Geo-Environmental

MINERAL SAFEGUARDING ASSESSMENT

for the site at

WOODCROFT PHASE 3, LOVEDEAN,

HAMPSHIRE

on behalf of

GRAINGER PLC



Report:	**MINERAL SAFEGUARDING ASSESSMENT**
Site:	**WOODCROFT PHASE 3, LOVEDEAN, HAMPSHIRE**
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1.0 INTRODUCTION

1.1 General

Geo-Environmental Services Limited (Geo-Environmental) was instructed by Grainger plc (the Client) to undertake an assessment of the possible mineral reserve significance pertaining to Woodcroft Phase 3, Lovedean, Hampshire. The site's location is presented in Figure 1.

Hampshire County Council's (HCC's), Hampshire Minerals and Waste Local Plan (adopted 2013) (HMWLP) has defined the subject site to be within a mineral consultation area. The HMWLP serves to protect potential mineral resources from sterilisation due to development. The HMWLP has been referred to for this assessment alongside documents which include:

> Hampshire (comprising Hampshire, City of Portsmouth and City of Southampton) mineral resources: mineral resource information in support of national, regional and local planning. Mineral Resources Series. British Geological Survey.

The Hampshire mineral resources: mineral resource information in support of national, regional and local planning report indicated the site to be located in an area where deposits are likely to be present that might be suitable as 'brick clay'. This is likely why the site was designated to be within a mineral consultation area.

The brick clay derives from the Reading Formation (Lambeth Group) and is shown on the mineral resources plan to extent across the site. As such there could be potential for viable clay soils to be recovered for use within the development project and upcycled to a mineral processing operator. HCC required the submission of a Mineral Safeguarding Assessment, undertaken prior to application determination.

Note – The term 'Brick Clay' is used to describe soils which may have potential for use in brick making and/or may have been used historically for brick making, not a definitive statement of their suitability for such .

1.2 Objectives

This Mineral Safeguarding Assessment (MSA) has been prepared with respect to the mineral reserve significance for the site and to support determination of possible planning application in due course.

1.3 Scope of Assessment

This report summarises the findings of a site specific desk study and preliminary ground investigation; an assessment of the mineral resources likely to be present based on the information currently available; and potential for resource extraction on site.

The desk study comprised a Phase I Ground Condition Assessment undertaken by Peter Brett Associates (now Stantec) ref. 21834, dated January 2015, on behalf of Grainger plc. The preliminary ground investigation was undertaken by Geo-Environmental and findings presented in a Ground Investigation Report, ref. GE20772/GIR/DEC23, dated 05/12/2023.

Geo-Environmental accepts no liability for errors or omissions within the third-party report, nor for implications of any updates in the background datasets since the third-party desk study was undertaken. For further information reference should be made to the Phase I Ground Condition Assessment, January 2015.

As part of the MSA, evidence was required of discussions with local operators to confirm the viability of prior extraction, where relevant.

2.0 SITE SETTING

The findings of the Phase I desk study are presented in the following section. A copy of the third party desk study is presented in Appendix A. Comments made in the following section regarding possible ground conditions on the site are based purely on the desk study.

2.1 Site Description

The site comprised an irregularly shaped parcel of land located at NGR 468186, 112255 which extended to c. 6.91ha. Six distinct depressions were present within the site and these were referenced as Sinkholes 1 – 6.

At the time of the intrusive investigation works, September 2023, the site comprised two separate agricultural fields divided by a public footpath. This footpath/track divided the two fields running in a north-south direction. The track was lined with dense vegetation and trees along the eastern side, with a radio mast located in the northeastern corner of the western field and adjacent to the track.

Both the western and eastern fields were bounded by a mix of mature trees, hedgerows and fencing around all site boundaries. Public footpaths and bridleways were noted to be present to the north of the site and the west of the western field.

The site was surrounded by agricultural land to the north and west and residential uses to the south and east.

Western Field

The western field was being utilised for the grazing of horses from the adjacent stables and was accessed via a gateway located in the northwestern corner of the field.

The ground surface on the western field generally fell from north to south. Four depressions/sinkholes were noted within the field (Sinkhole 1, 2a, 2b and 3). Sinkhole 1 was located within the north west of the western field and comprised a surface depression that was wholly within the grassed field. Sinkholes 2a and 2b were located in the south west of the western field and comprised two adjacent depressions that were also part of the grass field but extended to the field boundaries. Sinkhole 2a correlated with Sinkhole 2 as described in the 2015 report. Sinkhole 3 was located in the south eastern portion of the western field and comprised a grassed depression which extended to the southern and eastern boundaries of the field. In addition, the ground around and between sinkholes 1, 2a, 2b and 3 was observed to undulate and slope away in a general southeasterly direction. Figure 4 shows the locations of these identified geohazards.

In addition, a sub-linear break in slope was located towards the eastern side of the western field such that ground levels fell from within the field towards the track which bisected the site. The linear feature was oriented approximately north-north-east to south-south-west (sub-parallel to the footpath/track bisecting the site), with a change in ground level from west to east but also with a general topographic fall in ground level towards the south. The linear feature appeared to continue around the northern margin of Sinkhole 3 and turn to a westerly orientation to run to the north of Sinkhole 2b and petering out towards Sinkhole 2a.

Eastern Field

The eastern field was an open field within long uncut grass and a series of footpaths running across the field and utilised by local dog walkers as informal footpaths. The southwestern portion of the eastern field was densely vegetated and overgrown. The eastern field was accessed via an open gateway located in the northeastern corner of the field adjacent to the newly developed houses.

Whilst the eastern portion of the eastern field was generally level, ground levels on the western portion of the eastern field were variable. A shallow valley-like feature was evident transecting the western portion of the

eastern field from north-north-east to south-south-west. The northern and southern ends of this valley-like feature were grassed, but the central portion was heavily vegetated such that detailed site walkover of this central section was not possible. Nonetheless, observations into the more heavily vegetated area appeared to indicate that ground level fell quite sharply with steepening of the valley sides into this area.

In addition to the valley features, three sinkholes (Sinkhole 4, 5 and 6) were noted to be located within the western portion of the eastern field. Sinkhole 4 was located in the far southwestern corner of the eastern field and comprised a grassed depression. Sinkhole 5 was located to the north of Sinkhole 4, i.e. in the more densely vegetated portion of the valley-like feature. Sinkhole 6 was located to the east of Sinkhole 4 along the southern boundary of the eastern field. This sinkhole was also densely vegetated with mature trees, shrubs and undergrowth. Ground levels varied significantly between Sinkhole 4 and Sinkhole 6, the latter being at a higher elevation, i.e. on the shoulder of the valley-like feature and two step changes in slope level and profile were observed between Sinkhole 4 and Sinkhole 6. Figure 4 shows the locations of these identified geohazards.

Whilst not identified previously, an additional potential geohazard was observed in the hedgerow along the eastern side of the track bisecting the site. This feature was observed as an approximately circular hole at ground surface, tentatively identified as a crown hole, and located in the central third of the path alignment. Access to the feature was not possible due to the presence of undergrowth, but is likely to be required in due course to ensure that the feature can be treated and de-risked prior to development of the wider site.

November site visit

The site was revisited in late November 2023 such that Sinkhole 5 and a potential feature on the eastern side of the central footpath could be re-examined once leaves had started to fall and visibility into the features was better.

At the time of the re-visit, the feature in the eastern side of the footpath (c. 50m north from the southern end of the path) was evident as an open hole extending to unknown depth into the ground. The ground surface to the north, east and south appeared to have suffered some additional collapse such that the feature comprised an open hole with an estimated 1-2m diameter with a notable depression around its edge to the north, east and south. The hole appeared to have regressed towards the footpath albeit that no surface depression was observed in the footpath. An abandoned car (rusted shell) was located over the northern portion of the feature (located within the hedgerow). The open hole was considered consistent with the morphology of a crown hole. It was not possible to examine this feature in greater detail due to its location within the hedgerow alignment and also due to safety concerns of approaching or working adjacent to foundered strata and a hole of unknown depth.

An area of disturbed ground was also observed on the eastern side of the footpath c. 20m north of the southern end of the path. Whilst this disturbed ground included several holes c. 0.3-0.5m diameter and exposed soils, it was considered likely to be associated with badger activity or similar and not a geohazard. It is understood that the Client's Ecological Consultant had also identified this area of disturbed ground as being likely burrowing activity.

Sinkhole 5 was also revisited and whilst trees had shed some of their leaves, the density of vegetation within the feature hindered visibility. Nonetheless, the base of the Sinkhole appeared to fall towards the south and water was observed to be located in the bottom of the Sinkhole. The revisit was undertaken following a period of prolonged heavy rainfall and thus it was considered possible that the water in the Sinkhole might have been pooling of storm water run-off from the field areas to the west, north and east, or storm water exfiltrating the ground on the upper portion of the Sinkhole. The palaeo-valley feature extended to the north, rising gently from Sinkhole 5 towards the woodland beyond the northern boundary. Storm water was also observed to be pooling and flowing over the ground in the track and wooded area to the north, i.e. as overland flow.

2.2 Geology

British Geological Survey mapping indicated the subject site to be underlain by Head Deposits, Lambeth Group and Tarrant Chalk Member. The area indicated to be underlain by Head Deposits appeared to correlate with the general orientation of the valley to the west of the site and to extend through the site towards the north-east.

Head Deposits are drifts produced by solifluction, the downslope movement of debris outwash during the periglacial period, and characteristically vary from silt and clay to poorly sorted sand, gravel and chalk of local derivation.

The Lambeth Group is a sedimentary complex characterised by red, orange, yellow and grey mottled clay and sandy clay with a basal bed (the Bottom Bed) composed of clayey glauconitic sand. A bed of green-coated flints is also commonly present.

Tarrant Chalk is a soft white friable microporous limestone composed of coccolith biomicrites with a varying proportion of larger shell fragments. Flint occurs as nodular courses, tabular beds and linings to fractures.

At various levels clay sized material occurs as marl seams and partings. Close to the surface the upper few metres are invariably discoloured brown, due to leaching from the overlying strata. The interface with any overlying stratum is invariably extremely irregular as a result of localised weathering and general dissolution of the chalk. Weathering by frost action may extend to a depth of several metres.

Occasional solution features, such as pipes, swallow holes and solution cavities, usually in-filled with drift deposits, are found in the chalk, sometimes manifesting themselves at the surface as shallow circular depressions. Solution features may be reactivated by the concentrated ingress of water from leaking drains or soakaways. Reactivation may lead to surface collapse.

With reference to McDowell et al (2008), the occurrence of solution features in the general Lovedean and Horndean area (encompassing/bordering the subject site) is significantly higher than elsewhere within south-east Hampshire, with approximately 55 features per km^2, the average being 15 per km^2. The solution features reported by McDowell et al are predominantly associated with a shallow cover of drift deposits and palaeo-valley features. The majority of these features have been identified from shallow depressions (dolines) at ground level rather than collapse at ground level and the formation of sinkholes. The document reports that given the frequency of solution features in this area surprisingly few collapses at ground level have been recorded. Whilst the primary focus of McDowell et al's study was approximately 2km to the east of the subject site, the ground conditions on the subject site and located close to the head of a palaeo-valley form a similar ground model for the occurrence of solution features within the Chalk, this being further supported by the geomorphological evidence as described in Sections 2.2 and 2.3 above.

2.3 Hydrogeology

With reference to Environment Agency records and the Groundwater Vulnerability Map No. 52 entitled South Hampshire, the site is indicated to overlie a Secondary Aquifer (undifferentiated); a Secondary 'A' Aquifer; over a Principal Aquifer (assumed to be the Head Deposits, Lambeth Group and Chalk respectively).

The 'Secondary (undifferentiated)' Aquifer classification has been assigned in cases where the stratum in question has previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the strata.

Secondary 'A' Aquifers are defined as fractured or potentially fractured rocks which do not normally have a high primary permeability. Although these formations will seldom produce large quantities of water for abstraction, they are important both for local supplies and in supplying base flow to rivers.

Principal Aquifers are layers of rock or drift deposits that have high intergranular and/or fracture permeability, meaning that they usually provide a high level of water storage. They may support water supply and/or river base flow on a strategic scale.

The soil cover across the site varies from low to intermediate vulnerability classification. Intermediate leaching potential soils have some ability to attenuate diffuse source pollutants and in which non-absorbed diffuse source pollutants and liquid discharges have the potential to move rapidly to underlying strata or to shallow groundwater.

The site is located within the Inner zone of a Source Protection Zone (SPZ I) which is associated with a potable water abstraction located approximately 1km to the north of the site.

With reference to previous phases of assessment on the recently developed site immediately to the south of the site, groundwater is anticipated to be present at depth, possibly in excess of 25m below site ground level.

Reference to Defra's Hydrology Data Explorer (most recently accessed 09/11/2023) identified several groundwater monitoring wells within c. 5km of the site as summarised in Table 2.1.

Name	Bleak Cottage	Hinton Daubney Farm	Catherington	Pyle Farm Cottages	Sheepwash Lane
Grid Reference	SU6625912744	SU6800914243	SU69451435	SU7119512374	SU65511059
Distance from site (km)	1.7	1.85	2.15	2.85	2.95
Direction from site	W	N	NE	E	SW
Station ID	143302750	143301026	143301106	143701558	143302945
Aquifer	Tarrant Chalk Member	Tarrant Chalk Member	Chalk Group (undivided)	Tarrant Chalk Member	Chalk Group (undivided)
BH depth (m)	23.8	75.5	89.9	34.7	150
Datum (m AOD)	58.23	109.76	115.64	56.36	40.40
Shallowest groundwater level (m AOD)	43.81	51.83	55.60	33.64	38.39
Shallowest groundwater level date	25/03/2021	30/03/2021	02/03/2020	17/04/2018	25/03/2021
Deepest groundwater level (m AOD)	35.24	39.93	28.67	22.06	29.39
Deepest groundwater level date	22/10/2019	04/11/2022	16/11/2022	04/11/2022	08/11/2022

NOTE: Records relate to the most recent 5 years' of data as accessed on 09/11/2023; ground level on site is c. 72m AOD to 61m AOD

Table 2.1 Summary of nearby groundwater monitoring station records

2.4 Hydrology

No surface water features were located on or in close proximity to the subject site.

2.5 Sensitive Land Uses

A search was made of the third party desk study information in relation to environmentally sensitive areas including local and national nature reserves, areas of outstanding natural beauty (AONBs), Ramsar sites, sites of special scientific interest (SSSIs), conservation areas, special protection areas and biosphere reserves.

A Local Nature Reserve, Yeoll's Copse, was located c. 660m to the north-east, with the South Downs National Park located c. 800m to the north and Catherington Down SSSI was located c. 1.9km to the north of the site.

According to the Envirocheck dataset, the site lies within a eutrophic water Nitrate Vulnerable Zone (NVZ) as defined by the Department for Environment, Food and Rural Affairs (DEFRA). Nitrate Vulnerable Zones are

designated areas of land draining into waters polluted by nitrates from agriculture.

2.6 Environmental Data

Searches of other various environmental databases were made as part of the desk study, including air pollution control sites, Part IIA contaminated land, Integrated Pollution Control (IPC) and Integrated Pollution Prevention and Control (IPPC) sites, registered radioactive substances, COMAH sites, explosives sites, Notification of Installations Handling Hazardous Substances (NIHHS) sites, planning permissions for sites involving hazardous substances and fuel station registers. Additional detail is referenced in Appendix A.

No records were identified in the search area.

2.7 Geochemistry

Data obtained as part of the desk study provides details on the estimated soil chemistry for natural soils in the vicinity of the site. The estimated quality of natural soils beneath the subject site is presented in Table 2.2.

Determinand	Concentration (mg/kg)	In Excess of SGV/GAC/C4SL*?
Arsenic	<15	No
Cadmium	<1.8	No
Chromium	60-120	No
Lead	<150	No
Nickel	15-30	No

NOTE: *Comparative SGV/GAC/C4SL concentrations are for a residential end use with plant uptake
Table 2.2 Summary of Site Geochemistry

The natural background concentrations (where available) were below respective published Soil Guideline Values, Generic Assessment Criteria and Category 4 Screening Levels for the protection of human health under a residential land use, i.e. the most conservative end use.

However, these values are not necessarily representative of the site's soil chemistry and do not take account of current or historical activities on the site, nor the presence or composition of Made Ground soils. Furthermore, some screening criteria are dependent on pH and soil organic matter content. Therefore, concentrations of specific determinands and the utilised SGV/GAC/C4SL cannot be determined without site specific investigation and analysis.

2.8 Mining and Ground Workings

A summary of Mining and/or possible mineral Ground Working records within 2502m of the site is presented in Table 2.3 below.

Distance from Site	Name	Commodity	Status
0m NW	Eastland Gate Chalk Pit	Chalk	Ceased
0m S	Eastland Gate Chalk Pit	Chalk	Ceased
49m NW	Eastland Gate Chalk Pit	Chalk	Ceased
52m W	Eastland Gate Chalk Pit	Chalk	Ceased
150m SW	Woodcroft Chalk Pit	Chalk	Ceased
169m NW	Eastland Gate Chalk Pit	Chalk	Ceased

Table 2.3 Summary of Mining and possible mineral Ground Workings records

No workings relating to Reading Formation (brick clay) were identified within 500m of the site.

2.9 Landfill and Waste Management Facilities

A search of BGS recorded landfill sites, IPC registered waste sites, licensed waste management facilities, Local Authority recorded landfill sites, other registered landfill sites, waste transfer stations and other waste treatment or disposal sites was undertaken as part of the desk study. Such sites may form an artificial source of ground gases, such as carbon dioxide and methane, where wastes are buried or disposed of to landfill.

One historical landfill site was identified within 500m of the site and related to historic landfilling of a chalk pit at Woodcroft Farm 102m to the south-west of the site.

2.10 Historic Mapping

A review of historic mapping presented in the third party desk study indicated that the site had remained open fields with hedgerow boundaries throughout the mapping period.

Historic mapping labelled several features within the site as chalk pit, disused chalk pit, or as unlabelled earthwork type features. These appeared to correlate with the positions of Sinkholes 1-6 and the palaeo-valley feature.

2.11 Previous Ground Investigations

The third party desk study made reference to BGS borehole records proximal to, but not within, the site. These records indicated that a variable thickness of Lambeth Group was encountered overlying Chalk.

In addition, Geo-Environmental has undertaken intrusive investigations on the development land immediately to the south of the subject site and encountered superficial deposits including sand and gravel within and on the flank of the portion of the palaeo-valley feature which crossed that parcel.

2.12 Generic Contamination

The site's previous and current use is as agricultural land, primarily open fields. Elevated concentrations of contaminants of concern could potentially be present within any Made Ground and shallow natural soils underlying the site given the site's agricultural use. Sampling and laboratory testing formed part of the scope of the preliminary ground investigation undertaken and reported by Geo-Environmental.

No concentrations of concern, with respect to a residential end use, were identified from the testing undertaken.

3.0 PLANNING STATUS OF THE SITE

A search was made on 29/01/25 of the registered planning applications on the East Hampshire District Council website (ref: https://easthants.gov.uk/) and the following record was identified in relation to the site.

Case Reference: 55625/003
Application Description: Outline Planning Permission
Proposal: Outline planning application sought for the development of up to 164 dwellings, with associated vehicular access, infrastructure and landscaping (all matters reserved except access).
Date Registered: 15/05/2024

4.0 MINERAL POTENTIAL

The mineral potential of the site has been assessed on the basis of the encountered ground conditions.

A factual record of the conditions encountered during the physical investigations of the site are presented in the following sections.

The physical ground investigation works were undertaken in September 2023. The findings of the preliminary ground investigation were presented within the Ground Investigation Report (report ref. GE20772/GIR/DEC23). Extracts are presented herein where relevant to this assessment.

Unless stated otherwise, all depths are reported as metres below ground level (m bgl).

4.1 Ground Conditions

The ground conditions encountered were consistent with those anticipated based on published geological mapping and previous phases of intrusive investigation on the Phase 1 and Phase 2 development parcels to the immediate south of the site. However, the observed shallow soils varied in composition, with depth and laterally within individual investigation locations making it difficult to distinguish between soils of the Head Deposits and soils of the Lambeth Group. Reference has been made to published geological mapping to assist in assigning soils to specific strata. Within the Ground Investigation Report, shallow soils across the site were assigned to the Lambeth Group however, it is possible that some shallow soils were derived from reworking of the Lambeth Group and Chalk by natural processes.

A summary of the soil conditions encountered during the first ground investigation are presented in Table 4.1.

Top (m bgl)	Base (m bgl)	Geology	Positions
0.00	0.10 – 0.30	TOPSOIL: Grass over dark brown CLAY with varying proportions of silt, sand and gravelly and frequent roots and rootlets.	All
0.10 – 0.30	1.45 – 7.00	LAMBETH GROUP: Firm to very stiff brown, orange brown, orange and grey mottled CLAY with varying proportions of silt, sand and gravel; Stiff to very stiff grey, purplish grey, red and orange mottled CLAY; Orange, brown and grey mottled fine to medium SAND; Brown and off white cobbly CLAY.	All
1.45 – 7.00	15.00 (base of hole)	TARRANT CHALK: Structureless off white CHALK recovered as fine gravel sized clasts of very weak to weak chalk with a silt chalk matrix and occasional flint gravel, CIRIA grade Dm; Structureless off white CHALK comprising weak to moderately strong chalk clasts with a silt chalk matrix, estimated CIRIA Grade Dc.	BH01 – BH05, TP121 – TP124, WS01, WS04, WS06, WS07, WS11, WS12, WS13, WS16

Table 4.1 Summary of Ground Conditions

Whilst the soils encountered overlying the Chalk were reported as Lambeth Group, it is considered likely that some of these soils represent disturbed, potentially reworked strata. Published geological mapping indicates the presence of Head Deposits proximal to the southern central portion of the site and to the south of the wooded area of Sinkhole 5. This appears to correlate with Sinkhole 4 and the southern portion of the palaeo-valley feature within the site. As noted above, clear differentiation between potential Head Deposits (reworked, locally derived soils) and in-situ strata was not possible due to similarity of composition, condition and the like. It is possible that further investigation might be able to facilitate differentiation of strata in this portion of the site. The presence of more granular soils in some of the exploratory holes within or proximal to the southern portion of the palaeo-valley/Sinkhole 4 showed some possible correlation with superficial deposits encountered in exploratory holes located on the eastern shoulder of the southern continuation of the palaeo-valley on the development immediately to the south of Phase 3 (ground investigation undertaken by Geo-Environmental for Grainger as part

of assessment of the Phase 2 site). These superficial strata and their associated geomorphology comprised a sequence of layered deposits and terrace steps/shoulders and undulating ground on the eastern side of the palaeo-valley within the Phase 2 area. This was similar to the geomorphology around Sinkhole 4 and the area between Sinkholes 4 and 6.

As noted above, the ground conditions were observed to vary over relatively short distances, i.e. within the extent of some of the exploratory holes. In addition, the depth to the Chalk was observed to vary significantly such that whilst Chalk was encountered at relatively shallow depth in some of the exploratory holes, it was not encountered in others. These variations in depth to the Chalk are considered characteristic of karstic weathering, but also reflect the site's location on the 'feather edge' of the junction between the Lambeth Group and underlying Chalk.

For more detailed descriptions at specific locations, reference should be made to the exploratory hole logs presented within Appendix B.

4.2 Groundwater

Groundwater was not encountered within any of the exploratory holes during the intrusive investigation. Additionally, no monitoring wells were installed as part of this phase of investigation. However, previous intrusive investigation works undertaken across the adjoining site to the south (now developed) indicated that groundwater is present at depth within the Chalk, possibly c. 25m bgl or deeper. This is supported by groundwater monitoring records from off-site monitoring stations as summarised in Tabe 2.1 above.

It should also be noted that changes in groundwater levels do occur for a number of reasons including seasonal effects and variations in drainage. Such fluctuations may only be recorded by the measurement of the groundwater level within a series of standpipes or piezometers installed within appropriate response zones.

4.3 Obstructions

Obstructions were recorded at depth in several exploratory holes and were considered likely to be on a hard band of chalk, or flint.

4.4 Geotechnical Testing

The results of the geotechnical testing undertaken on samples attributed to Lambeth Group are summarised in Table 4.2, with test results presented in Appendix C.

Parameter	Lambeth Group
Natural Moisture Content (%)	12 – 44
Liquid Limit (%)	36 – 76
Plastic Limit (%)	14 – 22
Plasticity Index Ip (%)	22 – 55
Modified Plasticity Index Ip' (%)	23 – 53
A-Line Classification	CI – CV
pH	4.7 – 7.3
Water Soluble Sulphate (mg/l)	14.1 – 81

NOTE: Modified plasticity index is defined in NHBC Standards Chapter 4.2
Table 4.2 Summary of Geotechnical Test Results

The Modified Plasticity Indices showed the cohesive soils of the Lambeth Group to be of Medium to High Volume Change Potential as defined in NHBC guidance. A-line classification indicated the soils tested to be clay of intermediate to very high plasticity.

4.5 Mineral Quality and Quantity

The HMWLP indicated that the site was located in an area designated as a 'Mineral Safeguarding Area'. The Hampshire mineral resources map identified brick clay deposits to be present/anticipated, and, as such there could be potential for viable brick clay deposits to be recovered from the site, should they be present.

The intrusive investigation encountered a variable thickness and composition of strata considered characteristic of the Lambeth Group, i.e. source of the brick clay referred to in the HMWLP. Testing has shown the clay soils to be of intermediate to very high plasticity and medium to high volume change potential. Such soils can be prone to cracking on drying, e.g. in brick making, and may require addition of/blending with other soil types to create a viable material for brick making.

Whilst it might be possible to undertake extraction of the more cohesive deposits within the Lambeth Group by opencast (mass excavation) methods on this site, a sterile/no-dig buffer (assumed minimum 20m) would be required around the perimeter. A battered or stepped excavation profile would be required, and this would limit both the depth of excavation and volume which could be won from this site. In addition, segregating the more granular fractions from the cohesive soils would be very difficult and it is likely that much of the overall resource could be wasted during segregation.

At this stage, provisional estimates indicate that a soil volume of c. 100,000m^3 might potentially be won from mass excavation assuming approximately half of the site area could be excavated and clay recovered to an average thickness of 3m. This is very much a first approximation and not a statement of winnable volume or viable mineral reserve volume.

4.6 Opportunities for Prior Extraction

Current policy (Policy DM9) and guidance advocate the extraction of minerals prior to non-mineral development, where practicable, albeit with an acknowledgment that this approach needs to be flexible in application. The term 'practicable' relates not only to how prior extraction could be managed but also relates to the viability of mineral extraction and applies to post extraction reclamation such that this does not then prevent the non-mineral development taking place.

Whilst the HMWLP identifies the site as including a potential mineral resource for brick clay, this would relate to clay soils of the Lambeth Group. However, not all of the available clay might be suitable for use as brick clay due to sub-ordinate content of gravel, chalk or other extraneous geo-materials. Geotechnical laboratory testing indicates the clay soils of the Lambeth Group to be of intermediate to very high plasticity and medium to high volume change potential, such that they may be unsuitable as a simple, single raw ingredient for brick making =, i.e. may require blending with other soils to render them suitable. Ultimately, this factor would be a technical and commercial decision by any organisation seeking to use the clay soils as a brick clay (assuming there is any commercial interest).

Groundwater is anticipated to be present at depth, but shallow, perched water could be present and flowing water was observed on the ground surface within the head of the palaeo-valley (Sinkhole 5).

Whilst the depth and composition of the Lambeth Group were variable, the presence of cohesive soils over the Chalk provides some degree of protection to strata classified as a Principal Aquifer and as a barrier/inhibiter to rapid storm water ingress into the Chalk at sinkhole locations.

Given the site's sensitivity (Principal Aquifer and Source Protection Zone status), it is considered unlikely that mass excavation and extraction of clay soils would be acceptable in terms of risk of harm to the underlying aquifer and groundwater resource because of the potential for sediment run-off to discharge into any of the sinkholes (water was observed to drain into Sinkhole 5 during the November 2023 site visit). If mass extraction was permissible in terms of groundwater risk, it is anticipated that a substantial no dig buffer would be applied around each sinkhole

as part of any sediment control measures. This would further reduce the overall area of site that could be excavated and thus further reduce any winnable volume of any mineral resource.

The site is situated c.3-6km from the A3(M) depending on tracking route and thus might appear to be close to a major road link. However, the 3km route would require vehicle movements through residential areas and a school on local residential road network and the 6km route would require an initial westerly detour onto local country lanes prior to joining the local residential road network. In addition, suitable backfill material would also need to be transported to site by lorry and probably from multiple 'donor' sites. These lorry loads have the potential to cause significantly adverse impacts to the local communities and local road networks.

In backfilling the site following any mineral resource extraction, the engineering properties of the ground would be altered. This would potentially require changing any current foundation solution. The concrete requirements for this solution might also be more onerous, therefore increasing the carbon footprint and embodied carbon within the development, causing an adverse impact to the environment. In general terms, backfilled materials would not be considered geotechnically suitable as a foundation bearing stratum and thus, a deep foundation solution such as piled foundations might be required within areas of the site where extraction had occurred.

Given the site's sensitive status in terms of risk of harm to groundwater, it is also expected that there could be significantly onerous controls required in terms of materials permissible for deposition, i.e. in order to negate any risk of harm the groundwater resource (local drinking water supply source). Any consideration of mass excavation on the site, and hence need for deposition of backfill materials will require consultation with relevant regulators and organisations (including the Local Planning Authority, Environment Agency – groundwater and waste teams, and Portsmouth Water). At this stage, it is considered that there is no guarantee of regulatory approval, even in principle, to a concept of mass excavation and backfill deposition on this site. This alone could 'sterilise' the site in terms of prior extraction viability.

Landfilling using putrescible or degradable wastes will not be an acceptable option due to the risk of harm to the underlying aquifer, groundwater resource and risk of harm to human health and built environment due to the proximity of existing residential development.

4.7 Opportunities for Incidental Extraction

Much like the opportunities for prior extraction, current policy and guidance advocate the incidental extraction of minerals during the non-mineral development, where practicable. Such incidental extractions may be possible during the groundworks and foundation excavation stage. Any excess materials excavated during the development could be placed on CL:AIRE's register of materials, following best practice.

However, as noted above, given the variability in composition of the strata encountered, any incidental extraction might require additional treatment or processing to generate a usable mineral resource such as a brick clay and is also likely to generate a significant 'waste' stream, i.e. soils with no mineral resource value.

The cohesive soils beneath the site would have potential, subject to acceptability and compliance testing, to be considered for use as earthworks fill principally within the site assuming a requirement for earthworks and secondly as a viable earthwork fill for other construction sites. This might then preserve mineral resources elsewhere.

5.0 OPINIONS OF LOCAL OPERATORS

Consultation was made with local operators with regards to the commercial interest and viability of the potential mineral deposits on the subject site.

Grundon Sand and Gravel Ltd, Raymond Brown Quarrying Products Ltd and Tarmac Trading Ltd were contacted on 23/01/2025. At the time of writing, neither Grundon or Raymond Brown has responded, and this may reflect a lack of commercial interest. A verbal response was received from Tarmac stating they would have no commercial interest in the site, a copy of the conversation record is presented in Appendix D.

6.0 CONCLUSIONS

The intrusive investigation encountered a variable thickness of clay soils beneath the site. However, testing thus far indicates a potential for shrinkage on drying which might render the soils unsuitable for brick making, therefore any mineral quality is considered to be low. A no dig buffer would be required around the margins of the site and separate no dig buffers would be expected to be required around each of the sinkholes. Given these reductions in winnable area and the variable, sometimes limited thickness of Lambeth Group strata, the overall winnable volume is considered to be very low.

In addition, the presence of the sinkholes and requirement to negate the risk of any harm to the underlying aquifer (and drinking water supply resource), might render mass extraction unviable, especially if onerous groundwater protection measures and/or limitations on backfill materials are necessary.

To date, one response has been received from consultation with local operators and this was to state there would be no commercial interest or commercial viability in extraction of brick clay from this site.

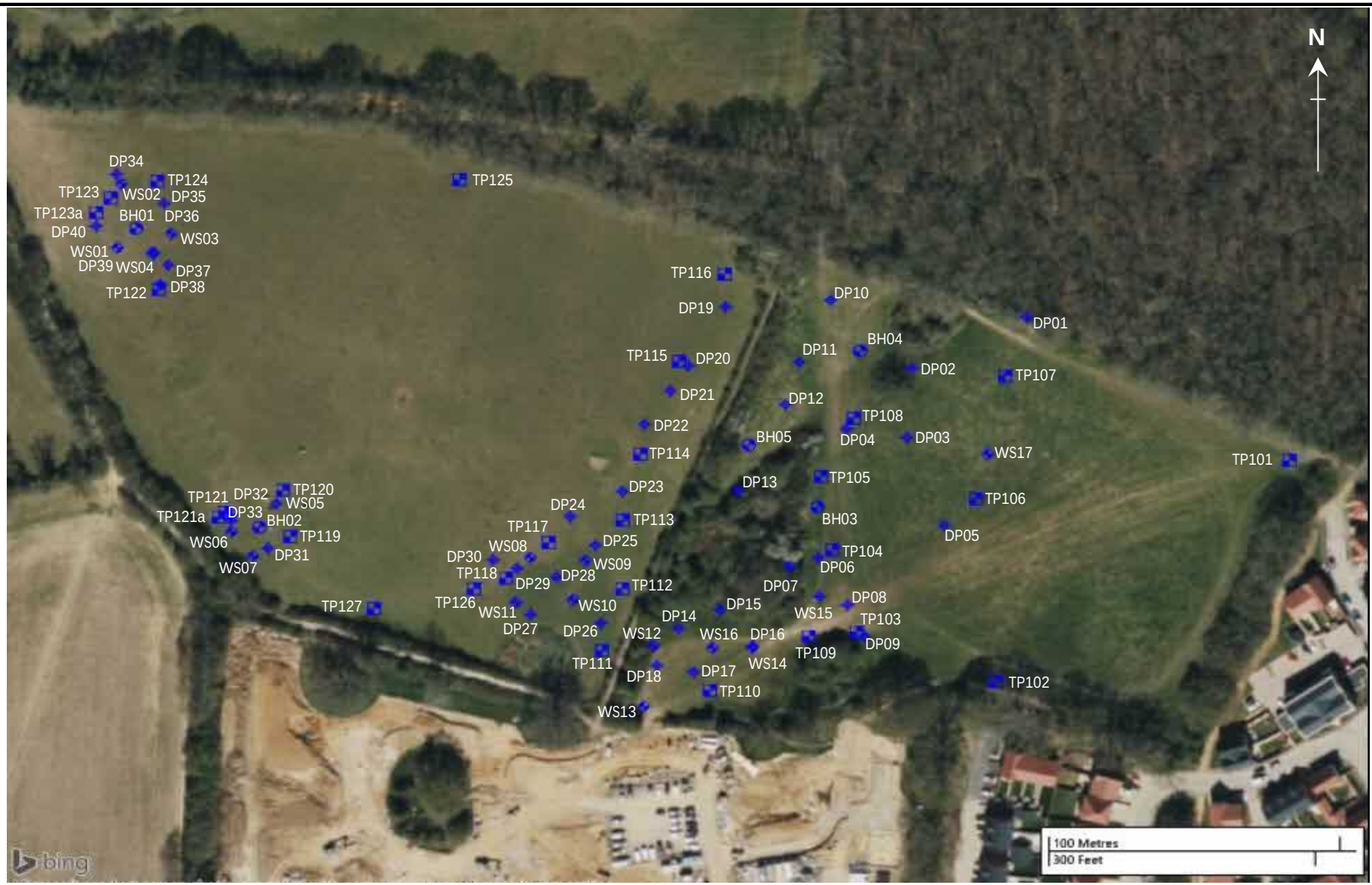
There could be potential for incidental extraction as part of a development of the site with any such soils won from development based excavation and construction work placed on CL:AIRE's register of materials, following best practice. Given the ground conditions encountered, incidental extraction of Lambeth Group strata is likely only to generate a mixed cohesive fill (likely to be cohesive assuming >35% clay fraction of the excavated soil mass). It is considered that there is no potential to extract or win 'brick clay' as a mineral resource.

Incidental use of site won soils might be feasible if/where ground level raising is required, or for earthworks associated with future development of the site and re-use of site won soils could reduce or remove a requirement to import specific earthworks fill materials, thereby preserving other deposits/resources off-site whilst maximising the re-use potential of any on-site resource as a general earthwork fill rather than necessarily as an aggregate or other mineral resource.

FIGURES



Project:	Woodcroft Phase 3, Lovedean			Title	Site Location Plan
Client:	Grainger plc			Geo-Environmental Services Ltd Unit 7 Danworth Farm, Cuckfield Road Hurstpierpoint, West Sussex BN6 9GL +44(0)1273 832972 www.gesl.net	Geo-Environmental
Ref No:	GE22961	Version:	1		
Drawn:	GR	Date:	30/01/2025		
Figure:	1	Scale:	Not To Scale		



Project:	Woodcroft Phase 3, Lovedean			Title	Exploratory Hole Location Plan
Client:	Grainger plc			Geo-Environmental Services Ltd Unit 7 Danworth Farm, Cuckfield Road Hurstpierpoint, West Sussex BN6 9GL +44(0)1273 832972 www.gesl.net	Geo-Environmental
Ref No:	GE22961	Version:	1		
Drawn:	FG	Date:	30/01/2025		
Figure:	2	Scale:	Not To Scale		

APPENDIX A

Desk Study Information



Phase II, Land at Woodcroft Farm, Waterlooville, Havant

Phase 1 Ground Condition Assessment

On behalf of **Grainger plc**

Project Ref: 21834 | Rev: 0 | Date: January 2015

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Date: **January 2015**

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For and on behalf of Peter Brett Associates LLP				

Revision	Date	Description	Prepared	Reviewed	Approved
Rev0	Jan 2015	Final for issue	CW	AZ	CE

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1 Introduction

1.1 Background Information

Peter Brett Associates (PBA) has been instructed by Grainger plc, the Client, to carry out a Phase 1 Ground Condition Assessment for the proposed development of Phase II at the land at Woodcroft Farm, Waterlooville, Havant, Hampshire.

The purpose of this study is to inform the master planning process and to support a planning application for the development of the site for residential use.

Previously a desk study review of readily available published information was carried out to assess the ground conditions to support the planning application for the proposed residential development at the adjacent parcel of land denoted Phase I at Woodcroft Farm, Waterlooville, Havant, Hampshire (PBA, 2010). Subsequently, an intrusive ground investigation was carried out at Phase I to determine the ground conditions for the design of the proposed development. The factual results of the investigation are presented in a separate report prepared by Risk Management (GEL, 2013). The interpretation of the factual information and comments on the ground conditions is presented in a separate report prepared by Peter Brett Associates (PBA, 2013). Information from these studies and investigation was utilised in this report.

1.2 Objectives

The objective of this report is to review readily available information to identify the likely ground conditions and to assess whether there are any potential geoenvironmental or geotechnical hazards and constraints to the proposed development.

