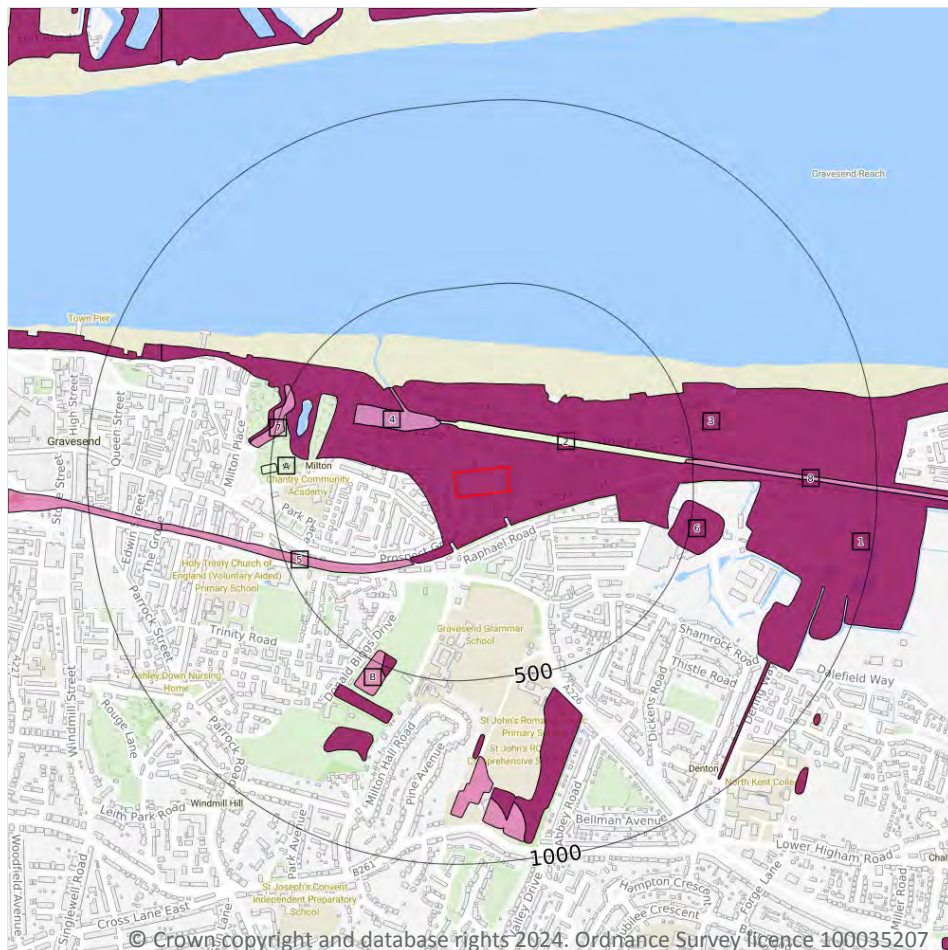
Features are displayed on the Geology 1:10,000 scale - Availability map on [page 109](#) >

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	Full	Full	Full	No coverage	TQ67SE

This data is sourced from the British Geological Survey.



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



— Site Outline
Search buffers in metres (m)

- Reclaimed ground
- Made ground
- Worked ground
- Infilled ground
- Disturbed ground
- Landscaped ground

14.2 Artificial and made ground (10k)

Records within 500m

12

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

Features are displayed on the Geology 1:10,000 scale - Artificial and made ground map on [page 110](#) >

ID	Location	LEX Code	Description	Rock description
1	On site	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
2	81m NE	WMGR-ARTDP	Infilled Ground	Artificial Deposit
3	103m NE	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
4	136m NW	WGR-VOID	Worked Ground (Undivided)	Void

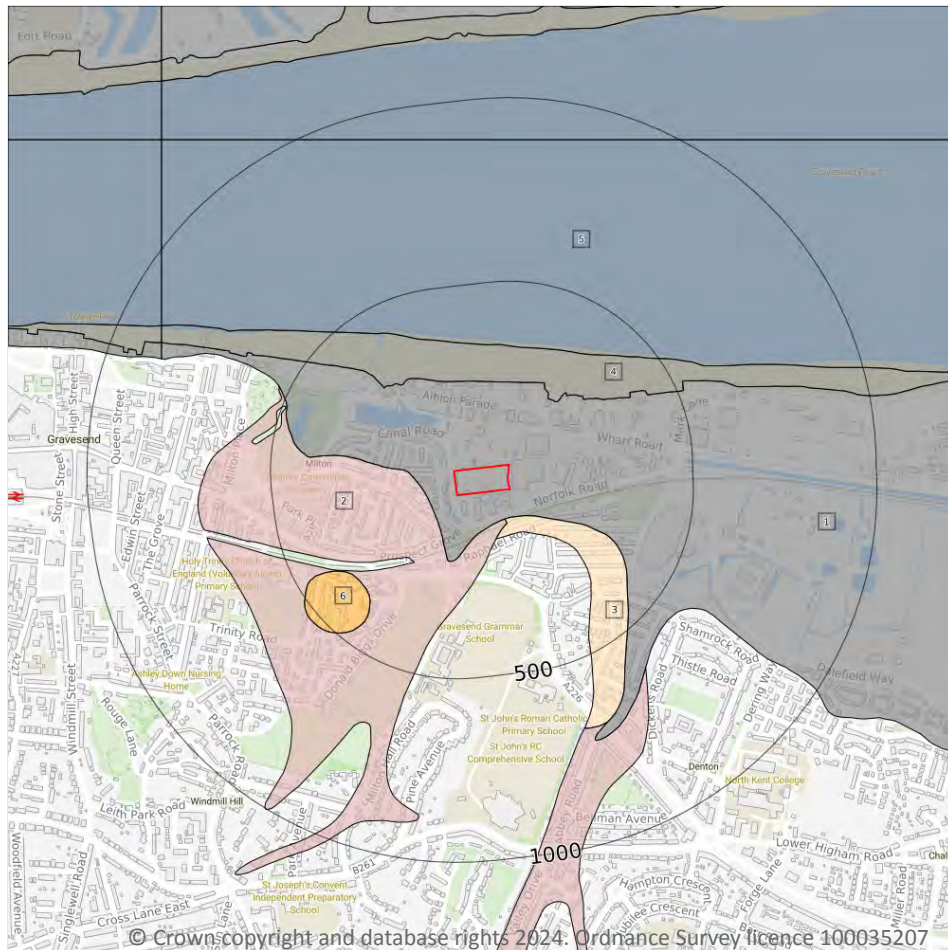


ID	Location	LEX Code	Description	Rock description
5	215m SW	WGR-VOID	Worked Ground (Undivided)	Void
6	447m E	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
A	449m W	WMGR-ARTDP	Infilled Ground	Artificial Deposit
B	467m SW	WGR-VOID	Worked Ground (Undivided)	Void
B	468m SW	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
7	471m W	WGR-VOID	Worked Ground (Undivided)	Void
8	479m E	WGR-VOID	Worked Ground (Undivided)	Void
A	481m W	WMGR-ARTDP	Infilled Ground	Artificial Deposit

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (10k)

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

14.3 Superficial geology (10k)

Records within 500m

6

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

Features are displayed on the Geology 1:10,000 scale - Superficial map on [page 112 >](#)

ID	Location	LEX Code	Description	Rock description
1	On site	ALV-Z	Alluvium - Silt (unlithified Deposits Coding Scheme)	Silt
2	76m SW	HEAD-DMTN	Head - Diamicton	Diamicton
3	77m SE	TPGR-XSV	Taplow Gravel Formation - Sand And Gravel	Sand And Gravel



ID	Location	LEX Code	Description	Rock description
4	209m NE	TRD-Z	Tidal River Or Creek Deposits - Silt	Silt
5	322m N	ALV-Z	Alluvium - Silt (unlithified Deposits Coding Scheme)	Silt
6	353m SW	LHGR-XSV	Lynch Hill Gravel Member - Sand And Gravel	Sand And Gravel

This data is sourced from the British Geological Survey.

14.4 Landslip (10k)

Records within 500m

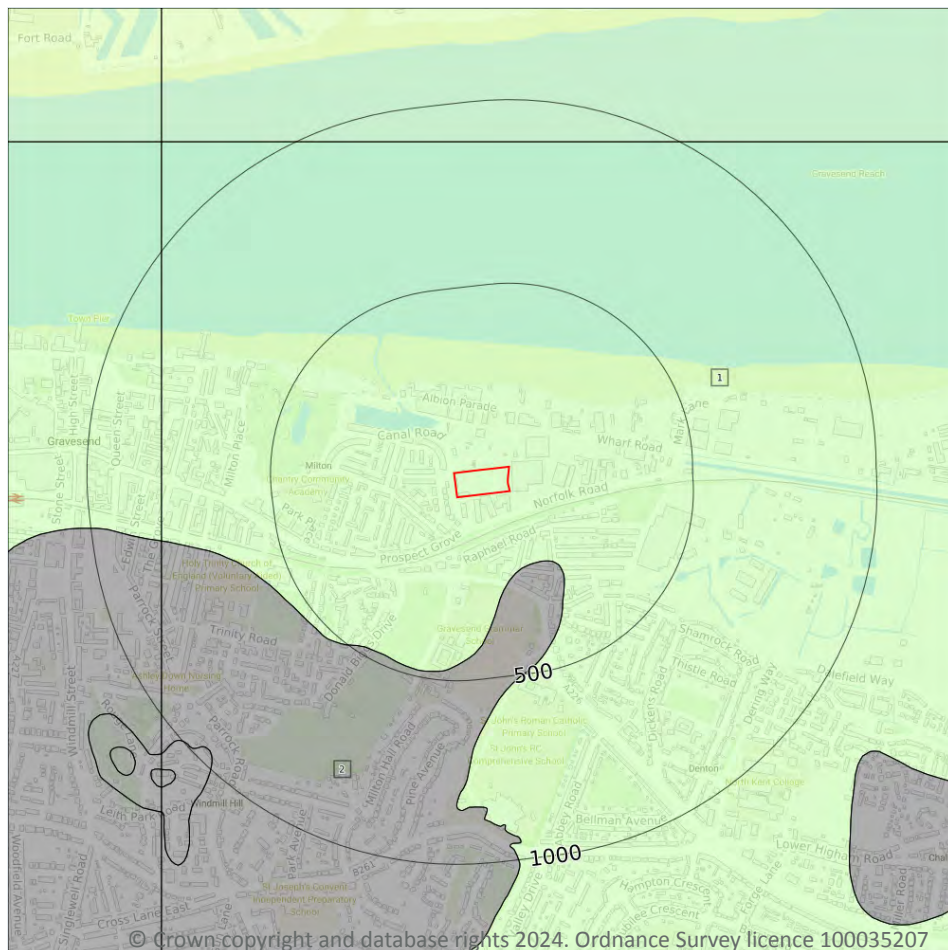
0

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

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Bedrock



— Site Outline

Search buffers in metres (m)

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

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

14.5 Bedrock geology (10k)

Records within 500m

2

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

Features are displayed on the Geology 1:10,000 scale - Bedrock map on [page 114](#) >

ID	Location	LEX Code	Description	Rock age
1	On site	SECK-CHLK	Seafood Chalk Formation - Chalk	Santonian Age - Coniacian Age
2	207m SE	TAB-SANDU	Thanet Sand Formation - Sand	Thanetian Age

This data is sourced from the British Geological Survey.



14.6 Bedrock faults and other linear features (10k)

Records within 500m

0

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

This data is sourced from the British Geological Survey.



15 Geology 1:50,000 scale - Availability



— Site Outline

Search buffers in metres (m)

□ Geological map tile

15.1 50k Availability

Records within 500m

1

An indication on the coverage of 1:50,000 scale geology data for the site. Either 'Full' or 'No coverage' for each geological theme.