1.3 Scope of Work / Terms of Reference

Guidance on ground condition assessment is given in CLR 11 Model Procedures for the Management of Contaminated Land (EA, 2004), that sets out a process based on a tiered risk assessment with increasing level of detail required to progress through the tiers.

The primary aim of this assessment is to meet the requirements of the National Planning Policy Framework (NPPF, 2012) Clause 121. Under the definition ‘Site Investigations Information’ given in the NPPF glossary page 56, a Phase 1 Desk Study and contamination risk assessment is the minimum requirement under the NPPF to support any planning application on a site that might be potentially affected by contamination or instability.

This report presents a review of the acquired information, together with the development of a Preliminary Conceptual Site Model (CSM) and the associated risk assessment. PBA has undertaken the work in general accordance with our specification for a Phase 1 Ground Condition Assessment, a copy of which is presented in Appendix 1.

The report also identifies the potential hazards and constraints to the proposed development of the site with regards to the risk of subsidence arising from artificial cavities, natural cavities, and ground conditions.

Attention is drawn to the Essential Guidance for Report Readers included as Section 9 of this report.

1.4 Methodology and Report Format

Contaminated Land

The PBA Methodology for Ground Condition Assessment is presented in **Appendix 1**.

The underlying principle is the evaluation of pollutant linkages in order to assess whether the presence of a source of contamination could potentially lead to harmful consequences. A pollutant linkage consists of the following three elements:-

- A source of contamination or hazard that has the potential to cause harm or pollution;
- A pathway for the hazard to move along / generate exposure; and
- A receptor which is affected by the hazard.

For each potential pollutant linkage identified the risk is estimated through consideration of the magnitude of the potential consequences and the likelihood or probability of an event occurring.

This report is divided into chapters identifying potential sources (hazard identification), potential pathways and receptor identification and risk estimation and assessment.

Ground Stability

The objective of a ground stability assessment it to identify the likely ground conditions of a defined site and assess the information to identify potential issues that may have associated geotechnical liabilities or other ground engineering constraints that could affect the site development. This includes potential subsidence arising from natural cavities, artificial cavities - coal and non-coal (underground) mining / extraction activities and adverse foundation conditions (ranging from soft weak sediments to hard strong rocks) and slope instability.

Geotechnical Considerations

The objective of the geotechnical assessment is to provide a preliminary guide to the likely foundations, infrastructure, pavement design, slope stability, and infiltration drainage. These comments are based on the desk study information and information from previous studies and investigation for the adjacent Phase 1 development and therefore are limited by the data available and further information from additional ground investigation will be required to confirm these comments in due course.

1.5 Sources of Information

The following sources of information were used in the preparation of this report:

- Landmark was commissioned to provide historical maps and an Envirocheck computerised data searches, the historical maps are presented in **Appendix 3** and the Envirocheck Report is presented in **Appendix 4;**
- The National Artificial and Natural Cavities Database managed and enhanced by Peter Brett Associates LLP (PBA);
- Information published by the British Geological Survey (BGS) from 1:50,000 scale geological maps;
- Borehole Logs held by the British Geological Society (BGS) as accessed via their website, www.bgs.ac.uk/data/boreholescans/home.html;
- A Site Walkover conducted by a PBA engineer;
- Environment Agency web site “What’s in Your Back Yard?”, http://maps.environment-agency.gov.uk; and

- Information from previous studies and investigations for Phase I, Land at Woodcroft Farm, Waterlooville.

Unless stated otherwise, information from previous studies and investigations has not been included in this report and, where referenced, the reports presenting this information should be read in conjunction with this report.

2 The Site

2.1 Introduction

This section presents a summary of the site setting, current and historical land uses, both on and immediately adjacent to the site. Land use information is used to inform the hazard identification element of the risk assessment.

2.2 Site Location and Setting

The site is situated adjacent to the western fringes of Horndean near Waterlooville as part of Woodcroft Farm and comprises predominantly agricultural open fields and woodland. The site is located at National Grid Reference SU 681 122. A site location plan is presented as **Figure1**.

The natural ground level across the site falls gently from the northern boundary of the Site where the ground level is about 72 m OD to the southern boundary where the ground level is about 61 m OD with a minor valley feature crossing the site orientated north-north-east to south-south-west.

A site layout plan is presented as **Figure 2**.

2.3 Historical Land Use

The historical land use information is based on Ordnance Survey maps and aerial photography provided by Landmark and are presented in **Appendix C**, particular attention is given to potentially contaminative land uses within or adjacent to the site boundary.

Historically, the site was situated in the northern edge of the former Forest of Bere. According to available records Woodcroft Farm was built by 1830s and its barns by the 1850s (CGMS, 2010).

The earliest available OS map that covers the site dated 1868 indicates that the site is situated in undeveloped agricultural land comprising numerous fields. Woodcroft Farm comprises a farm house and three barns shown about 0.2 km to the south of the Site. Two 'Old Chalk Pits' are marked at the centre of the site and a number of 'Old Chalk Pits' are recorded in the fields around the site. A copse later denoted James's Copse is recorded along the northern boundary and immediately to the north of the site. A number of other copses are shown in the vicinity of the site. A farm denoted Eastland Gate and Yewtree Cottage are shown immediately to the west of the northwest corner of the site.

By early 1930s residential properties as part of Waterlooville were constructed about 0.4 km to the east of the site. Subsequently, by the 1960s further residential developments were constructed to the east and south east of the site as part of Waterlooville. By the 1970s Woodcroft Primary School was constructed to the southeast of the site. A chalk pit within Woodcroft Farm situated about 150 m to the southwest of the Site had been backfilled.

The land use at the site and its immediate surroundings remains largely unchanged from the 1980's through to the latest available map dated 2014.

2.4 Current Land Use

A site walkover was undertaken by PBA on the 18th November 2014 to observe current site conditions. The layout of the site, salient notes and the location and direction of site photographs are presented as **Figure 2**. Photographs from the walkover are presented as **Appendix 2**.

The site comprises predominantly agricultural pastureland (horse paddocks) divided into two fields denoted in this report as Field A and Field B. The fields are used for grazing of horses from Woodcroft Farm. A track from Woodcroft Farm leads to a gate at the southern boundary of the site.

The track crosses the site and divides Fields A and B. The track has dense vegetation and trees along the eastern side and leads to a telephone mast situated in the northeast corner of Field A. The northern boundary of the site comprises very dense vegetation including mature trees and shrubs.

The ground level in Field A falls gently from north to south. There are 3 depression features assumed to be solution features (Features 1, 2 and 3) that were observed in Field A. Feature 1 is an elongated in a northeast to southwest direction, with a linear depression approximately 40 m by 15 m through the centre and about 1 m below the surrounding ground. Feature 2 is situated in the southwest corner of the site. The feature is linear approximately 30 m long and 20 m wide about 1 m below the surrounding ground. Feature 3 is situated in the southeast corner of Field A adjacent to the cluster of features in Field B. The feature is circular in shape between about 30 and 40 m in diameter with a depth of between about 1.0 and 1.5 m below the surrounding ground.

The western part of Field B contains three observed depression features (Features 4, 5 and 6) assumed to be solution features. Within Field B there are changes in slope on the western, with a minor valley like feature orientated in a north-north-east to south-south-west direction with Features 4 and 5 situated within the valley feature. About 20 m to the east of the base of the valley feature there is a pronounced linear change in slope angle with a smooth convex slope.

Feature 5 is elongated in shape in a north-north-east to south-south-west direction situated along the base of the minor valley feature. The solution feature is between about 2.0 and 2.5 m below the surrounding ground level. The dimensions of the feature are approximately 70 m long and 30 m wide at its widest point. The feature is heavily vegetated and currently fenced off.

Feature 4 is situated at the southern part of the site along the valley feature. The feature is up to 3 m below the surrounding ground level to the west, north and east. It has a circular shape approximately 40 m in diameter.

Feature 6 is up to 1.5 m below the surrounding ground and is roughly circular with diameter of about 20 m. The feature is heavily vegetated and contains some pieces of concrete rubble. Linear changes in the slope angles were observed along two lines between Features 5 and 6.

The site is surrounded mainly by agricultural land. Woodcroft Farm and associated buildings including stables and a small workshop are situated about 150 m south of the site. Eastland Gate Farm and associated buildings is situated immediately to the west of the western corner of the site. Woodcroft Primary School and housing developments of Cowplain and Horndean are situated to the east of the site.

2.5 Proposed Development

It is proposed to develop the site for residential use, constructing up to 180 dwellings, including landscaping, access roads and parking.

3 Environmental Settings

3.1 Introduction

Information about the environmental setting is used in the Hazard Assessment section of the risk assessment to identify potential pathways and receptors.

3.2 Geology

Published Information

The 1:50,000 scale geological map of the area (BGS, 1998) indicates the solid geology on the site comprises the Lambeth Group (formerly the Woolwich and Reading Beds), which is described as mottled locally sandy clay and overlying the Tarant Chalk Member of the Chalk Group deposits (formerly part of the Upper Chalk) at depth. In the very northwest corner of the site the Lambeth Group is absent and the Chalk is recorded at the surface.

The solid geology is overlain by Head Deposits at the southern boundary of the site within the minor valley feature. According to the geological map the Head Deposits comprise sandy silty clay, locally gravelly, chalk and flint. It is possible that due to the topography at the site, Head Deposits derived from reworking of the Lambeth Group and the Chalk by natural processes may be present in other parts of the site.

The bedding of the strata on and in the vicinity of the site is dipping in a general direction to the south-south-west. A dip direction and dip angle of 190°/1.5° is recorded immediately to the north of the site.

An extract of the geological map is presented in **Figure 3**.

BGS Borehole Records

The British Geological Survey archives contain records of a number of borehole and water wells previously completed in the vicinity of the site. Copies of a number of borehole and well records have been obtained from the archives, these comprise:

a) The record of six boreholes sunk approximately 100 m southeast of the site (BGS, 1975).

b) The record of a water well SU61SE114 sunk on site, approximately 2 m north of the farmhouse (BGS, 1966).

The borehole records indicate that the geology 100 m to the southeast of the site comprise the Lambeth Group underlain by Chalk. A summary of the ground conditions in the historical borehole records is presented in Table 3.1 below.

Table 3.1 Summary of Ground Conditions from Historical Boreholes

Strata	Depth (m)	Description
Lambeth Group	1.8 - 10.5	Multicoloured clay locally sandy with some flint gravel pockets and/or thin layers (<0.8 m thick) of sand.
Chalk	> 11.0 (base not proven)	Recovered as gravel fragments with remoulded matrix and flint nodules. Locally a layer (<1.0 m thick) of hard chalk was encountered at the top.

Copies of these records have been are reproduced in **Appendix 5.**

Phase I Investigation 2013

A Phase I ground investigation was carried out in 2013 immediately to the south and east of the Phase II site (PBA, 2013). The investigation revealed that ground conditions in the northwest part of the Phase I site comprise Head Deposits overlying the Chalk. On the south and east parts of Phase I the Lambeth Group is present overlying the Chalk, with occasional pockets of superficial Head Deposits present overlying the Lambeth Group. Made Ground was encountered overlying the natural soils in the infilled historical pit and within the farmyard. Sinkholes associated with karstic weathering of the Chalk and solution feature cavity infills were encountered at a number of locations at the site. Karstic weathering in the chalk was locally identified to a depth of 10 m below ground level.

Details of the strata from the Phase I investigation are summarised in **Table 3.2** below.

Table 3.2 Summary of Ground Conditions based on the Phase I Investigation (PBA, 2013)

Stratum		Depth to base (m bgl)	Typical Description
Sinkhole and Solution Features Infill		2.5 to 7.5 (where present)	Variable in composition and comprised clay with variable proportions of sand and gravel and silty sand with some chalk and flint gravel.
Made Ground	Infilled Pit	0.6 to 5.8	Variable in composition and comprised clay with changing proportions of sand, gravel and some timber and organic matter. Locally layers of sandy gravel with cobbles and boulders of concrete and brick up to 1.2 m long were found.
	Dismantling Yard	0.5 to 0.6	Variable in composition and comprised clayey gravel and sandy gravelly clay.
Head Deposits		1.4 to 4.2 (where present)	Typically comprises clay with variable proportions of silt, sand and gravel with pockets and beds of sand and/or gravel with some clay.
Lambeth Group		2.4 to 12.7 (where present)	Multicoloured clay with some silt and sand partings and locally silt and sand. The clay locally contains red and black round and subrounded flint gravel
Chalk Group		>15.0 base not proven	White with black specks with occasional orange staining recovered as gravelly sandy chalk silt and a silty chalk gravel and cobbles. Locally the Chalk contained seams <5 mm thick of soft brown clay.

Groundwater level in the Chalk as measured in an existing water well within Woodcroft Farm was at about 30 m depth. Perched groundwater tables were encountered within the Lambeth Group with groundwater levels measured between 4.1 and 6.5 m below ground level.

Localised sources of contamination (PAH, heavy metals, asbestos and soil gas) have been identified associated with the infilled pit and the dismantling yard.

3.3 Naturally Occurring Geological Hazards

An assessment of potential geological hazards that may give rise to instability or adverse foundation or construction conditions as supplied by the British Geological Survey (BGS) from their National Geosource Data Service are presented in the Envirocheck Report reproduced in **Appendix 4**.

The assessment is generated automatically based on digital geological maps and the scope and the accuracy is limited by the methods used to create the dataset and is therefore only indicative for the search area.

The information contained in the Envirocheck Report has been reviewed and where considered necessary reassessed considering the specific information available for the site. The modified

assessment of the potential for geological hazards to be present on the site is summarised in **Table 3.3** below.

Table 3.3 Summary of Geological and Mining hazards from Envirocheck report.

Hazard	Hazard Potential	PBA Opinion/Comment
Shrink swell	Moderate	This designation is likely to be related to the Lambeth Group clays. PBA concur with this designation
Landslides	Low	PBA concur with this designation
Soluble Rocks	Moderate	Based on the site settings, geomorphology, natural cavity records and ground investigation for Phase I the overall potential for solution features to be present at the site is considered by PBA to be **High**.
Compressible Ground	No Hazard	PBA concur with this designation.
Collapsible Rocks	Very Low	PBA concur with this designation.
Running Sand	Very Low	PBA concur with this designation.
Coal Mining affected areas	None within 75m of site	PBA concur with this designation.

The potential for the occurrence of the majority of geological hazards at the site is negligible or very low with the exception of hazards arising from shrinking and swelling clays of the Lambeth Group which is classed as a Moderate Hazard. The potential for occurrence of solution features though is considered to be High Hazard.

3.4 Natural and Mining Cavities

Natural Cavities

The surface depressions created over solution features are the consequence of ground subsidence occurring as part of a continuous natural karst process as the chalk at depth is dissolved away progressively and are generally referred to as sinkholes. Across the Chalk outcrop sinkholes are associated with the presence of cover deposits, especially those of Palaeogene ages, such as the Lambeth Group (Edmonds, 2008), and also where Quaternary Head Deposits are present. A schematic diagram that illustrates the development of natural cavities in Chalk is presented as **Figure 6.**

The ground investigation in Phase I identified 3 solution features (hollows) and an additional feature was identified but could not be investigated at the time. Two of the verified solution features were found to comprise hollows that have developed as a sinkhole centred over solution widened and infilled subvertical joints that extend to depth in the Chalk and may radially inter-link with other solution cavities associated with solution widened bedding planes in the Chalk. Such cavities may be both infilled with low strength sands/clays/gravels or even maybe open and air-filled. The third solution feature is likely to be a sinkhole that has developed over a dissolution weathering feature (e.g. solution pipe) associated with a karst horizon in the Chalk that has migrated up to the surface through the Lambeth Group (PBA, 2013).

A search of the PBA Natural Cavities Database indicated that there are three records of sinkholes or swallow holes within the site and ten additional records of natural cavities within 250 m from the site. A plan showing the locations on and in the vicinity of the site is presented as **Figure 4**.

The ground conditions at the site are expected to be similar to the ground conditions found in Phase I. Overall, the potential hazard for ground subsidence over karstic features formed by dissolution weathering of chalk at the site is assessed to be **High**.

Mining Cavities

A search of the PBA Mining Cavities Database indicated that there are no recorded mining cavities located within 2 km of the site centre. The nearest recorded mining cavity is located 2.2 km to the east south-east.

3.5 Radon

Radon is a naturally occurring radioactive gas and emanates from geological formations to varying degrees, depending on the type, porosity and permeability. The guidance notes on protective measures for new dwellings (BRE, 2007) presents a series of maps that determine the level of protection that new dwellings are required to have for protection from radon

The guidance notes (BRE, 2007) indicate that the site is situated in area where radon protection measures are not required.

3.6 Hydrogeology

The published groundwater vulnerability maps (NRA, 1995) indicates the Head Deposits and the Lambeth Group are classified as Secondary A Aquifer (former Minor Aquifer), which are formations of variable permeability that, although seldom producing large quantities of water for abstraction, may be important for local supplies and in supplying base flow to rivers.

The Chalk is classified as a Principal Aquifer (former Major Aquifer). These are layers of rock or drift deposits that have high intergranular and/or fracture permeability - meaning they usually provide a high level of water storage. They may support water supply and/or river base flow on a strategic scale.

Groundwater vulnerability mapping (NRA, 1995) shows that the soils on the majority of the site have Low Leaching Potential, whereas the soils at the southwest corner of the site are shown to have Intermediate Leaching Potential (I1) (NRA, 1995). Intermediate Leaching Potential soils have some ability to attenuate diffuse source pollutants and in which non-absorbed diffuse source pollutants and liquid discharges have the potential to move rapidly to underlying strata or to shallow groundwater. However, research by Edmonds (2008a), taking into account the karst setting, suggests that the Lambeth Group Deposits, because of their hydraulic connectivity with solution features developed within the surface of the underlying chalk, should be classified as being of High Leaching Potential. Sinkhole locations are classified as being of Extremely High Leaching Potential. These classifications refer to situations where pollutants can rapidly penetrate down into the chalk aquifer to reach the water table to cause pollution because little or no attenuation is possible given the fast travel times. The travel time can be as little as 24 hours.

The EA has defined Source Protection Zones (SPZs) for valuable water resources such as wells, boreholes and springs used for public drinking water supply. According to the EA website (2011) the entire site is located within an Inner Source Protection Zone (Zone 1). SPZ1 is defined as the 50 day travel time from any point below the water table to the source.

According to the Envirocheck Report (LIG, 2014) there are two recorded groundwater abstractions located within a 2 km radius of the site from the Chalk. The closest abstraction license is registered to Portsmouth Water Ltd located approximately 1 km to the north of the site and is used for potable water supply. It is understood that the Inner SPZ (Zone 1) that underlies the site is in-place to safeguard this abstraction borehole.

The groundwater information available for Phase I suggests it is plausible there are two groundwater bodies beneath the site; one a perched water table within the Lambeth Group at around 5 m below

ground level, with the main regional water table being within the Chalk Group at around 30 m below ground level (PBA, 2013).

The 1:100 000 scale hydrogeological map of the area (BGS, 1974) indicates that the groundwater level in the Chalk in October 1973 was at about 30 m below existing ground level. The groundwater is shown to flow in general direction to the southeast.

3.7 Hydrology

There are no records of a significant surface water course within 1 km of the site.

3.8 Groundwater and Surface Water Control

Information on ground and surface water controls are presented in the Envirocheck Report (LIG, 2014) and reproduced in **Appendix 4**.

The results of the database search are summarised on the following table and discussed below:

Table 3.4: Summary of Groundwater and Surface Water controls

Groundwater and Surface Water Controls	Number on site	Number within 500m of site
Abstraction	0 (0)	0 (0)
Discharge Consents	0 (0)	1 (0)
Pollution Incidents to Controlled Waters	0	3
Prosecutions Relating to Controlled Waters	0	0

Notes:
1) Numbers in brackets denotes number of authorisations, licences or permits that are lapsed, revoked, cancelled, superseded, defunct, surrendered, not applicable or not yet started.
2) Includes water impact entries on the Substantiated Pollution Incident Register.

Discharge Consents The closest active consent is licenced to Mrs Margaret Watson, located approximately 470 m to the west of the site, with the licence held for discharging treated sewage effluent via a soakaway.

Given the distance from the site and effects of treatment, this discharge license is not considered to represent a particular risk of environmental hazard to the site or the proposed development.

Pollution Incidents There are records of 3 pollution incidents within 500 m from the site with the closest situated about 220 m to the southeast. All of the incidents are classified as class 3 (minor incident).

Given the distance from the site and the type of incidents none of the incidents are considered to represent a particular risk of environmental hazard to the site or the proposed development.

3.9 Landfill Records

According to the Envirocheck Report (LIG, 2014), there are two historic landfill sites within 1 km of the site boundary. The nearest is situated about 100 m to the southwest of the site and according to the Environment Agency records the pit was filled with 'Deposited waste including industrial waste'. Anecdotal information from the Woodcroft Farm tenant, Mrs Jenny Manson indicates that the pit was backfilled with inert and construction demolition materials. The farm tenant also stated that the area of

the infilled pit settled over the years. The 2013 investigation targeted the infilled pit and further information is provided in Section 2.2.

3.10 Contemporary Trade Directory

According to the Envirocheck Report there are 6 active contemporary trade directory entries within 250 m of the site two of which are active. The nearest record is for waste disposal services situated about 160 m to the south of the site.

Given the distance from the site and the nature of the activities none of these are considered to represent a particular risk of environmental hazard to the site or the proposed development.

3.11 Sites Determined as Contaminated Land under Part 2A

There are records of a contaminated land register entries or notices within 1 km of the site boundary.

3.12 Ecology

There are no environmentally sensitive sites designated within 1 km of the site. The nearest designated site is the Catherington Down a Site of Special Scientific Interest (SSSI) located approximately 1900 m to the north of the site. The SSSI is designated for being a chalk based grassland similar to the South Downs and is an example of early strip cultivation.

4 Tier 1 Preliminary Risk Assessment

4.1 Introduction

The methodology developed and adopted by PBA for the assessment of ground conditions is presented in **Appendix A**. In accordance with guidance presented in CLR 11 (EA Model Procedures for the Management of Land Contamination) we adopt a staged approach to risk assessment and this report presents a Tier 1 assessment or first stage.

The underlying principle to ground condition assessment is the identification of pollutant linkages in order to evaluate whether the presence of a source of contamination could potentially lead to harmful consequences.

4.2 Conceptual Site Model

The Tier 1 Preliminary Risk Assessment includes the development of a conceptual site model (CSM). The CSM describes the types and locations of potential contamination sources, the identification of potential receptors and the identification of potential transport/migration pathways.

For a pollutant linkage to be identified a connection between all three elements (source-pathway-receptor) is required.

4.3 Geoenvironmental Hazard Identification

On site

The Site has been in agricultural use (horse grazing) with no identified sources of contamination on the site. Based on the known current and historical land uses the potential for significant widespread ground contamination to be present is considered to be **Very Low**.

Off site

The site is surrounded by agricultural land. The 2013 investigation in Phase I identified limited contamination in Woodcroft Farm within the small infilled pit and a dismantling yard. The elevated contaminants included hydrocarbons, metals and asbestos and elevated concentrations of soil gas. However, the contamination was found to be localised and was not identified in any of the exploratory holes in the other parts of Phase I. Furthermore, significant elevated concentrations of soil gas or gas flows were not identified in any of the monitoring wells installed outside of the infilled pit.

Based on current and historical land use (agricultural) adjacent to the site, the potential for widespread contamination to be present in the area surrounding the site is considered to be **Very Low**.

4.4 Hazard Assessment

Following the source-pathway-receptor model, the absence of any sources of significant contamination would therefore indicate that there could be no plausible pollutant linkages and therefore the risk to the receptors such as human health, ecology, controlled waters etc. is considered to be **Very Low**.

4.5 Conclusions

The results of this Ground Condition Assessment consider that the site soils are unlikely to be impacted by contamination. The site is considered to have a **Very Low** risk of ground contamination being present. A **Very Low** risk is classed as follows:-

There is a low possibility that harm could arise to a receptor. In the event of such harm being realised it is not likely to be severe.

The conceptual site model and the Tier 1 risk assessment have been adequately informed such that the potential hazards and their associated risks are clearly identified. It is considered that a ground investigation is not required to support the planning application for the development of the site for contamination purposes. Ground investigation will be required at a later stage to inform foundations, infrastructure and earthworks design and to confirm the absence of contamination.

4.6 Confidence and Uncertainty

CLR 11 requires appropriate range and level of information to be collected. The information quality criteria given in CLR 11 are:-

- Relevant – to the context of the assessment
- Sufficient – for the required level of confidence
- Reliable – reflect the true or likely conditions
- Transparent – in meaning and origin

Whilst the data used in this assessment is considered robust and suitable for purpose, there is some degree of uncertainty due to the potential for unforeseen ground conditions.

5 Geotechnical Considerations

5.1 Introduction

It is understood that it is proposed to redevelop the site for residential use consisting of approximately 180 residential units of two and two and a half storeys high with associated infrastructure, roads and open landscaped areas.

5.2 Sinkholes and Subsidence Risk

It is expected that the ground conditions in Phase II are similar to the conditions present in Phase I and are prone to the development of solution features. During the site visit 6 possible solution features were identified at the site. Two of these features are recorded in the PBA Natural Cavities Database as sinkholes or swallow holes. Furthermore, an area of karstic underdrainage was identified in the base of the minor valley feature to cross the site.

Based on the 2013 investigation for the adjacent site the soils within and in the immediate vicinity of the sinkholes are expected to be weak, with infilled or even voided zones posing a ground instability hazard (PBA, 2013).

A ground investigation will be required to confirm the ground conditions at the site, in particular, the presence, extent and nature of the solution features (sinkholes and karstic underdrainage) and their infills if present.

It is expected that any structures, roads and services within and immediately adjacent to the sinkholes and the karstic underdrainage area may suffer from significant settlement and structural damage with time. At this stage, it is recommended that a development exclusion buffer zone of 10 m from the identified edge of any untreated sinkhole or karstic underdrainage zone is applied. This would include any structure in the vicinity such as buildings, services or roads.

Alternatively, consideration could be given to carrying out ground treatment to stabilise the sinkholes or karstic underdrainage zone to permit future development. Appropriate remedial works include the removal of loose soil infill, compaction grouting of the weathered karstic chalk, and backfilling of the depression with engineered fill to create a building platform. The process will require an engineering specification and validation testing, also the use of materials that do not cause any deleterious effect upon the underlying aquifer. A preliminary cost estimate for the treatment of sinkholes that exist at the site is in the order of between about £250,000 and £400,000 for the smaller to larger solution features present respectively. The cost to carry out ground treatment of the karstic underdrainage zone is likely to be higher again due to its plan extent but cannot be realistically estimated at this time until ground investigation data is available.

A Constraints Plan showing the extent of the karstic features identified and the proposed exclusion zone for development is presented as **Figure 5**.

5.3 Foundations

It is expected that the ground conditions at the site are similar to the ground conditions found in Phase I with the presence of sinkholes and associated disturbed ground linked to the underlying karstic weathering of the chalk. There is a risk that hitherto undiscovered solution features that can lead to sinkhole formation might be present anywhere on site, without any tell-tale surface expression such as a depression. Consequently, future subsidence and settlement of near surface soils into such features would occur beneath conventional foundation types and lead to a risk of structural damage. Such instability could be triggered by extremes of climate, changes to infiltration and drainage due to development, soakaways or leakages etc.

The foundation options that were suggested for Phase I and are expected to be suitable to deal with the solution feature hazard that is likely to be present at the site, as follows.

(a) Re-inforced Conventional Spread or Strip Foundations

This solution involves proving the ground beneath the footprint of proposed foundations using the dynamic probing technique, and then designing either re-inforced strip foundation, or a pad and ground beam system to span the likely size of void that might form as the result of ground loss into a feature. PBA experience of sites in similar geology suggests that a combination of probing at, say, 3 m centres and the design of foundation and/or ground beams to span a nominal 3 m diameter void will reduce the risk to an acceptable level. It is particularly important to probe the corner positions to confirm their stability and that the cantilever design will work. However, different solutions based on a balance between probing costs versus the cost of re-inforcing the foundations and/or ground beams are possible, and this will need to be assessed on a structure specific basis.

(b) Re-inforced Raft Foundations

The use of a re-inforced concrete raft foundation designed to span 3 m diameter void is another suitable foundation solution. Again dynamic probing needs to confirm the span condition is applicable to the ground conditions present and that the design cantilever works at the corners as for the solution above. The probe spacing is based on a statistical assessment of the engineering characteristics of sites with a similar geological setting and solution features hazard rating.

Piled Foundations

Piled foundations are unlikely to be suitable because of the deep penetrative karstic chalk weathering present as found in Phase I (and the possible presence of deep unconsolidated and variable solution feature infill). These hazards can lead to a loss of lateral support and shaft friction and/or loss in end bearing support below the pile toe. Furthermore, a single pile design and grid layout to accommodate the variable ground profile will not be possible and a flexible configuration, adjusted for each structure or each individual pile, based on the driving resistance during installation, may well prove to be impracticable and uneconomic to implement.

Disturbed Ground

Disturbed ground or otherwise unsuitable soils may be present at the formation level owing to karstic weathering. It is recommended that all bearing surfaces be inspected by a qualified geotechnical engineer prior to constructing the foundations to ensure that the design criteria are achieved. Any soft or loose soil encountered at foundation level should be removed and replaced with well compacted granular fill or foundation concrete.

5.4 Potential for Volumetric Change

The Lambeth Group and the Head Deposits, if present, are likely to be classified as a shrinkable soil in accordance with the guidance given in NHBC (2014). In accordance with the guidance a minimum depth of the foundations of 0.9 m below the proposed level is required, however, the depth may need to be greater where the foundations are close to existing or new trees, hedgerows or shrubs that may cause significant changes in moisture content resulting in ground movement.

Suspended ground floors may be required due to the potential for volumetric change resulting in ground movement as detailed in the guidance given in NHBC (2014). A ground investigation and assessment of the potential influence of any proposed planting and existing trees, hedgerows or shrubs on the foundations and floor slabs for the proposed buildings should be carried out in accordance with the NHBC guidance.

5.5 Excavations

The development is likely to involve excavation of certain areas of the site in order to create a formation level for the proposed buildings or infrastructure. Reuse of material from the Lambeth Group and other natural strata should be possible for use as an engineered or non-engineered fill.

Ground levelling (cut and fill), foundation works and other construction activities, such as service trenches will require excavations for any proposed development on the site. Based on the information available it is likely that conventional mechanical excavators will be suitable for shallow excavations around the site.

It is possible that a perched water level may be encountered at around 5 m bgl within the Lambeth Group; however, this level may rise or fall during periods of prolonged rainfall or drought respectively. It should be possible to deal with sudden inundations from heavy rainfall by sump pumping where necessary.

5.6 Sustainable Drainage

Surface water drainage using shallow infiltration (soakaways) is unlikely to provide a complete drainage solution to accommodate surface runoff from the development due to the low permeability nature of the near surface soils over large areas of the site. Surface water drainage should not be discharged into the sinkhole features to avoid triggering instability and avoiding the potential to discharge pollutants directly into the underlying chalk aquifer water table.

In addition, it is not recommended that shallow soakaways are adopted for surface water drainage in areas identified in **Figure 5**. If shallow soakaways are to be used on site then the soakaway should be a minimum of 20 m distant from a property (CIRIA C574, 2002). Alternatively deep bored soakaways should be considered. However, due to the deep weathering of the chalk the soakaway bore should be checked for any evidence of karst features by validation investigation such as dynamic probing and positions adjusted where possible to avoid karstic features and ground instability triggered by soakaways.

5.7 Design of Buried Concrete

Overconsolidated clay formations, such as the Lambeth Group can contain elevated concentrations of sulphate minerals which can attack buried concrete. Ground investigation and laboratory testing should be undertaken to in accordance with BRE Special Digest 365 to ascertain the Design Sulphate Class that is required to design concrete that is in contact with the ground.

6 Conclusions and Recommendations

6.1 Geoenvironmental Conclusions

Based on the known current and historical land uses at the site (farmland) the potential for contamination to be present as a result of on-site activities is considered to be Very Low.

Using the PBA methodology for assessing ground conditions potential pollutant linkages have been identified, with the estimated risk classed as Very Low.

Given the level of risk and the proposed end use it is anticipated that a ground investigation is not likely to be required to support the planning application for redevelopment of the site owing to contamination.

Notwithstanding the above, it is recommended that any future ground investigation at the site will incorporate some basic contamination testing to support the conclusions of this study.

6.2 Geotechnical Conclusions

The ground conditions which comprise a thin veneer of Lambeth Group over Chalk are prone to the development of karstic weathering. Six probable solution features and a karstic underdrainage zone were identified at the site.

The presence of ground dissolution hazards is potentially a major constraint for the proposed development. A ground investigation will be required to confirm the ground conditions, in particular, the presence, extent and nature of the solution features (sinkholes and karstic underdrainage). The potential presence of unstable solution features will have a potential impact on foundations, infiltration drainage, infrastructure and services.

Notwithstanding the above, it is possible to undertake safe development of such sites provided that the geotechnical characteristics are fully understood, the risks adequately managed and appropriate engineering solutions are adopted to mitigate the hazards. A ground investigation will be required to inform a mitigation strategy. It is possible that remedial ground treatment of an area will be required to facilitate the development as currently proposed.

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8 Essential Guidance for Report Readers

This report has been prepared within an agreed timeframe and to an agreed budget that will necessarily apply some constraints on its content and usage. The remarks below are presented to assist the reader in understanding the context of this report and any general limitations or constraints. If there are any specific limitations and constraints they are described in the report text.

The opinions and recommendations expressed in this report are based on statute, guidance, and best practice current at the time of its publication. Peter Brett Associates LLP (PBA) does not accept any liability whatsoever for the consequences of any future legislative changes or the release of subsequent guidance documentation, etc. Such changes may render some of the opinions and advice in this report inappropriate or incorrect and the report should be returned to us and reassessed if required for re-use after one year from date of publication. Following delivery of the report PBA has no obligation to advise the Client or any other party of such changes or their repercussions.

Some of the conclusions in this report may be based on third party data. No guarantee can be given for the accuracy or completeness of any of the third party data used. Historical maps and aerial photographs provide a “snap shot” in time about conditions or activities at the site and cannot be relied upon as indicators of any events or activities that may have taken place at other times.

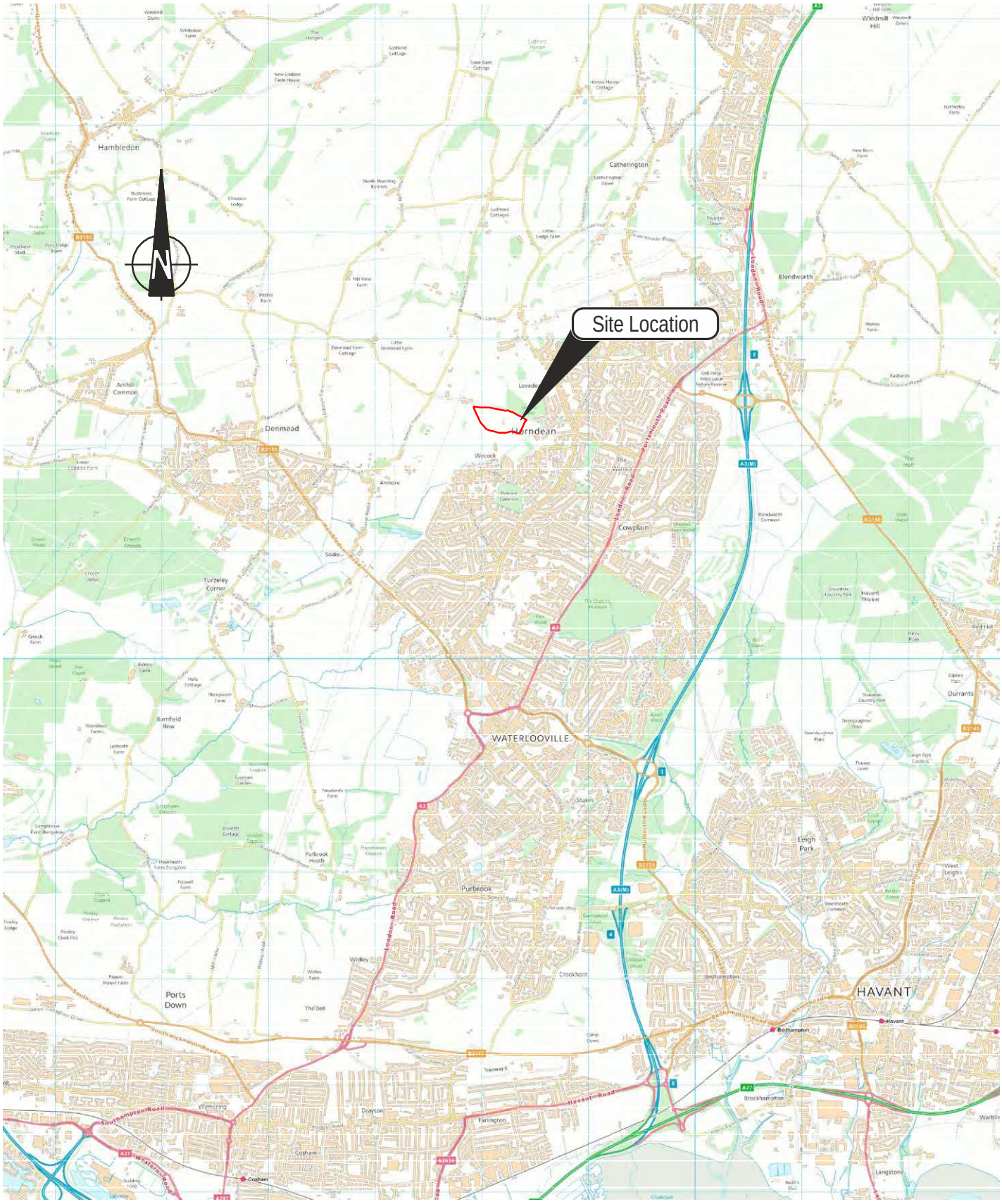
The conclusions and recommendations made in this report and the opinions expressed are based on the information reviewed and/or the ground conditions encountered in exploratory holes and the results of any field or laboratory testing undertaken. There may be ground conditions at the site that have not been disclosed by the information reviewed or by the investigative work undertaken. Such undisclosed conditions cannot be taken into account in any analysis and reporting.

This report has been written for the sole use of the Client stated at the front of the report in relation to a specific development or scheme. The conclusions and recommendations presented herein are only relevant to the scheme or the phase of project under consideration. This report shall not be relied upon or transferred to any other party without the express written authorisation of PBA. Any such party relies upon the report at its own risk.

The interpretation carried out in this report is based on scientific and engineering appraisal carried out by suitably experienced and qualified technical consultants based on the scope of our engagement. We have not taken into account the perceptions of, for example, banks, insurers, other funders, lay people, etc, unless the report has been prepared specifically for that purpose. Advice from other specialists may be required such as the legal, planning and architecture professions, whether specifically recommended in our report or not.

Public or legal consultations or enquiries, or consultation with any Regulatory Bodies (such as the Environment Agency, Natural England or Local Authority) have taken place only as part of this work.