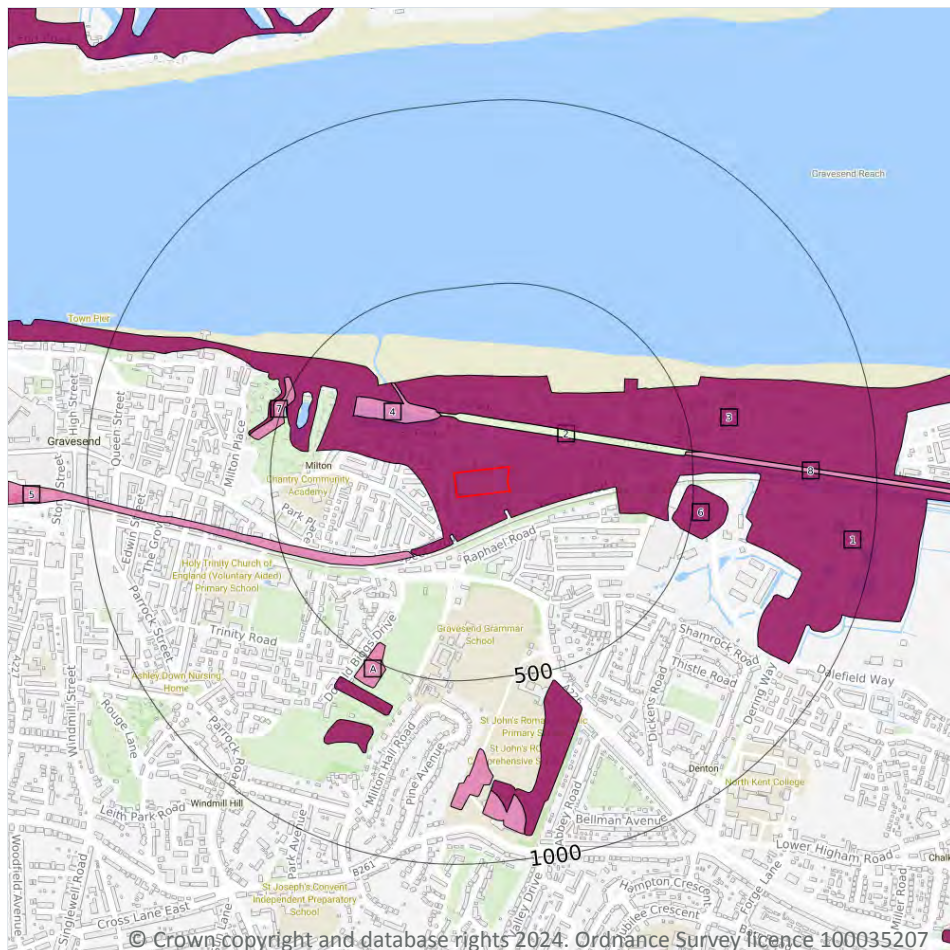
Features are displayed on the Geology 1:50,000 scale - Availability map on [page 116](#) >

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	Full	Full	Full	Full	EW271_dartford_v4

This data is sourced from the British Geological Survey.



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



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

15.2 Artificial and made ground (50k)

Records within 500m

9

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

Features are displayed on the Geology 1:50,000 scale - Artificial and made ground map on [page 117](#) >

ID	Location	LEX Code	Description	Rock description
1	On site	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT
2	102m NE	WMGR-ARTDP	INFILLED GROUND	ARTIFICIAL DEPOSIT
3	124m NE	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT
4	156m NW	WGR-VOID	WORKED GROUND (UNDIVIDED)	VOID



ID	Location	LEX Code	Description	Rock description
5	198m SW	WGR-VOID	WORKED GROUND (UNDIVIDED)	VOID
A	448m SW	WGR-VOID	WORKED GROUND (UNDIVIDED)	VOID
6	448m E	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT
7	479m NW	WGR-VOID	WORKED GROUND (UNDIVIDED)	VOID
8	480m E	WGR-VOID	WORKED GROUND (UNDIVIDED)	VOID

This data is sourced from the British Geological Survey.

15.3 Artificial ground permeability (50k)

Records within 50m	1
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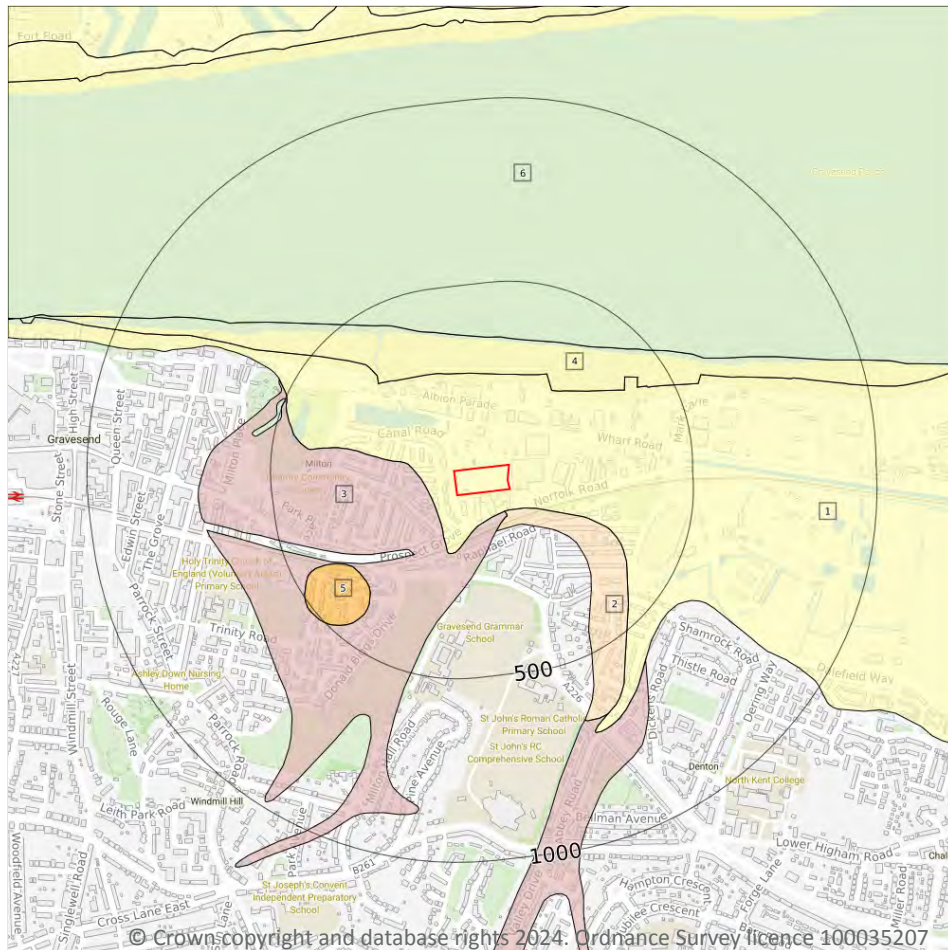
A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any artificial deposits (the zone between the land surface and the water table).

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

This data is sourced from the British Geological Survey.



Geology 1:50,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (50k)

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

15.4 Superficial geology (50k)

Records within 500m

6

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

Features are displayed on the Geology 1:50,000 scale - Superficial map on [page 119](#) >

ID	Location	LEX Code	Description	Rock description
1	On site	ALV-XCZSP	ALLUVIUM	CLAY, SILT, SAND AND PEAT
2	56m SE	TPGR-XSV	TAPLOW GRAVEL MEMBER	SAND AND GRAVEL
3	58m SE	HEAD-XCZSV	HEAD	CLAY, SILT, SAND AND GRAVEL



ID	Location	LEX Code	Description	Rock description
4	233m NE	TRD-XCZ	TIDAL RIVER OR CREEK DEPOSITS	CLAY AND SILT
5	340m SW	LHGR-XSV	LYNCH HILL GRAVEL MEMBER	SAND AND GRAVEL
6	343m N	ALV-XCZSP	ALLUVIUM	CLAY, SILT, SAND AND PEAT

This data is sourced from the British Geological Survey.

15.5 Superficial permeability (50k)

Records within 50m **1**

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

Location	Flow type	Maximum permeability	Minimum permeability
On site	Intergranular	Moderate	Very Low

This data is sourced from the British Geological Survey.

15.6 Landslip (50k)

Records within 500m **0**

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

This data is sourced from the British Geological Survey.

15.7 Landslip permeability (50k)

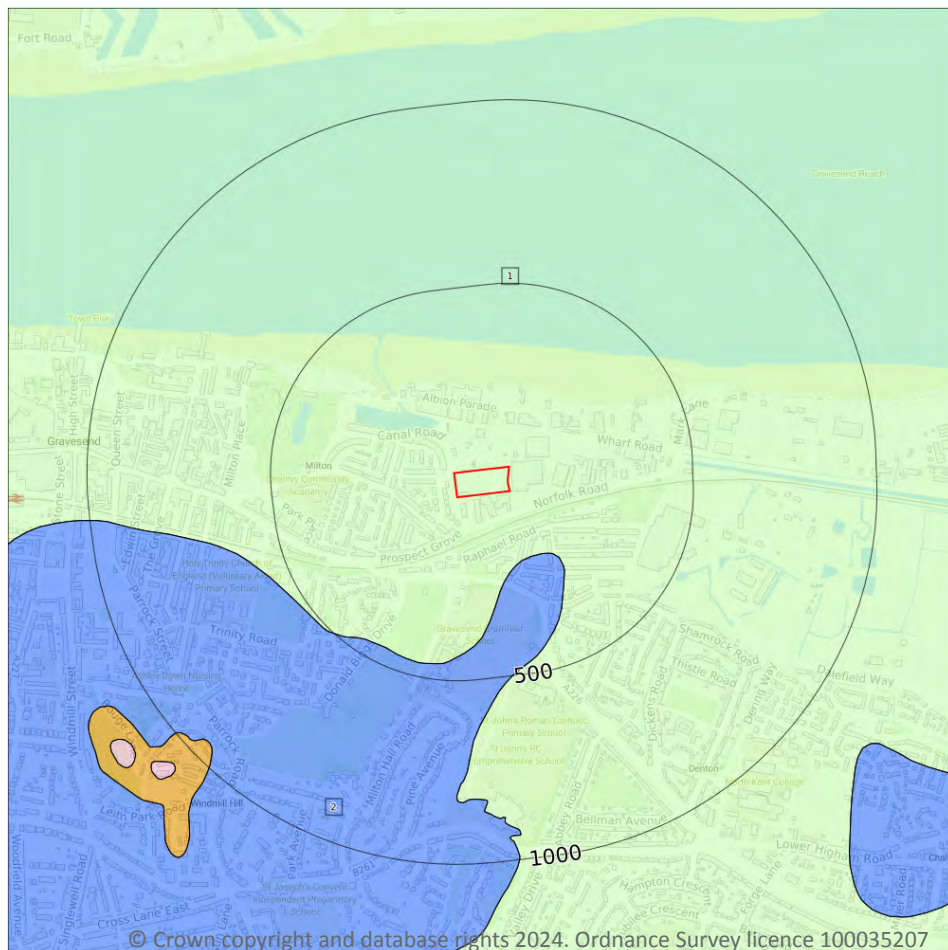
Records within 50m **0**

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

This data is sourced from the British Geological Survey.



Geology 1:50,000 scale - Bedrock



— Site Outline

Search buffers in metres (m)

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

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

15.8 Bedrock geology (50k)

Records within 500m

2

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

Features are displayed on the Geology 1:50,000 scale - Bedrock map on [page 121](#) >

ID	Location	LEX Code	Description	Rock age
1	On site	LSNCK-CHLK	LEWES NODULAR CHALK FORMATION, SEAFOOD CHALK FORMATION AND NEWHAVEN CHALK FORMATION (UNDIFFERENTIATED) - CHALK	TURONIAN
2	187m SE	TAB-S	THANET FORMATION - SAND	THANETIAN

This data is sourced from the British Geological Survey.



15.9 Bedrock permeability (50k)

Records within 50m**1**

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

Location	Flow type	Maximum permeability	Minimum permeability
On site	Fracture	Very High	Very High

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

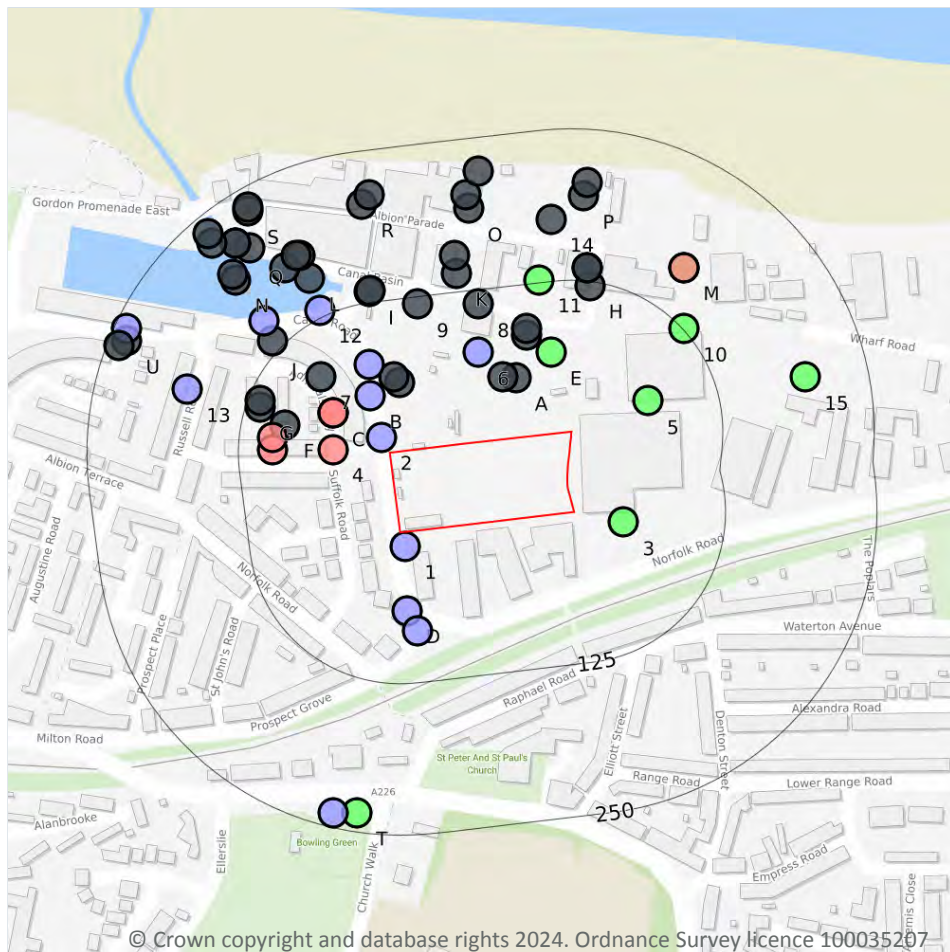
Records within 500m**0**

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

This data is sourced from the British Geological Survey.