FIGURES



Site Grid Ref: SU 682 122

pba peterbrett	Client Grainger Plc Contains Ordnance Survey data © Crown copyright and database right 2014.	LAND AT WOODCROFT FARM, PHASE II WATERLOOVILLE, HAVANT SITE LOCATION PLAN	Date 21.11.2014 Scale 1:50 000 Drawn by davco Checked by CW Revision 0

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Grainger Plc

Google Earth

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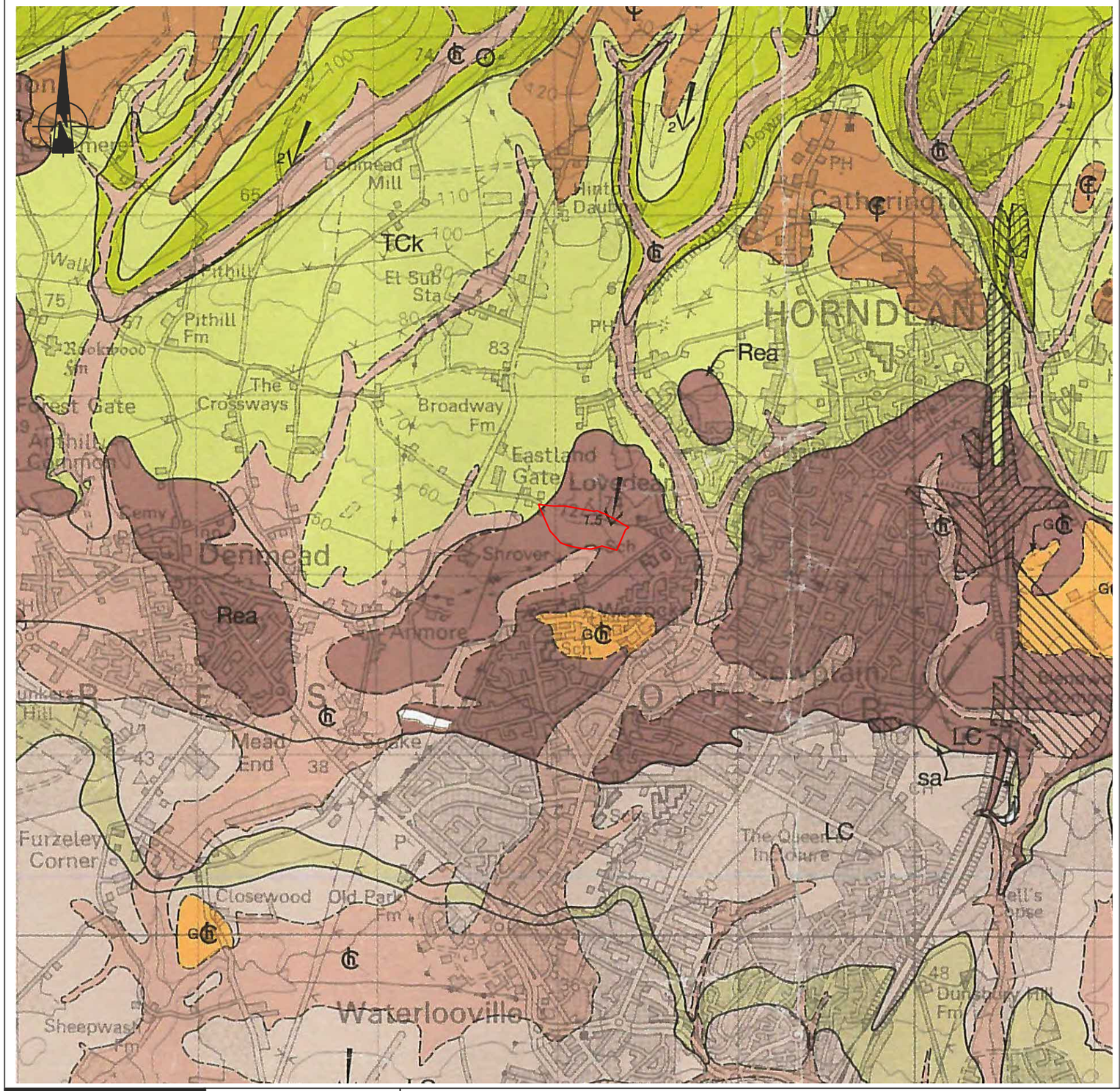
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LAND AT WOODCROFT FARM, PHASE II
WATERLOOVILLE, HAVANT

SITE LAYOUT PLAN

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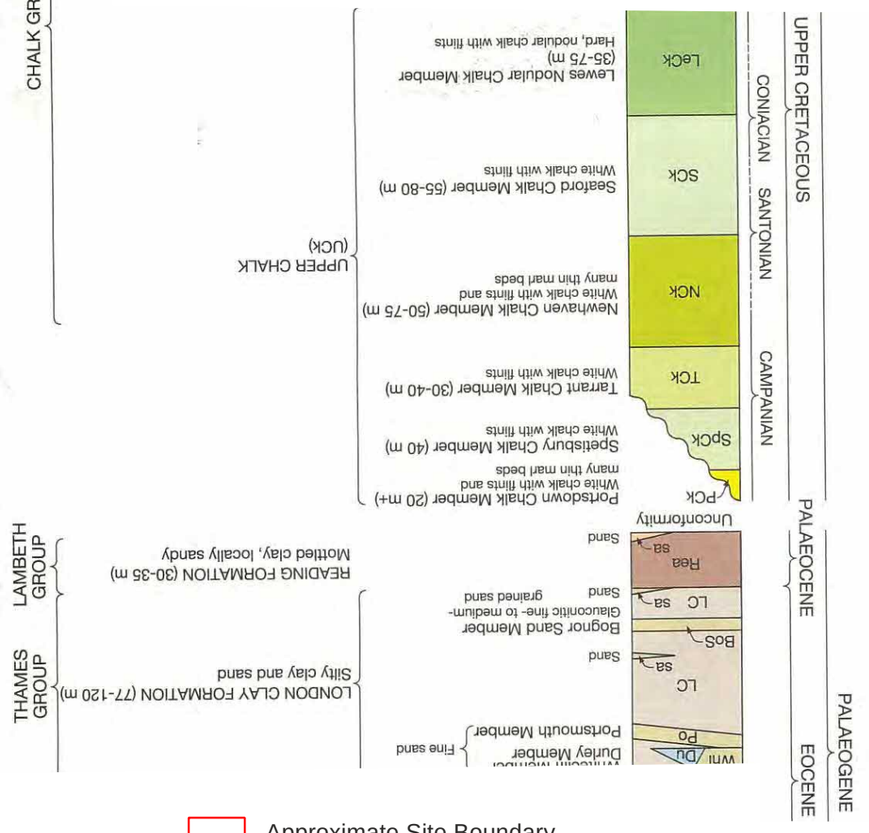
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KEY

DRIFT

- Worked Ground
- Made Ground
- Landslip
- Gt — Head: variable deposits of sandy silty clay, locally gravelly; chalky and flinty in dry valleys
- Gt' — Older Head: variable slope deposits, generally gravelly including Clay-with-flints debris
- GGt — Head Gravel: clayey gravel
- Gc — Clay-with-flints: clay with numerous nodular and well rounded flints
- 2 — Generalised dip of inclined strata, dip in degrees



Approximate Site Boundary

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LAND AT WOODCROFT FARM, PHASE II
WATERLOOVILLE, HAVANT

EXTRACT OF PUBLISHED GEOLOGY

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LAND AT WOODCROFT FARM, PHASE II
WATERLOOVILLE, HAVANT

NATURAL CAVITY LOCATION PLAN

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Revision	0

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KEY

- Red Line Boundary
- Possible sinkhole feature identified in walkover survey.
- Identified Solution Features in Phase I
- Possible zone of karstic underdrainage.
- Angular Convex Slope
- Angular Concave Slope
- Smooth Convex Slope
- Minimun10m Buffer Zone around sinkhole where development should be avoided unless remedial treatment is carried out .
- Buffer zone around possible karstic underdrainage. Subject to further investigation, development within this zone should be avoided unless remedial ground treatment is carried out.

NOTE: LANDFORMS SHOULD NOT BE USED FOR SURFACE WATER DISPOSAL

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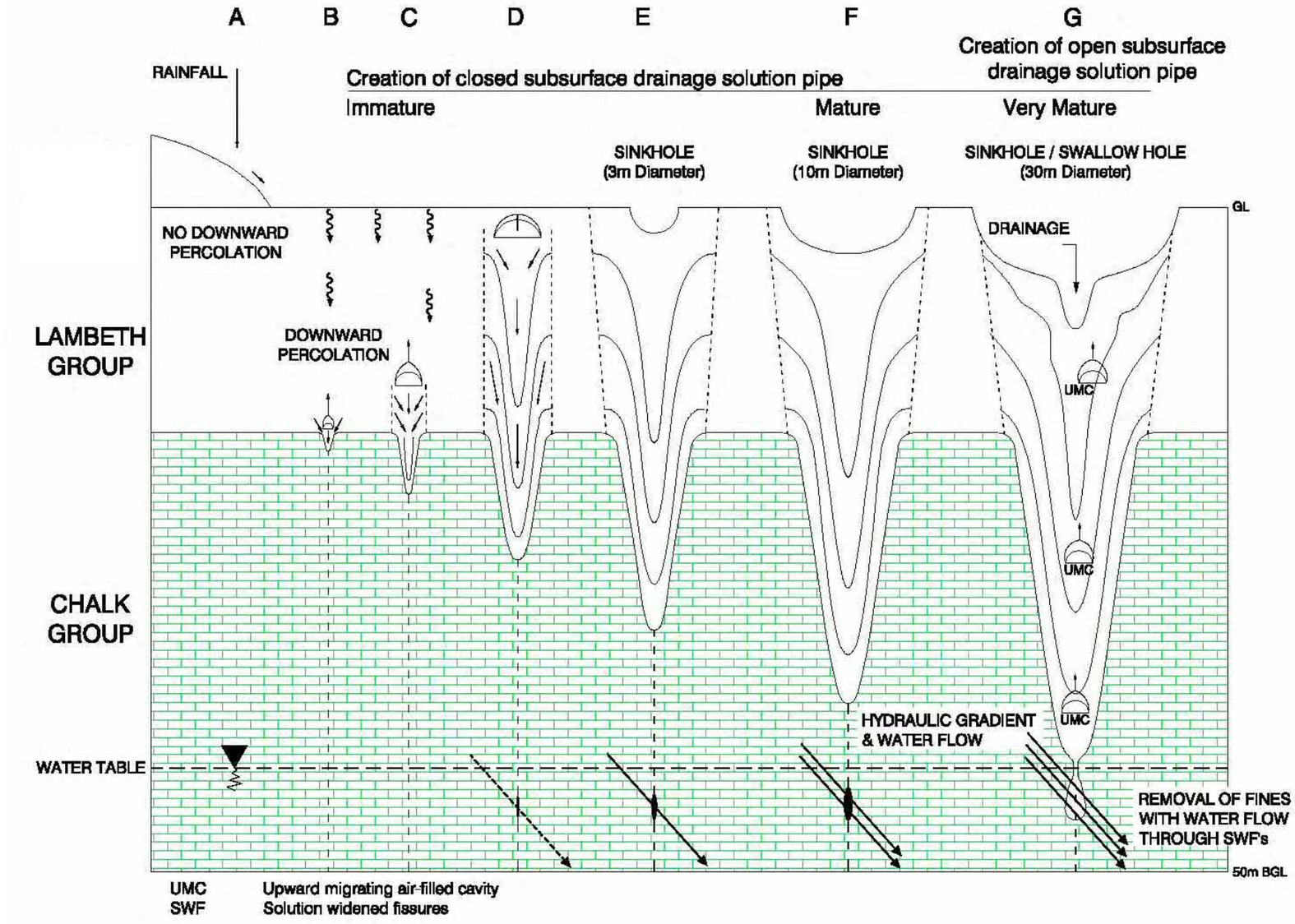
LAND AT WOODCROFT FARM, PHASE II
WATERLOOVILLE, HAVANT

CONSTRAINTS PLAN

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Note
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Client grainger

PROPOSED DEVELOPMENT OF NATURAL CAVITIES IN CHALK

WOODCROFT FARM, WATERLOOVILLE

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APPENDIX 1

Specification for a Combined Phase 1 Ground Condition Assessment (Geotechnical and Contamination)

1 Introduction

The objective of a Combined Phase 1 Ground Condition Assessment is to identify the likely ground conditions and environmental setting of a defined site and assess the information to identify potential issues that may have associated environmental liabilities or geotechnical and other ground engineering constraints that could affect the site redevelopment.

The Phase 1 Desk Study and contamination risk assessment is the minimum requirement under the National Planning Policy Framework (NPPF) Clause 121 and the definition of "*Site Investigation Information*" given in the Glossary Page 56, to support any planning application on a site that might be potentially affected by contamination. Similarly, a desk study and site reconnaissance is the minimum information that should be provided for a site potentially at risk from ground instability.

The data gathering stages of each assessment have many aspects in common and it is usually very cost effective to prepare a single combined report covering both contamination and instability requirements. The assessments are an important first step in the investigation of ground conditions at most sites, and can provide an early indication of geo-hazards, environmental liabilities, constraints and opportunities to feed into the master-planning process and development budgets. In many cases it is a pre-requisite for the planning application.

2 Scope of Works

The following sources of information will be included in our standard combined Phase 1 and geotechnical engineering desk study:

- A site reconnaissance visit to verify the current condition of the site and its immediate surroundings.
- Purchase of Historical Ordnance Survey maps.
- Third party database search to obtain environmental information in the public domain.
- Review of readily available published geological maps and memoirs, and review of technical papers or reports relating to the geology, geomorphology or geotechnics e.g. mineral assessment reports.
- Reference to useful publications on land stability (such as those in Appendix B of now withdrawn PPG14).
- Review of published texts on the general geotechnical properties of the geological horizons.
- Purchase of BGS Borehole Records (if appropriate/available).
- Review of PBA's national natural and mining cavities (non-coal) databases.
- Review of PBA's internal database of ground investigation reports and surveys.
- Review of published maps on hydrogeology and groundwater vulnerability.
- Telephone requests to the council for information that can be provided without charge
- An internet search (Google or a similar)
- Web based information on ecological sites with international and national designations using a search radius of 1, 2 or 5km depending on the site specific circumstances.

The factual data will be presented and assessed in a report that will include an assessment of the potential for natural and anthropogenic geo-hazards to be present, a preliminary conceptual site model (CSM), a Tier 1 Qualitative Risk Assessment based on a source-pathway-receptor model to identify potential pollutant linkages and a preliminary review of potential liabilities and constraints that might affect the development.

Preliminary advice will be provided where appropriate on likely requirements for foundations, infrastructure, earthworks (cut and fill), slope stability, retaining structures, pavements and the suitability of the ground for infiltration drainage systems. Outline recommendations for further work such as specialist surveys or intrusive ground investigation will be included as required.

3 Clarifications and Limitations

Some of the searches will be undertaken using computerised database facilities. All databases have the limitation that they may not be up to date because they are only periodically updated.

No guarantee can be given for the accuracy or completeness of third party information.

Based on a review of the initial data the collection of further information, e.g. via formal requests to the relevant authorities, may be recommended. Any additional costs will be notified and approval sought.

The absence of cavity records in the PBA natural and mining cavities (non-coal) databases should not be considered as conclusive as to the absence of cavities.

Information presented on maps / photographs represents the situation as surveyed at a given time. It is possible for developments to have occurred between surveys that are not shown or for the map record to have been censored for military security.

It should be noted that the Tier 1 risk assessment may determine that the identification of potential ecological receptors is inconclusive and recommend a Phase 1 habitat survey is subsequently undertaken.

The comments and the opinions expressed will be based on the information obtained from the specified sources. However, there may be conditions pertaining to the site, which are not disclosed by this information and, therefore, can not be taken into consideration.

Any interpretation is carried out based on a scientific and engineering appraisal and does not take into account the perceptions of, for example banks, insurers, lay people etc.

When data is insufficient or inadequate to support a robust assessment we will state that any conclusions are provisional and recommend further works.

It should be noted that NPPF requires that *"planning decisions should also ensure that adequate site investigation information, prepared by a competent person, is presented"*. A desk study may not be sufficient to enable the authority to grant planning permission.

An intrusive ground investigation may be required to confirm the actual site conditions and risks. It should be noted that the Combined Phase 1 Ground Condition Assessment described above does not purport to be an ecological, flood risk or archaeological survey. Additional specific surveys may be required to support a planning application.

APPENDIX 2



Plate A - Solution Feature in Field B looking West



Plate B - Solution Feature in Field B looking South



Plate C - Concrete rubble within solution feature area

Plate D - Looking North East in Field B

Plate E - Looking East in Field B

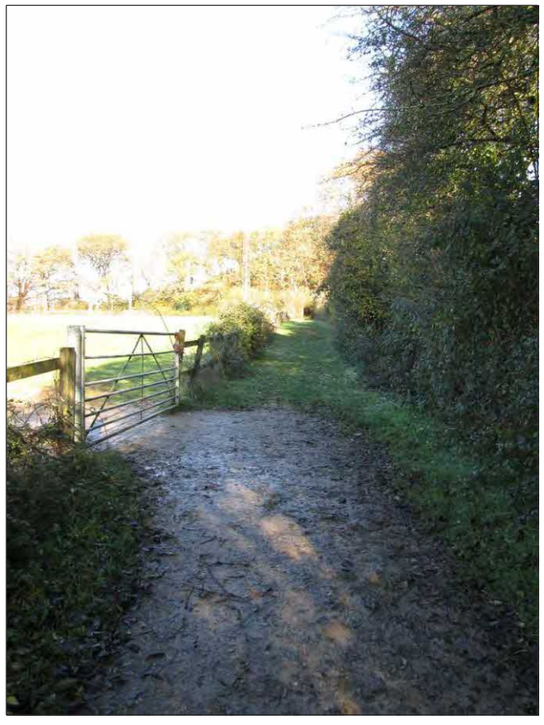


Plate F - Existing track between Fields A and B

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Client

Grainger Plc

LAND AT WOODCROFT FARM, PHASE II
WATERLOOVILLE, HAVANT

SITE PHOTOGRAPHS

(page 1 of 2)

Date	20.11.2014
Scale	1:2500
Drawn by	davco
Checked by	CW
Revision	0

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Plate G - Exisitng Telelphone Mast in Field A



Plate H - Looking South East in Field A



Plate I - Southerly view into solution feature in north of Field A



Plate J - South West view into solution feature in south west of Field A



Plate K - Looking East into solution feature in south east of Field A

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LAND AT WOODCROFT FARM, PHASE II
WATERLOOVILLE, HAVANT

SITE PHOTOGRAPHS

(page 2 of 2)

Date	20.11.2014
Scale	1:2500
Drawn by	davco
Checked by	CW
Revision	0

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APPENDIX 3

Historical Mapping Legends

Ordnance Survey County Series 1:10,560

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

Ordnance Survey Plan 1:10,000

Chalk Pit, Clay Pit or Quarry
Gravel Pit
Sand Pit
Disused Pit or Quarry
Refuse or Slag Heap
Lake, Loch or Pond
Dunes
Boulders
Coniferous Trees
Non-Coniferous Trees
Orchard
Scrub
Coppice
Bracken
Heath
Rough Grassland
Marsh
Reeds
Saltings
Building
Direction of Flow of Water
Shingle
Sand
Glasshouse
Pylon
Sloping Masonry
Electricity Transmission Line
Pole
Cutting
Embankment
Standard Gauge Multiple Track
Road Under
Road Over
Level Crossing
Foot Bridge
Standard Gauge Single Track
Siding, Tramway or Mineral Line
Narrow Gauge
Geographical County
Administrative County, County Borough or County of City
Municipal Borough, Urban or Rural District, Burgh or District Council
Borough, Burgh or County Constituency
Shown only when not coincident with other boundaries
Civil Parish
Shown alternately when coincidence of boundaries occurs

BP, BS	Boundary Post or Stone	Pol Sta	Police Station
Ch	Church	PO	Post Office
CH	Club House	PC	Public Convenience
F E Sta	Fire Engine Station	PH	Public House
FB	Foot Bridge	SB	Signal Box
Fn	Fountain	Spr	Spring
GP	Guide Post	TCB	Telephone Call Box
MP	Mile Post	TCP	Telephone Call Post
MS	Mile Stone	W	Well

1:10,000 Raster Mapping

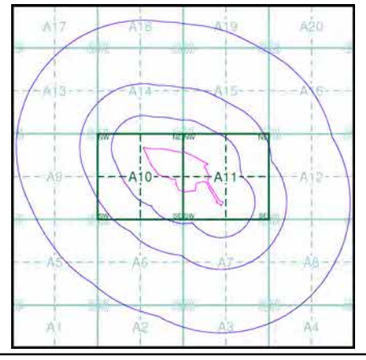
Gravel Pit
Refuse tip or slag heap
Rock
Rock (scattered)
Boulders
Boulders (scattered)
Shingle
Mud
Mud
Sand
Sand
Sand Pit
Slopes
Top of cliff
General detail
Underground detail
Overhead detail
Narrow gauge railway
Multi-track railway
Single track railway
County boundary (England only)
Civil, parish or community boundary
District, Unitary, Metropolitan, London Borough boundary
Constituency boundary
Area of wooded vegetation
Non-coniferous trees
Non-coniferous trees (scattered)
Coniferous trees
Coniferous trees (scattered)
Positioned tree
Orchard
Coppice or Osiers
Rough Grassland
Heath
Scrub
Marsh, Salt Marsh or Reeds
Water feature
Flow arrows
MHW(S) Mean high water (springs)
MLW(S) Mean low water (springs)
Telephone line (where shown)
Electricity transmission line (with poles)
BM 123.45 m Bench mark (where shown)
Triangulation station
Point feature (e.g. Guide Post or Mile Stone)
Pylon, flare stack or lighting tower
Site of (antiquity)
Glasshouse
General Building
Important Building

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Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Hampshire & Isle Of Wight	1:10,560	1870	3
Hampshire & Isle Of Wight	1:10,560	1897	4
Hampshire & Isle Of Wight	1:10,560	1910	5
Hampshire & Isle Of Wight	1:10,560	1933	6
Hampshire & Isle Of Wight	1:10,560	1942	7
Historical Aerial Photography	1:10,560	1947	8
Ordnance Survey Plan	1:10,000	1962	9
Ordnance Survey Plan	1:10,000	1980	10
Havant	1:25,000	1983	11
Ordnance Survey Plan	1:10,000	1992	12
10K Raster Mapping	1:10,000	2006	13
VectorMap Local	1:10,000	2014	14

Historical Map - Slice A



Order Details

Order Number: 62099871_1_1
Customer Ref: 21834
National Grid Reference: 468240, 112190
Slice: A
Site Area (Ha): 10.8
Search Buffer (m): 1000

Site Details

Woodcroft Farm, Woodcroft Lane, Waterlooville, PO8 9QA

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Russian Military Mapping Legends

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

a. Not drawn to scale b. Drawn to scale

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

243,8 — Values for prominent elevations

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

0,2 — Velocity of the current, width of river bed, depth of river

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

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

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

1:25,000 mapping

a. Not drawn to scale b. Drawn to scale

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

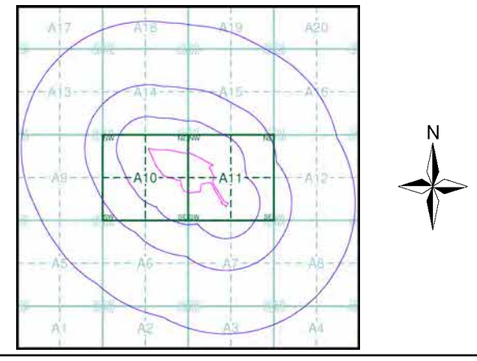
Key to Numbers on Mapping

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Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Hampshire & Isle Of Wight	1:10,560	1870	3
Hampshire & Isle Of Wight	1:10,560	1897	4
Hampshire & Isle Of Wight	1:10,560	1910	5
Hampshire & Isle Of Wight	1:10,560	1933	6
Hampshire & Isle Of Wight	1:10,560	1942	7
Historical Aerial Photography	1:10,560	1947	8
Ordnance Survey Plan	1:10,000	1962	9
Ordnance Survey Plan	1:10,000	1980	10
Havant	1:25,000	1983	11
Ordnance Survey Plan	1:10,000	1992	12
10K Raster Mapping	1:10,000	2006	13
VectorMap Local	1:10,000	2014	14

Russian Map - Slice A



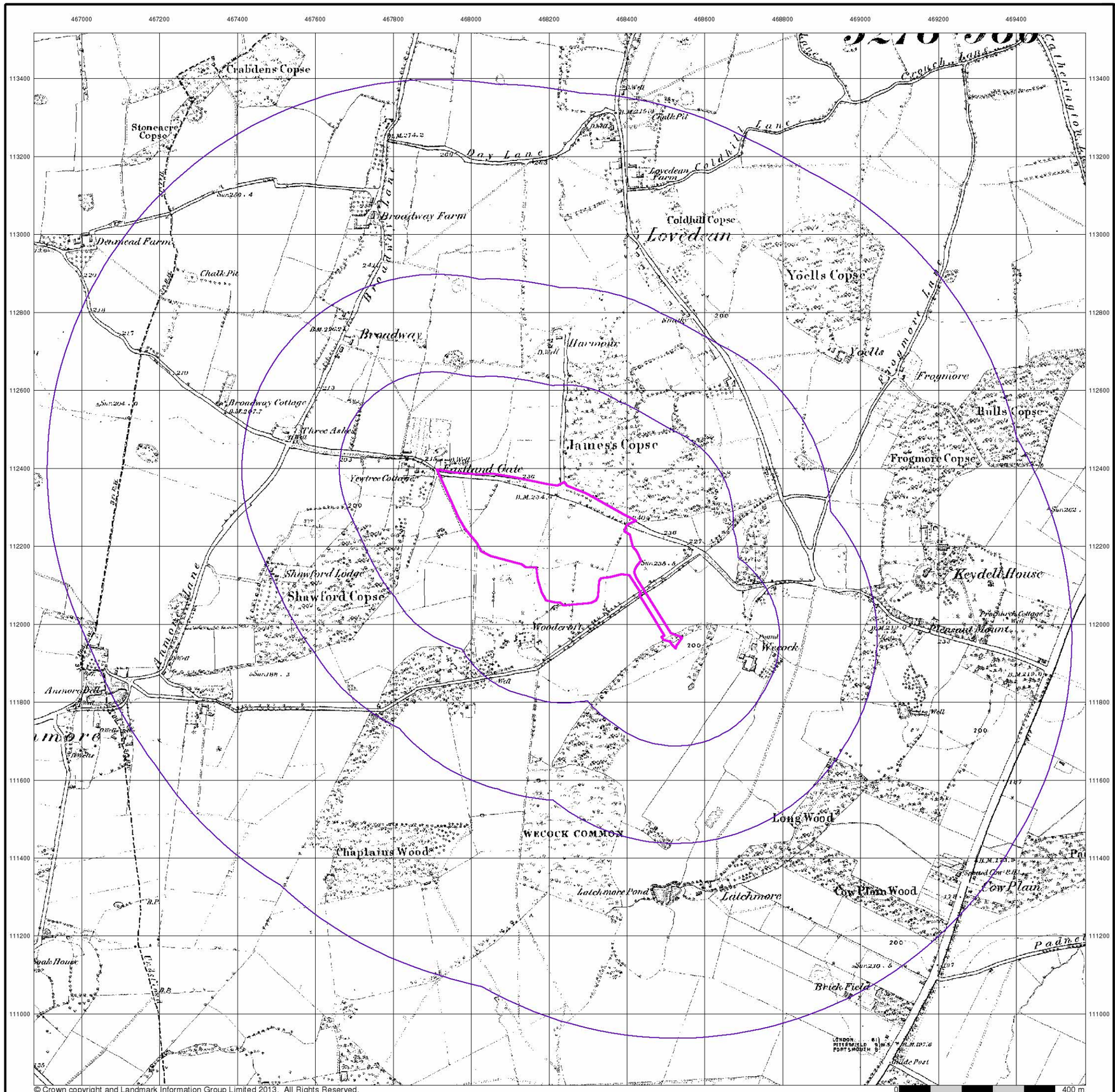
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Order Number: 62099871_1_1
Customer Ref: 21834
National Grid Reference: 468240, 112190
Slice: A
Site Area (Ha): 10.8
Search Buffer (m): 1000

Site Details

Woodcroft Farm, Woodcroft Lane, Waterlooville, PO8 9QA

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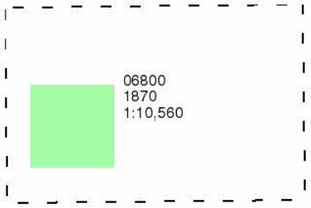
Hampshire & Isle Of Wight

Published 1870

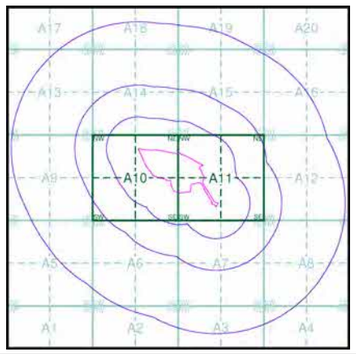
Source map scale - 1:10,560

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

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

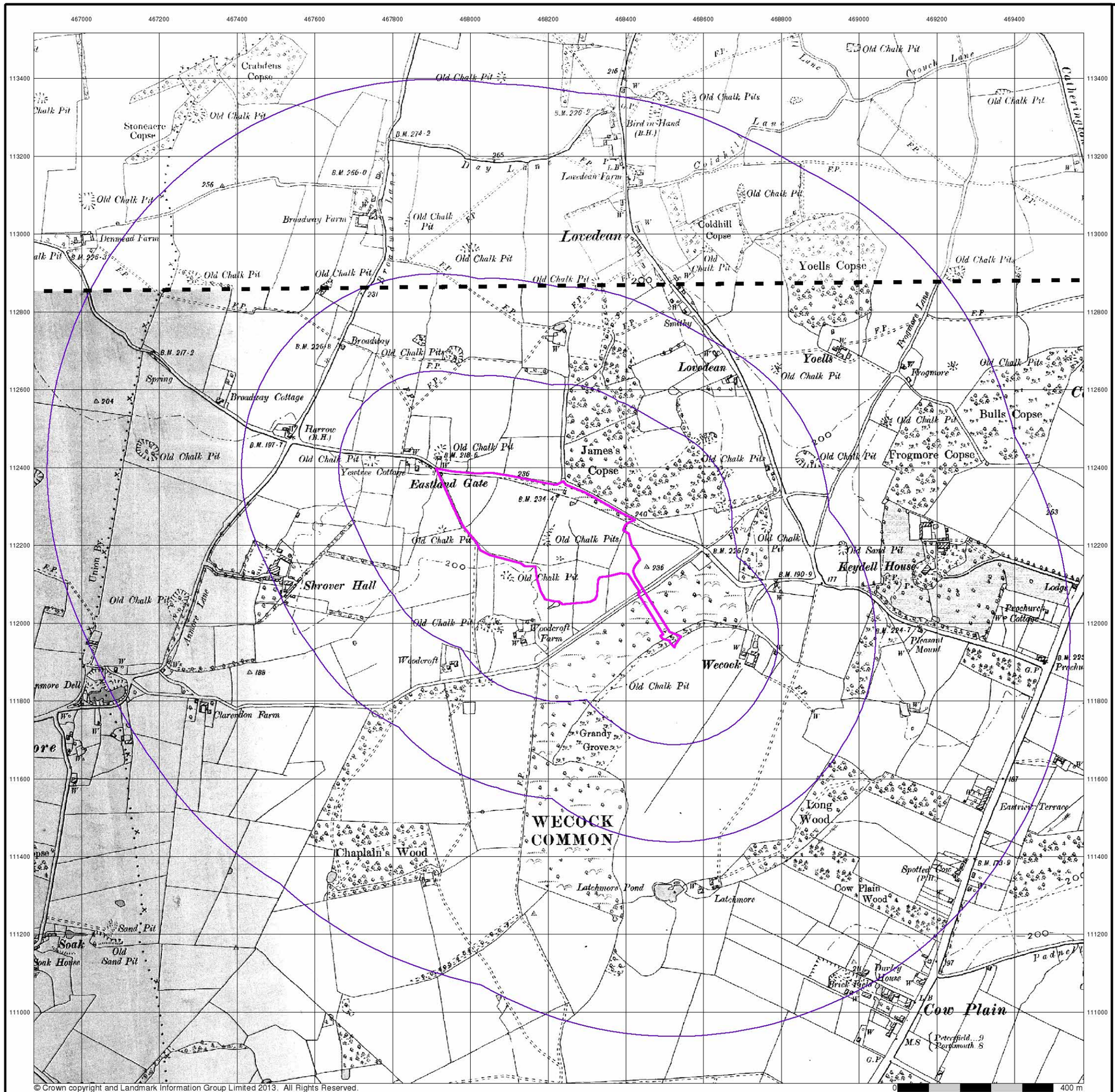
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National Grid Reference:	468240, 112190
Slice:	A
Site Area (Ha):	10.8
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Hampshire & Isle Of Wight

Published 1897

Source map scale - 1:10,560

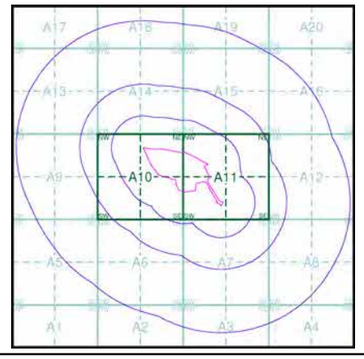
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some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

Map Name(s) and Date(s)

068NW
1897
1:10,560

068SW
1897
1:10,560

Historical Map - Slice A



N

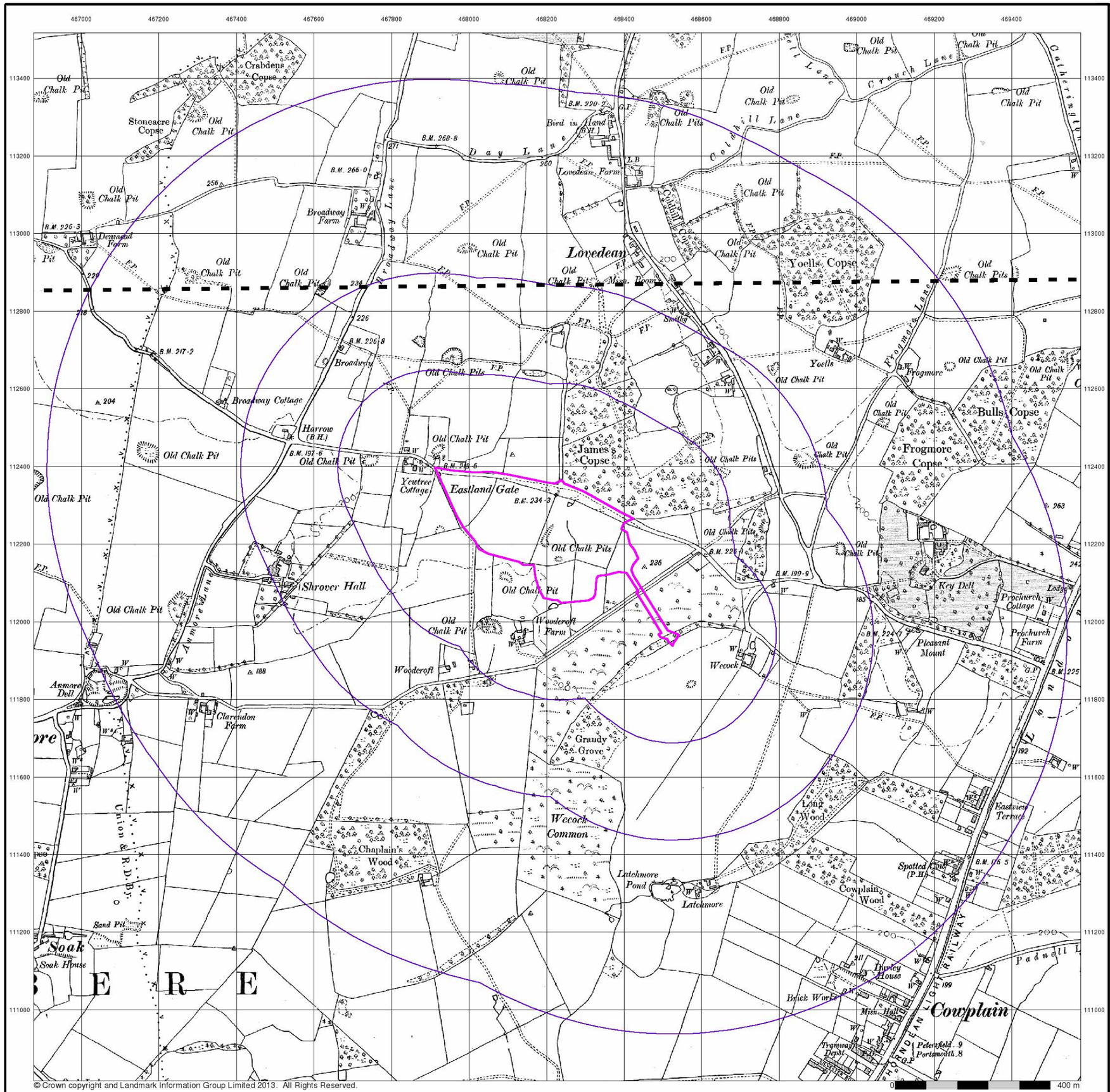
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Customer Ref:	21834
National Grid Reference:	468240, 112190
Slice:	A
Site Area (Ha):	10.8
Search Buffer (m):	1000

Site Details

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Hampshire & Isle Of Wight

Published 1910

Source map scale - 1:10,560

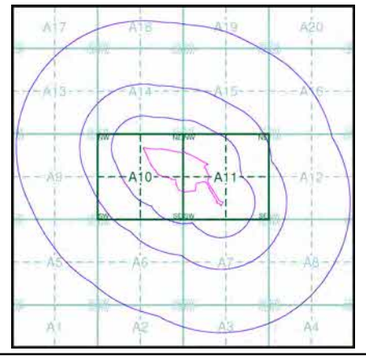
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some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

Map Name(s) and Date(s)