16 Boreholes



— Site Outline
Search buffers in metres (m)

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

16.1 BGS Boreholes

Records within 250m

69

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

Features are displayed on the Boreholes map on [page 123](#) >

ID	Location	Grid reference	Name	Length	Confidential	Web link
1	12m SW	565810 174020	NORFOLD ROAD CANAL ROAD LINK TP 4	2.5	N	725698 ↗
2	15m NW	565790 174110	NORFOLD ROAD CANAL ROAD LINK TP 2	2.75	N	725696 ↗
3	42m E	565990 174040	GRAVESEND 3	17.07	N	725619 ↗



ID	Location	Grid reference	Name	Length	Confidential	Web link
4	47m W	565750 174100	GENERATING STATION GRAVESEND	279.5	N	725560 ↗
A	49m N	565901 174159	LAND EAST OF CANAL BASIN GRAVESEND 105	-	Y	N/A
B	49m NW	565781 174144	NORFOLK-CANAL RD MILTON 2	7.0	N	725614 ↗
A	52m N	565890 174160	CANAL BASIN GRAVESEND 105	-	Y	N/A
B	56m NW	565805 174155	LAND EAST OF CANAL BASIN GRAVESEND 104	-	Y	N/A
C	57m NW	565750 174130	ELECTRIC LIGHT STATION	45.72	N	725561 ↗
C	57m NW	565750 174130	ELECTRIC LIGHT STATION	76.81	N	725563 ↗
B	62m NW	565800 174160	CANAL BASIN GRAVESEND 104	-	Y	N/A
D	65m SW	565811 173967	NORFOLK-CANAL RD MILTON 1	5.0	N	725613 ↗
E	67m NE	565930 174180	GRAVESEND 2	14.63	N	725618 ↗
5	68m NE	566010 174140	GRAVESEND 4	12.5	N	725620 ↗
6	74m N	565870 174180	GRAVESEND GAS WORKS	9.14	N	725565 ↗
B	75m NW	565780 174170	NORFOLD ROAD CANAL ROAD LINK TP 1	2.4	N	725695 ↗
D	83m SW	565820 173950	NORFOLD ROAD CANAL ROAD LINK TP 3	2.0	N	725697 ↗
E	83m N	565910 174194	LAND EAST OF CANAL BASIN GRAVESEND 108	-	Y	N/A
7	85m NW	565740 174160	CANAL BASIN GRAVESEND TP 153	-	Y	N/A
E	89m N	565910 174200	CANAL BASIN GRAVESEND 108	-	Y	N/A
F	90m W	565710 174120	CANAL BASIN GRAVESEND TP 154	-	Y	N/A
F	97m W	565700 174100	ELECTRIC LIGHT STATION	36.57	N	725562 ↗
F	98m W	565700 174110	GENERATAING STATION GRAVESEND	91.44	N	725564 ↗
8	113m N	565870 174220	CANAL BASIN GRAVESEND TP 162	-	Y	N/A
G	113m W	565690 174135	LAND EAST OF CANAL BASIN GRAVESEND 103	-	Y	N/A
G	115m W	565690 174140	CANAL BASIN GRAVESEND 103	-	Y	N/A
9	119m N	565820 174220	CANAL BASIN GRAVESEND TP 161	-	Y	N/A
H	121m NE	565962 174235	LAND EAST OF CANAL BASIN GRAVESEND WP128/128A	-	Y	N/A
10	126m NE	566040 174200	GRAVESEND 5	12.64	N	725621 ↗
11	128m N	565920 174240	GRAVESEND 1	19.51	N	725617 ↗
12	131m NW	565739 174215	NORFOLK-CANAL RD MILTON 3	9.1	N	725615 ↗



ID	Location	Grid reference	Name	Length	Confidential	Web link
I	134m NW	565780 174230	CANAL BASIN GRAVESEND 107	-	Y	N/A
J	134m NW	565700 174190	CANAL BASIN GRAVESEND TP 152	-	Y	N/A
I	135m NW	565781 174231	LAND EAST OF CANAL BASIN GRAVESEND 107	-	Y	N/A
H	136m NE	565960 174250	CANAL BASIN GRAVESEND WP128	-	Y	N/A
H	136m NE	565960 174250	CANAL BASIN GRAVESEND WP128A	-	Y	N/A
K	140m N	565852 174245	LAND EAST OF CANAL BASIN GRAVESEND WP127	-	Y	N/A
J	151m NW	565693 174206	NORFOLK-CANAL RD MILTON 4	10.0	N	725616 ↗
K	155m N	565850 174260	CANAL BASIN GRAVESEND WP127	-	Y	N/A
L	158m NW	565731 174241	LAND EAST OF CANAL BASIN GRAVESEND WP131	-	Y	N/A
M	164m NE	566040 174250	URALITE	13.0	N	725539 ↗
M	164m NE	566040 174250	TILBURY GRAVESEND TUNNEL	37.0	N	725540 ↗
13	175m W	565630 174150	GRAVESEND 1	10.0	N	725542 ↗
L	176m NW	565710 174250	CANAL BASIN GRAVESEND WP131	-	Y	N/A
14	176m N	565930 174290	CANAL BASIN GRAVESEND TP 156	-	Y	N/A
L	179m NW	565723 174260	LAND EAST OF CANAL BASIN GRAVESEND WP124	-	Y	N/A
L	180m NW	565720 174260	CANAL BASIN GRAVESEND WP124	-	Y	N/A
N	191m NW	565670 174240	CANAL BASIN GRAVESEND WP130	-	Y	N/A
O	193m N	565862 174299	LAND EAST OF CANAL BASIN GRAVESEND 111	-	Y	N/A
P	195m N	565957 174309	LAND EAST OF CANAL BASIN GRAVESEND 110/110A	-	Y	N/A
N	196m NW	565667 174244	LAND EAST OF CANAL BASIN GRAVESEND WP130	-	Y	N/A
15	199m E	566140 174160	GRAVESEND 6	12.34	N	725622 ↗
O	204m N	565860 174310	CANAL BASIN GRAVESEND 111	-	Y	N/A
Q	205m NW	565681 174266	LAND EAST OF CANAL BASIN GRAVESEND WP132/132A	-	Y	N/A
P	206m N	565960 174320	CANAL BASIN GRAVESEND 110	-	Y	N/A
R	206m NW	565774 174302	LAND EAST OF CANAL BASIN GRAVESEND WP126	-	Y	N/A
R	213m N	565780 174310	CANAL BASIN GRAVESEND WP126	-	Y	N/A
Q	214m NW	565670 174270	CANAL BASIN GRAVESEND WP132	-	Y	N/A

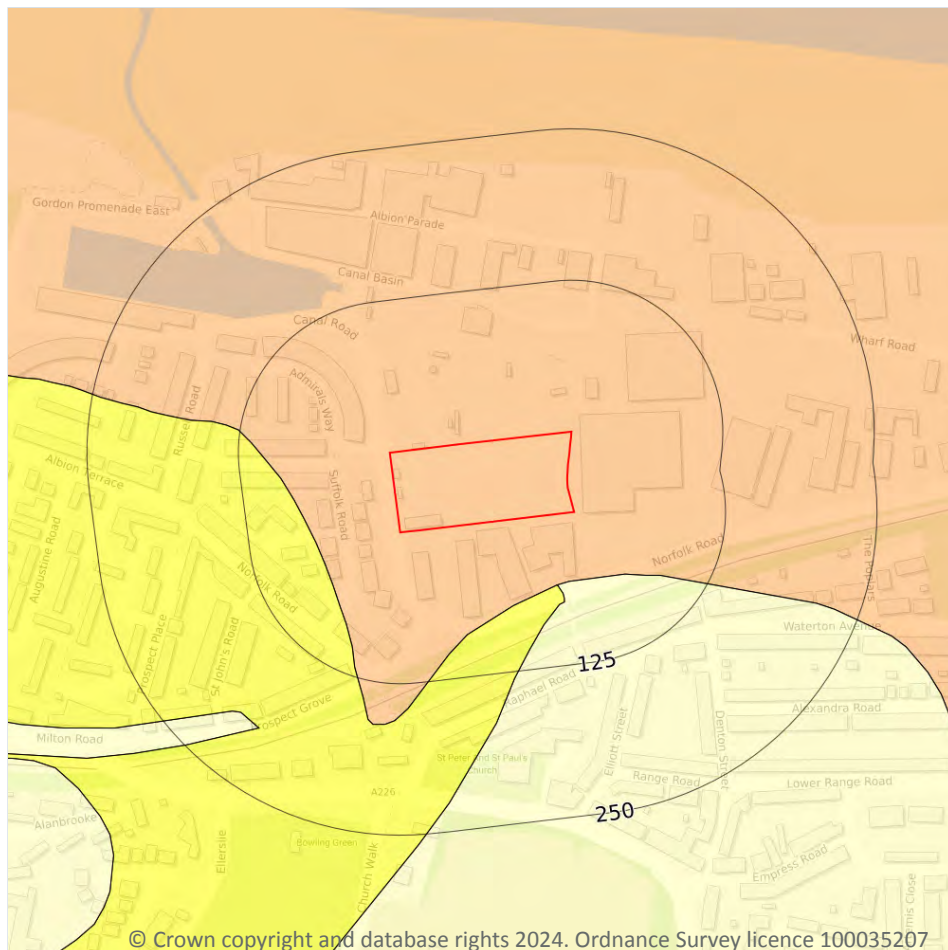


ID	Location	Grid reference	Name	Length	Confidential	Web link
Q	214m NW	565670 174270	CANAL BASIN GRAVESEND WP132A	-	Y	N/A
O	223m N	565870 174330	CANAL BASIN GRAVESEND TP 155	-	Y	N/A
Q	227m NW	565650 174270	CANAL BASIN GRAVESEND WP123	-	Y	N/A
S	232m NW	565680 174297	LAND EAST OF CANAL BASIN GRAVESEND 109	-	Y	N/A
S	234m NW	565680 174300	CANAL BASIN GRAVESEND 109	-	Y	N/A
T	234m S	565770 173800	A226 MILTON RD GRAVESEND S1	21.0	N	725602 ↗
Q	235m NW	565647 174278	LAND EAST OF CANAL BASIN GRAVESEND WP123	-	Y	N/A
U	236m W	565580 174190	CANAL BASIN GRAVESEND 102	-	Y	N/A
T	238m SW	565750 173800	A226 MILTON RD GRAVESEND S4	2.0	N	725605 ↗
U	240m NW	565580 174200	GRAVESEND 3	7.0	N	725544 ↗
U	241m W	565573 174186	LAND EAST OF CANAL BASIN GRAVESEND 102	-	Y	N/A

This data is sourced from the British Geological Survey.



17 Natural ground subsidence - Shrink swell clays



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

17.1 Shrink swell clays

Records within 50m

1

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

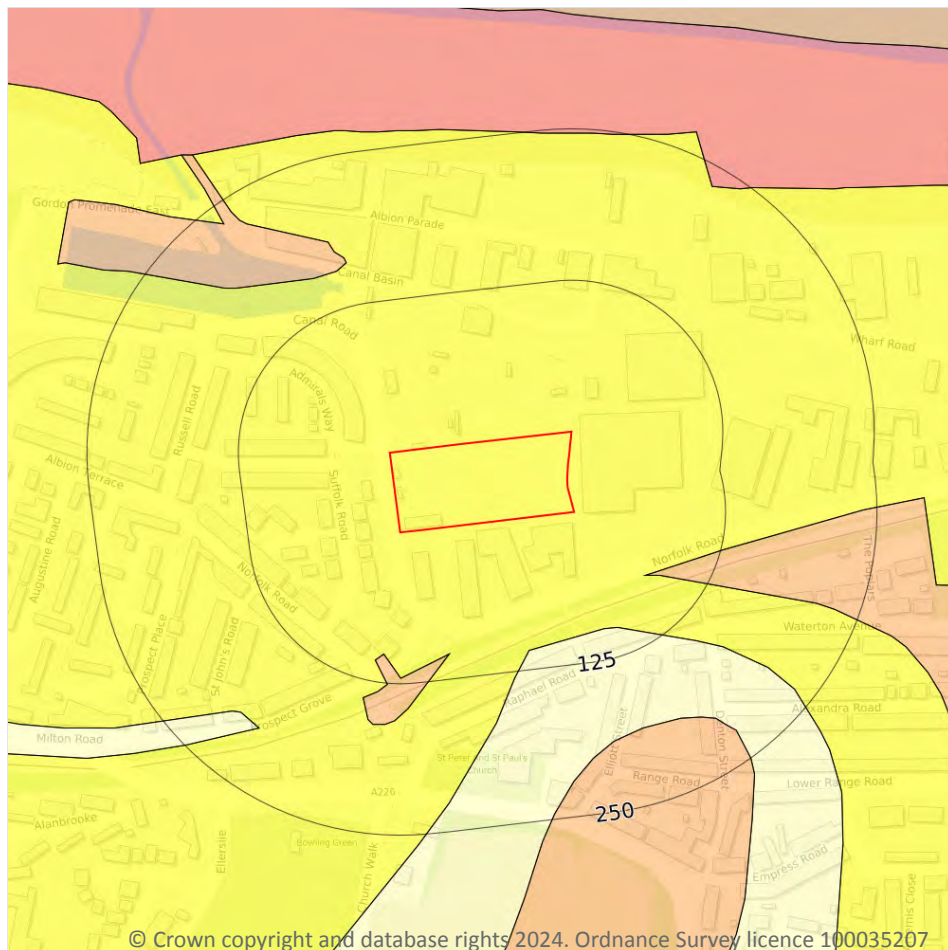
Features are displayed on the Natural ground subsidence - Shrink swell clays map on [page 127 >](#)

Location	Hazard rating	Details
On site	Low	Ground conditions predominantly medium plasticity.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Running sands



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

17.2 Running sands

Records within 50m

1

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

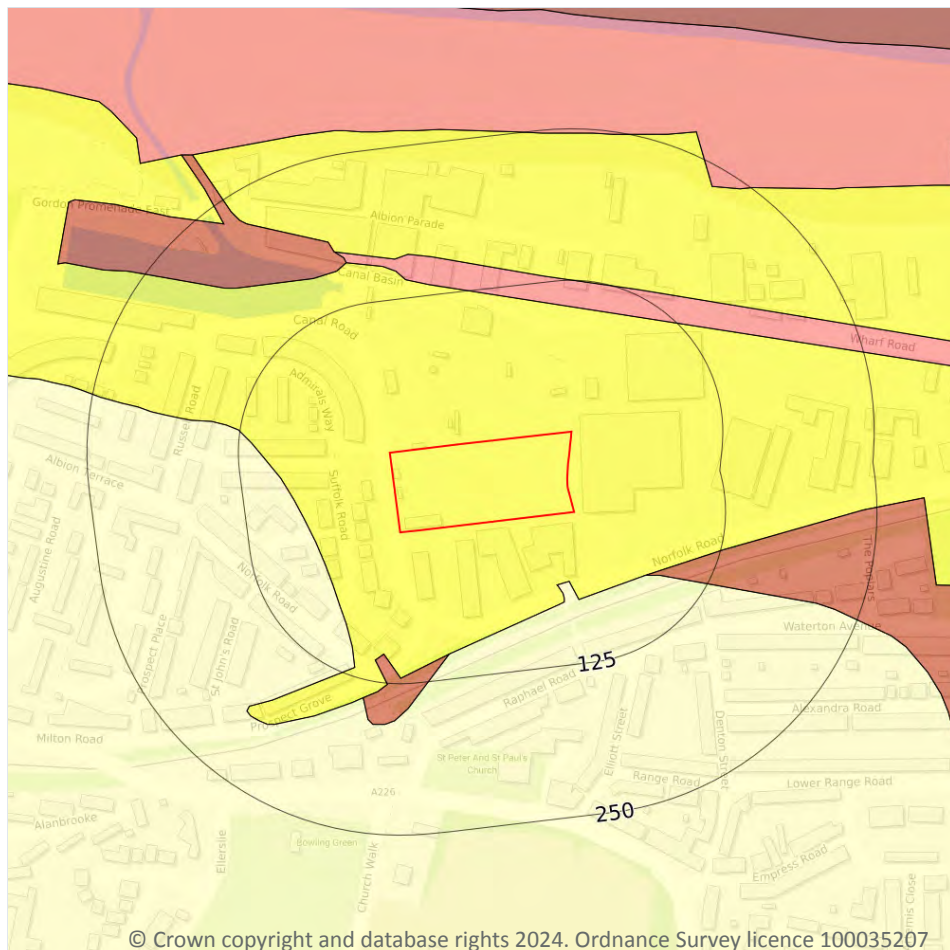
Features are displayed on the Natural ground subsidence - Running sands map on [page 128 >](#)

Location	Hazard rating	Details
On site	Very low	Running sand conditions are unlikely. No identified constraints on land use due to running conditions unless water table rises rapidly.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Compressible deposits



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

17.3 Compressible deposits

Records within 50m

1

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

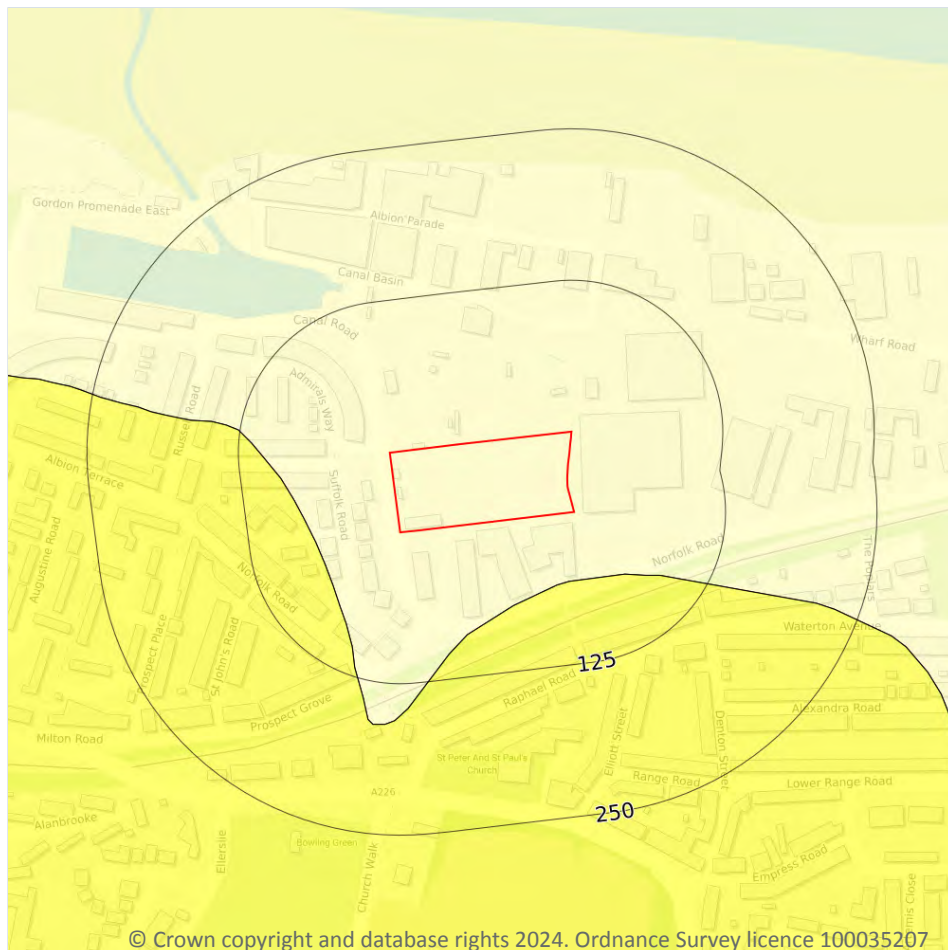
Features are displayed on the Natural ground subsidence - Compressible deposits map on [page 129](#) >

Location	Hazard rating	Details
On site	Very low	Compressibility and uneven settlement problems are not likely to be significant on the site for most land uses.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Collapsible deposits



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

17.4 Collapsible deposits

Records within 50m

1

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

Features are displayed on the Natural ground subsidence - Collapsible deposits map on [page 130](#) >

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

This data is sourced from the British Geological Survey.

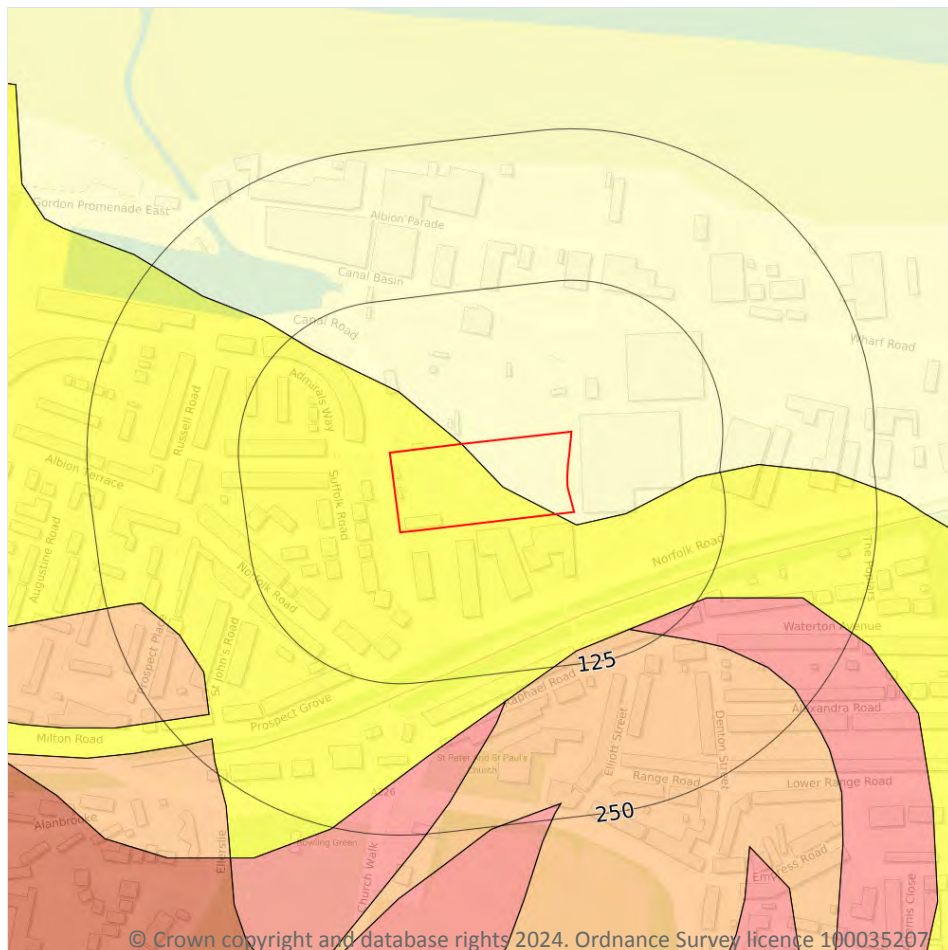


[illegible]