068NW
1910
1:10,560

068SW
1910
1:10,560

Historical Map - Slice A



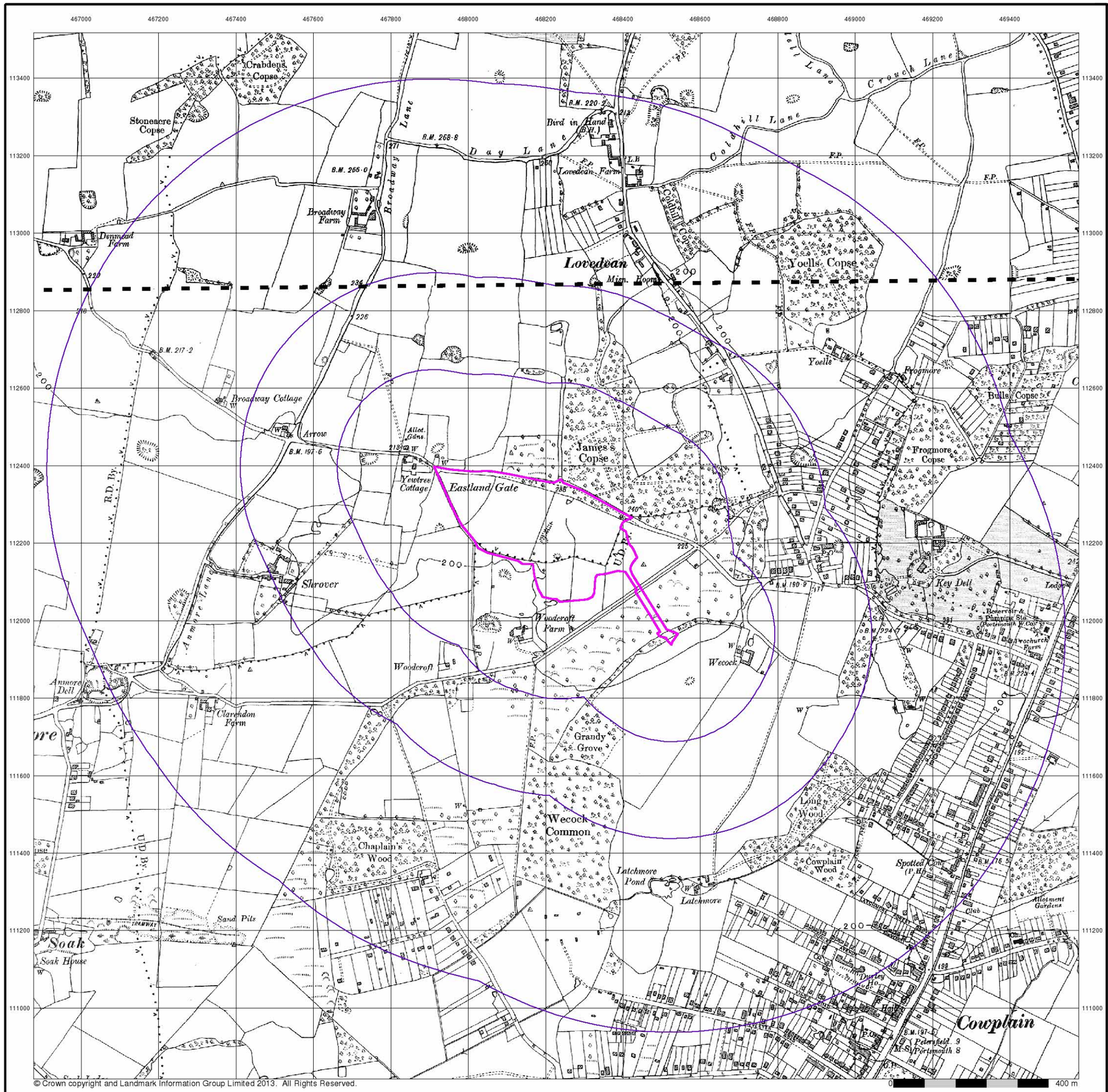
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Slice:	A
Site Area (Ha):	10.8
Search Buffer (m):	1000

Site Details

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Hampshire & Isle Of Wight

Published 1933

Source map scale - 1:10,560

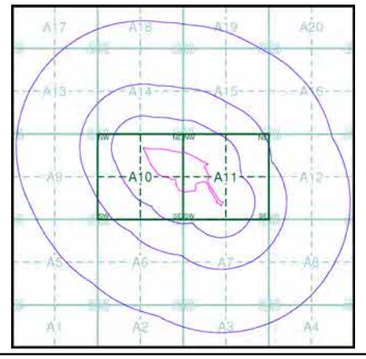
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some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

Map Name(s) and Date(s)

068NW
1933
1:10,560

068SW
1933
1:10,560

Historical Map - Slice A



Order Details

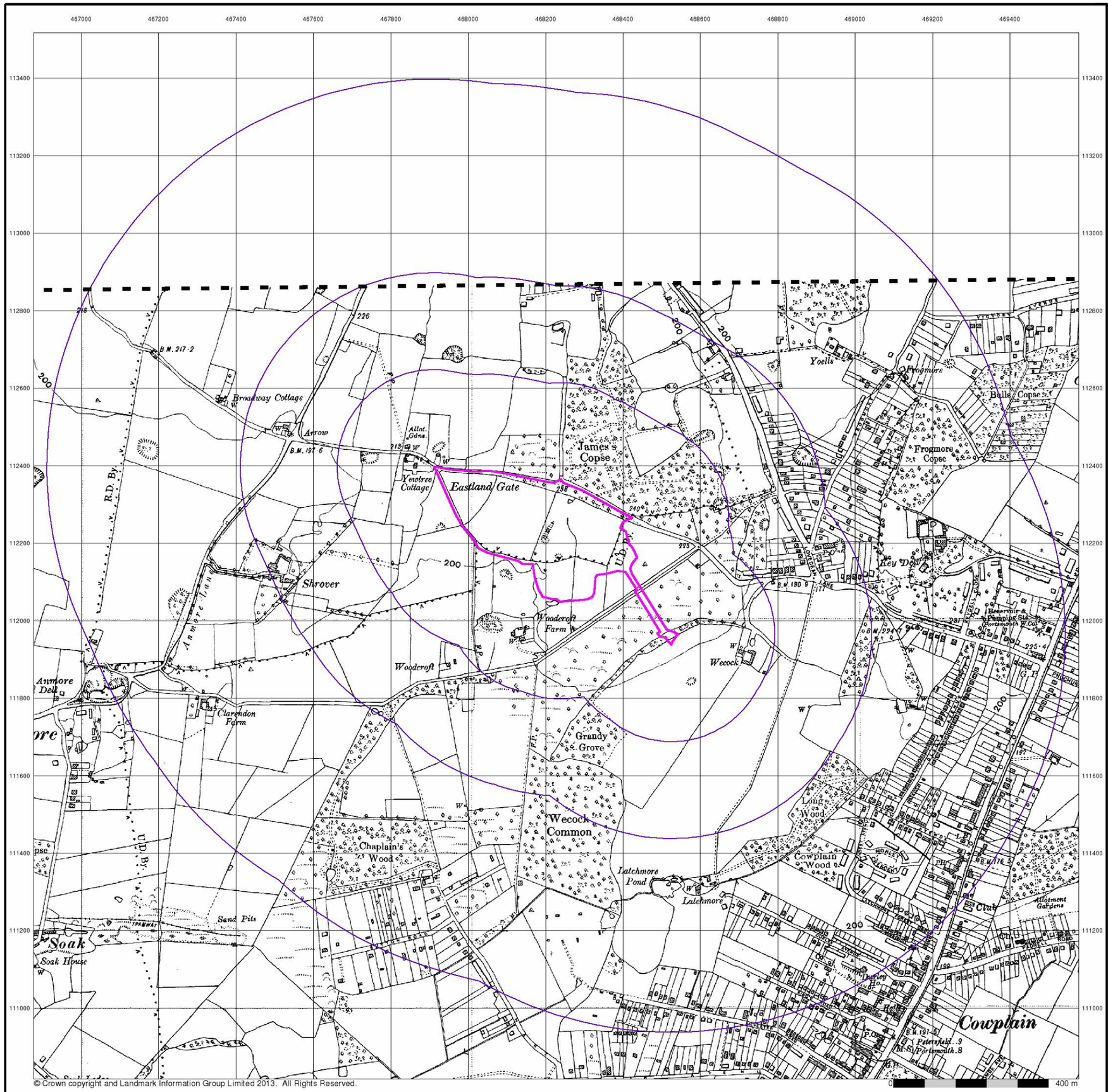
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Customer Ref:	21834
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Slice:	A
Site Area (Ha):	10.8
Search Buffer (m):	1000

Site Details

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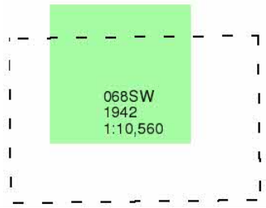
Hampshire & Isle Of Wight

Published 1942

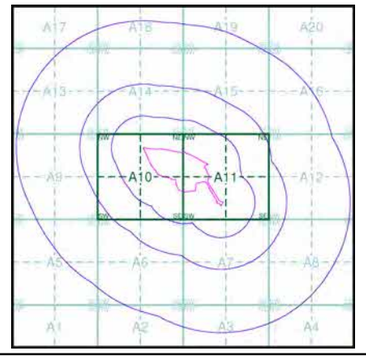
Source map scale - 1:10,560

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

Map Name(s) and Date(s)



Historical Map - Slice A



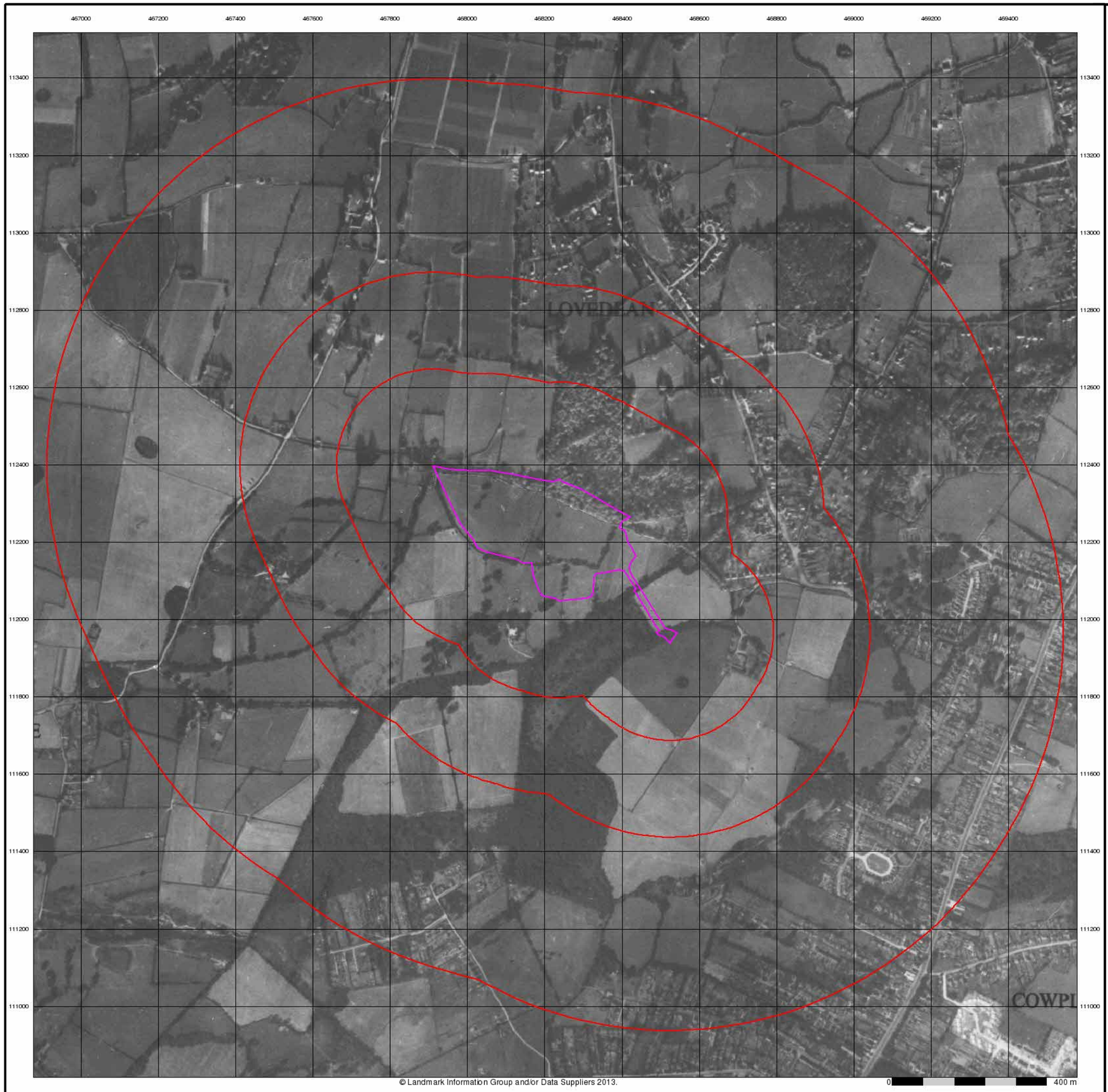
Order Details

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Customer Ref:	21834
National Grid Reference:	468240, 112190
Slice:	A
Site Area (Ha):	10.8
Search Buffer (m):	1000

Site Details

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Historical Aerial Photography

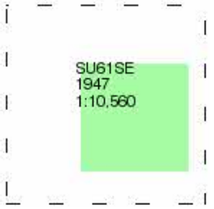
Published 1947

Source map scale - 1:10,560

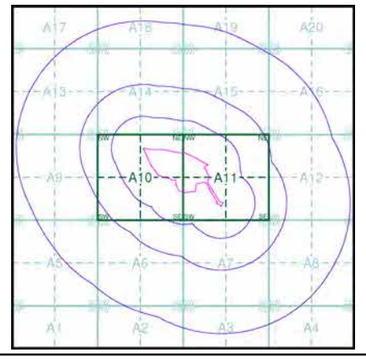
The Historical Aerial Photos were produced by the Ordnance Survey at a scale of 1:1,250 and 1:10,560 from Air Force photography. They were produced between 1944 and 1951 as an interim measure, pending preparation of conventional mapping, due to post war resource shortages. New security measures in the 1950's meant that every photograph was re-checked for potentially unsafe information with security sites replaced by fake fields or clouds. The original editions were withdrawn and only later made available after a period of fifty years although due to the accuracy of the editing, without viewing both revisions it is not easy to spot the edits. Where available Landmark have included both revisions.

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Map Name(s) and Date(s)



Historical Aerial Photography - Slice A



Order Details

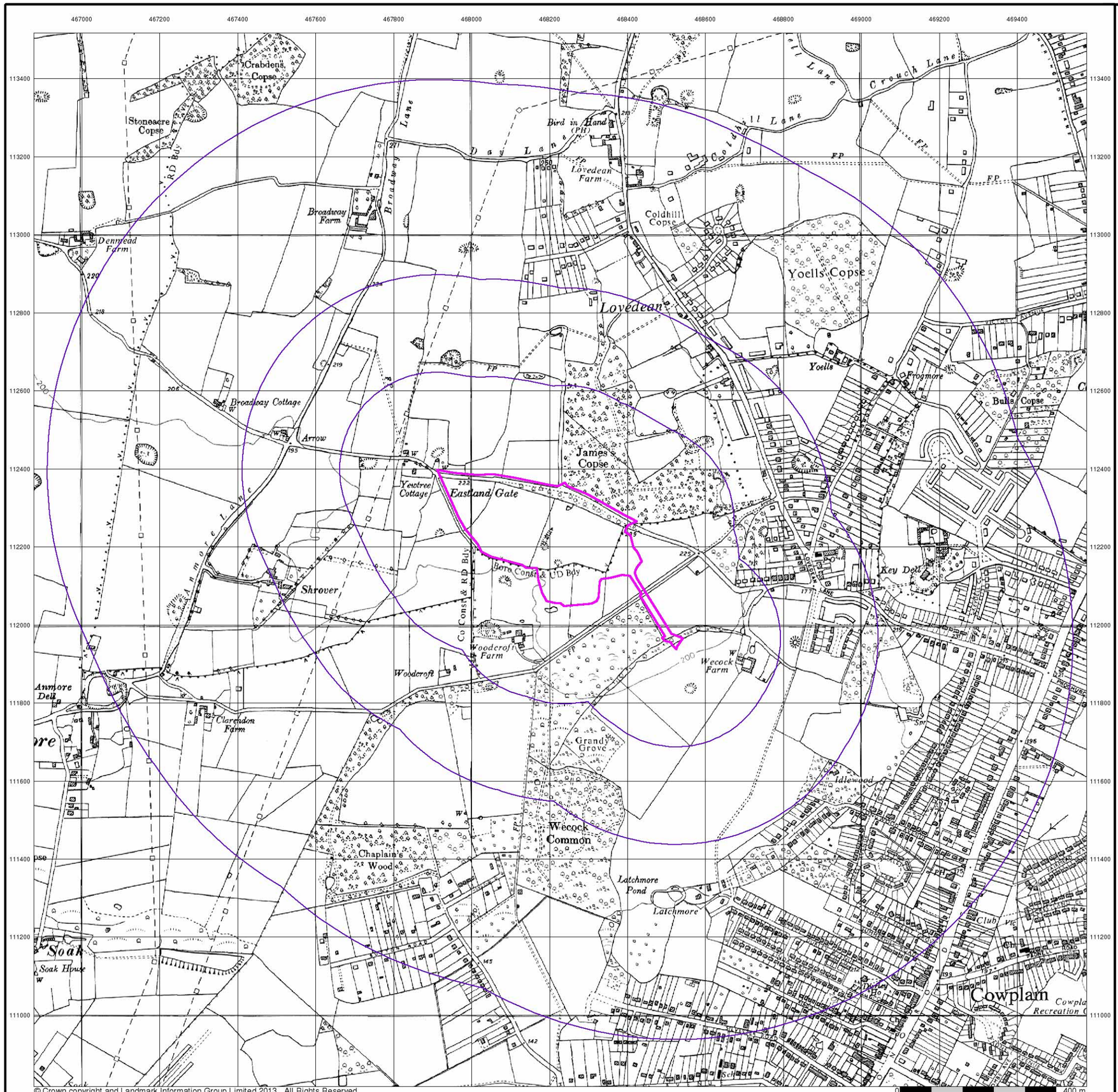
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Customer Ref:	21834
National Grid Reference:	468240, 112190
Slice:	A
Site Area (Ha):	10.8
Search Buffer (m):	1000

Site Details

Woodcroft Farm, Woodcroft Lane, Waterlooville, PO8 9QA

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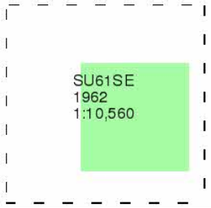
Ordnance Survey Plan

Published 1962

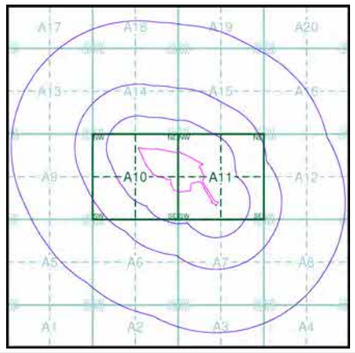
Source map scale - 1:10,000

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

Map Name(s) and Date(s)



Historical Map - Slice A



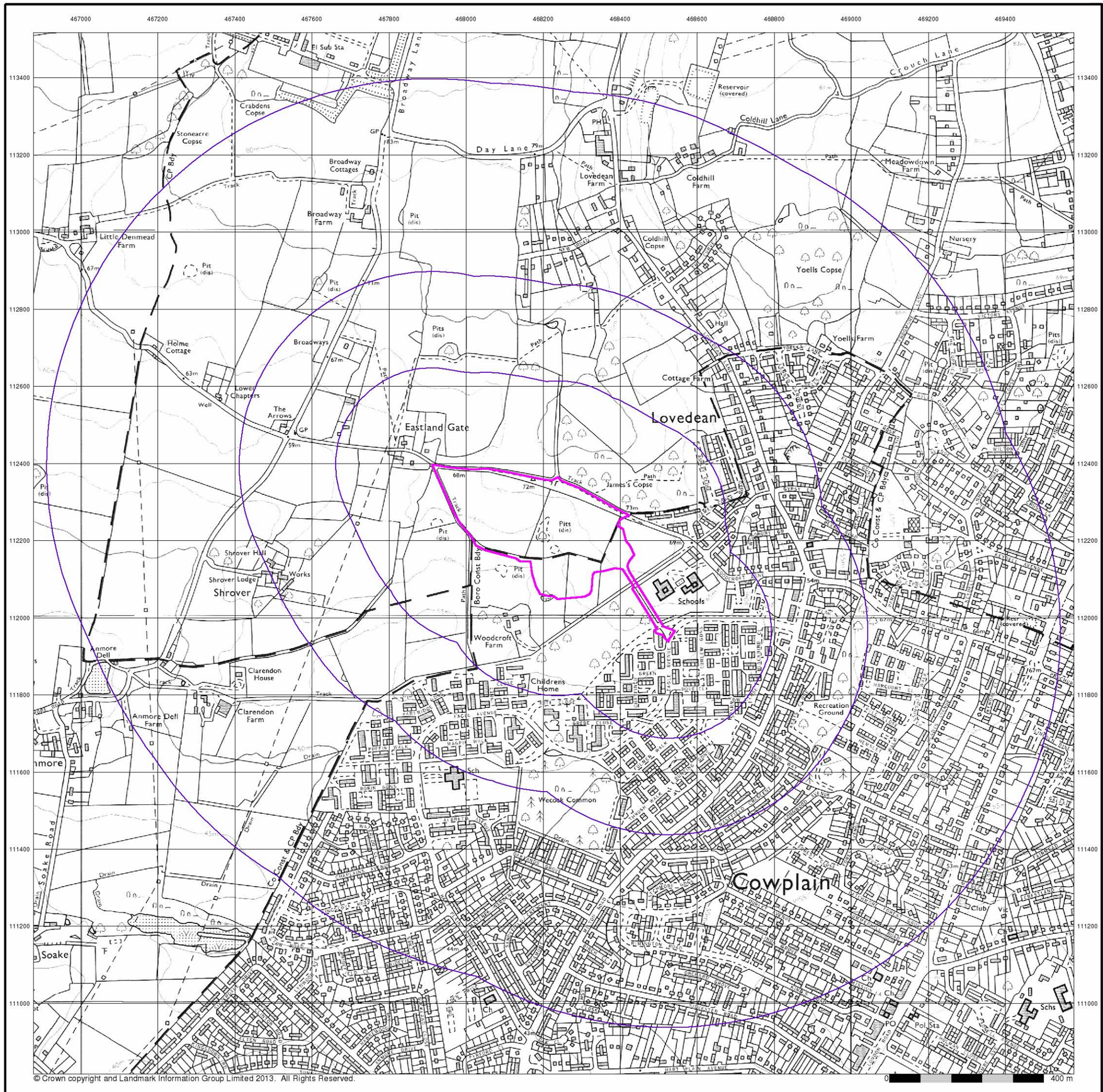
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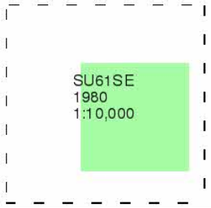
Ordnance Survey Plan

Published 1980

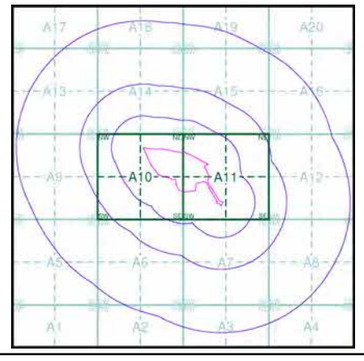
Source map scale - 1:10,000

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Map Name(s) and Date(s)



Historical Map - Slice A



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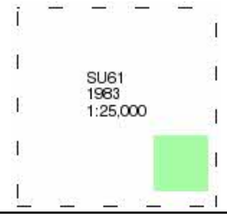
Havant

Published 1983

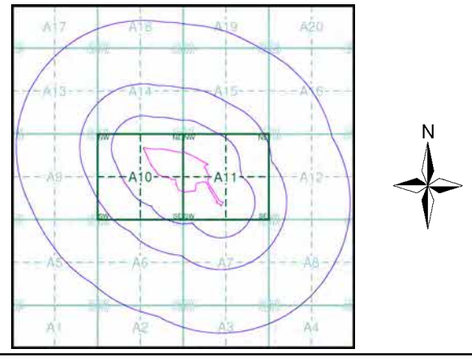
Source map scale - 1:25,000

These maps were produced by the Russian military during the Cold War between 1950 and 1997, and cover 103 towns and cities throughout the U.K. The maps are produced at 1:25,000, 1:10,000 and 1:5,000 scale, and show detailed land use, with colour-coded areas for development, green areas, and non-developed areas. Buildings are coloured black and important building uses (such as hospitals, post offices, factories etc.) are numbered, with a numbered key describing their use.
They were produced by the Russians for the benefit of navigation, as well as strategic military sites and transport hubs, for use if they were to have invaded the U.K. The detailed information provided indicates that the areas were surveyed using land-based personnel, on the ground, in the cities that are mapped.

Map Name(s) and Date(s)



Russian Map - Slice A



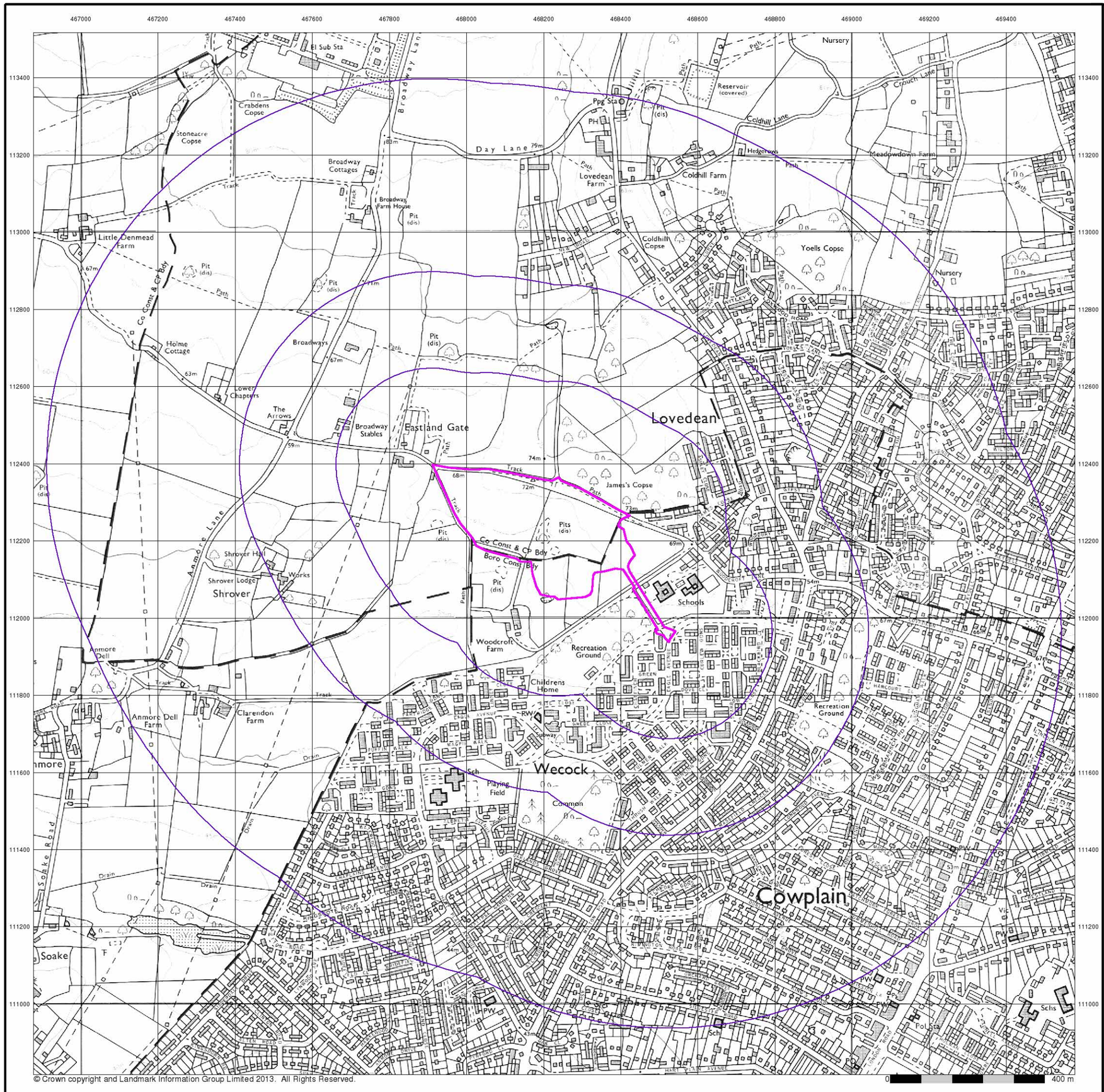
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Ordnance Survey Plan

Published 1992

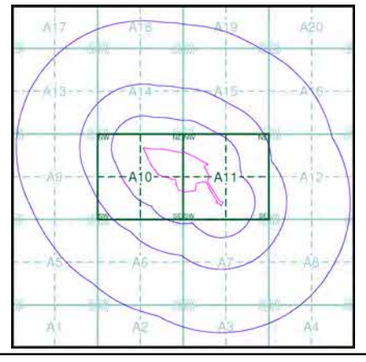
Source map scale - 1:10,000

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

Map Name(s) and Date(s)



Historical Map - Slice A



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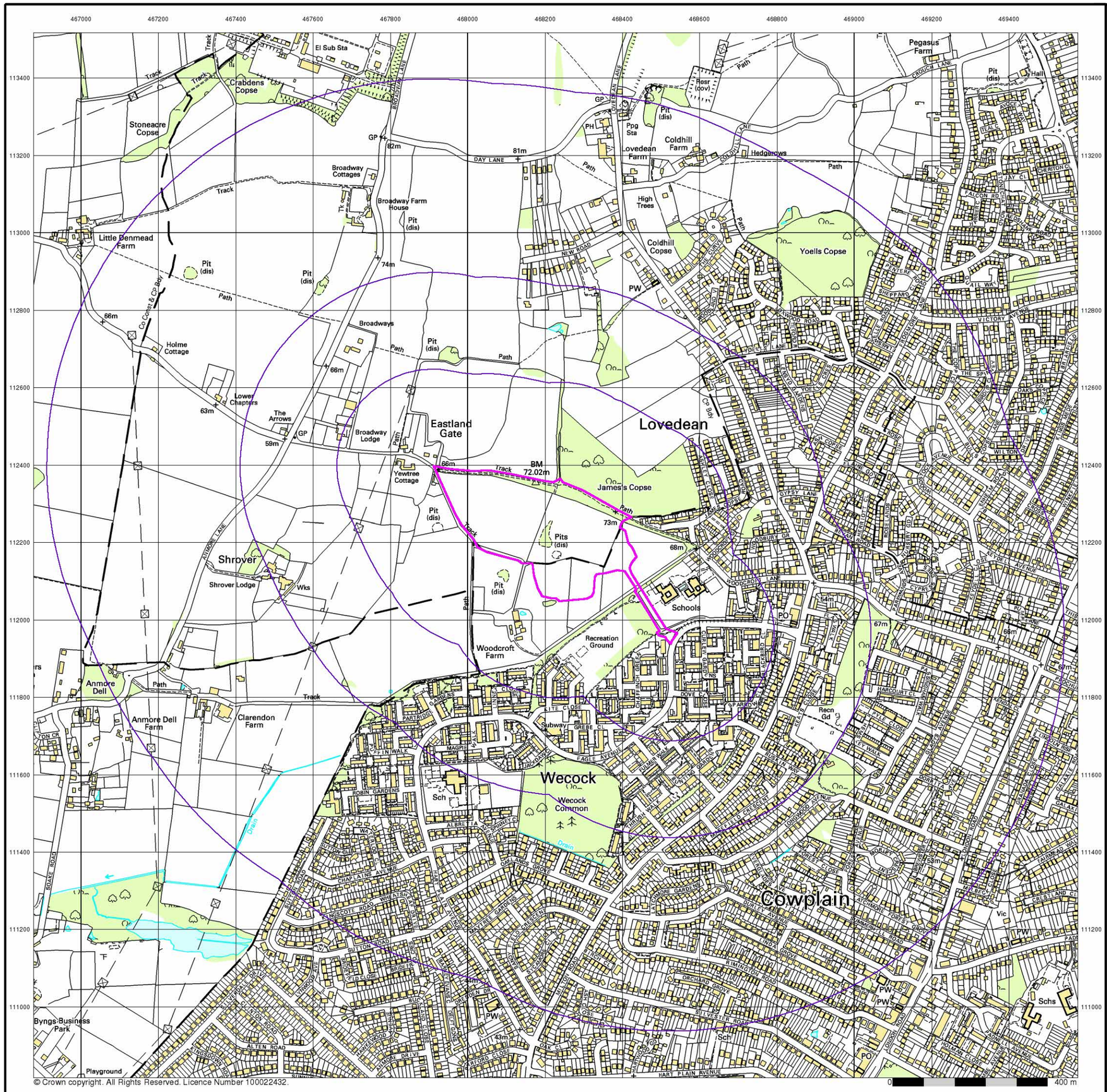
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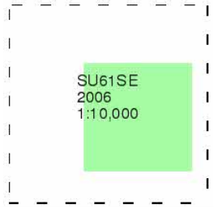
10k Raster Mapping

Published 2006

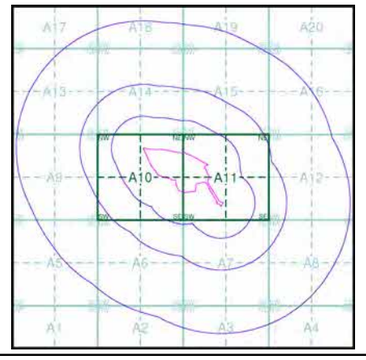
Source map scale - 1:10,000

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

Map Name(s) and Date(s)



Historical Map - Slice A



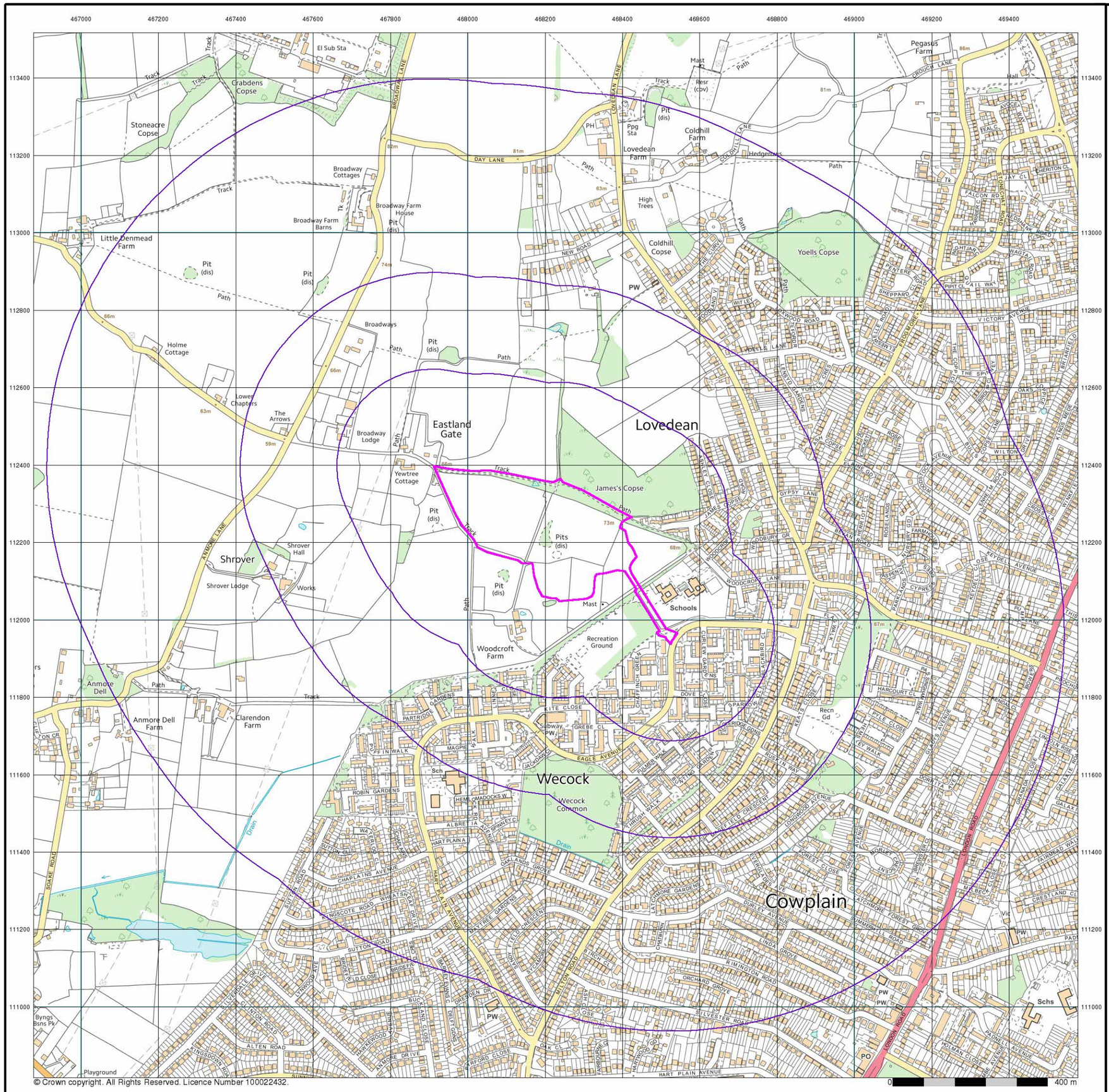
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VectorMap Local

Published 2014

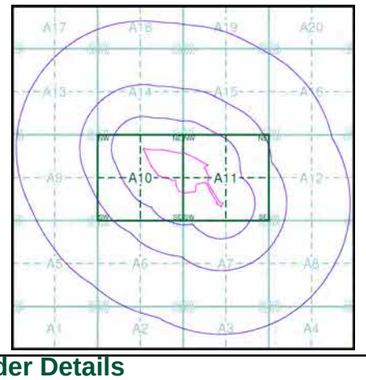
Source map scale - 1:10,000

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

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

Order Number:	62099871_1_1
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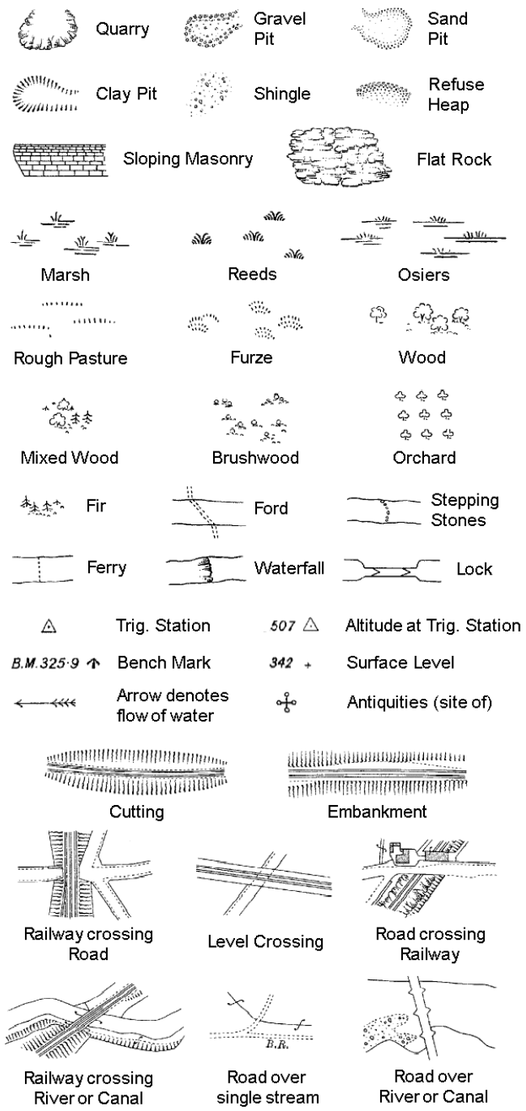
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Historical Mapping Legends