 No data
 Negligible
 Very low
 Low
 Moderate
 High

131

Natural ground subsidence - Ground dissolution of soluble rocks



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

17.6 Ground dissolution of soluble rocks

Records within 50m

2

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

Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on [page 132](#) >

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

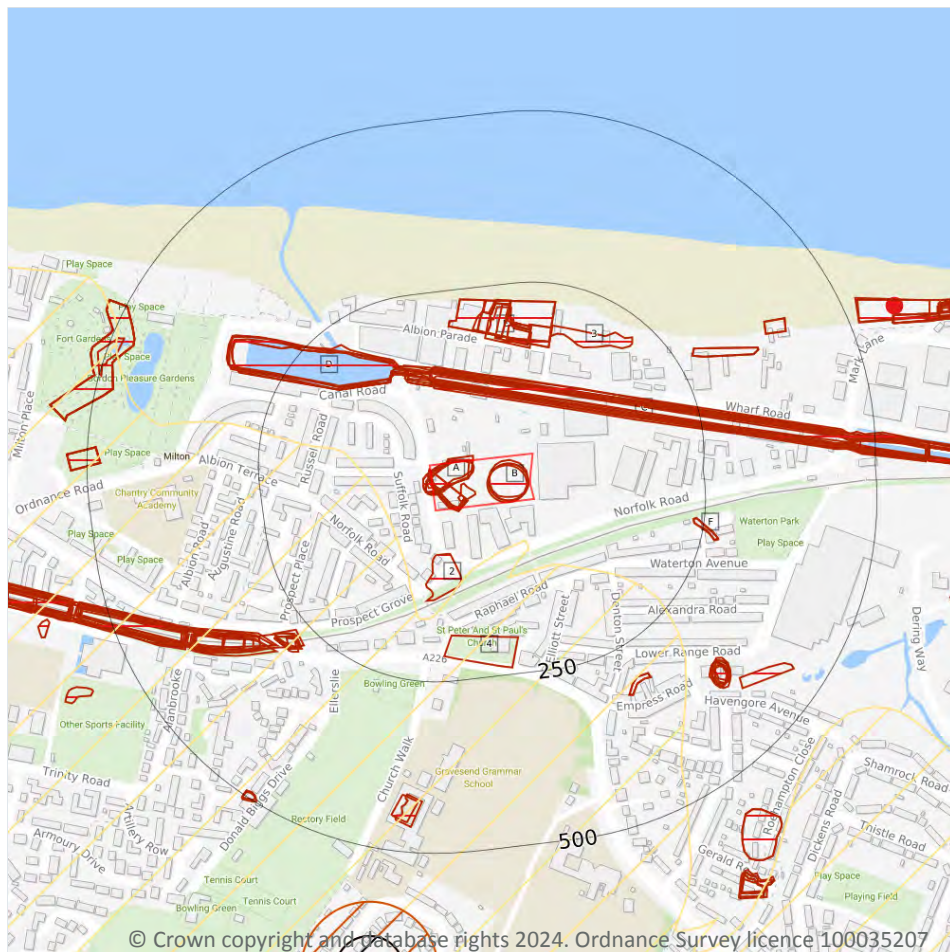


Location	Hazard rating	Details
On site	Very low	Soluble rocks are present within the ground. Few dissolution features are likely to be present. Potential for difficult ground conditions or localised subsidence are at a level where they need not be considered.

This data is sourced from the British Geological Survey.



18 Mining and ground workings



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

18.1 BritPits

Records within 500m

0

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

This data is sourced from the British Geological Survey.

18.2 Surface ground workings

Records within 250m

47

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

Features are displayed on the Mining and ground workings map on [page 134](#) >

ID	Location	Land Use	Year of mapping	Mapping scale
A	On site	Refuse Heap	1895	1:10560
A	On site	Unspecified Heap	1932	1:10560
A	On site	Pond	1895	1:10560
A	On site	Refuse Heap	1895	1:10560
A	On site	Unspecified Ground Workings	1938	1:10560
A	On site	Unspecified Ground Workings	1863	1:10560
A	On site	Unspecified Heap	1932	1:10560
A	On site	Refuse Heap	1888	1:10560
A	On site	Refuse Heap	1899	1:10560
A	On site	Refuse Heap	1899	1:10560
B	On site	Unspecified Heap	1916	1:10560
B	On site	Unspecified Heap	1888	1:10560
B	On site	Unspecified Heap	1899	1:10560
B	On site	Unspecified Heap	1899	1:10560
2	65m SW	Unspecified Heap	1865	1:10560
C	72m NE	Canal	1923	1:10560
C	75m NE	Canal	1865	1:10560
C	76m NE	Canal	1938	1:10560
C	76m NE	Canal	1863	1:10560
C	76m NE	Canal	1907	1:10560
C	76m NE	Canal	1895	1:10560
C	79m NE	Canal	1888	1:10560
D	79m NE	Canal	1932	1:10560



ID	Location	Land Use	Year of mapping	Mapping scale
D	79m NE	Canal	1973	1:10000
D	79m NE	Canal	1955	1:10560
D	79m NE	Disused Canal	1966	1:10560
C	80m NE	Canal	1899	1:10560
C	80m NE	Canal	1899	1:10560
D	81m NE	Canal	1938	1:10560
D	81m NE	Canal	1938	1:10560
C	84m NE	Canal	1916	1:10560
D	85m NE	Canal	1895	1:10560
E	154m N	Unspecified Wharves	1923	1:10560
E	157m NE	Unspecified Wharves	1938	1:10560
E	157m NE	Unspecified Wharves	1863	1:10560
E	158m N	Unspecified Wharves	1907	1:10560
E	163m N	Unspecified Wharves	1938	1:10560
E	164m N	Unspecified Wharves	1938	1:10560
E	164m N	Unspecified Wharves	1938	1:10560
E	165m NE	Unspecified Wharves	1955	1:10560
E	165m NE	Unspecified Wharves	1966	1:10560
3	171m NE	Refuse Heap	1966	1:10560
E	173m N	Unspecified Wharves	1932	1:10560
E	173m N	Unspecified Wharves	1932	1:10560
4	184m S	Grave Yard	1865	1:10560
F	234m E	Pond	1895	1:10560
F	235m E	Pond	1888	1:10560

This is data is sourced from Ordnance Survey/Groundsure.



18.3 Underground workings

Records within 1000m**0**

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

This data is sourced from Ordnance Survey/Groundsure.

18.4 Underground mining extents

Records within 500m**0**

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

This data is sourced from Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m**0**

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

This data is sourced from the British Geological Survey.

18.6 Non-coal mining

Records within 1000m**5**

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

Features are displayed on the Mining and ground workings map on [page 134](#) >

ID	Location	Name	Commodity	Class	Likelihood
1	58m SE	Not available	Chalk	A	Underground mine workings are uncommon, although the geology is similar to that worked elsewhere. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.



ID	Location	Name	Commodity	Class	Likelihood
V	577m S	Milton Hall Road	Chalk	D	Underground mining is considered likely to have occurred within or close to the area. The location, extent and nature of mining should be considered in any site investigation. Potential for difficult ground conditions should be considered.
V	627m S	Milton Hall Road	Chalk	E	Underground mining is known or considered likely within or very close to the area. The location, extent and nature of mining should be considered in any site investigation. Potential for difficult ground conditions should be considered.
-	797m W	Not available	Chalk	A	Underground mine workings are uncommon, although the geology is similar to that worked elsewhere. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.
-	950m SW	Not available	Chalk	B	Underground mine workings may have occurred in the past or current mines may be working at significant depth to modern engineering standards. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.

This data is sourced from the British Geological Survey.

18.7 JPB mining areas

Records on site **0**

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

This data is sourced from Johnson Poole and Bloomer.

18.8 The Coal Authority non-coal mining

Records within 500m **0**

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

This data is sourced from The Coal Authority.



18.9 Researched mining

Records within 500m

0

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

This data is sourced from Groundsure.

18.10 Mining record office plans

Records within 500m

0

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

This data is sourced from Groundsure.

18.11 BGS mine plans

Records within 500m

0

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

This data is sourced from Groundsure.

18.12 Coal mining

Records on site

0

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

This data is sourced from the Coal Authority.

18.13 Brine areas

Records on site

0

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

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



18.14 Gypsum areas

Records on site	0
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Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.15 Tin mining

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

Generalised areas that may be affected by historical tin mining.

This data is sourced from Groundsure.

18.16 Clay mining

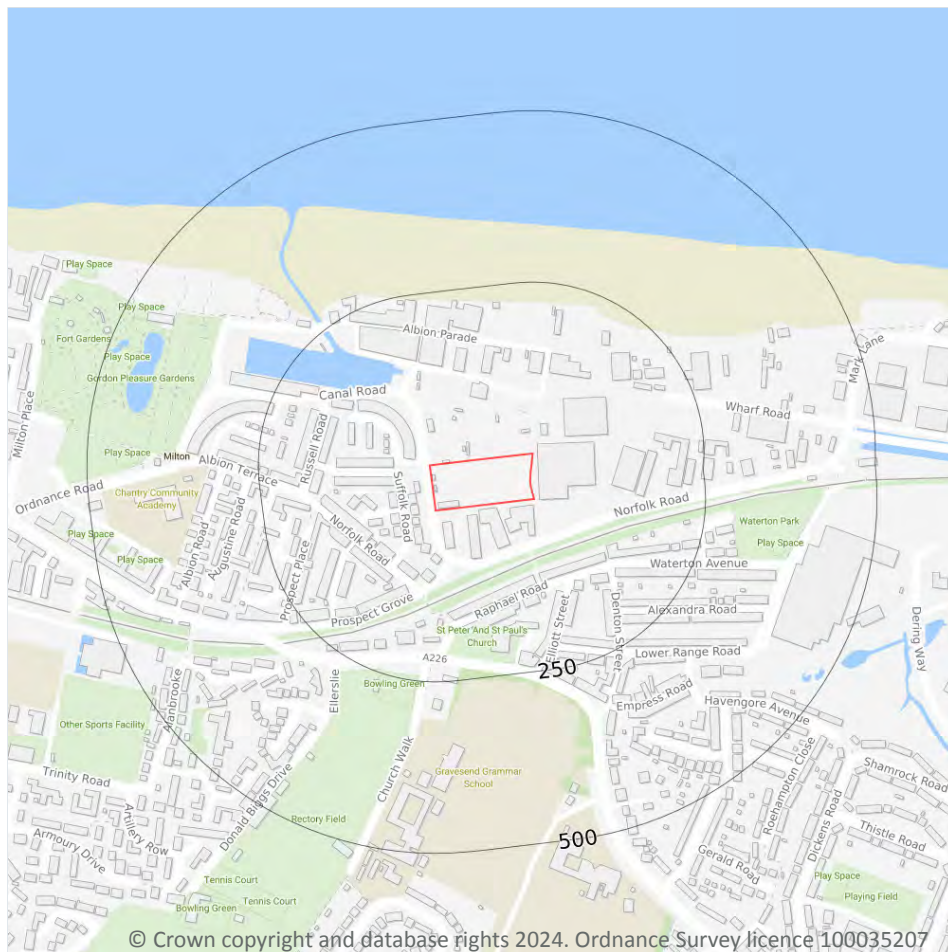
Records on site	0
-----------------	---

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

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



19 Ground cavities and sinkholes



- Site Outline
- Search buffers in metres (m)
- Natural cavities (Area)
- Natural cavities (Point)
- Mining cavities
- Reported recent incidents
- Historical incidents
- BGS karst database (Point)
- BGS karst database (Line)
- BGS karst database (Area)

19.1 Natural cavities

Records within 500m

0

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

This data is sourced from Stantec UK Ltd.

19.2 Mining cavities

Records within 1000m

1

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

Features are displayed on the Ground cavities and sinkholes map on [page 141](#) >

ID	Location	Mine Address	Mineral	Data source	Publisher
-	721m S	Gravesend, Kent	Chalk	-	-

This data is sourced from Stantec UK Ltd.

19.3 Reported recent incidents

Records within 500m

0

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

This data is sourced from Groundsure.

19.4 Historical incidents

Records within 500m

0

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

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

This data is sourced from Groundsure.