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



County Boundary (Geographical)

County & Civil Parish Boundary

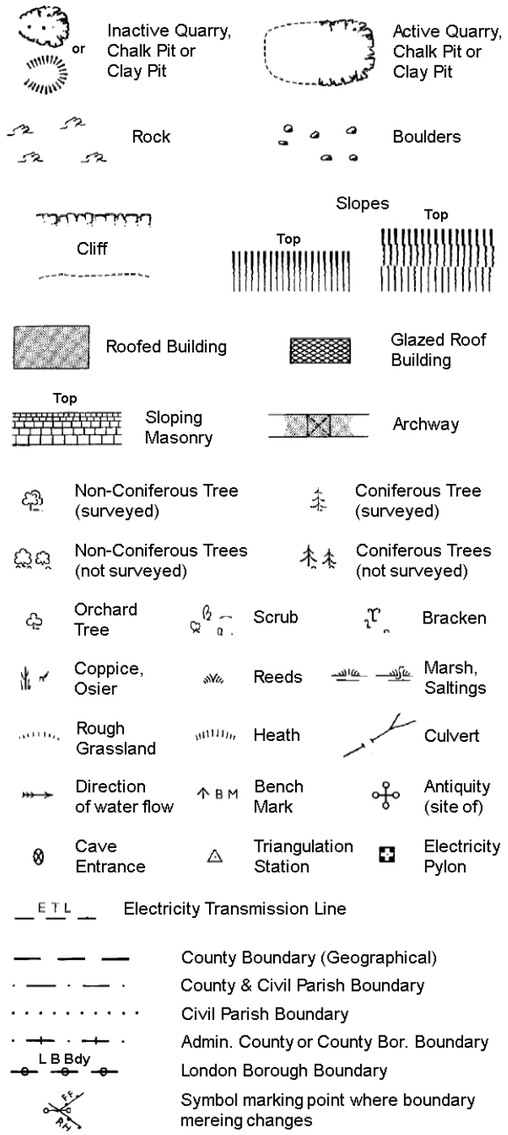
Administrative County & Civil Parish Boundary

Co. Boro. Bdy. County Borough Boundary (England)

Co. Burgh Bdy. County Burgh Boundary (Scotland)

B P B S	Boundary Post or Stone	P.C.B	Police Call Box
B.R.	Bridle Road	P	Pump
E.P	Electricity Pylon	S.P	Signal Post
F.B.	Foot Bridge	St.	Sluice
F.P.	Foot Path	Sp.	Spring
G.P	Guide Post or Board	T.C.B	Telephone Call Box
M.S	Mile Stone	Tr.	Trough
M.P M.R	Mooring Post or Ring	W	Well

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



County Boundary (Geographical)

County & Civil Parish Boundary

Civil Parish Boundary

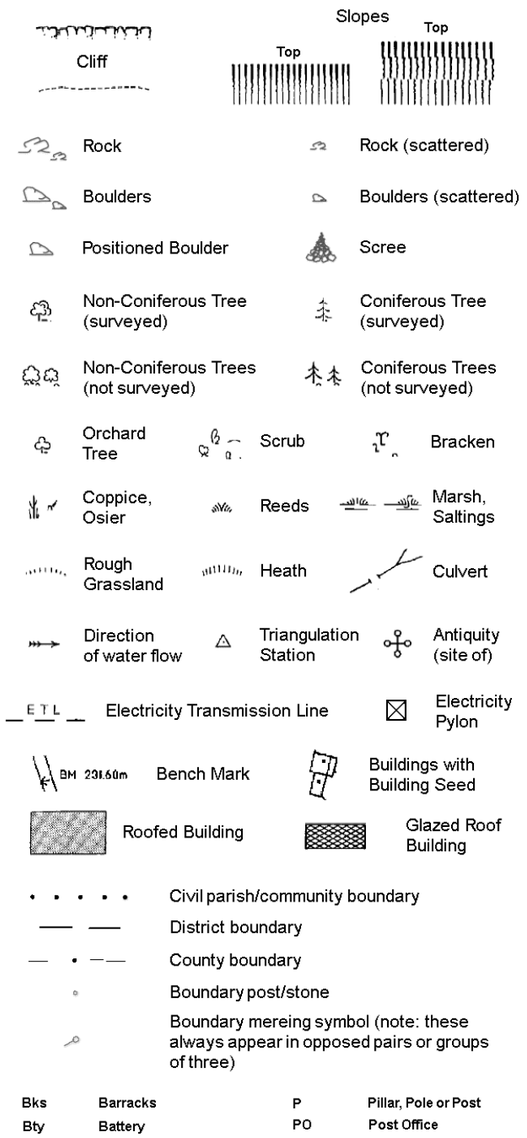
Admin. County or County Bor. Boundary

L B Bdy London Borough Boundary

Symbol marking point where boundary mereing changes

BH	Beer House	P	Pillar, Pole or Post
BP, BS	Boundary Post or Stone	PO	Post Office
Cn, C	Capstan, Crane	PC	Public Convenience
Chy	Chimney	PH	Public House
D Fn	Drinking Fountain	Pp	Pump
El P	Electricity Pillar or Post	SB, S Br	Signal Box or Bridge
FAP	Fire Alarm Pillar	SP, SL	Signal Post or Light
FB	Foot Bridge	Spr	Spring
GP	Guide Post	Tk	Tank or Track
H	Hydrant or Hydraulic	TCB	Telephone Call Box
LC	Level Crossing	TCP	Telephone Call Post
MH	Manhole	Tr	Trough
MP	Mile Post or Mooring Post	Wr Pt, Wr T	Water Point, Water Tap
MS	Mile Stone	W	Well
NTL	Normal Tidal Limit	Wd Pp	Wind Pump

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



Civil parish/community boundary

District boundary

County boundary

Boundary post/stone

Boundary mereing symbol (note: these always appear in opposed pairs or groups of three)

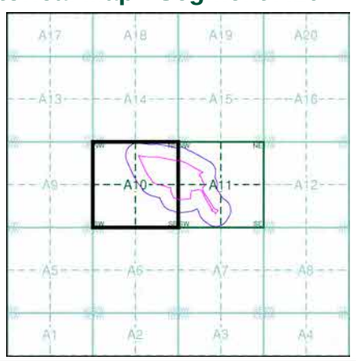
Bks	Barracks	P	Pillar, Pole or Post
Bty	Battery	PO	Post Office
Cemy	Cemetery	PC	Public Convenience
Chy	Chimney	Pp	Pump
Cis	Cistern	Ppg Sta	Pumping Station
Dismtd Rly	Dismantled Railway	PW	Place of Worship
El Gen Sta	Electricity Generating Station	Sewage Ppg Sta	Sewage Pumping Station
El P	Electricity Pole, Pillar	SB, S Br	Signal Box or Bridge
El Sub Sta	Electricity Sub Station	SP, SL	Signal Post or Light
FB	Filter Bed	Spr	Spring
Fn / D Fn	Fountain / Drinking Ftn.	Tk	Tank or Track
Gas Gov	Gas Valve Compound	Tr	Trough
GVC	Gas Governer	Wd Pp	Wind Pump
GP	Guide Post	Wr Pt, Wr T	Water Point, Water Tap
MH	Manhole	Wks	Works (building or area)
MP, MS	Mile Post or Mile Stone	W	Well

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Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Hampshire & Isle Of Wight	1:2,500	1868	2
Hampshire & Isle Of Wight	1:2,500	1868	3
Hampshire & Isle Of Wight	1:2,500	1897	4
Hampshire & Isle Of Wight	1:2,500	1909	5
Hampshire & Isle Of Wight	1:2,500	1932	6
Ordnance Survey Plan	1:2,500	1953 - 1966	7
Ordnance Survey Plan	1:2,500	1959 - 1975	8
Ordnance Survey Plan	1:2,500	1970 - 1974	9
Ordnance Survey Plan	1:1,250	1973	10
Additional SIMs	1:2,500	1975 - 1990	11
Ordnance Survey Plan	1:1,250	1976 - 1985	12
Additional SIMs	1:1,250	1977	13
Additional SIMs	1:2,500	1990	14
Large-Scale National Grid Data	1:2,500	1993	15
Large-Scale National Grid Data	1:1,250	1993	16
Large-Scale National Grid Data	1:1,250	1996	17

Historical Map - Segment A10



Order Details

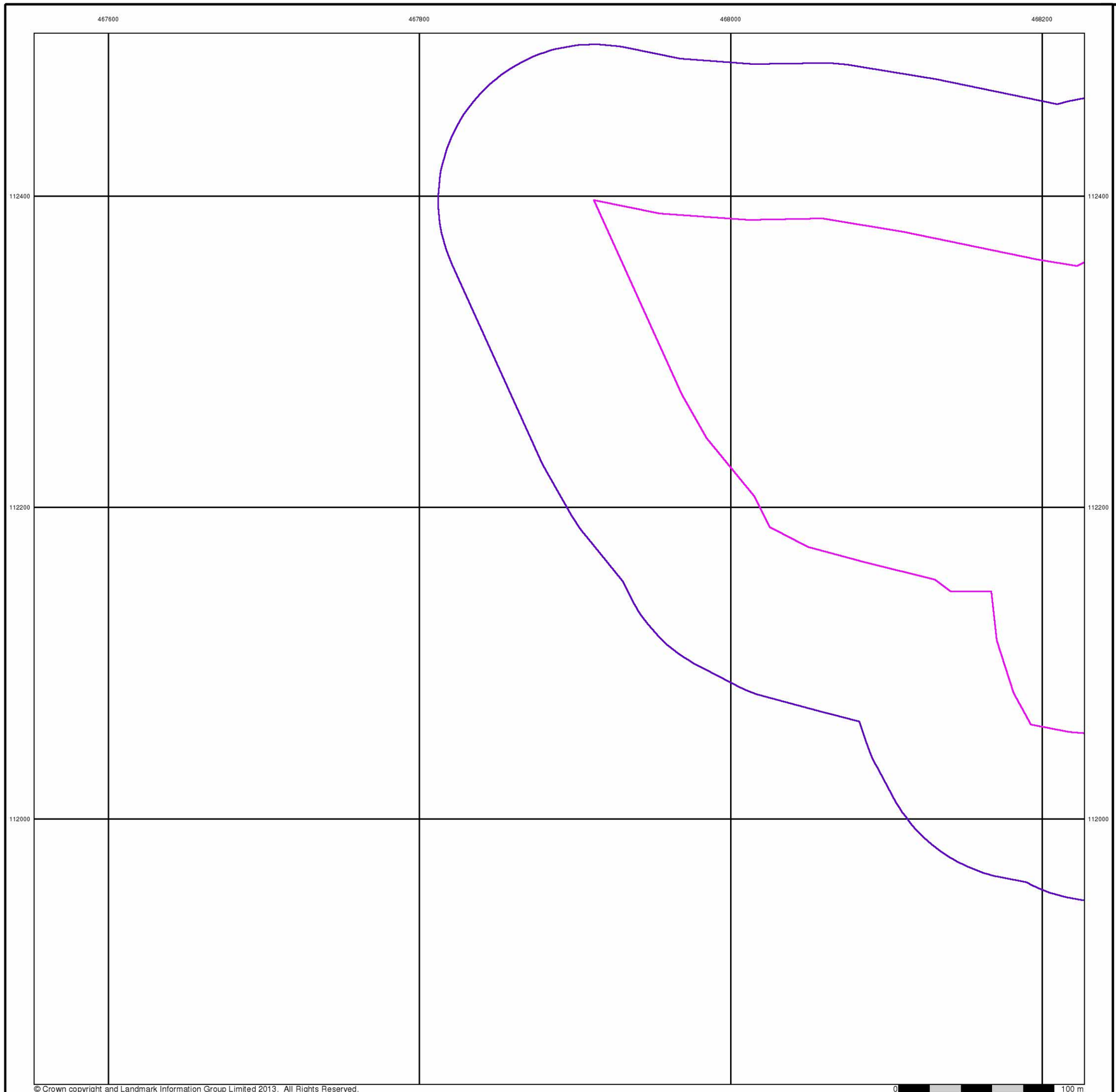
Order Number:	62099871_1_1
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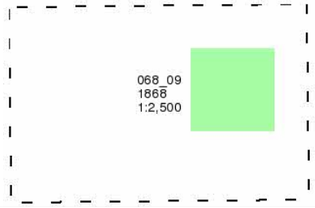
Hampshire & Isle Of Wight

Published 1868

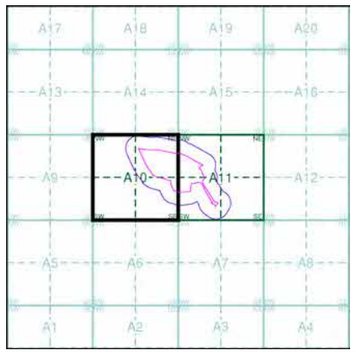
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A10



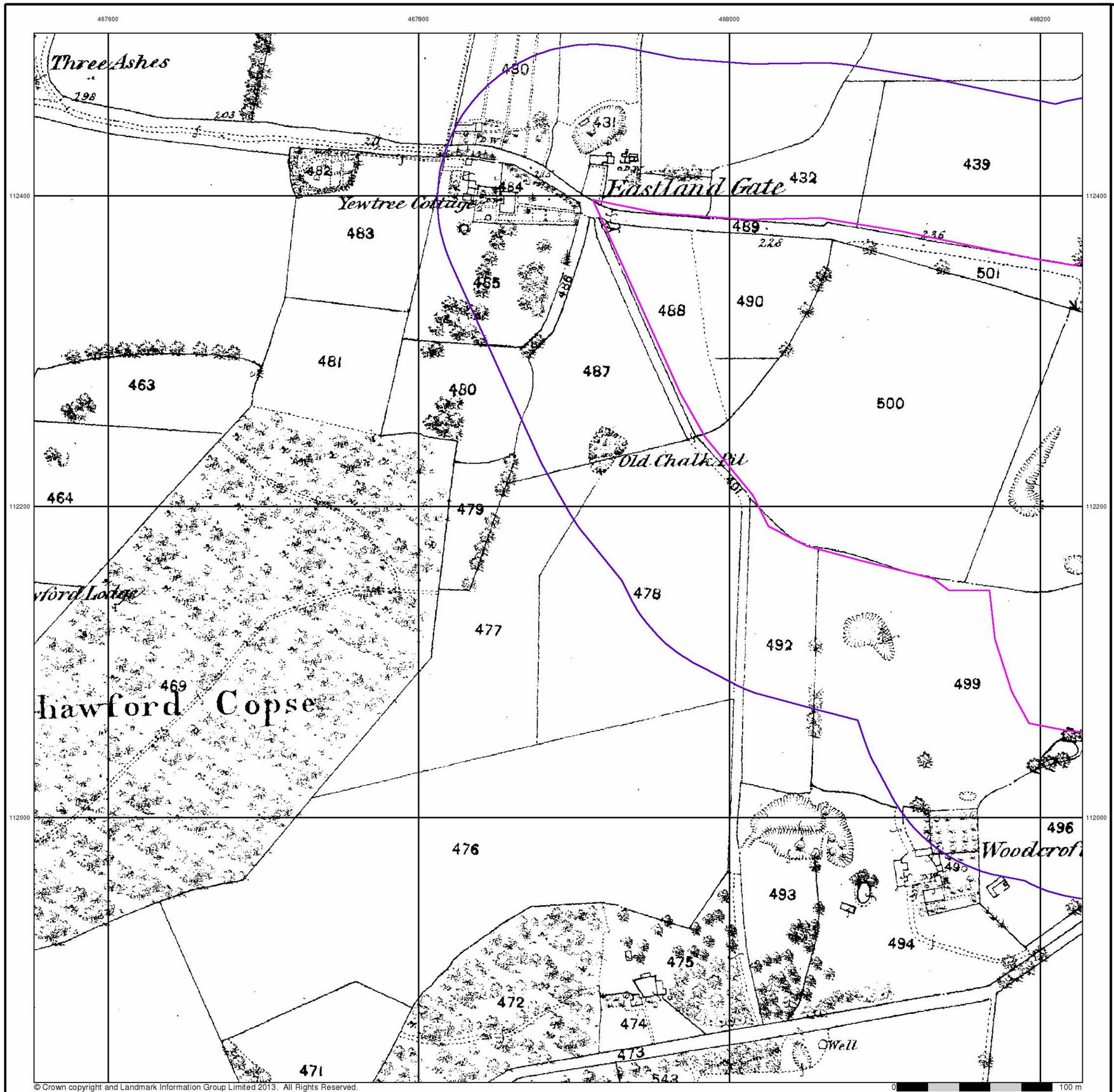
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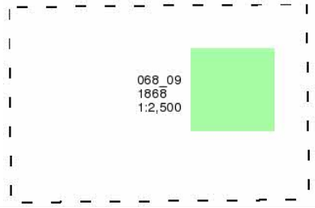
Hampshire & Isle Of Wight

Published 1868

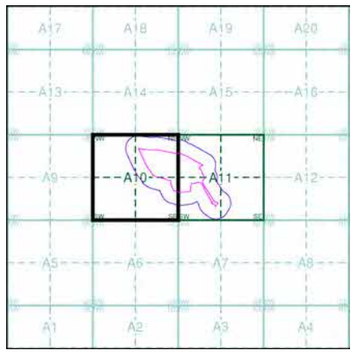
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Map Name(s) and Date(s)



Historical Map - Segment A10



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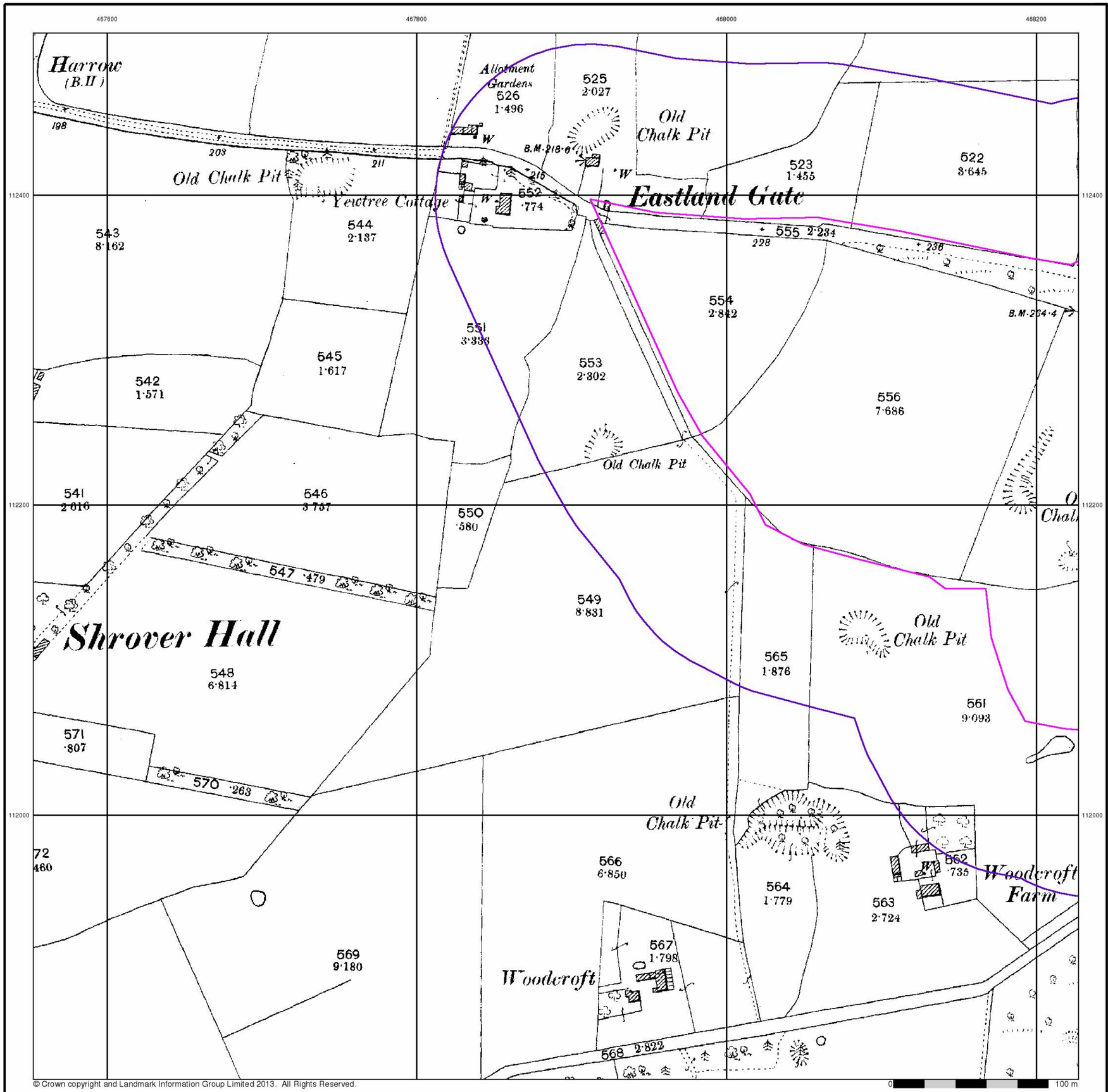
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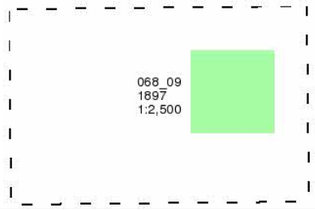
Hampshire & Isle Of Wight

Published 1897

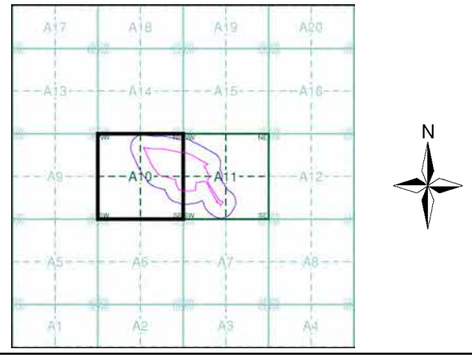
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A10



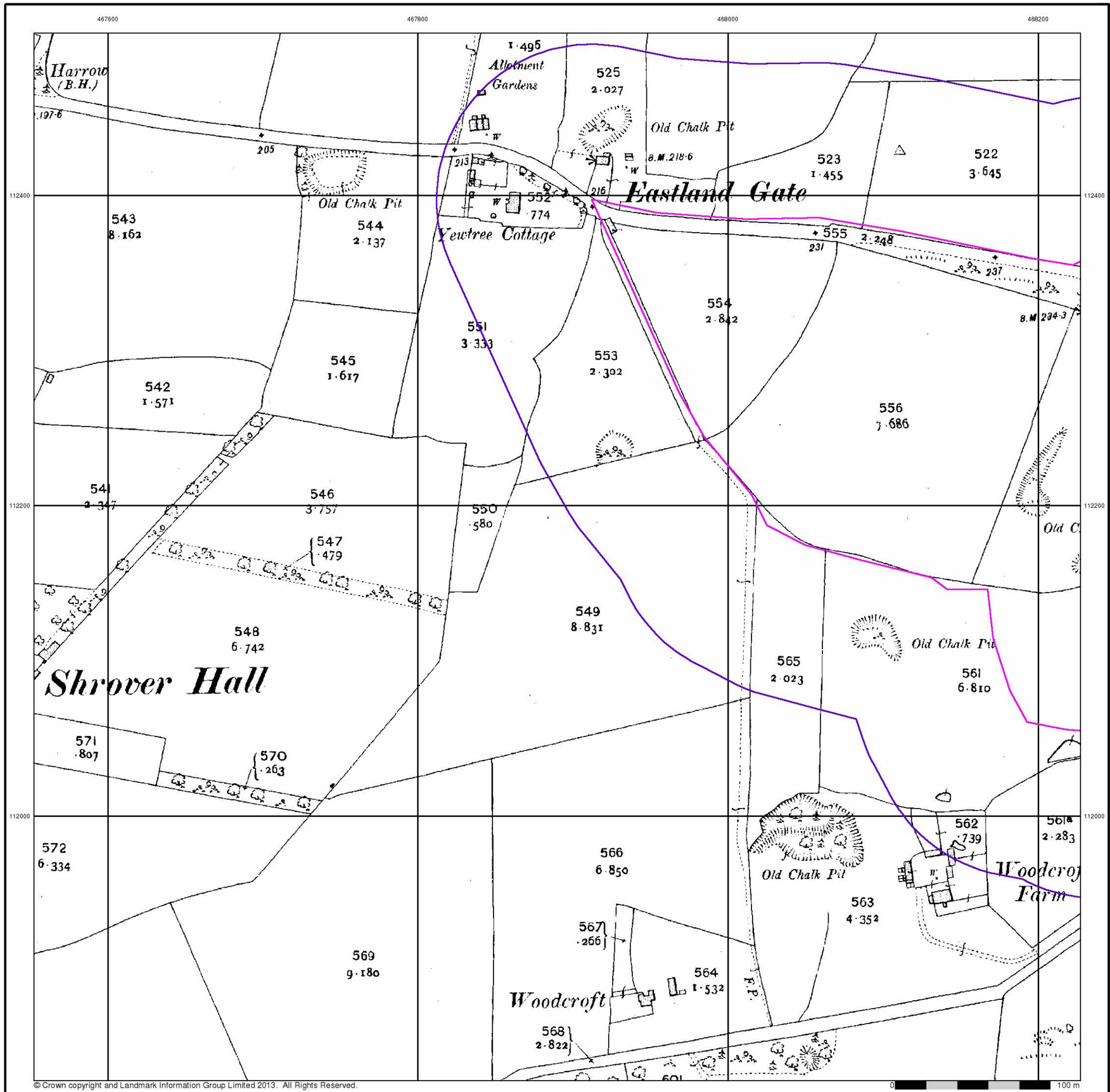
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Customer Ref:	21834
National Grid Reference:	468240, 112190
Slice:	A
Site Area (Ha):	10.8
Search Buffer (m):	100

Site Details

Woodcroft Farm, Woodcroft Lane, Waterlooville, PO8 9QA

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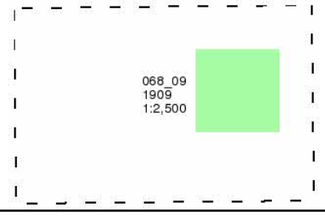
Hampshire & Isle Of Wight

Published 1909

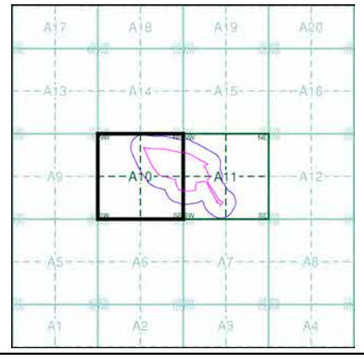
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Map Name(s) and Date(s)



Historical Map - Segment A10

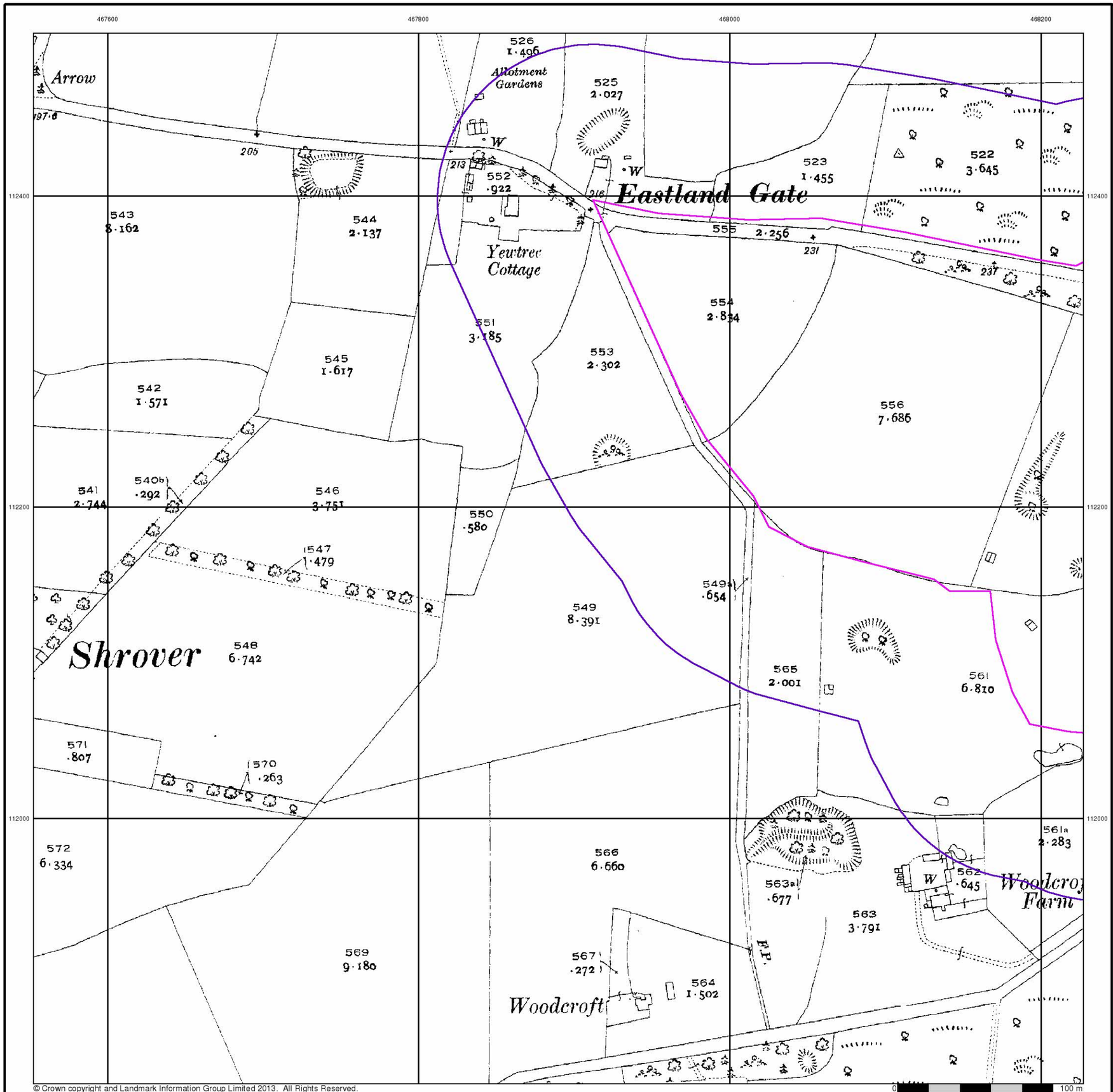


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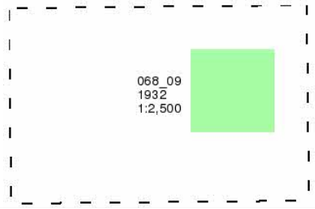
Hampshire & Isle Of Wight

Published 1932

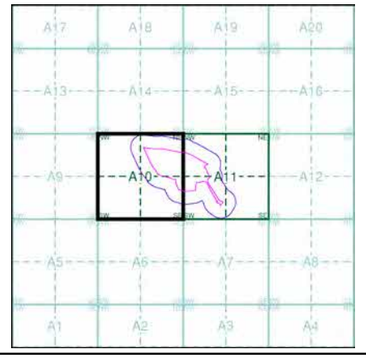
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Map Name(s) and Date(s)



Historical Map - Segment A10



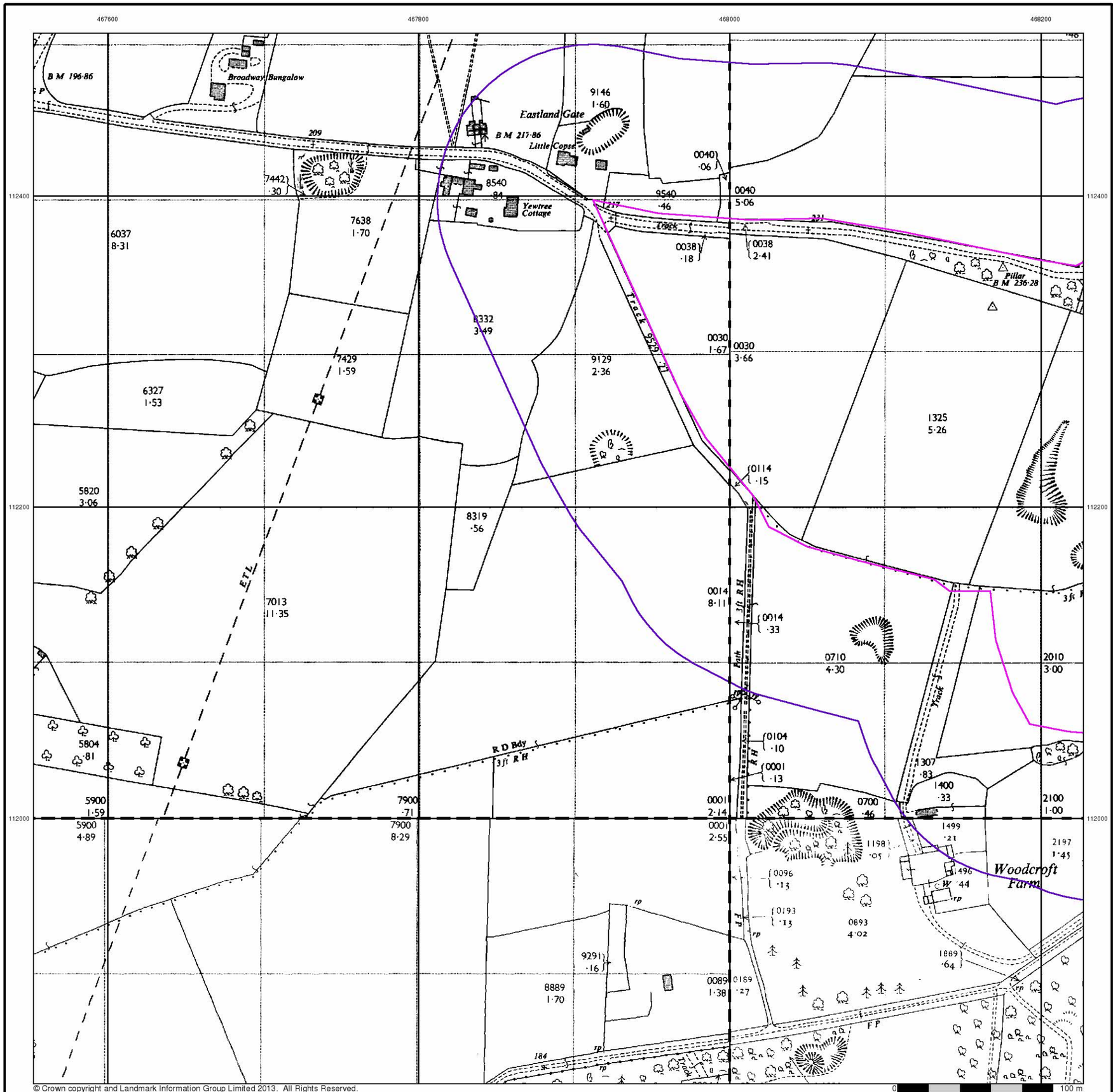
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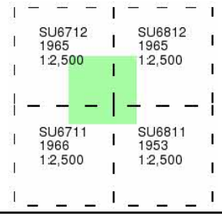
Ordnance Survey Plan

Published 1953 - 1966

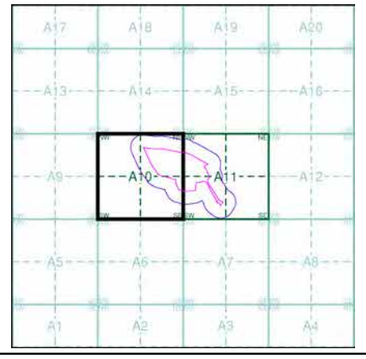
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Map Name(s) and Date(s)



Historical Map - Segment A10



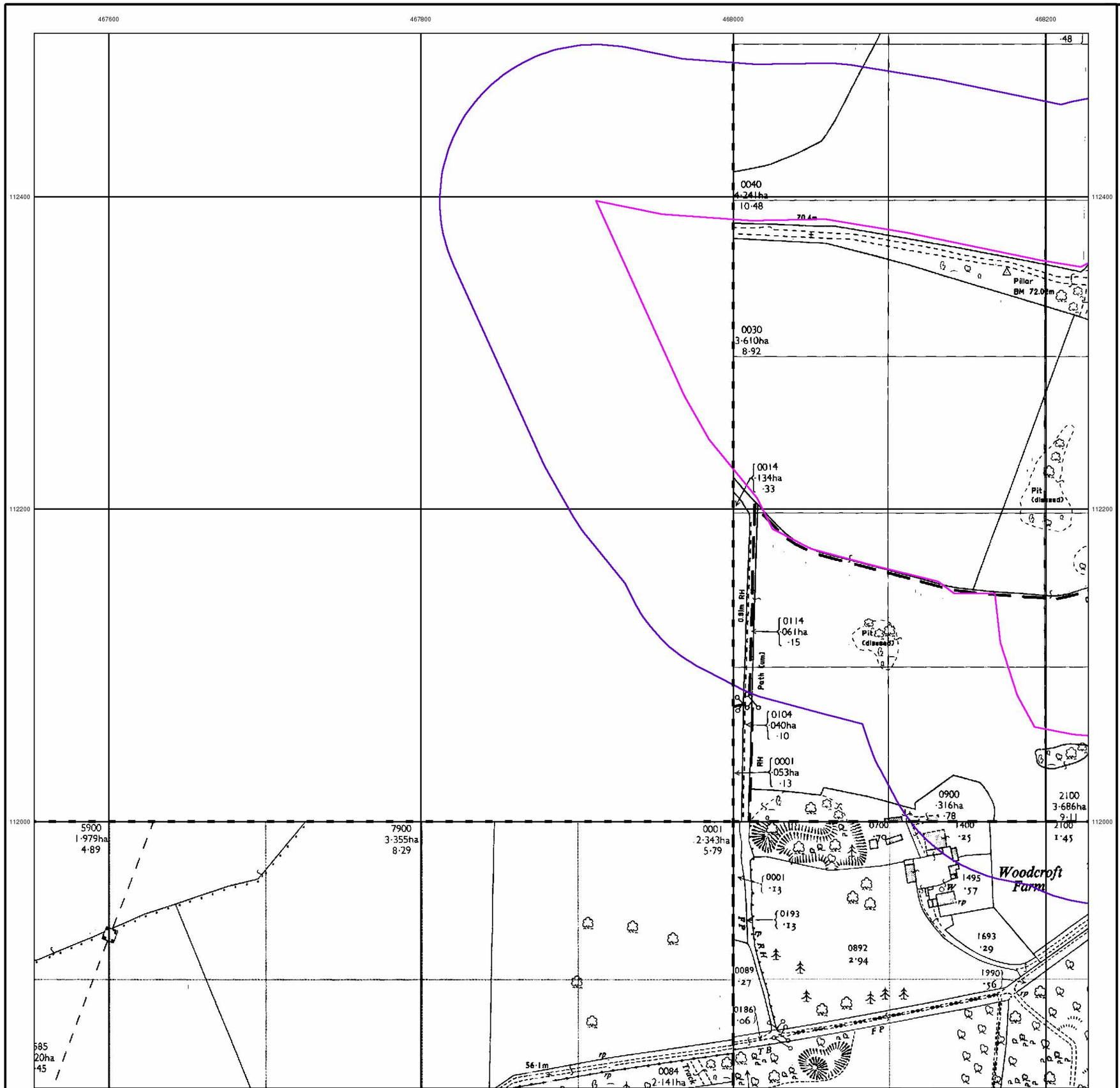
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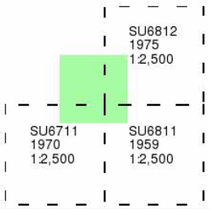
Ordnance Survey Plan