19.5 National karst database

Records within 500m

0

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

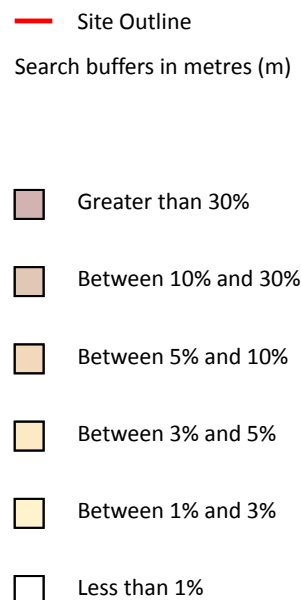
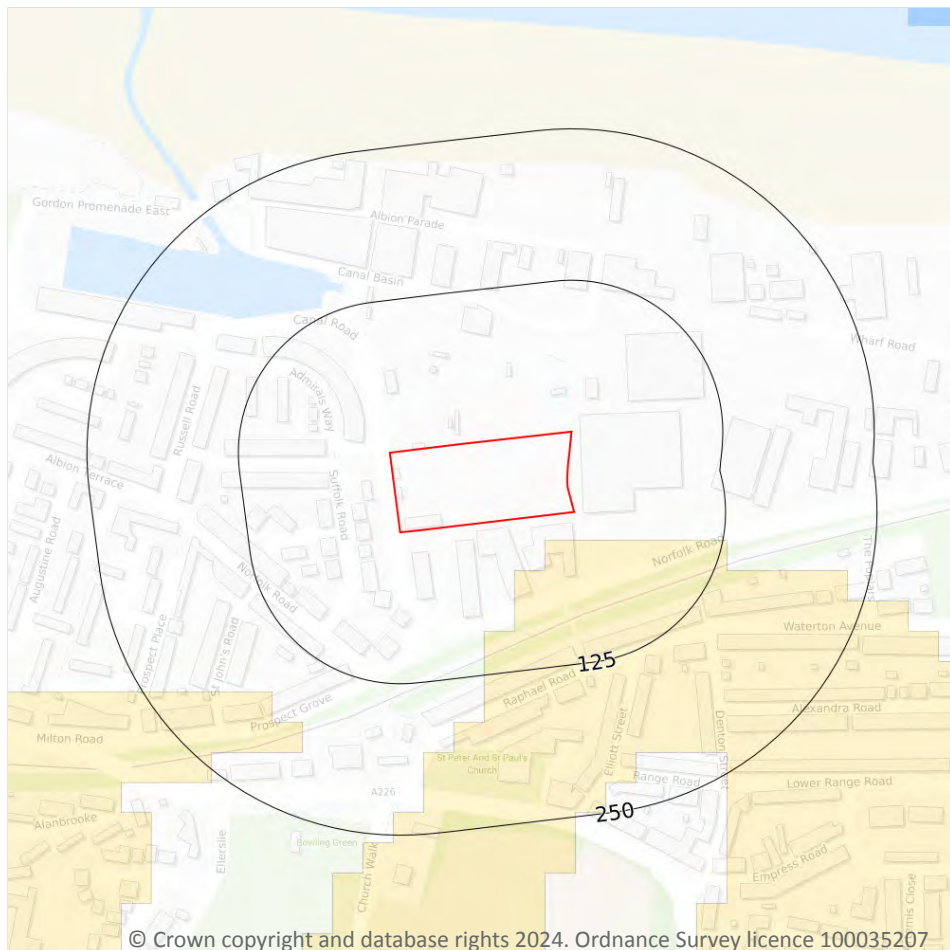
Since the database was set up in 2002 data covering most of the evaporite karst areas of the UK have now been added, along with data covering about 60% of the Chalk, and 35% of the Carboniferous Limestone outcrops. Many of the classic upland karst areas have yet to be included. Recorded so far are: Over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

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

This data is sourced from the British Geological Survey.



20 Radon



20.1 Radon

Records on site

1

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

Features are displayed on the Radon map on [page 144](#) >

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



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



21 Soil chemistry

21.1 BGS Estimated Background Soil Chemistry

Records within 50m

2

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

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	15 - 25 mg/kg	No data	200 - 300 mg/kg	120 - 240 mg/kg	1.8 mg/kg	90 - 120 mg/kg	30 - 45 mg/kg
32m SW	15 - 25 mg/kg	No data	200 - 300 mg/kg	120 - 240 mg/kg	1.8 mg/kg	90 - 120 mg/kg	30 - 45 mg/kg

This data is sourced from the British Geological Survey.

21.2 BGS Estimated Urban Soil Chemistry

Records within 50m

0

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

This data is sourced from the British Geological Survey.

21.3 BGS Measured Urban Soil Chemistry

Records within 50m

0

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

This data is sourced from the British Geological Survey.



22 Railway infrastructure and projects



- Site Outline
- Search buffers in metres (m)
- C1 Crossrail 1 Stations
- Crossrail 1 Route
- C2 Crossrail 2 Stations
- Crossrail 2 Route
- Crossrail 2 Worksites
- Crossrail 2 Safeguarding
- Crossrail 2 Headhouses
- Railway stations
- Active railways
- Active tunnels
- Abandoned railways
- Historic railways
- Historic tunnels
- Underground stations
- Underground Lines
- Royal Mail tunnels
- HS2 optimised route
- HS2 Stations
- HS2 Depots
- HS2 Surface Safeguarding
- HS2 Subsurface Safeguarding

22.1 Underground railways (London)

Records within 250m

0

Details of all active London Underground lines, including approximate tunnel roof depth and operational hours.

This data is sourced from publicly available information by Groundsure.

22.2 Underground railways (Non-London)

Records within 250m

0

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



This data is sourced from publicly available information by Groundsure.

22.3 Railway tunnels

Records within 250m

0

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

22.4 Historical railway and tunnel features

Records within 250m

18

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

Features are displayed on the Railway infrastructure and projects map on [page 147 >](#)

Location	Land Use	Year of mapping	Mapping scale
67m NW	Railway Sidings	1923	10560
69m SE	Railway	1867	-
69m SE	Railway	1897	-
74m NW	Railway Sidings	1907	10560
74m NW	Railway Sidings	1938	10560
74m NW	Railway Sidings	1948	10560
77m NW	Railway Sidings	1938	10560
77m NW	Tramway Sidings	1909	2500
79m NW	Tramway Sidings	1953	2500
79m NW	Tramway Sidings	1953	1250
80m NW	Railway Sidings	1938	10560
80m NW	Railway Sidings	1932	10560
84m NW	Railway Sidings	1932	2500
84m NW	Railway Sidings	1897	2500
88m NW	Railway Sidings	1966	10560
126m E	Railway	1864	-
200m NW	Railway Sidings	1909	2500



Location	Land Use	Year of mapping	Mapping scale
232m NW	Railway Sidings	1953	1250

This data is sourced from Ordnance Survey/Groundsure.

22.5 Royal Mail tunnels

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

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

This data is sourced from Groundsure/the Postal Museum.

22.6 Historical railways

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

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

This data is sourced from OpenStreetMap.

22.7 Railways

Records within 250m	9
----------------------------	----------

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

Features are displayed on the Railway infrastructure and projects map on [page 147 >](#)

Location	Name	Type
80m SE	North Kent Line	rail
82m SE	Not given	Multi Track
84m SE	North Kent Line	rail
135m SW	North Kent Line	rail
138m S	North Kent Line	rail
141m SW	North Kent Line	rail
146m SW	North Kent Line	rail
210m E	North Kent Line	rail



Location	Name	Type
215m SW	Not given	Multi Track

This data is sourced from Ordnance Survey and OpenStreetMap.

22.8 Crossrail 1

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

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

This data is sourced from publicly available information by Groundsure.

22.9 Crossrail 2

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

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

This data is sourced from publicly available information by Groundsure.

22.10 HS2

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

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

This data is sourced from HS2 Ltd.



Data providers

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

Terms and conditions

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Site Details:

CANAL INDUSTRIAL PARK,
CANAL ROAD, GRAVESEND,
KENT, DA12 2PA

Client Ref: J24-012 Gravesend
Report Ref: GS-HRI-MMV-AHC-WY4
Grid Ref: 565873, 174073

Map Name: County Series

Map date: 1866

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1866
Revised 1866
Edition N/A
Copyright N/A
Levelled N/A

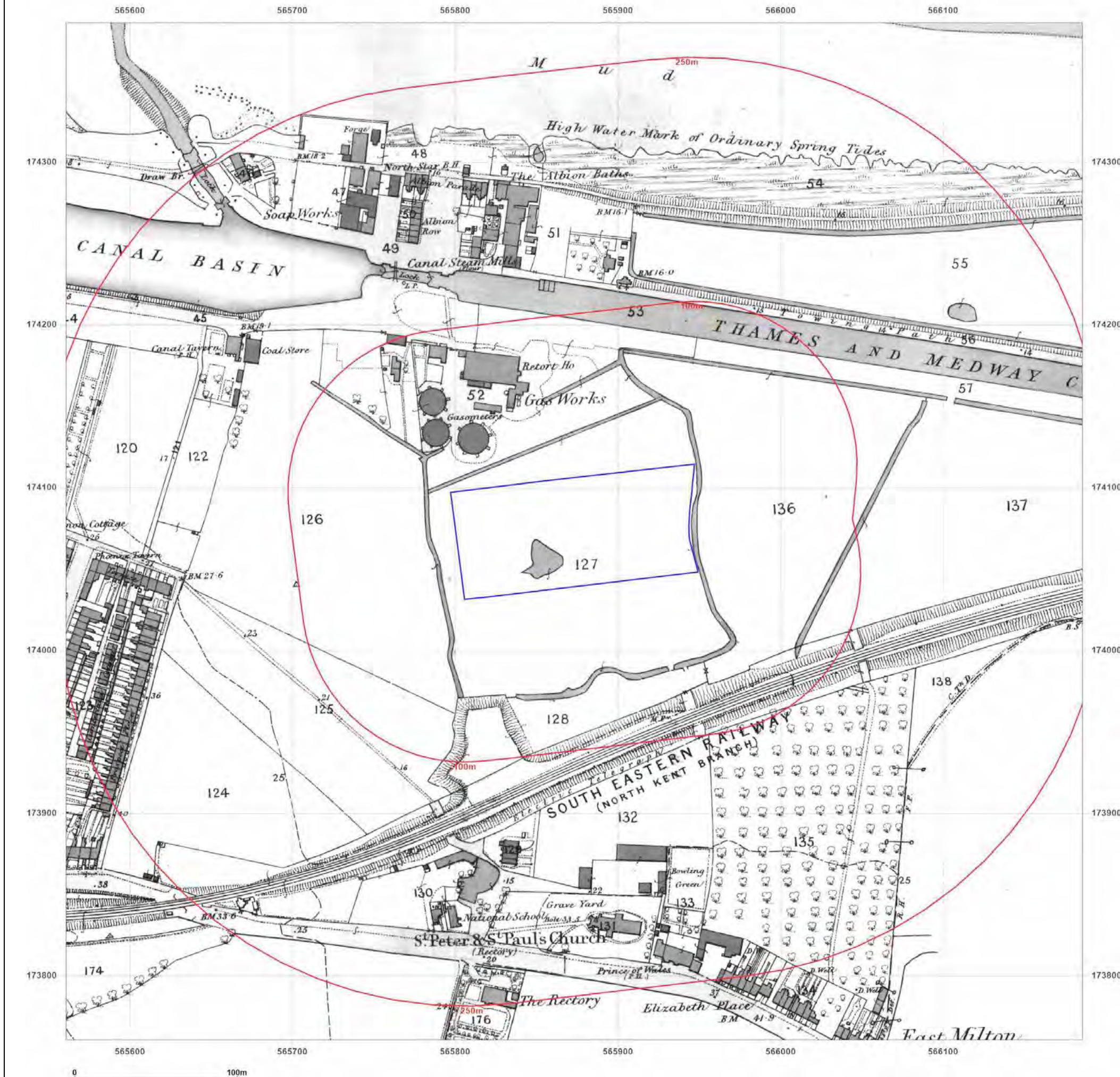


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Production date: 18 March 2024

Map legend available at:
www.groundsure.com/sites/default/files/groundsure_legend.pdf



Site Details:

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KENT, DA12 2PA

Client Ref: J24-012 Gravesend
Report Ref: GS-HRI-MMV-AHC-WY4
Grid Ref: 565873, 174073

Map Name: County Series

Map date: 1897

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1897
Revised 1897
Edition N/A
Copyright N/A
Levelled N/A