Published 1959 - 1975

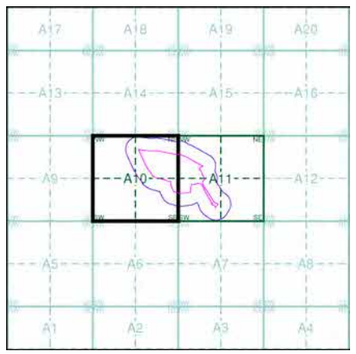
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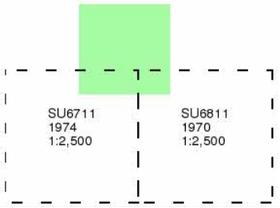
Ordnance Survey Plan

Published 1970 - 1974

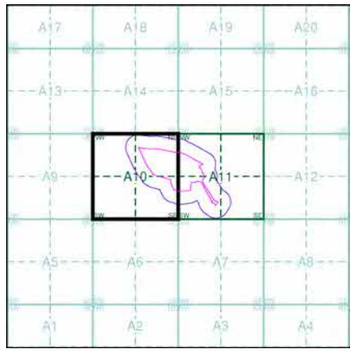
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Map Name(s) and Date(s)



Historical Map - Segment A10



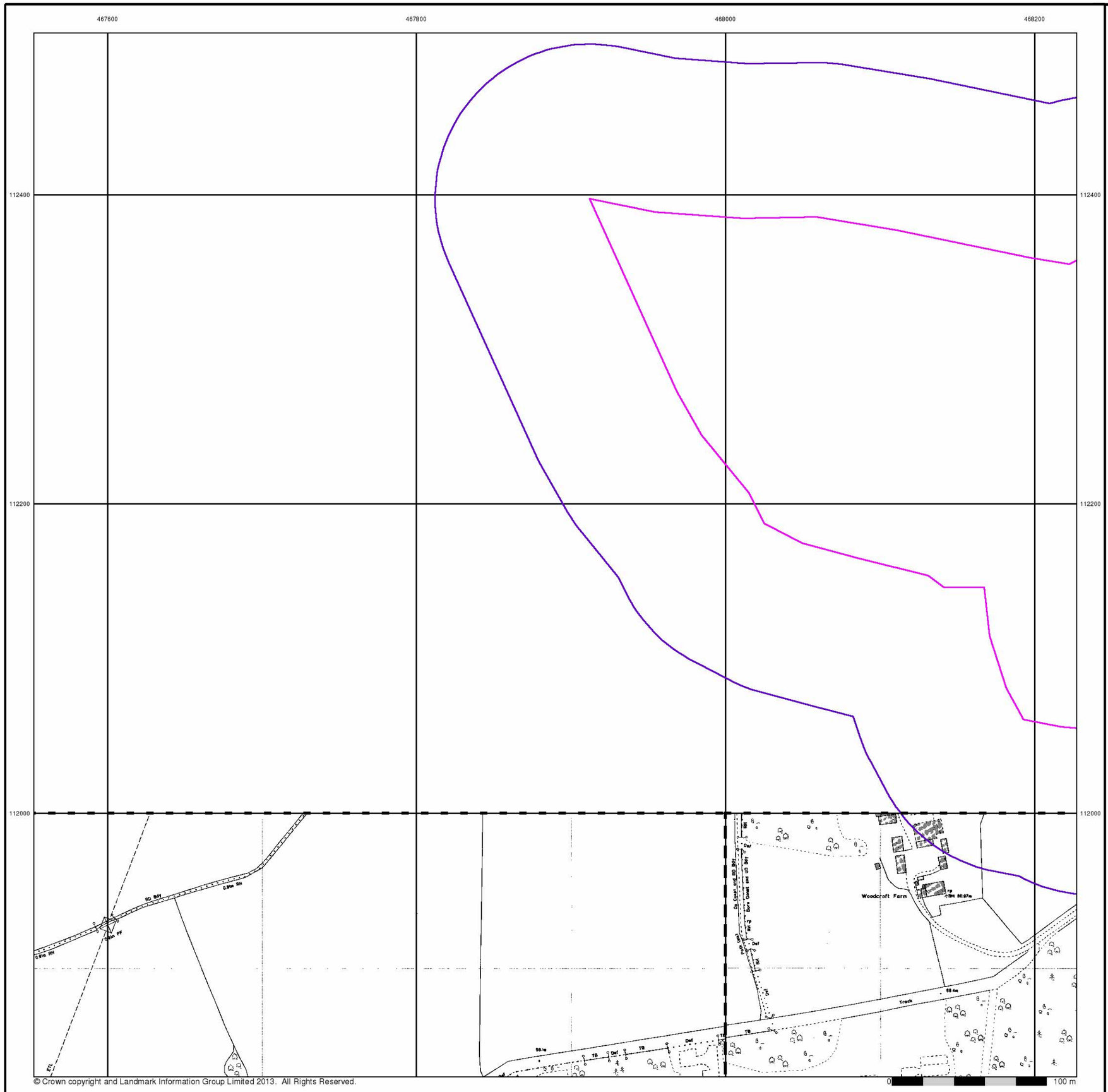
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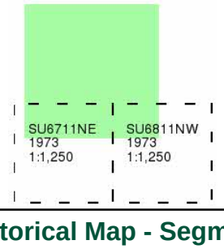
Ordnance Survey Plan

Published 1973

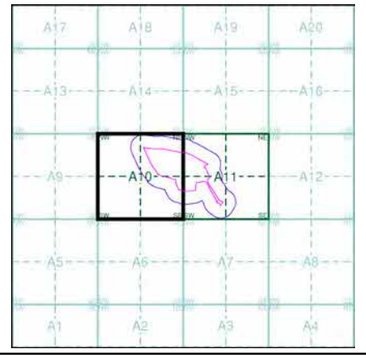
Source map scale - 1:1,250

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

Map Name(s) and Date(s)



Historical Map - Segment A10



Order Details

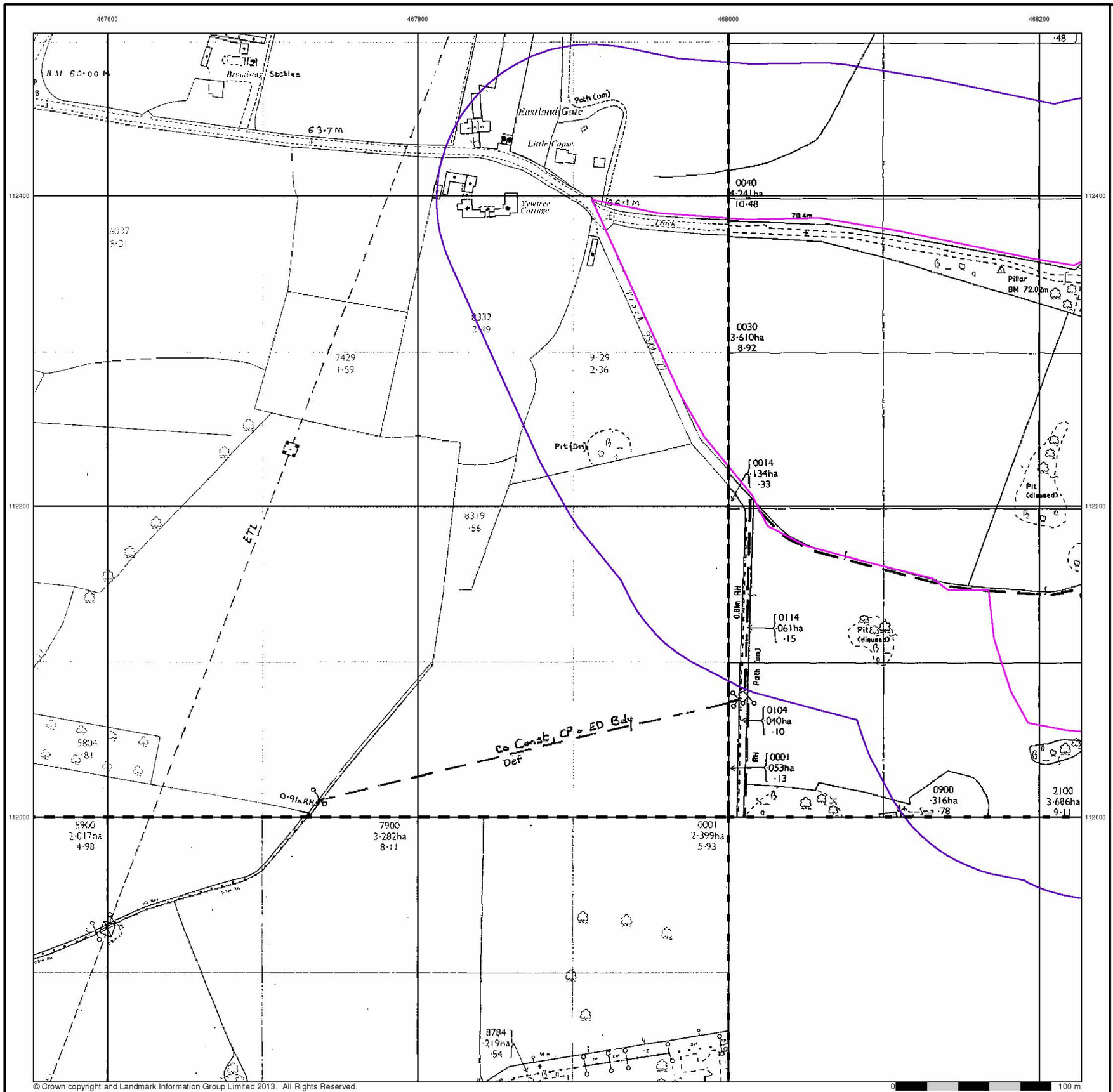
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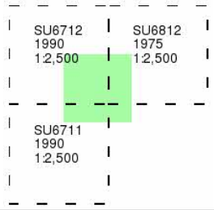
Additional SIMs

Published 1975 - 1990

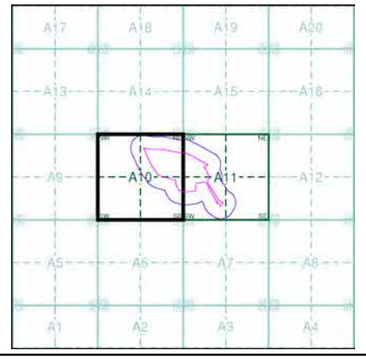
Source map scale - 1:2,500

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Map Name(s) and Date(s)



Historical Map - Segment A10



Order Details

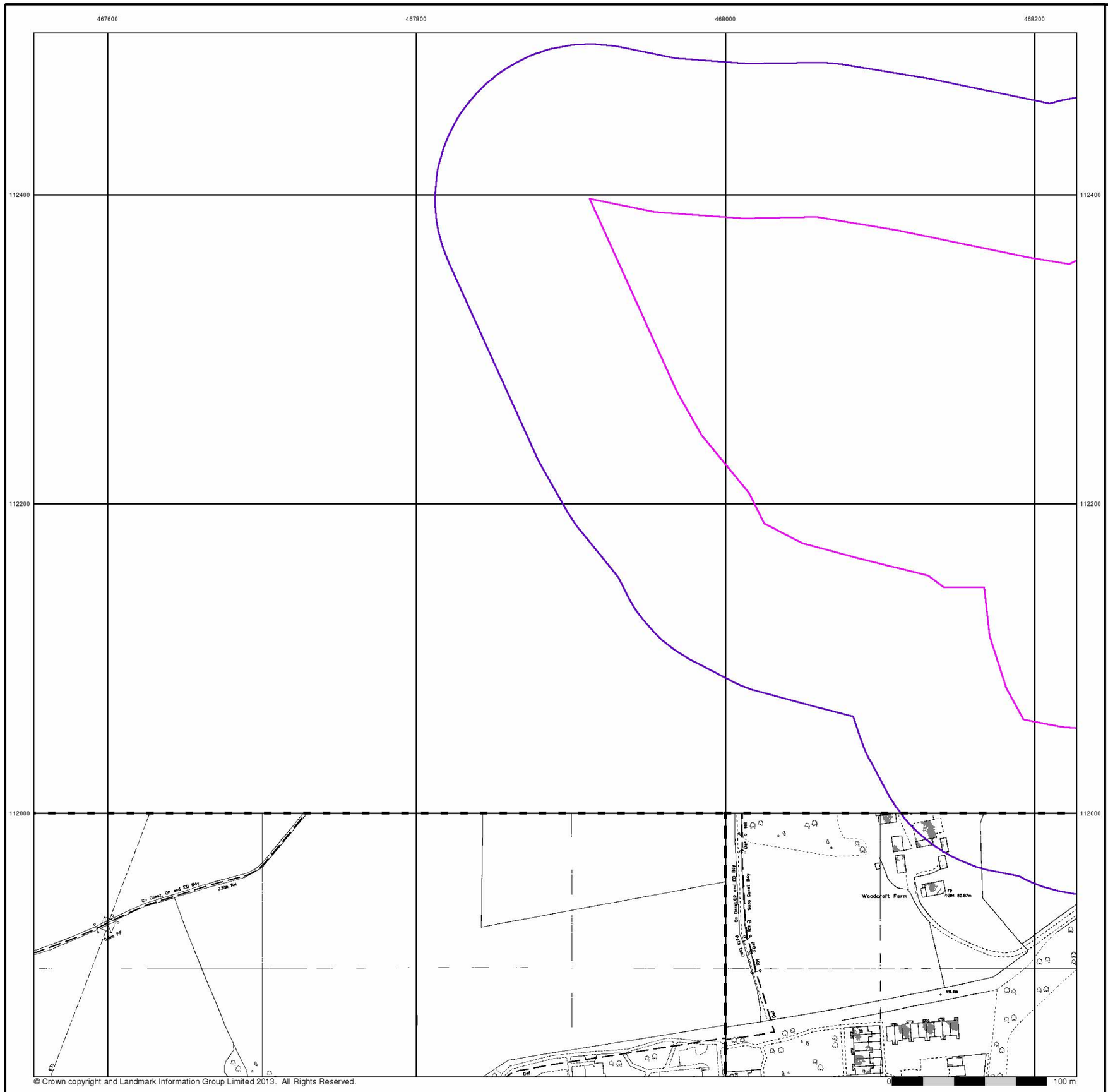
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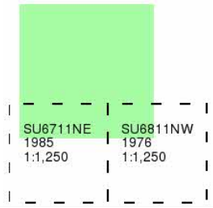
Ordnance Survey Plan

Published 1976 - 1985

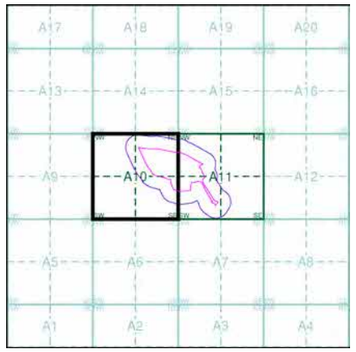
Source map scale - 1:1,250

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Historical Map - Segment A10



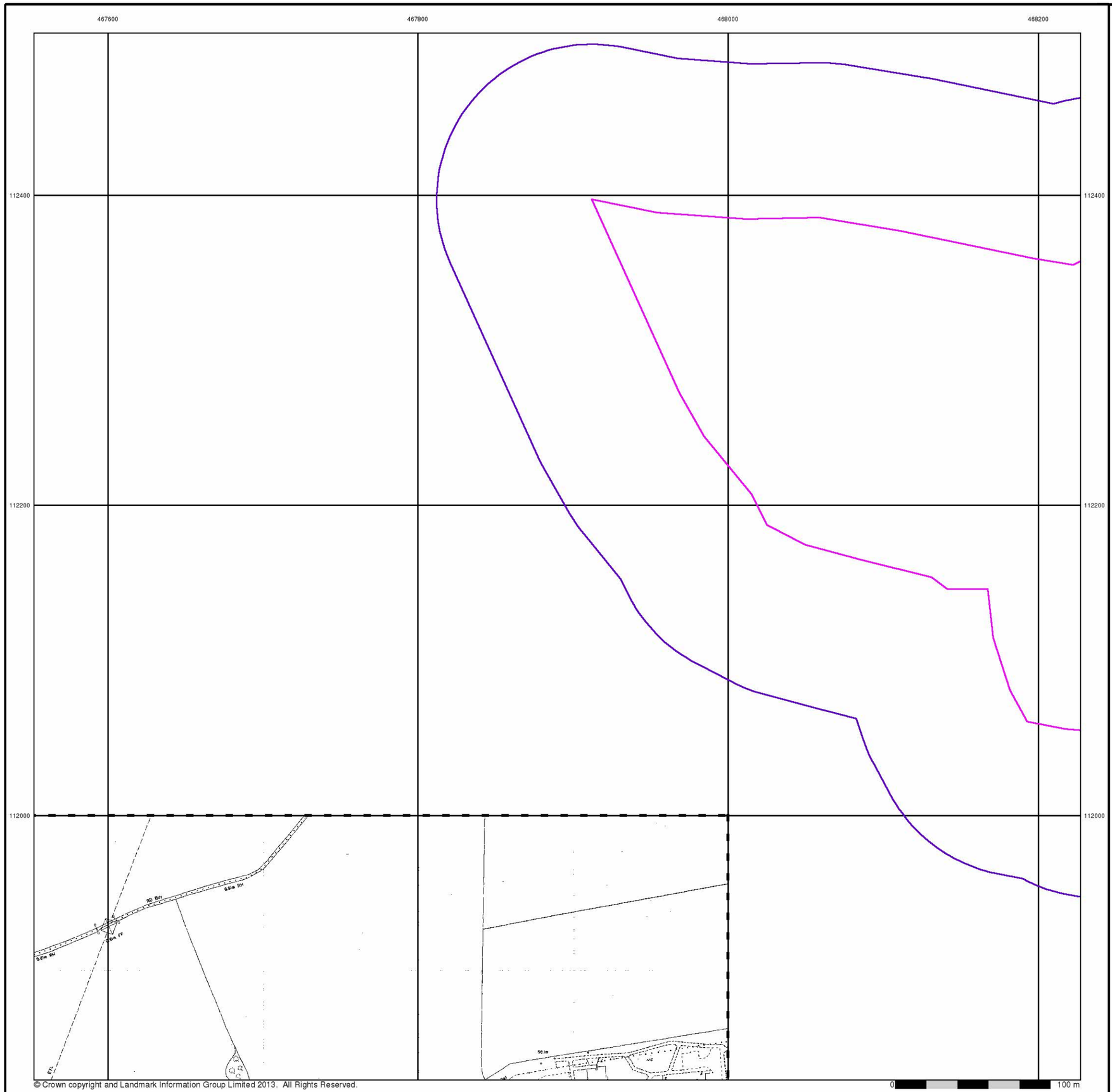
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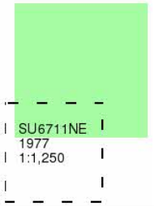
Additional SIMs

Published 1977

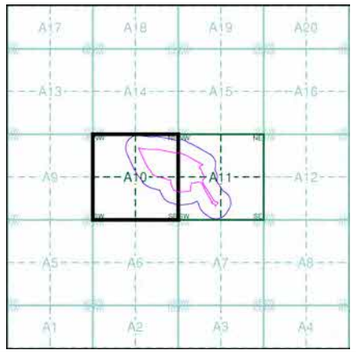
Source map scale - 1:1,250

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Map Name(s) and Date(s)



Historical Map - Segment A10

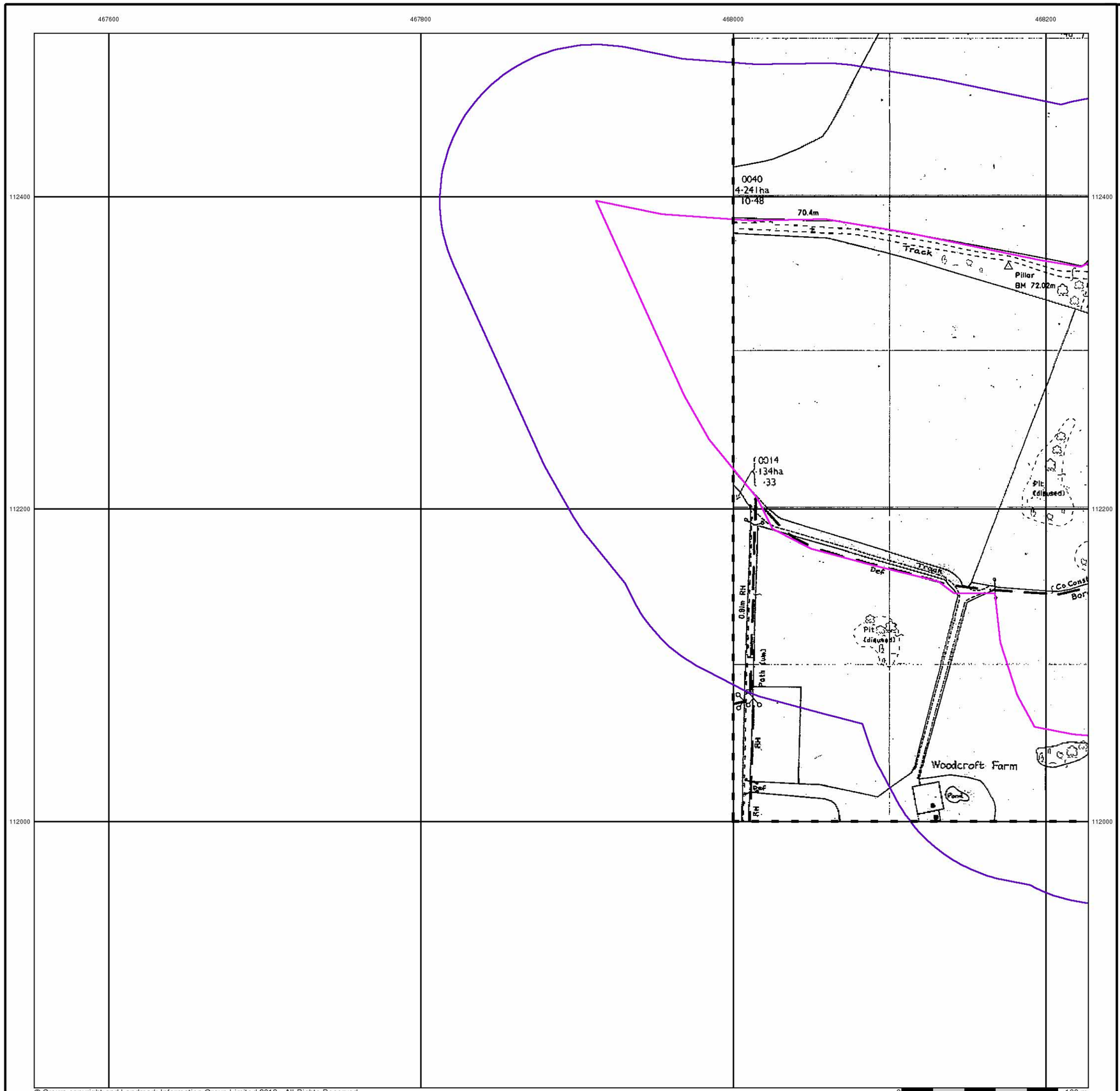


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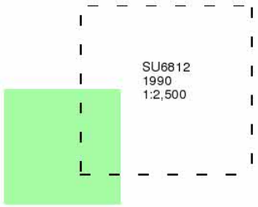
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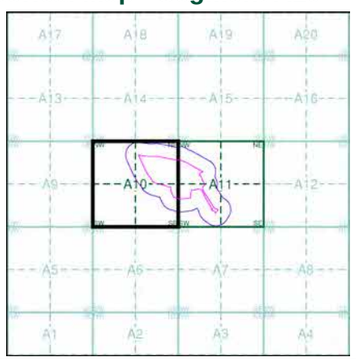
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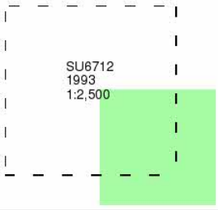
Large-Scale National Grid Data

Published 1993

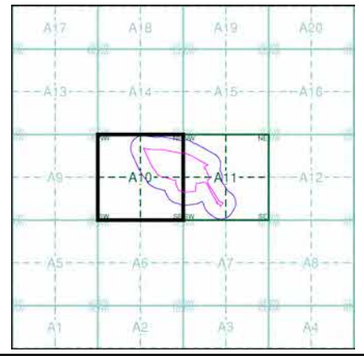
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A10



Order Details

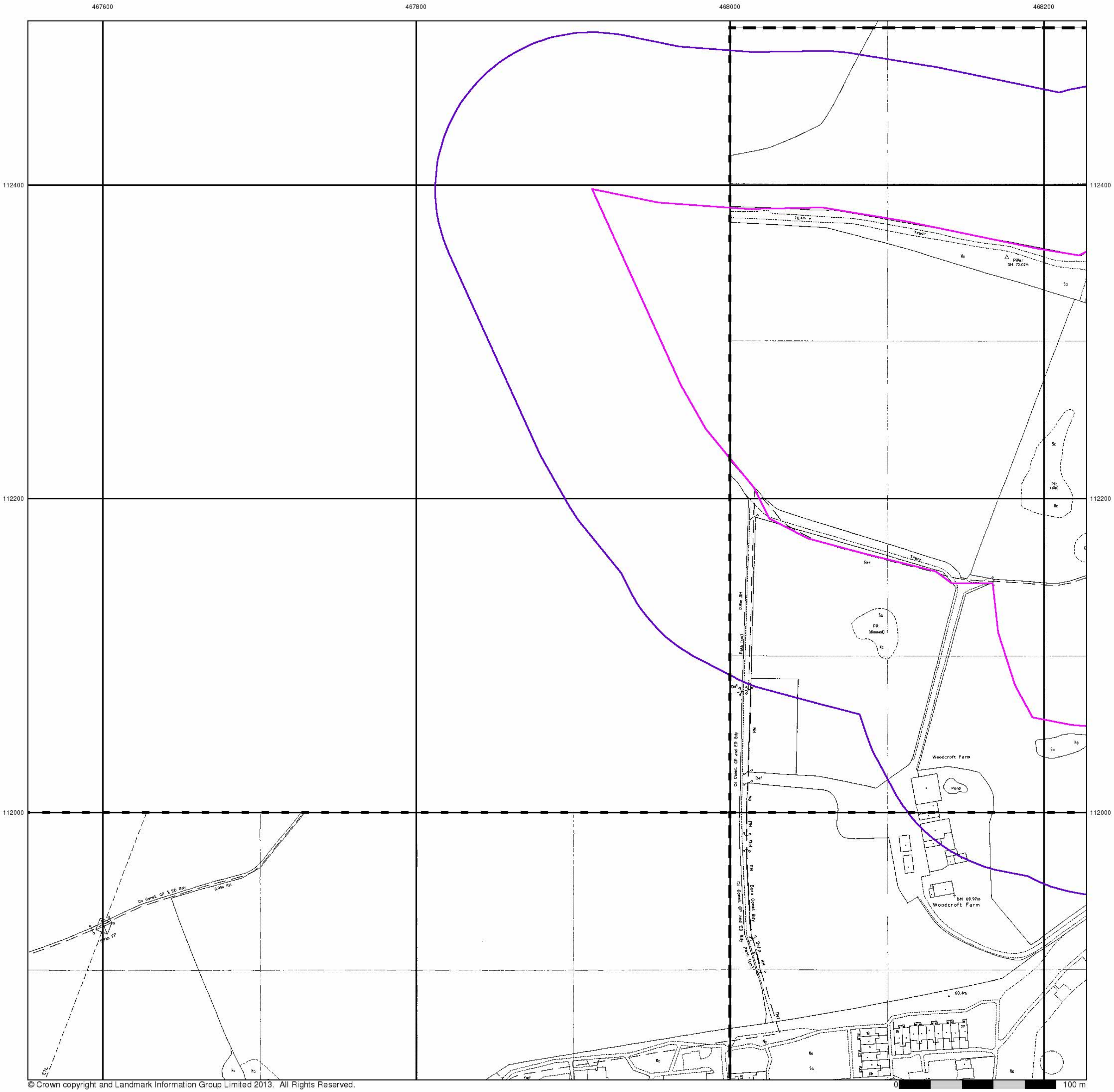
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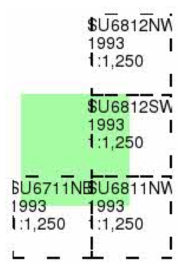
Large-Scale National Grid Data

Published 1993

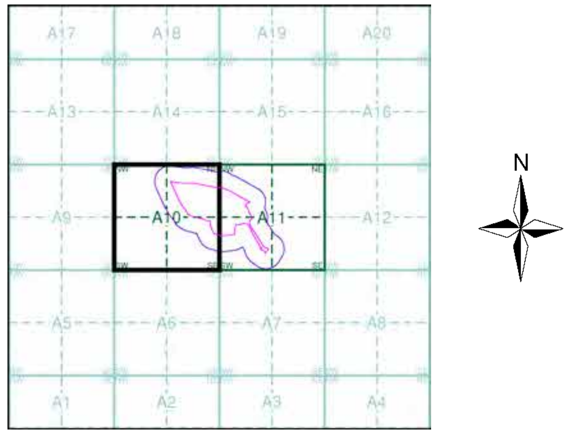
Source map scale - 1:1,250

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

Map Name(s) and Date(s)



Historical Map - Segment A10



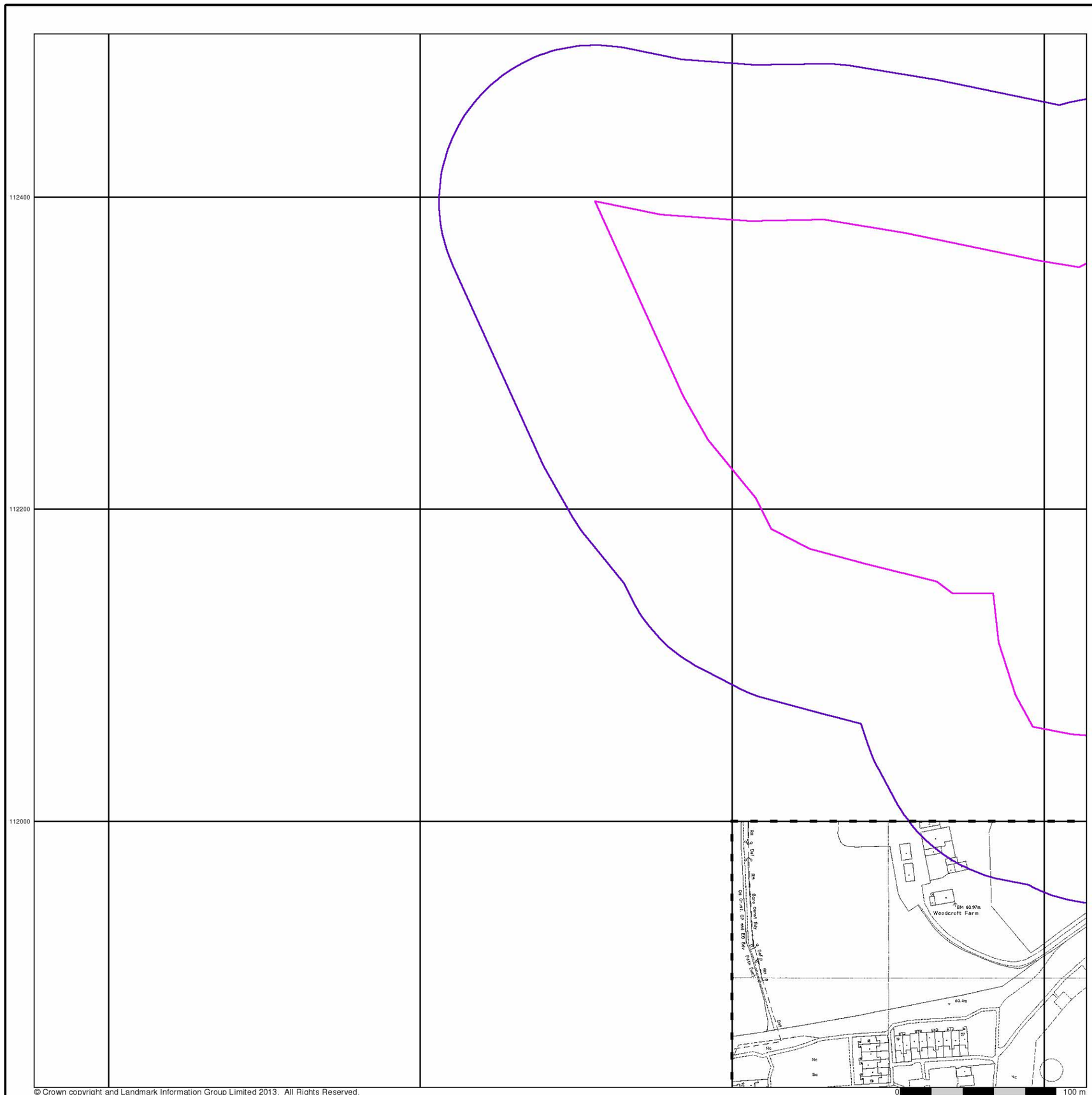
Order Details

Order Number: 62099871_1_1
Customer Ref: 21834
National Grid Reference: 468240, 112190
Slice: A
Site Area (Ha): 10.8
Search Buffer (m): 100

Site Details

Woodcroft Farm, Woodcroft Lane, Waterlooville, PO8 9QA

Tel: 0844 844 9952
Fax: 0844 844 9951
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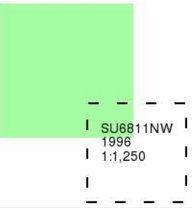
Large-Scale National Grid Data

Published 1996

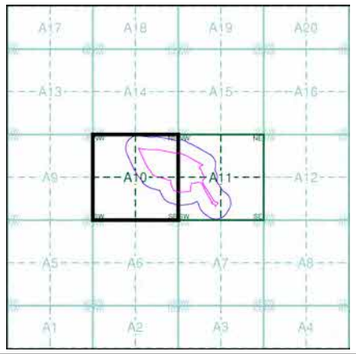
Source map scale - 1:1,250

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Map Name(s) and Date(s)



Historical Map - Segment A10



Order Details

Order Number:	62099871_1_1
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National Grid Reference:	468240, 112190
Slice:	A
Site Area (Ha):	10.8
Search Buffer (m):	100

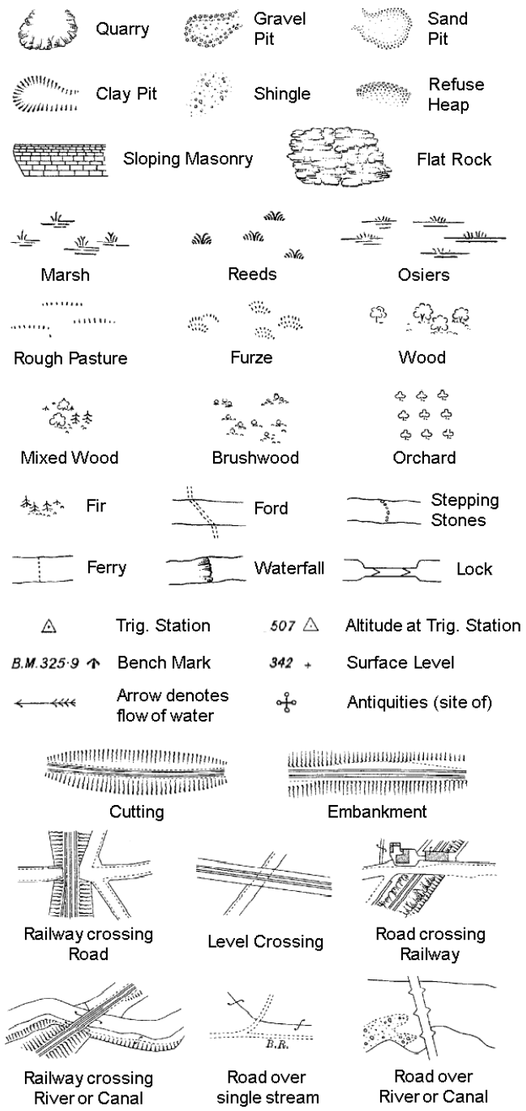
Site Details

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Historical Mapping Legends

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



County Boundary (Geographical)

County & Civil Parish Boundary

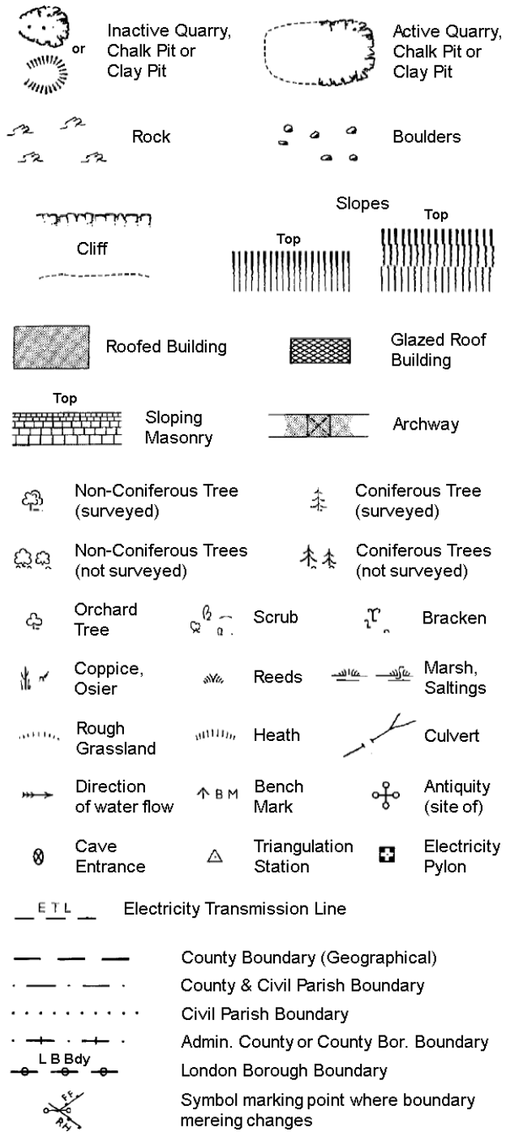
Administrative County & Civil Parish Boundary

Co. Boro. Bdy. County Borough Boundary (England)

Co. Burgh Bdy. County Burgh Boundary (Scotland)

B P B S	Boundary Post or Stone	P.C.B	Police Call Box
B.R.	Bridle Road	P	Pump
E.P	Electricity Pylon	S.P	Signal Post
F.B.	Foot Bridge	St.	Sluice
F.P.	Foot Path	Sp.	Spring
G.P	Guide Post or Board	T.C.B	Telephone Call Box
M.S	Mile Stone	Tr.	Trough
M.P M.R	Mooring Post or Ring	W	Well

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



County Boundary (Geographical)

County & Civil Parish Boundary

Civil Parish Boundary

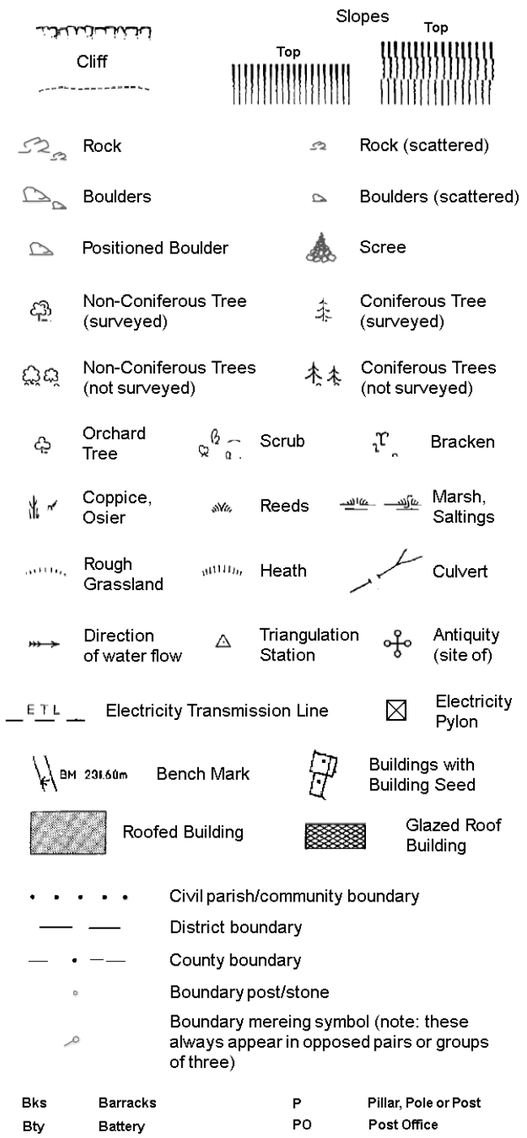
Admin. County or County Bor. Boundary

L B Bdy London Borough Boundary

Symbol marking point where boundary mereing changes

BH	Beer House	P	Pillar, Pole or Post
BP, BS	Boundary Post or Stone	PO	Post Office
Cn, C	Capstan, Crane	PC	Public Convenience
Chy	Chimney	PH	Public House
D Fn	Drinking Fountain	Pp	Pump
El P	Electricity Pillar or Post	SB, S Br	Signal Box or Bridge
FAP	Fire Alarm Pillar	SP, SL	Signal Post or Light
FB	Foot Bridge	Spr	Spring
GP	Guide Post	Tk	Tank or Track
H	Hydrant or Hydraulic	TCB	Telephone Call Box
LC	Level Crossing	TCP	Telephone Call Post
MH	Manhole	Tr	Trough
MP	Mile Post or Mooring Post	Wr Pt, Wr T	Water Point, Water Tap
MS	Mile Stone	W	Well
NTL	Normal Tidal Limit	Wd Pp	Wind Pump

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



Civil parish/community boundary

District boundary

County boundary

Boundary post/stone

Boundary mereing symbol (note: these always appear in opposed pairs or groups of three)

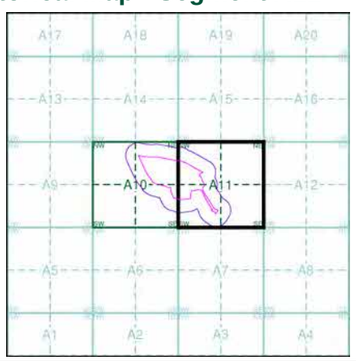
Bks	Barracks	P	Pillar, Pole or Post
Bty	Battery	PO	Post Office
Cemy	Cemetery	PC	Public Convenience
Chy	Chimney	Pp	Pump
Cis	Cistern	Ppg Sta	Pumping Station
Dismtd Rly	Dismantled Railway	PW	Place of Worship
El Gen Sta	Electricity Generating Station	Sewage Ppg Sta	Sewage Pumping Station
El P	Electricity Pole, Pillar	SB, S Br	Signal Box or Bridge
El Sub Sta	Electricity Sub Station	SP, SL	Signal Post or Light
FB	Filter Bed	Spr	Spring
Fn / D Fn	Fountain / Drinking Ftn.	Tk	Tank or Track
Gas Gov	Gas Valve Compound	Tr	Trough
GVC	Gas Governer	Wd Pp	Wind Pump
GP	Guide Post	Wr Pt, Wr T	Water Point, Water Tap
MH	Manhole	Wks	Works (building or area)
MP, MS	Mile Post or Mile Stone	W	Well

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Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Hampshire & Isle Of Wight	1:2,500	1868	2
Hampshire & Isle Of Wight	1:2,500	1868	3
Hampshire & Isle Of Wight	1:2,500	1897	4
Hampshire & Isle Of Wight	1:2,500	1909	5
Hampshire & Isle Of Wight	1:2,500	1932	6
Ordnance Survey Plan	1:2,500	1953 - 1965	7
Ordnance Survey Plan	1:2,500	1959 - 1975	8
Ordnance Survey Plan	1:2,500	1970	9
Ordnance Survey Plan	1:1,250	1973 - 1974	10
Additional SIMs	1:2,500	1975	11
Ordnance Survey Plan	1:1,250	1976 - 1990	12
Additional SIMs	1:1,250	1977 - 1987	13
Additional SIMs	1:1,250	1979	14
Additional SIMs	1:2,500	1990	15
Large-Scale National Grid Data	1:1,250	1993	16
Large-Scale National Grid Data	1:1,250	1995	17
Large-Scale National Grid Data	1:1,250	1996	18

Historical Map - Segment A11



Order Details

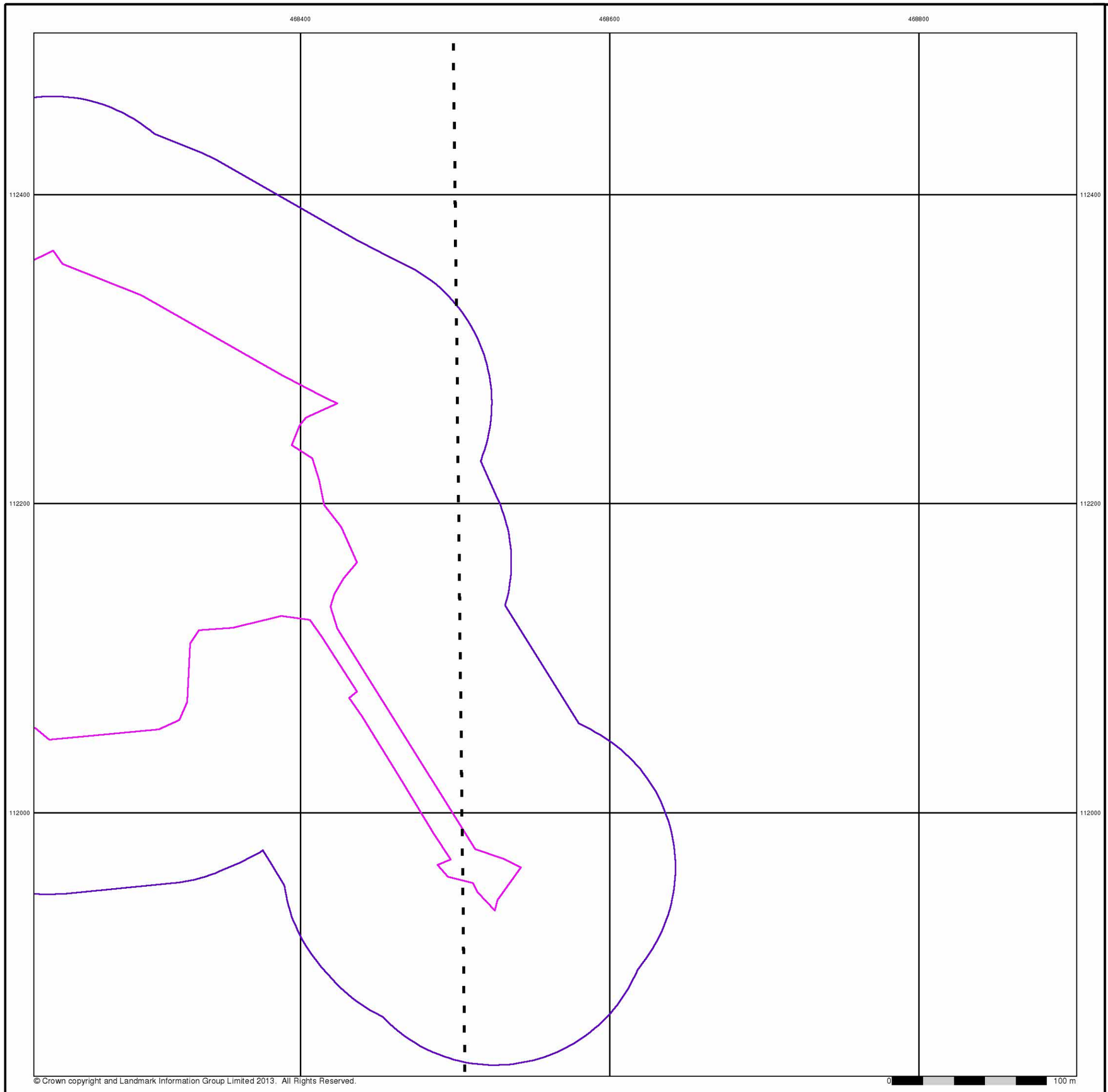
Order Number: 62099871_1_1
Customer Ref: 21834
National Grid Reference: 468240, 112190
Slice: A
Site Area (Ha): 10.8
Search Buffer (m): 100

Site Details

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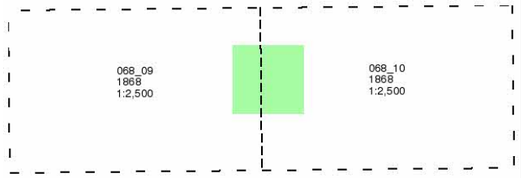
Hampshire & Isle Of Wight

Published 1868

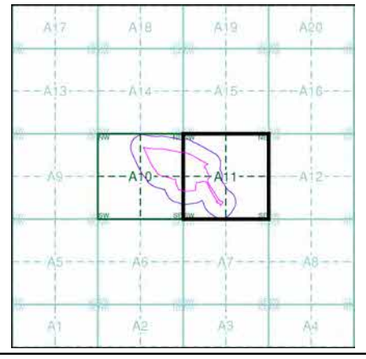
Source map scale - 1:2,500

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Map Name(s) and Date(s)



Historical Map - Segment A11



Order Details

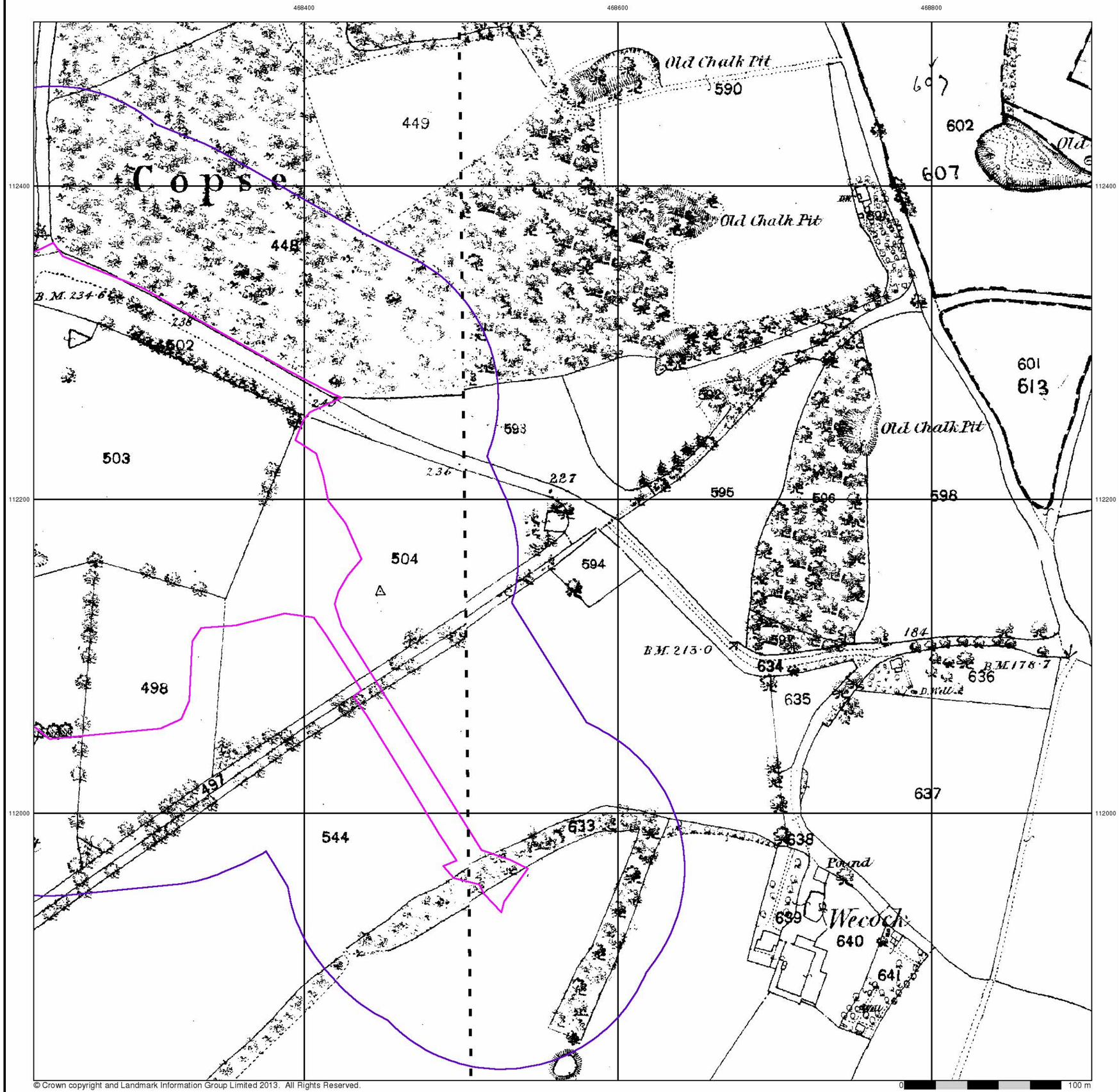
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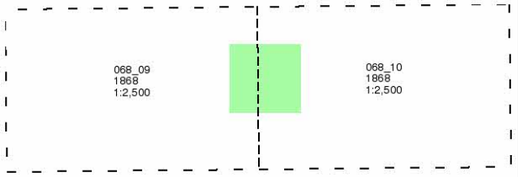
Hampshire & Isle Of Wight

Published 1868

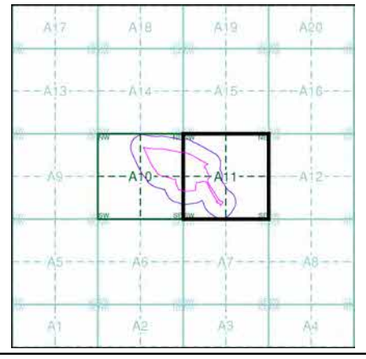
Source map scale - 1:2,500

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Map Name(s) and Date(s)



Historical Map - Segment A11



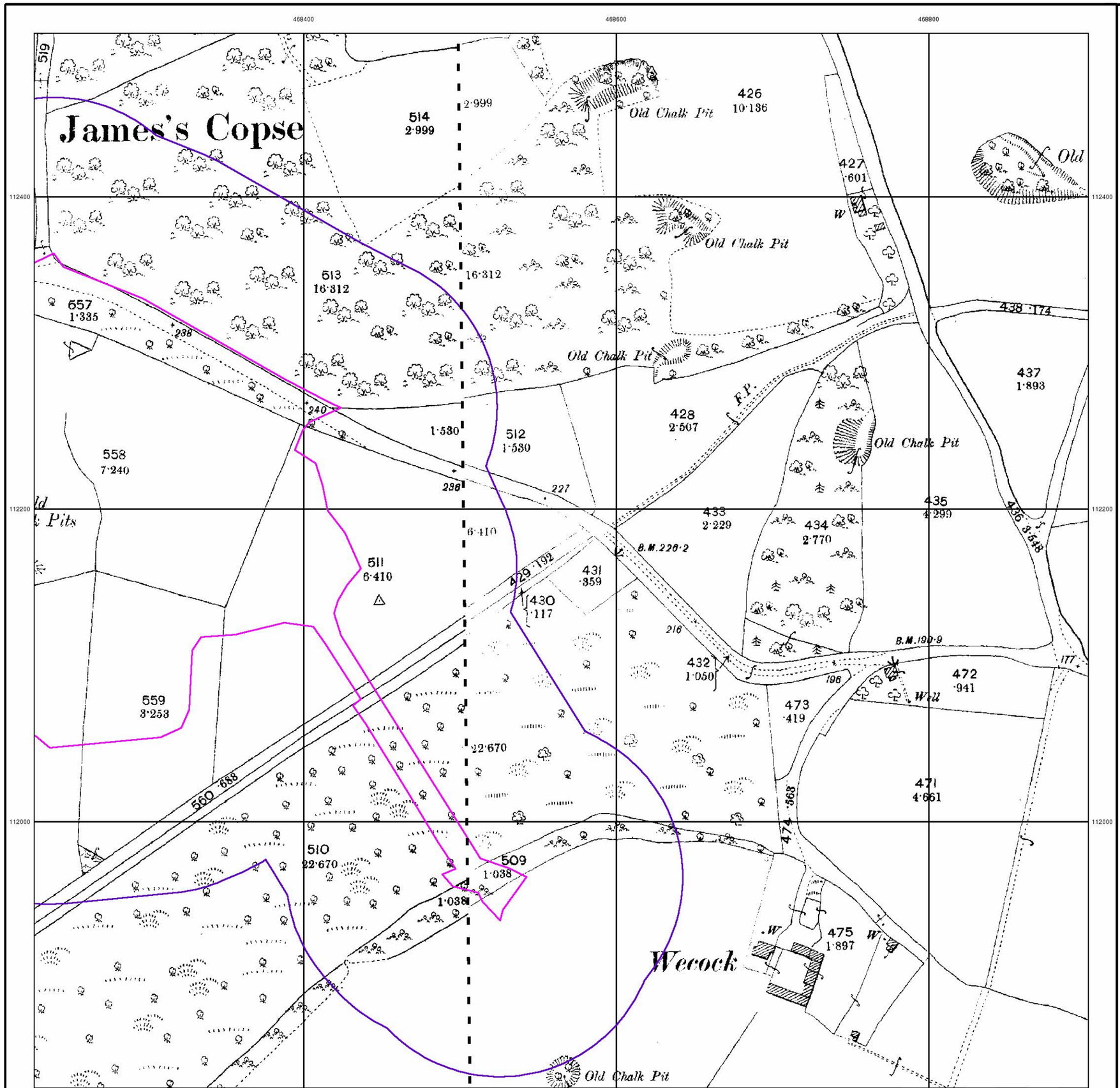
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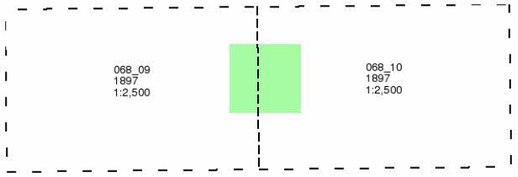
Hampshire & Isle Of Wight

Published 1897

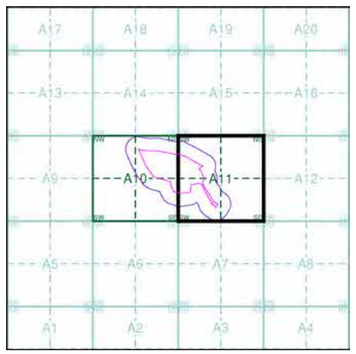
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A11



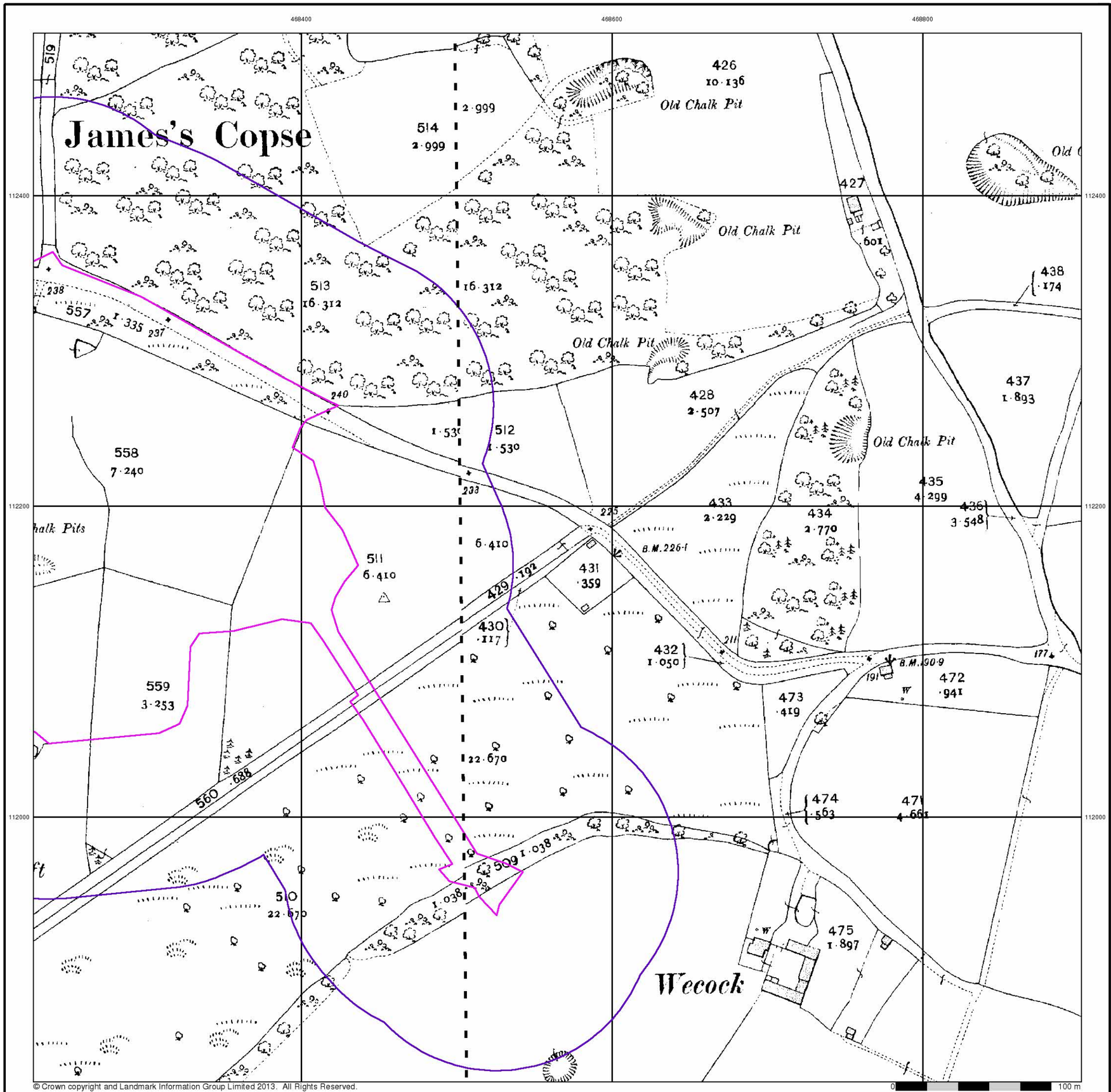
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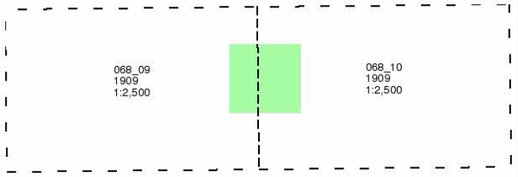
Hampshire & Isle Of Wight

Published 1909

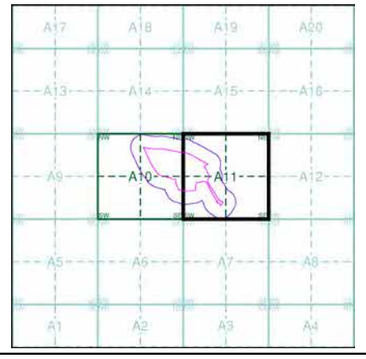
Source map scale - 1:2,500

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Map Name(s) and Date(s)



Historical Map - Segment A11



Order Details

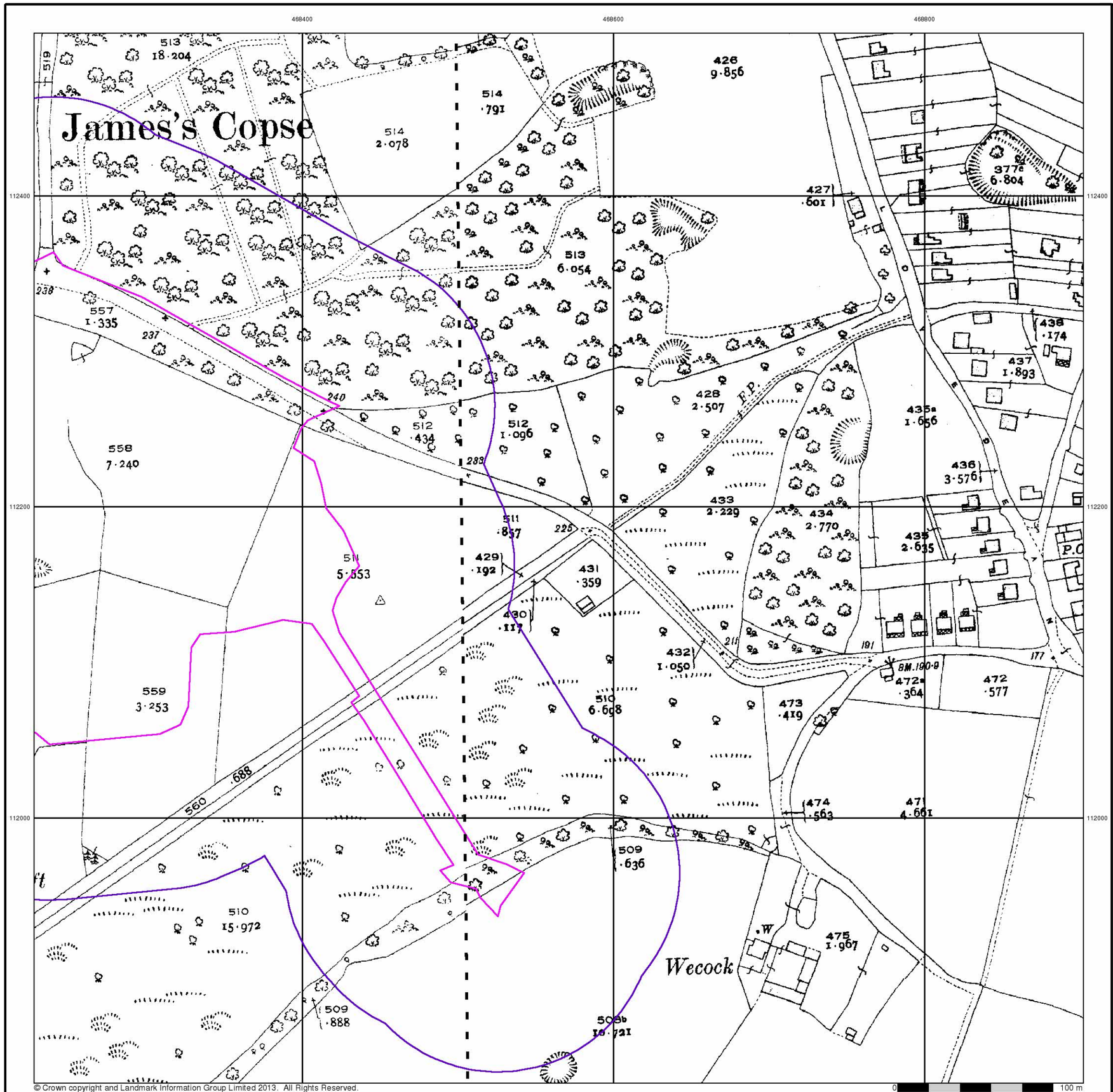
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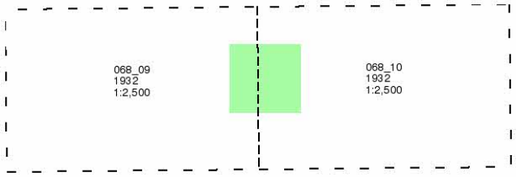
Hampshire & Isle Of Wight

Published 1932

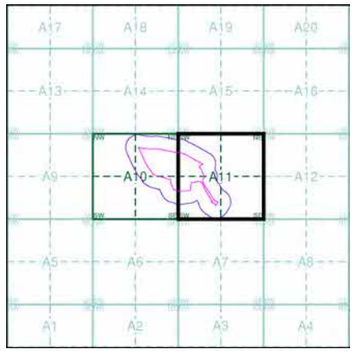
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Map Name(s) and Date(s)



Historical Map - Segment A11



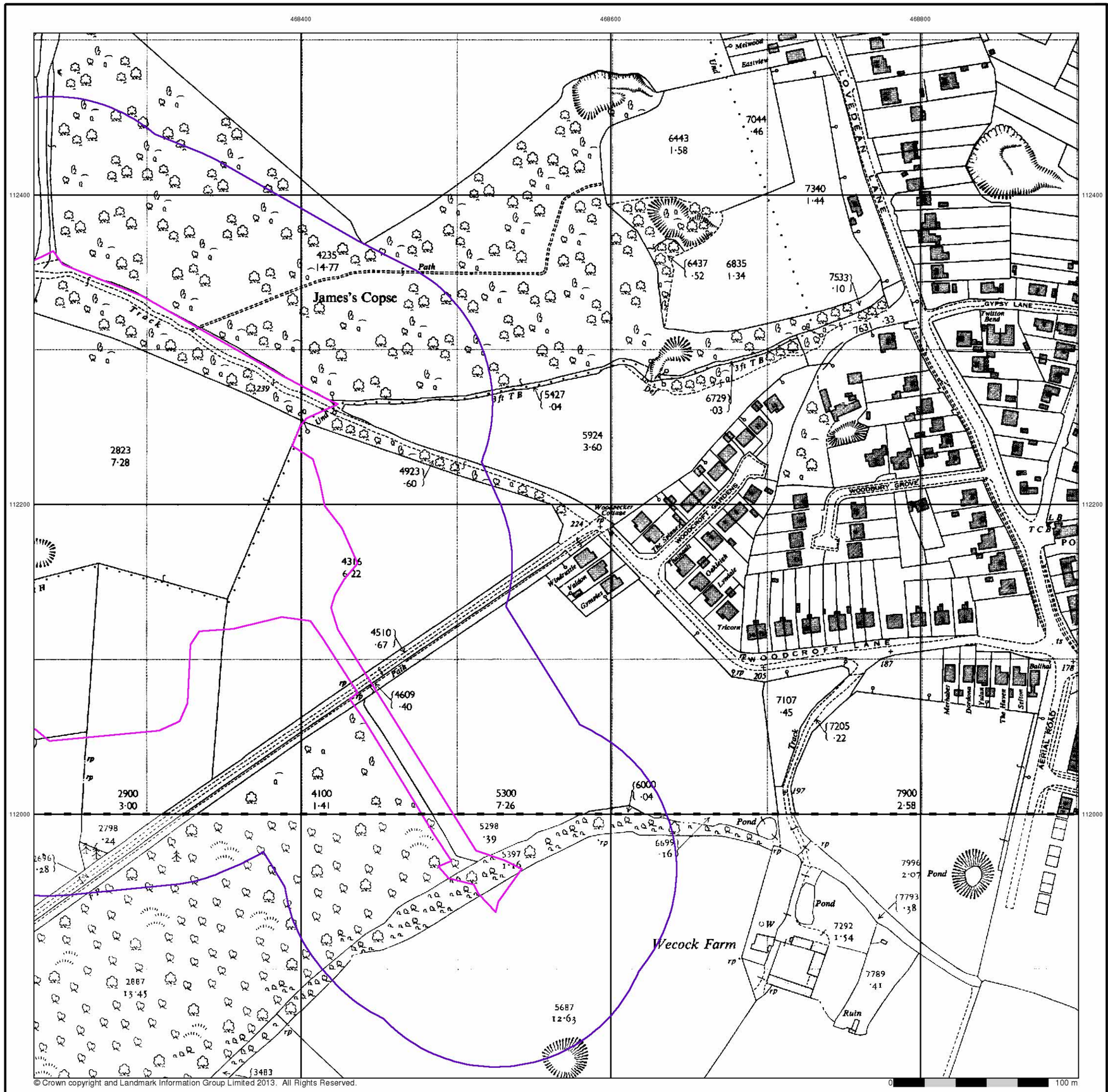
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Ordnance Survey Plan

Published 1953 - 1965

Source map scale - 1:2,500

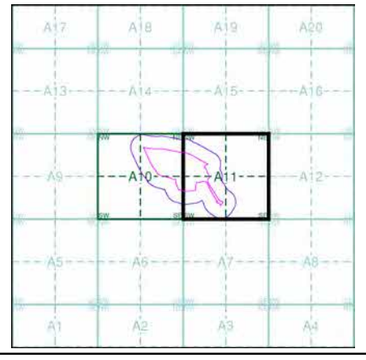
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain.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

Map Name(s) and Date(s)

SU6812
1965
1:2,500

SU6811
1953
1:2,500

Historical Map - Segment A11



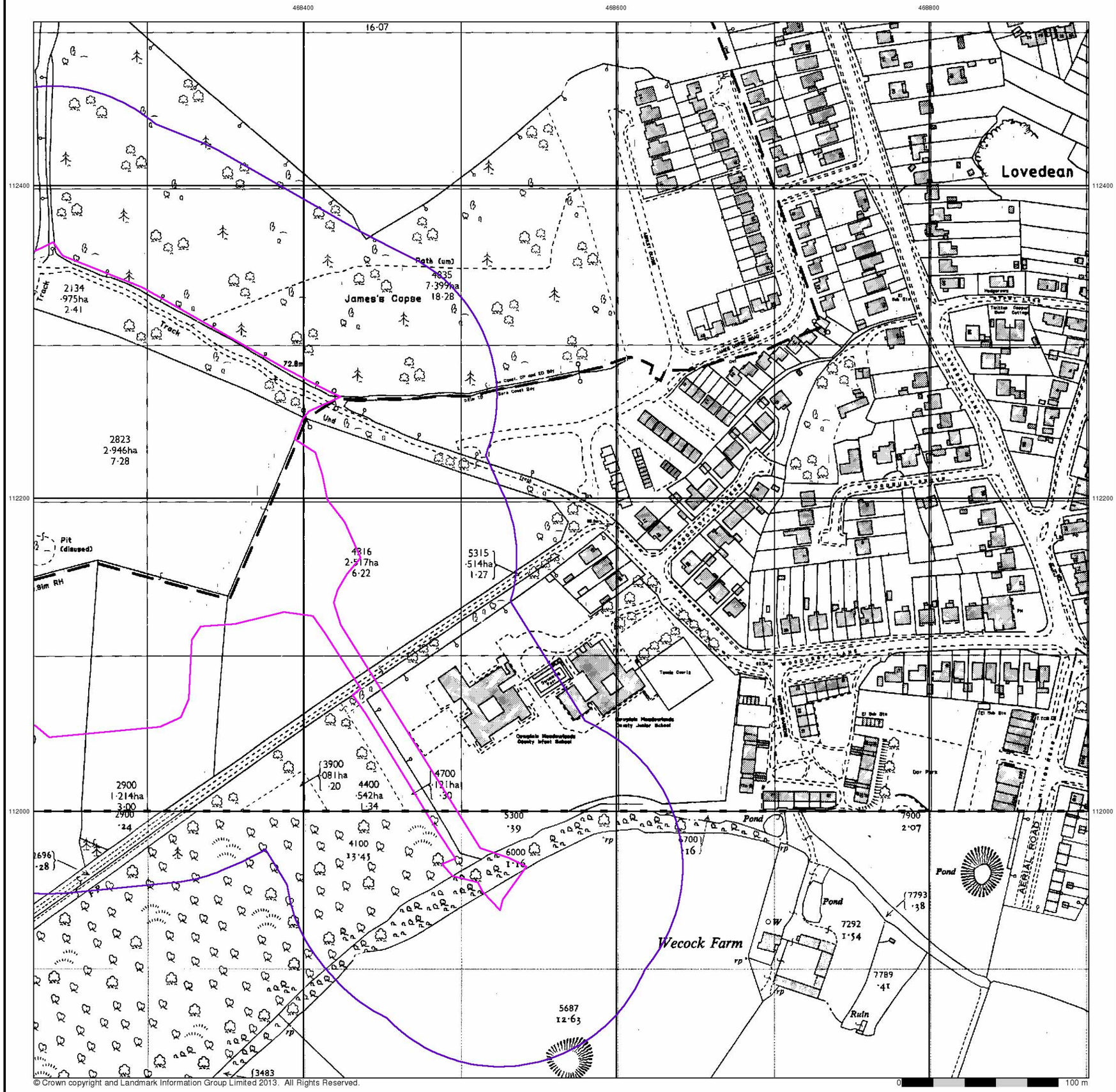
Order Details

Order Number:	62099871_1_1
Customer Ref:	21834
National Grid Reference:	468240, 112190
Slice:	A
Site Area (Ha):	10.8
Search Buffer (m):	100

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Ordnance Survey Plan

Published 1959 - 1975

Source map scale - 1:2,500

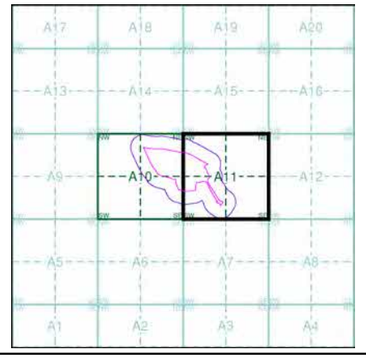
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain.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

Map Name(s) and Date(s)