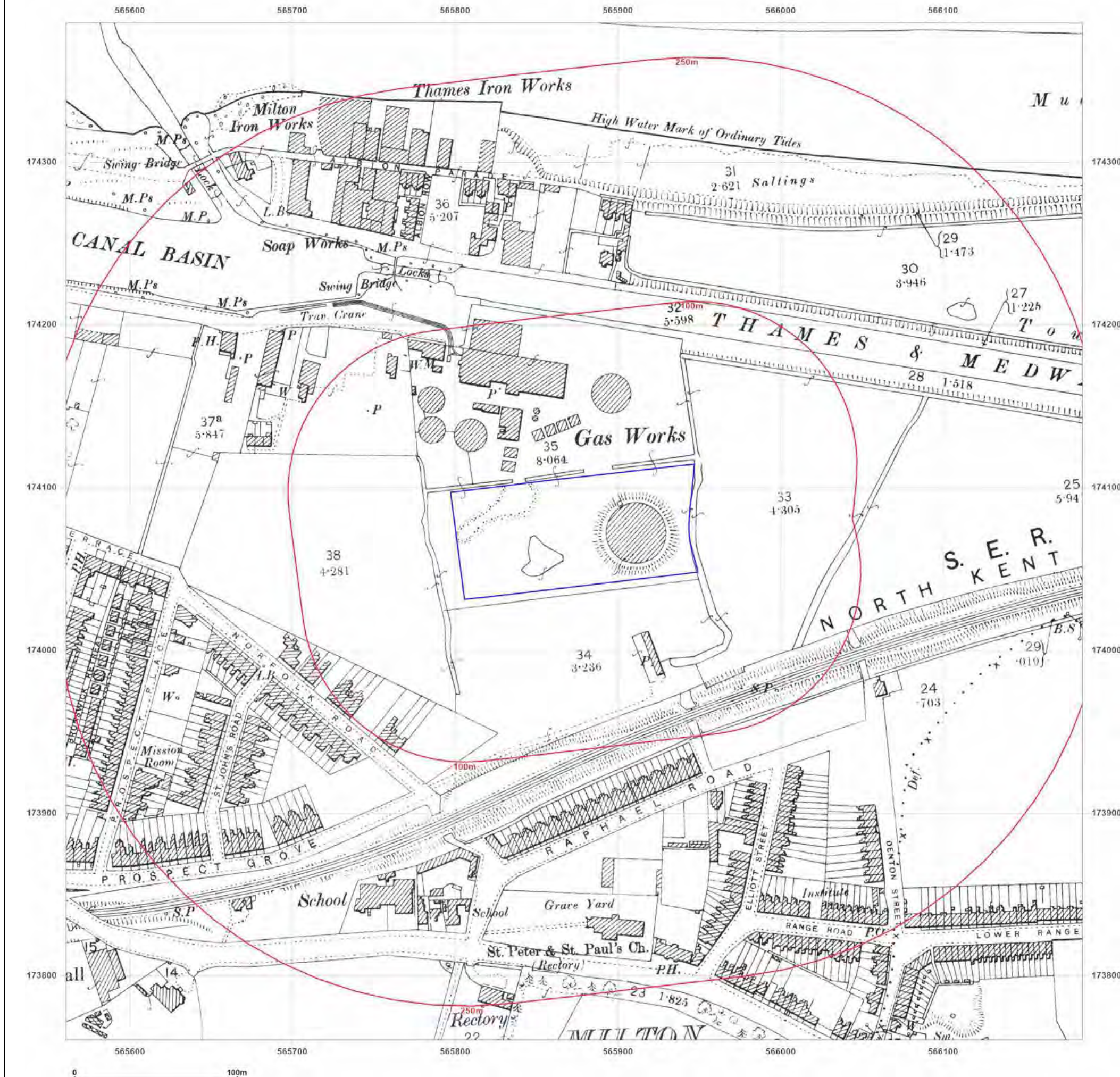


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Site Details:

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KENT, DA12 2PA

Client Ref: J24-012 Gravesend
Report Ref: GS-HRI-MMV-AHC-WY4
Grid Ref: 565873, 174073

Map Name: County Series

Map date: 1909

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1909
Revised 1909
Edition N/A
Copyright N/A
Levelled N/A

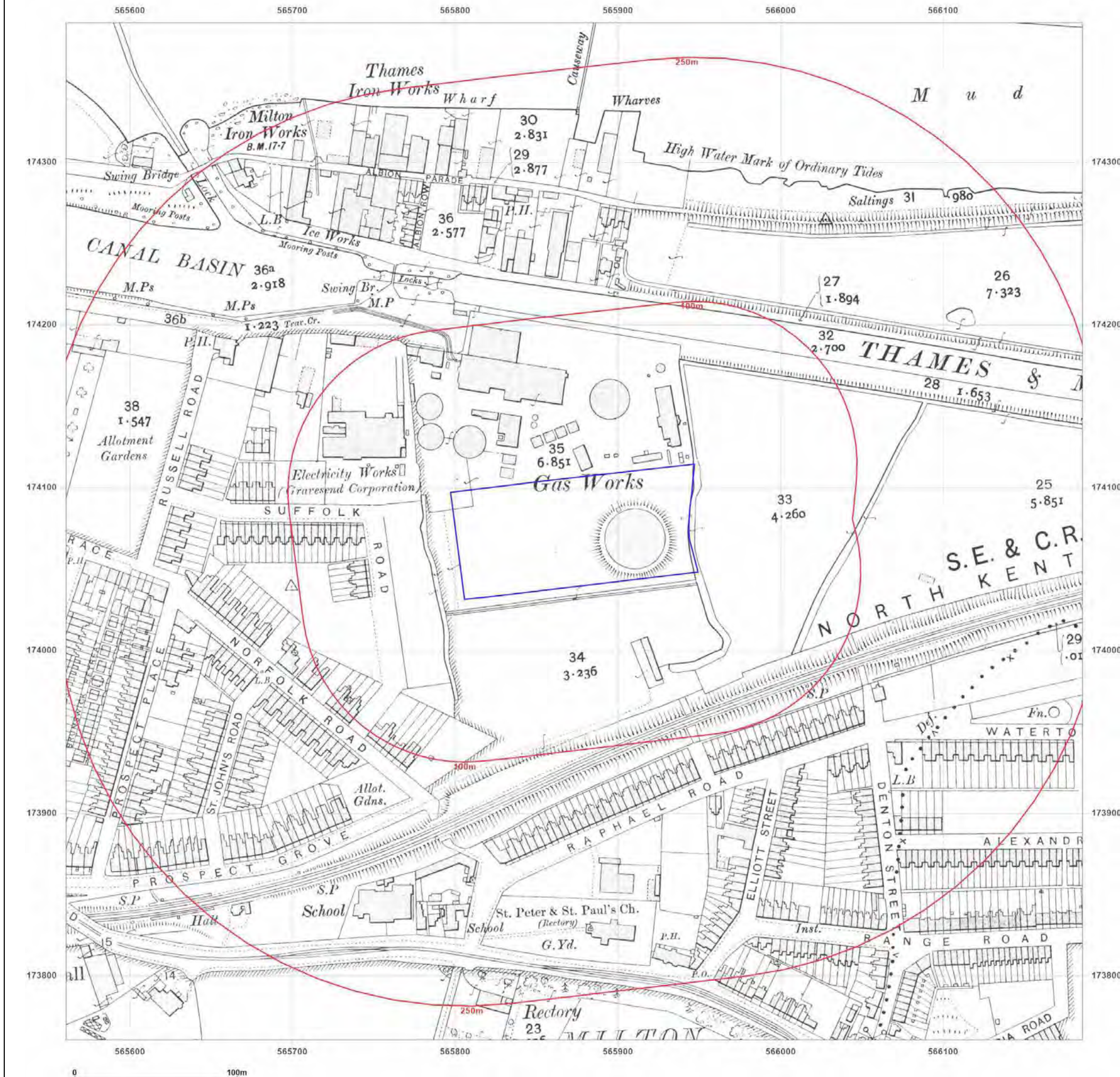


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KENT, DA12 2PA

Client Ref: J24-012 Gravesend
Report Ref: GS-HRI-MMV-AHC-WY4
Grid Ref: 565873, 174073

Map Name: County Series

Map date: 1932

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1932
Revised 1932
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Site Details:

CANAL INDUSTRIAL PARK,
CANAL ROAD, GRAVESEND,
KENT, DA12 2PA

Client Ref: J24-012 Gravesend
Report Ref: GS-HRI-MMV-AHC-WY4
Grid Ref: 565873, 174073

Map Name: National Grid

Map date: 1953

Scale: 1:1,250

Printed at: 1:2,000



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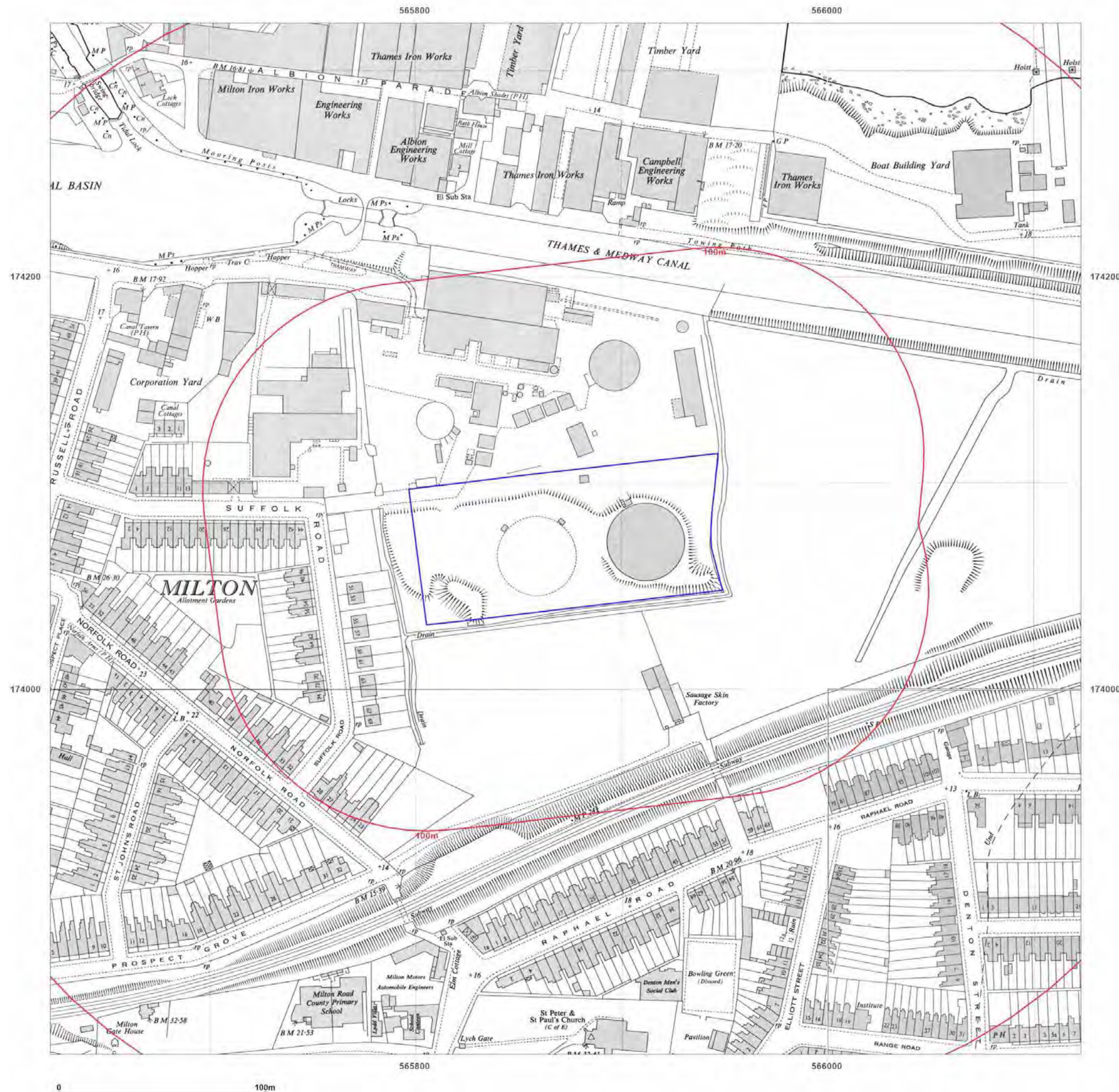


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Site Details:

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KENT, DA12 2PA

Client Ref: J24-012 Gravesend
Report Ref: GS-HRI-MMV-AHC-WY4
Grid Ref: 565873, 174073

Map Name: National Grid

Map date: 1953

Scale: 1:2,500

Printed at: 1:2,500



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Site Details:

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KENT, DA12 2PA

Client Ref: J24-012 Gravesend
Report Ref: GS-HRI-MMV-AHC-WY4
Grid Ref: 565873, 174073

Map Name: National Grid

Map date: 1954

Scale: 1:1,250

Printed at: 1:2,000



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Client Ref: J24-012 Gravesend
Report Ref: GS-HRI-MMV-AHC-WY4
Grid Ref: 565873, 174073

Map Name: National Grid

Map date: 1961-1964

Scale: 1:2,500

Printed at: 1:2,500



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Client Ref: J24-012 Gravesend
Report Ref: GS-HRI-MMV-AHC-WY4
Grid Ref: 565873, 174073

Map Name: National Grid

Map date: 1967-1969

Scale: 1:1,250

Printed at: 1:2,000



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Client Ref: J24-012 Gravesend
Report Ref: GS-HRI-MMV-AHC-WY4
Grid Ref: 565873, 174073

Map Name: National Grid

Map date: 1973-1978

Scale: 1:1,250

Printed at: 1:2,000



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Client Ref: J24-012 Gravesend
Report Ref: GS-HRI-MMV-AHC-WY4
Grid Ref: 565873, 174073

Map Name: National Grid

Map date: 1976-1980

Scale: 1:1,250

Printed at: 1:2,000



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KENT, DA12 2PA

Client Ref: J24-012 Gravesend
Report Ref: GS-HRI-MMV-AHC-WY4
Grid Ref: 565873, 174073

Map Name: National Grid

Map date: 1980-1988

Scale: 1:1,250

Printed at: 1:2,000



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Client Ref: J24-012 Gravesend
Report Ref: GS-HRI-MMV-AHC-WY4
Grid Ref: 565873, 174073

Map Name: National Grid

Map date: 1992-1993

Scale: 1:1,250

Printed at: 1:2,000



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Client Ref: J24-012 Gravesend
Report Ref: GS-HRI-MMV-AHC-WY4
Grid Ref: 565873, 174073

Map Name: LandLine

Map date: 2003

Scale: 1:1,250

Printed at: 1:1,250



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Client Ref: J24-012 Gravesend
Report Ref: GS-HRI-MMV-AHC-WY4
Grid Ref: 565873, 174073

Map Name: County Series

Map date: 1865

Scale: 1:10,560

Printed at: 1:10,560



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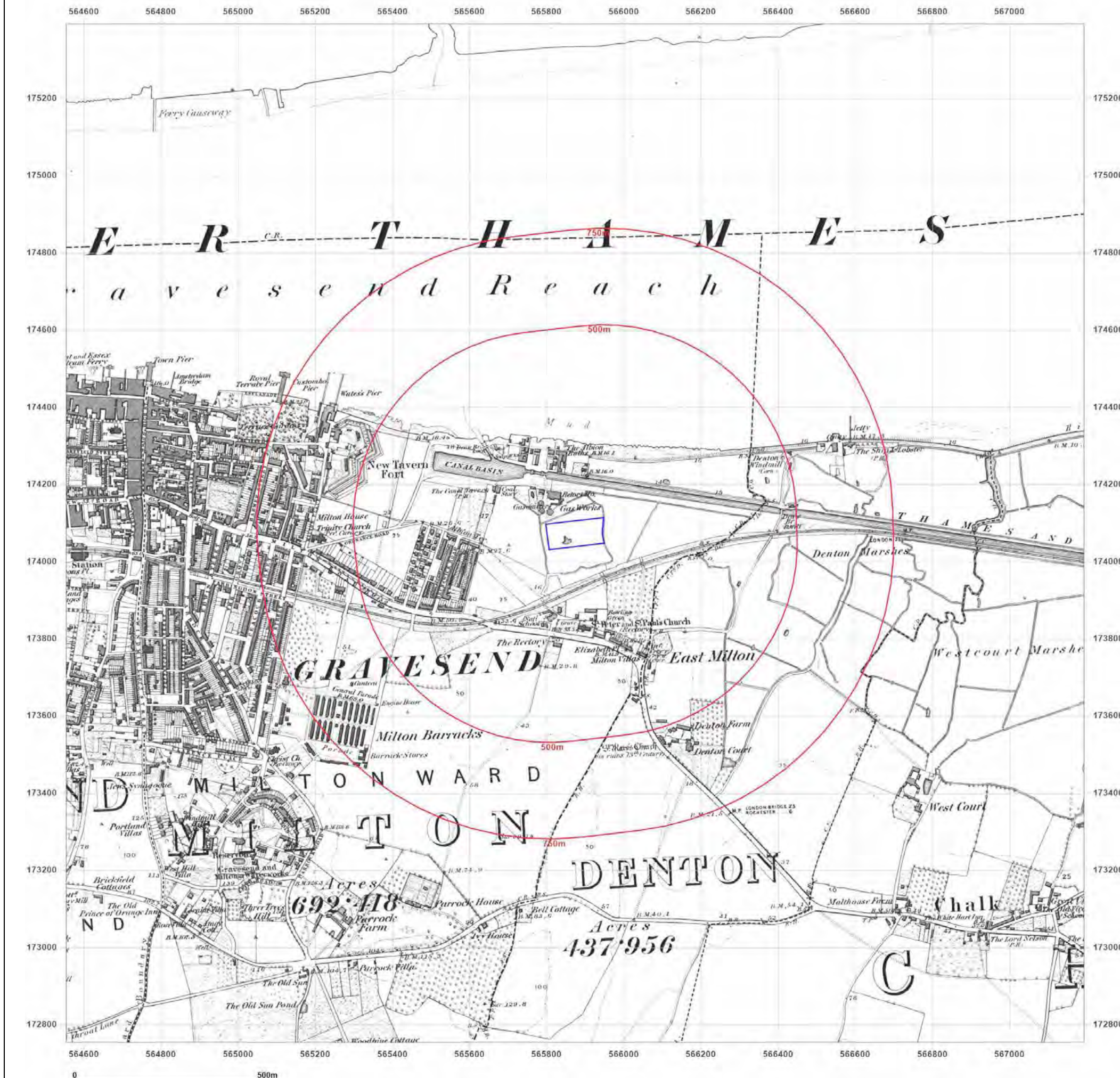


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Client Ref: J24-012 Gravesend
Report Ref: GS-HRI-MMV-AHC-WY4
Grid Ref: 565873, 174073

Map Name: County Series

Map date: 1888

Scale: 1:10,560

Printed at: 1:10,560



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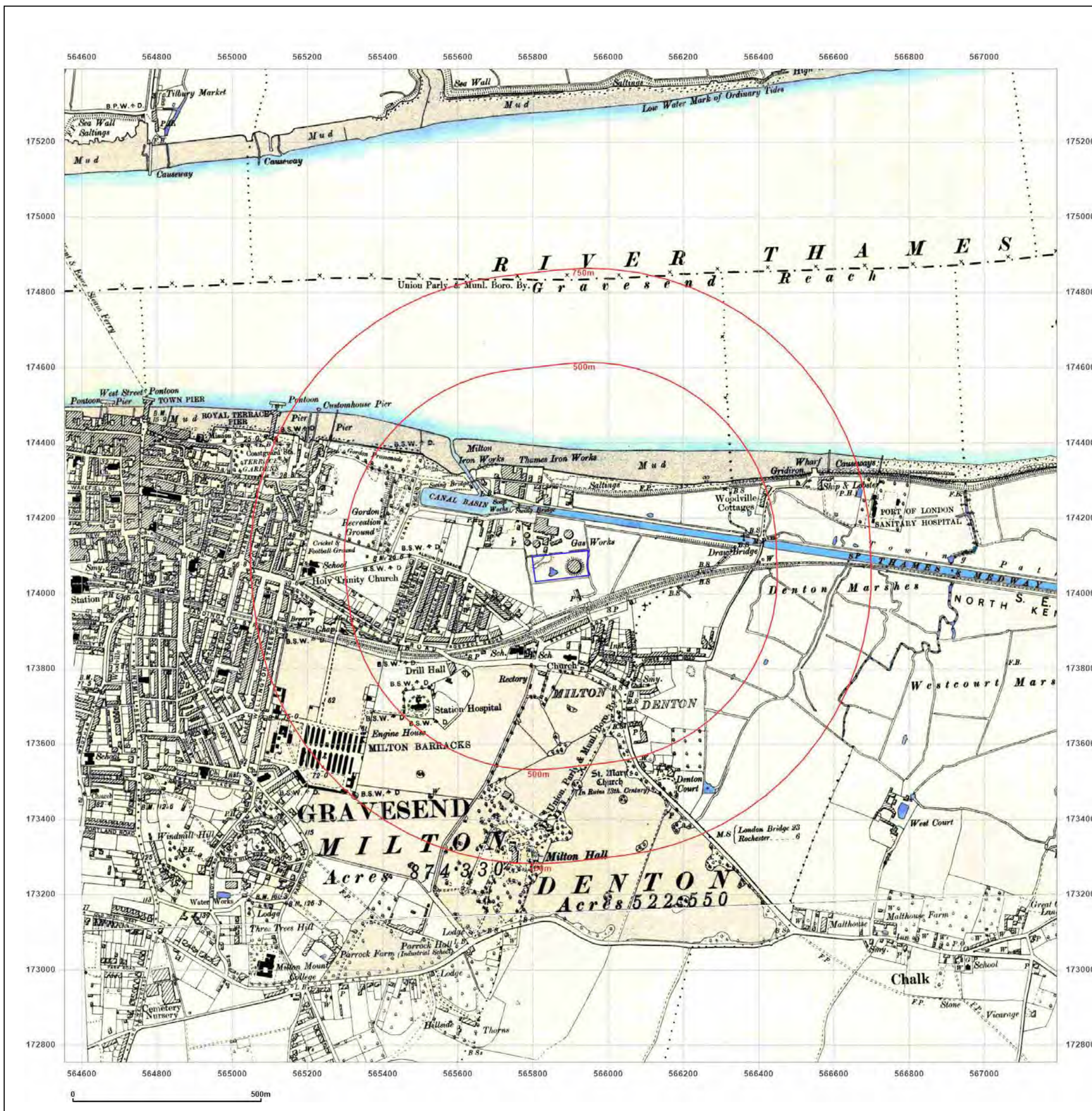


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Client Ref: J24-012 Gravesend
Report Ref: GS-HRI-MMV-AHC-WY4
Grid Ref: 565873, 174073

Map Name: County Series

Map date: 1895

Scale: 1:10,560

Printed at: 1:10,560



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Surveyed 1866 Revised 1895 Edition N/A Copyright N/A Levelled N/A	Surveyed 1864 Revised 1895 Edition N/A Copyright N/A Levelled N/A

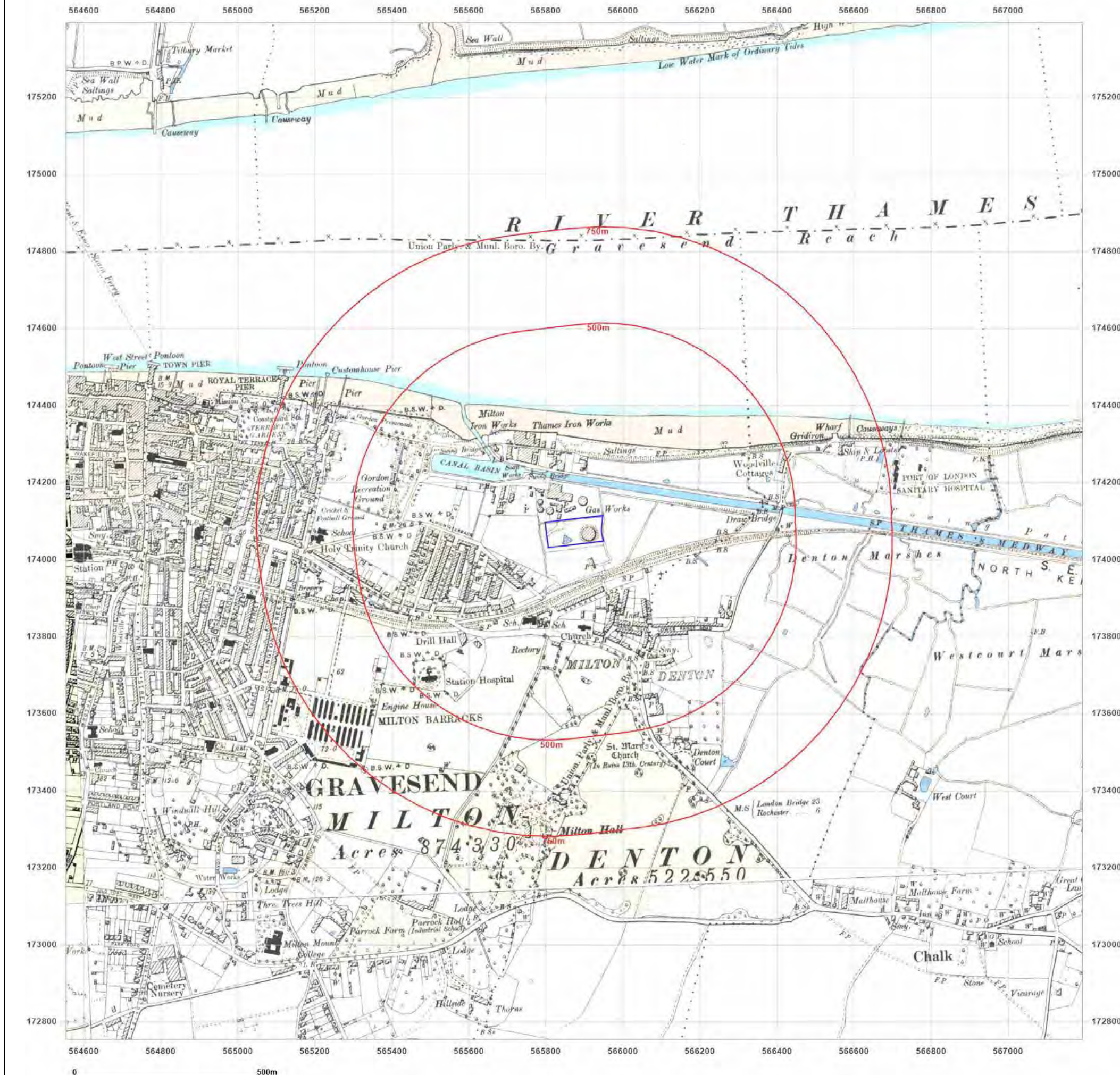


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Client Ref: J24-012 Gravesend
Report Ref: GS-HRI-MMV-AHC-WY4
Grid Ref: 565873, 174073

Map Name: County Series

Map date: 1895

Scale: 1:10,560

Printed at: 1:10,560



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