SU6812
1975
1:2,500

SU6811
1959
1:2,500

Historical Map - Segment A11



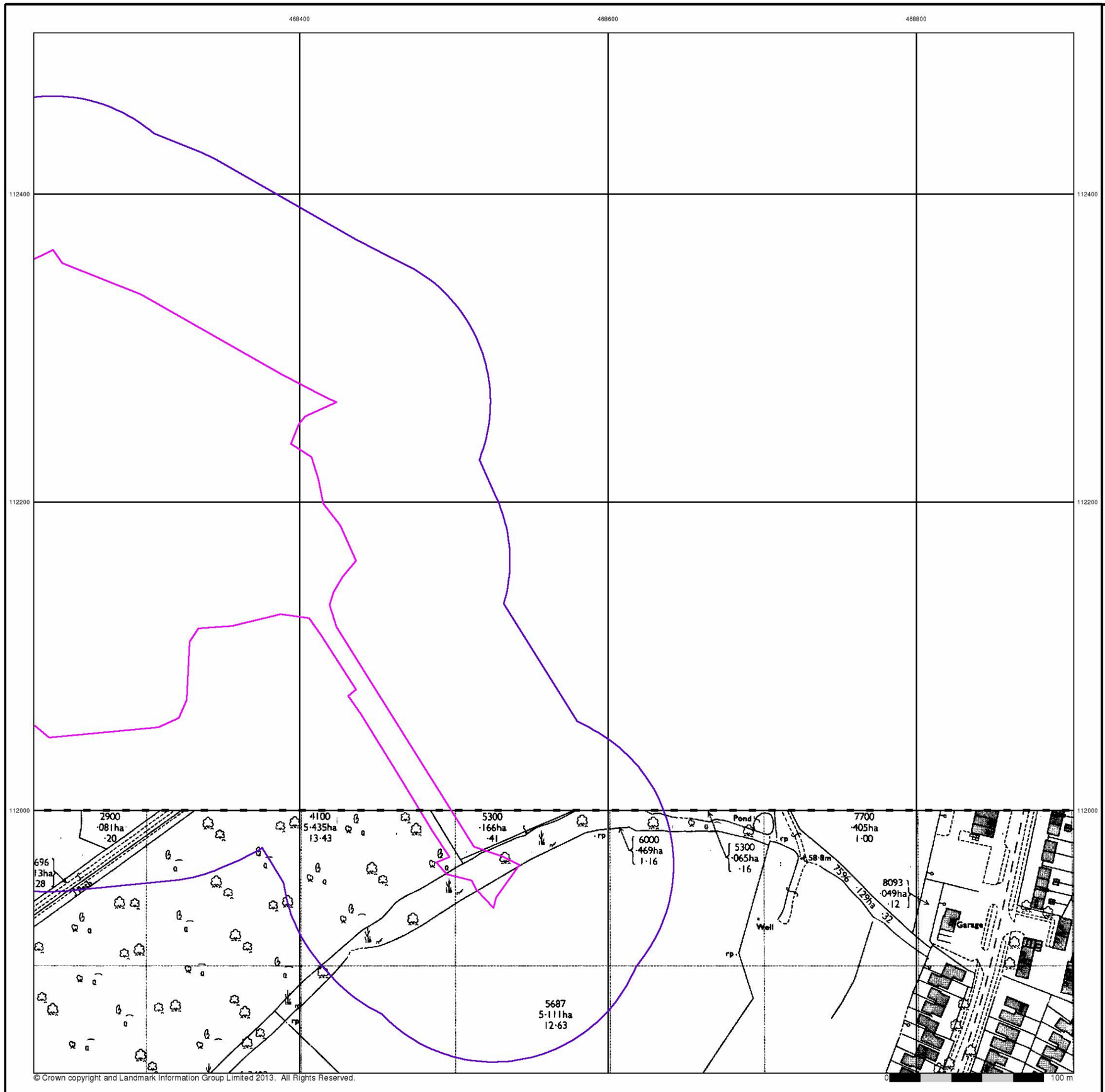
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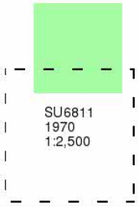
Ordnance Survey Plan

Published 1970

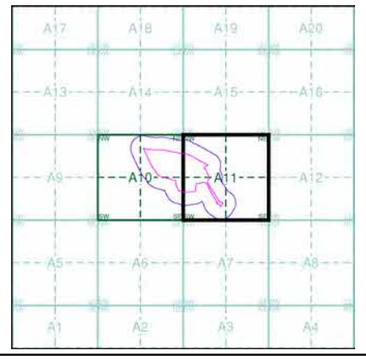
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Map Name(s) and Date(s)



Historical Map - Segment A11



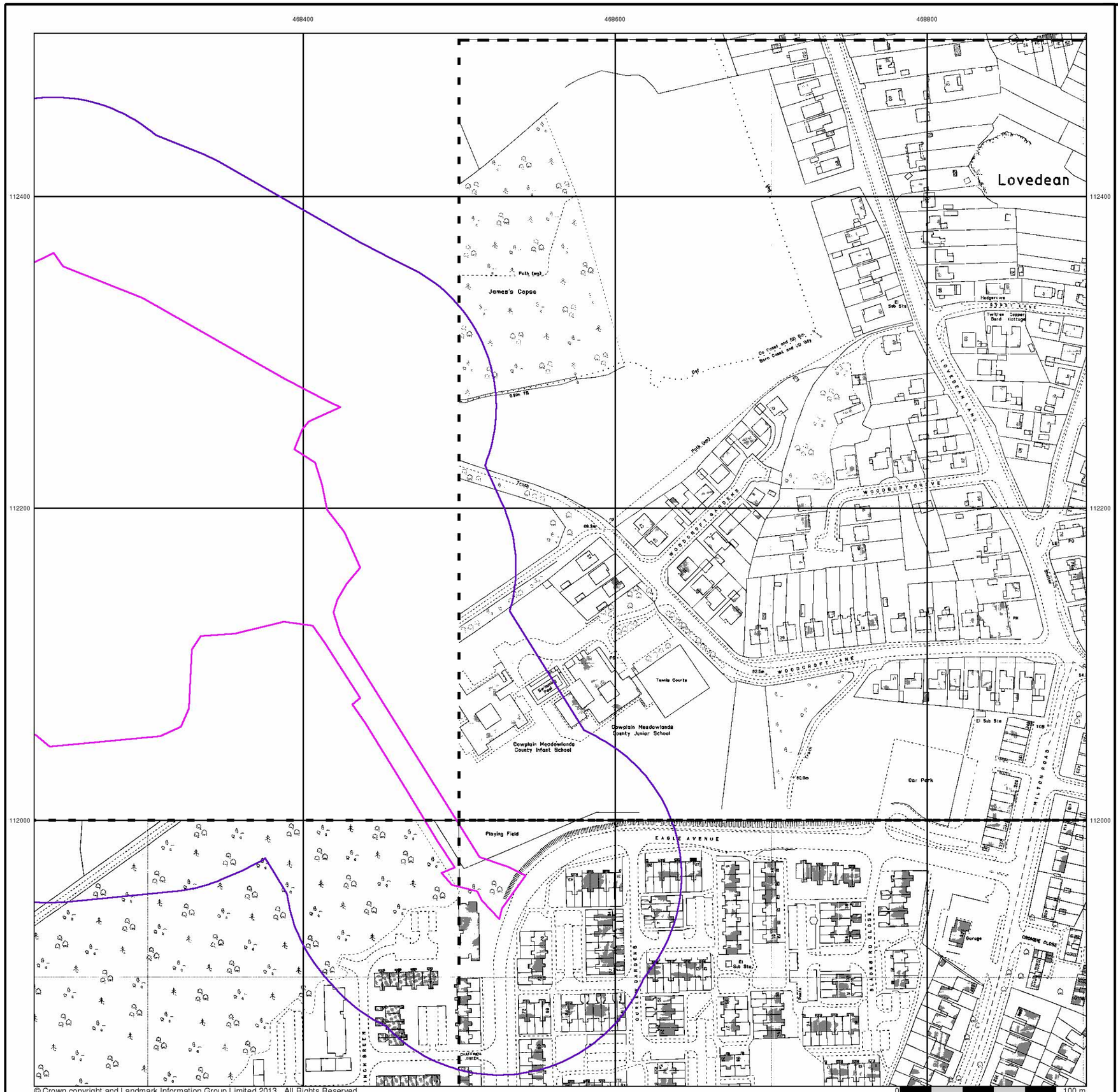
Order Details

Order Number:	62099871_1_1
Customer Ref:	21834
National Grid Reference:	468240, 112190
Slice:	A
Site Area (Ha):	10.8
Search Buffer (m):	100

Site Details

Woodcroft Farm, Woodcroft Lane, Waterlooville, PO8 9QA

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



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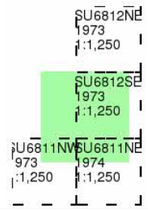
Ordnance Survey Plan

Published 1973 - 1974

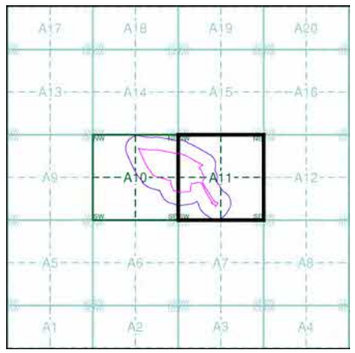
Source map scale - 1:1,250

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

Map Name(s) and Date(s)



Historical Map - Segment A11



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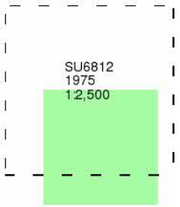
Additional SIMs

Published 1975

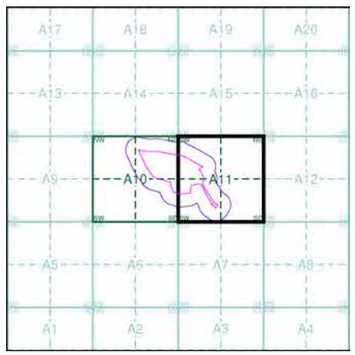
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A11



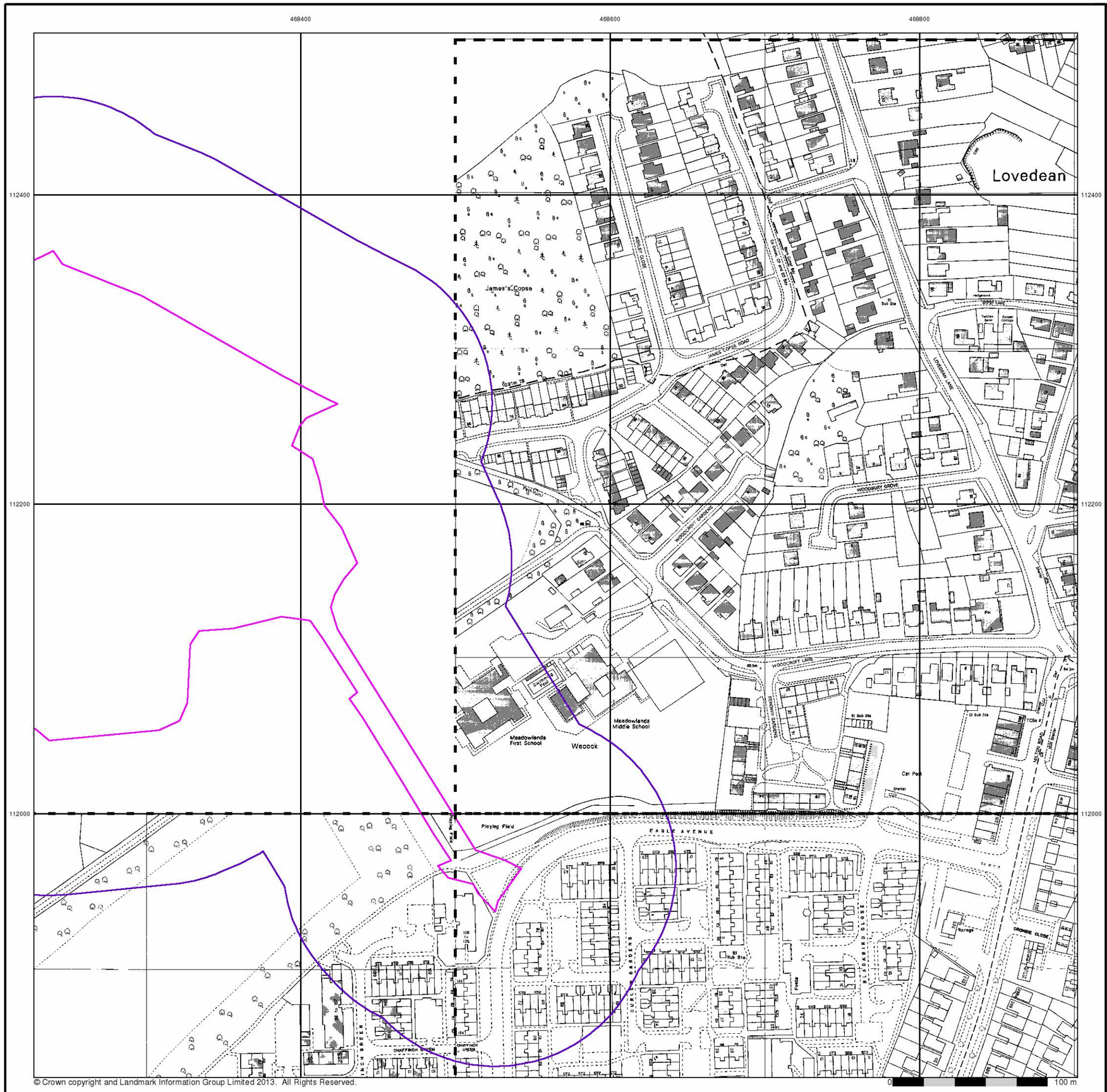
Order Details

Order Number:	62099871_1_1
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National Grid Reference:	468240, 112190
Slice:	A
Site Area (Ha):	10.8
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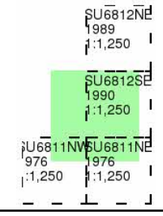
Ordnance Survey Plan

Published 1976 - 1990

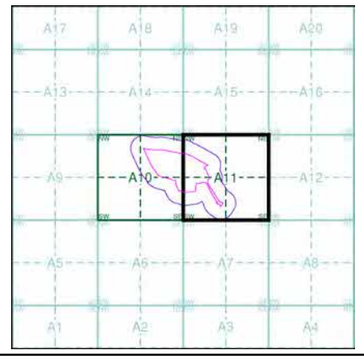
Source map scale - 1:1,250

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Map Name(s) and Date(s)



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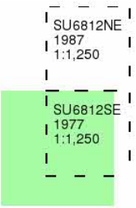
Additional SIMs

Published 1977 - 1987

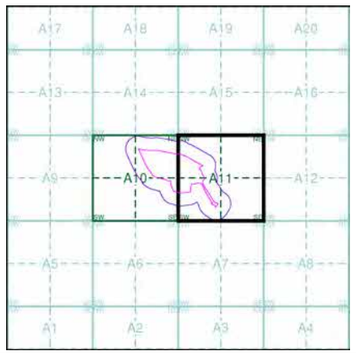
Source map scale - 1:1,250

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Map Name(s) and Date(s)



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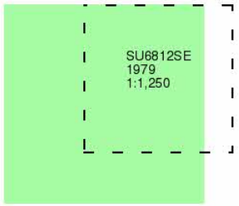
Additional SIMs

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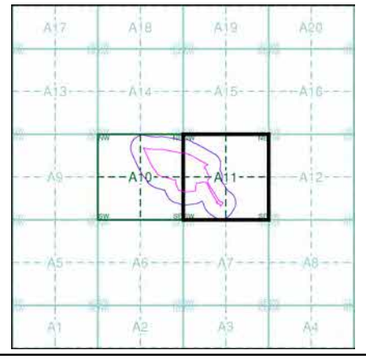
Source map scale - 1:1,250

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Map Name(s) and Date(s)



Historical Map - Segment A11



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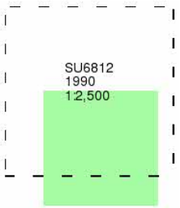
Additional SIMs

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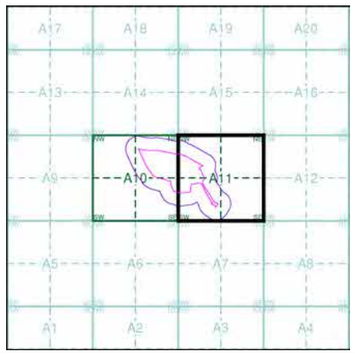
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A11



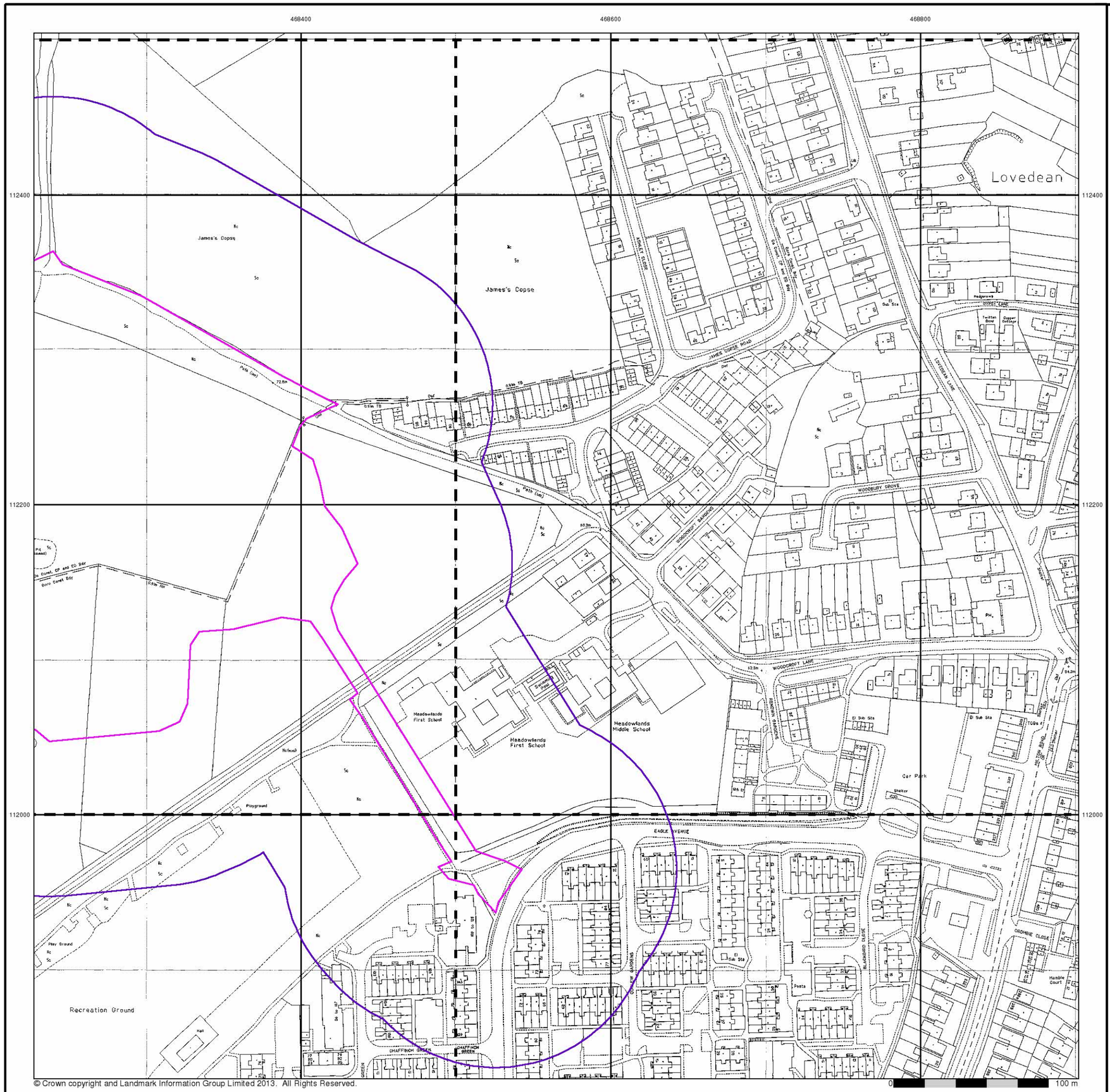
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0 100 m

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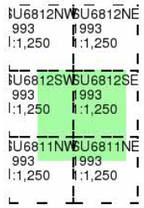
Large-Scale National Grid Data

Published 1993

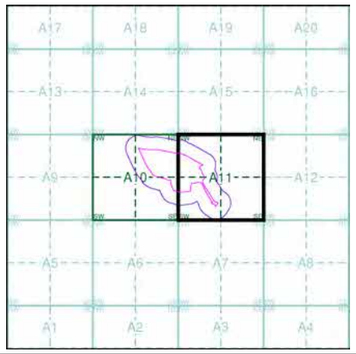
Source map scale - 1:1,250

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

Map Name(s) and Date(s)



Historical Map - Segment A11



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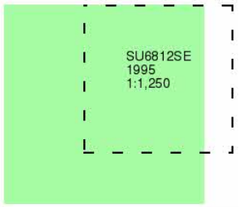
Large-Scale National Grid Data

Published 1995

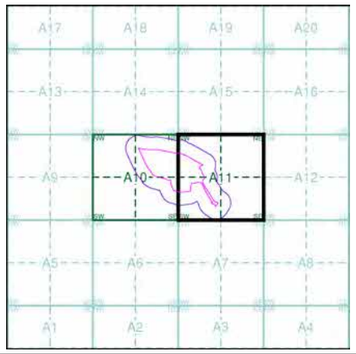
Source map scale - 1:1,250

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Map Name(s) and Date(s)



Historical Map - Segment A11



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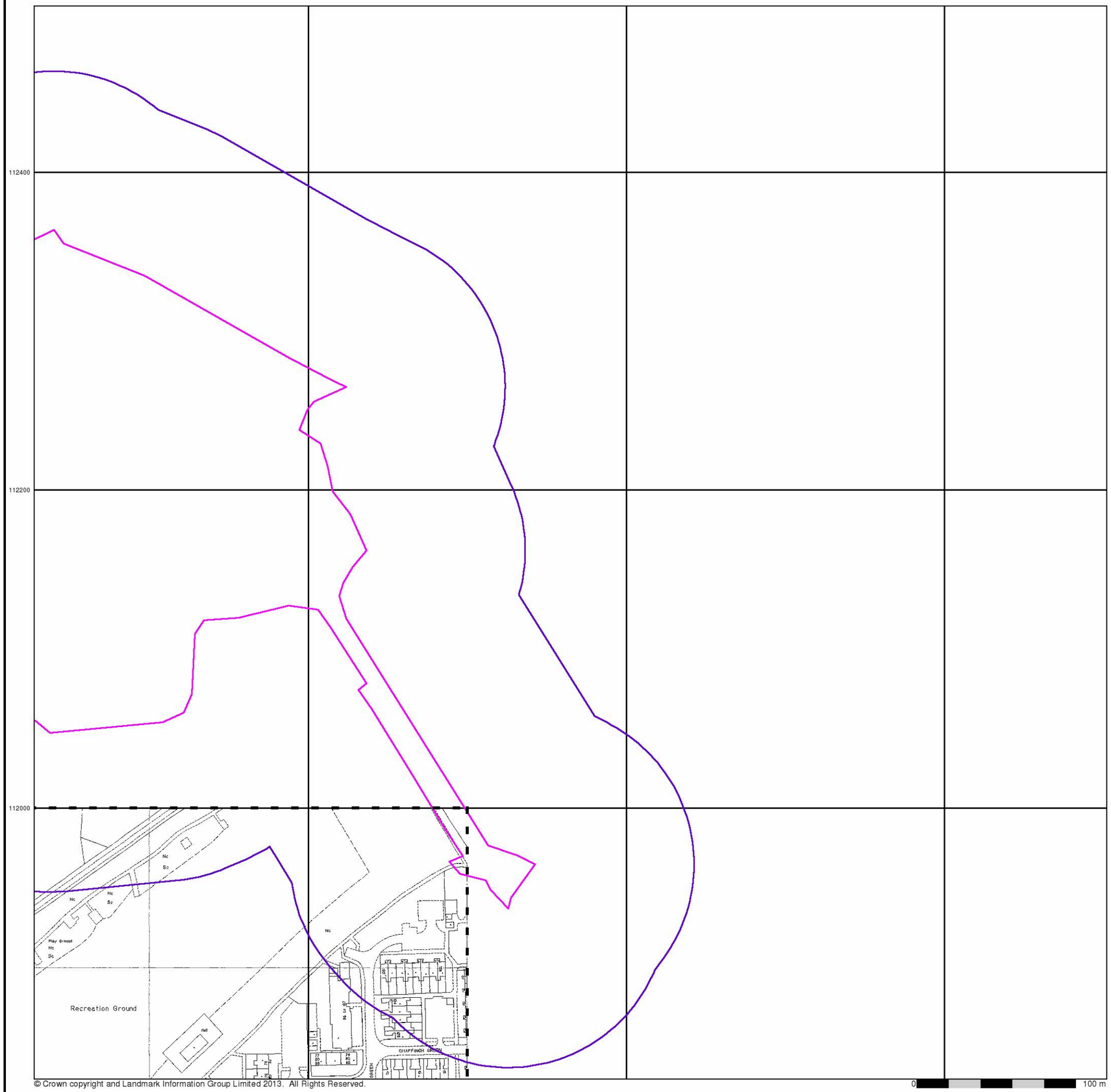
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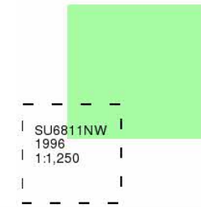
Large-Scale National Grid Data

Published 1996

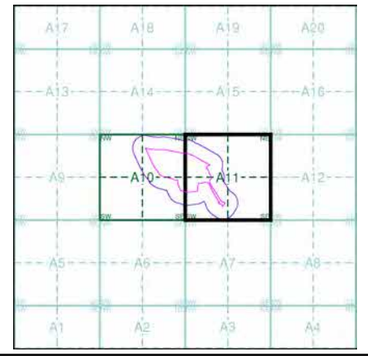
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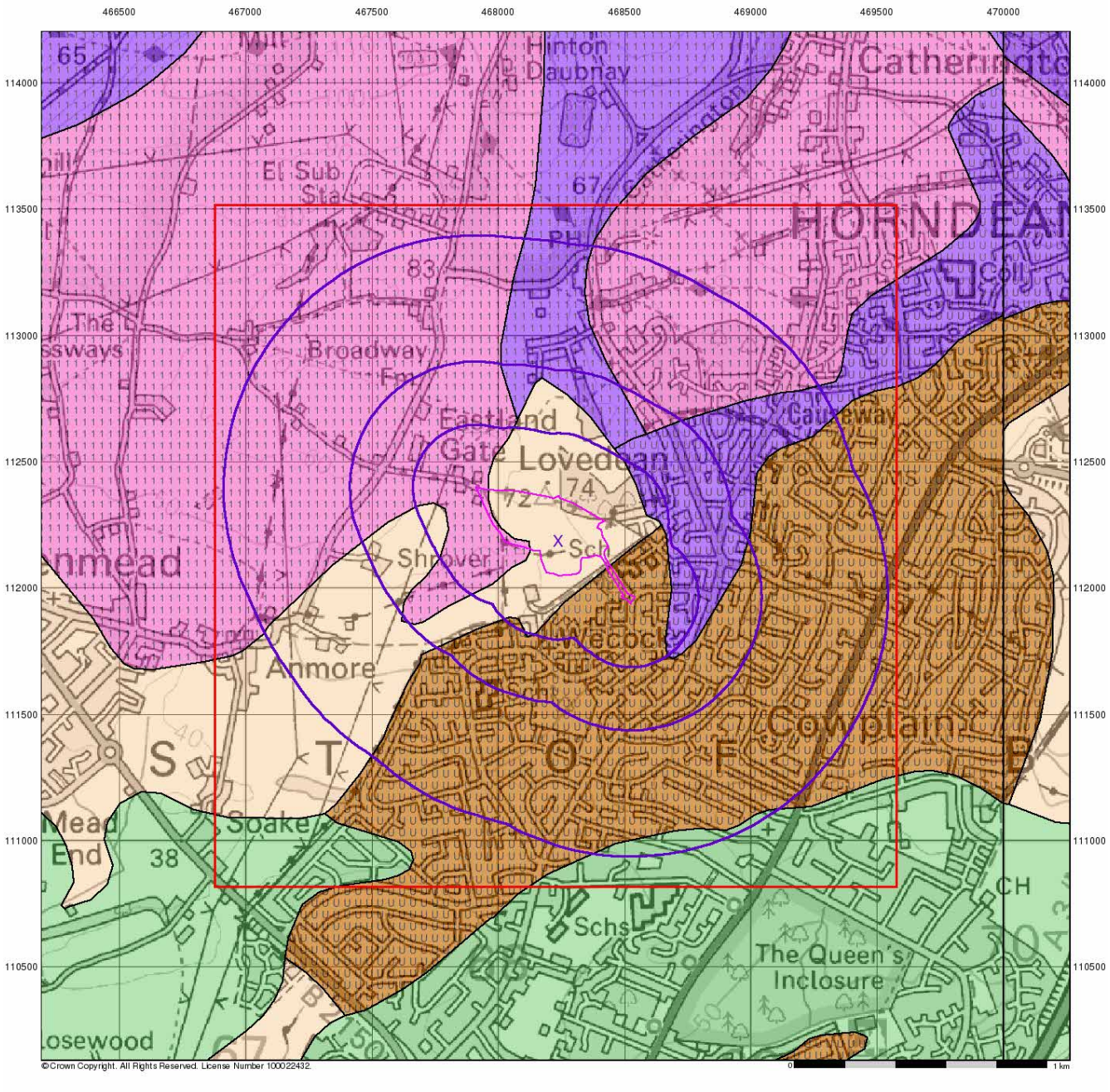
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APPENDIX 4



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Groundwater Vulnerability

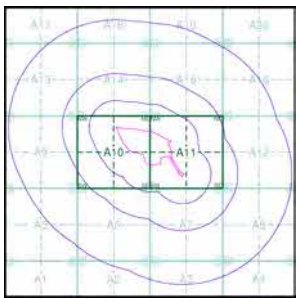
General

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

Agency and Hydrological

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

Site Sensitivity Context Map - Slice A



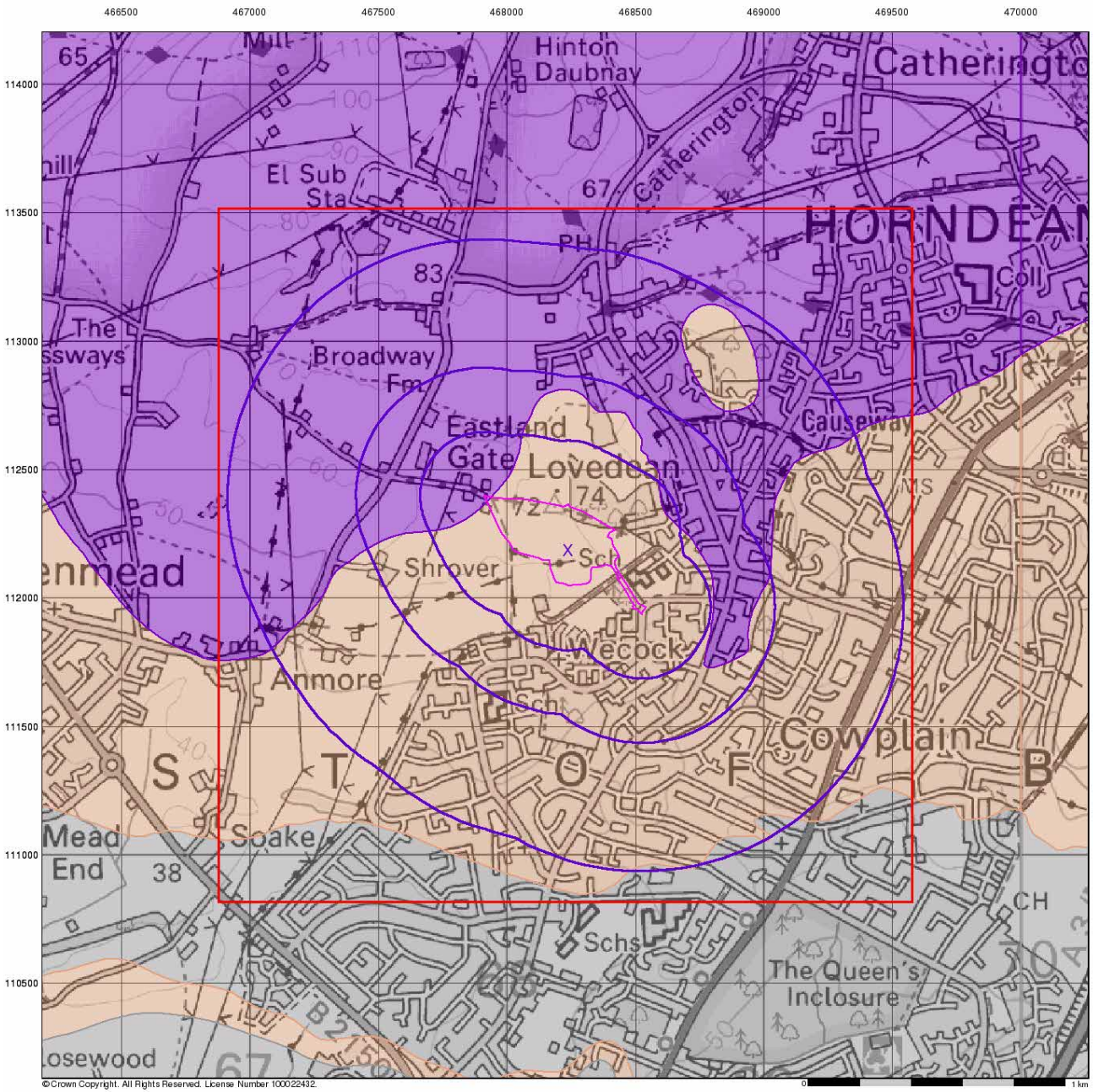
Order Details

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National Grid Reference:	468240, 112190
Slice:	A
Site Area (Ha):	10.8
Search Buffer (m):	1000

Site Details

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Bedrock Aquifer Designation

General

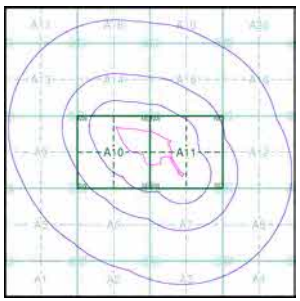
Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

Agency and Hydrological

Geological Classes

- Principal Aquifer
- Secondary A Aquifer
- Secondary B Aquifer
- Secondary Undifferentiated
- Unproductive Strata
- Unknown

Site Sensitivity Context Map - Slice A



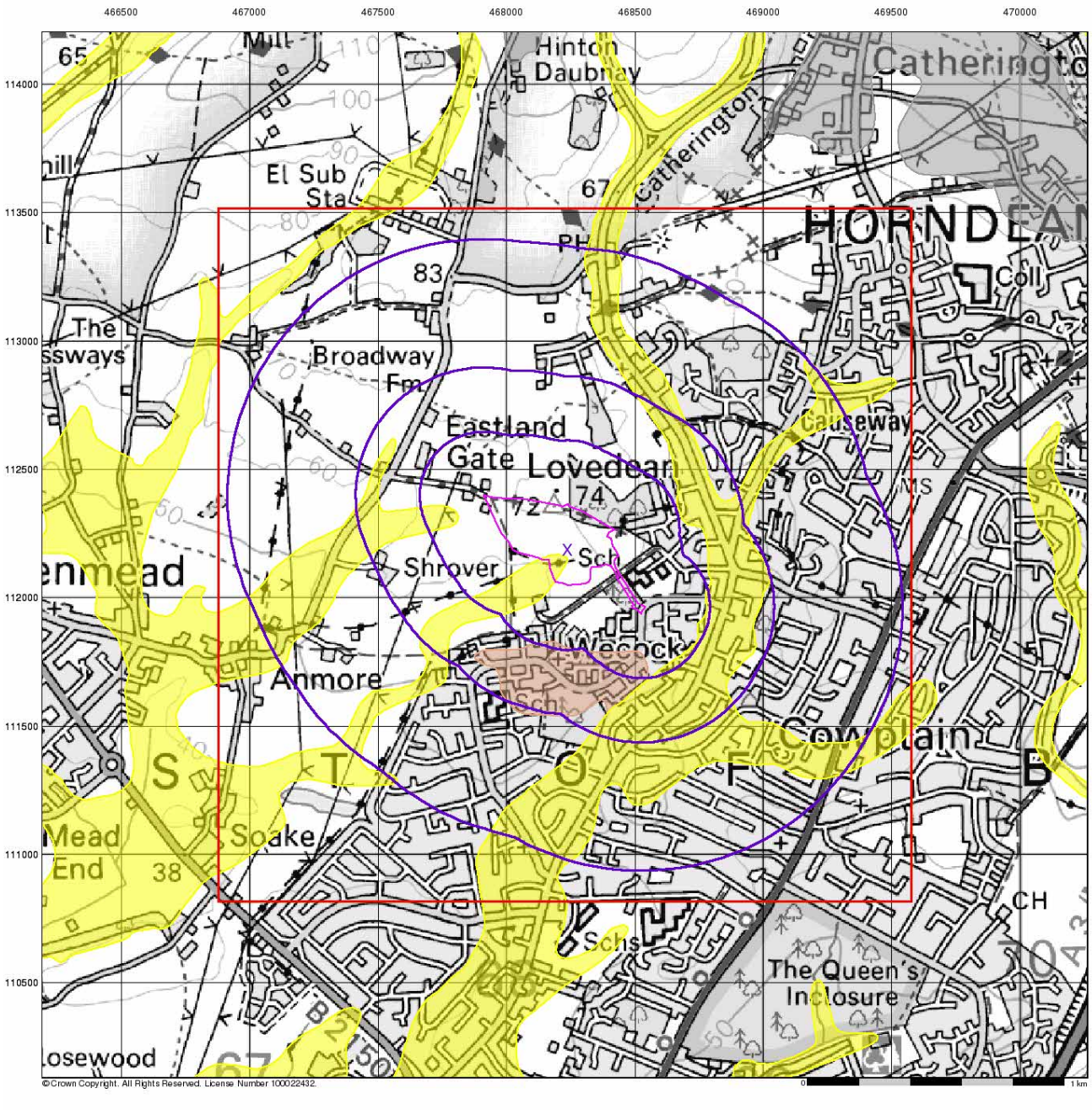
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Superficial Aquifer Designation

General

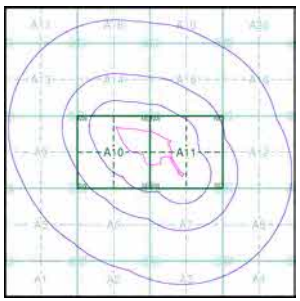
Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

Agency and Hydrological

Geological Classes

- Principal Aquifer
- Secondary A Aquifer
- Secondary B Aquifer
- Secondary Undifferentiated
- Unproductive Strata
- Unknown

Site Sensitivity Context Map - Slice A



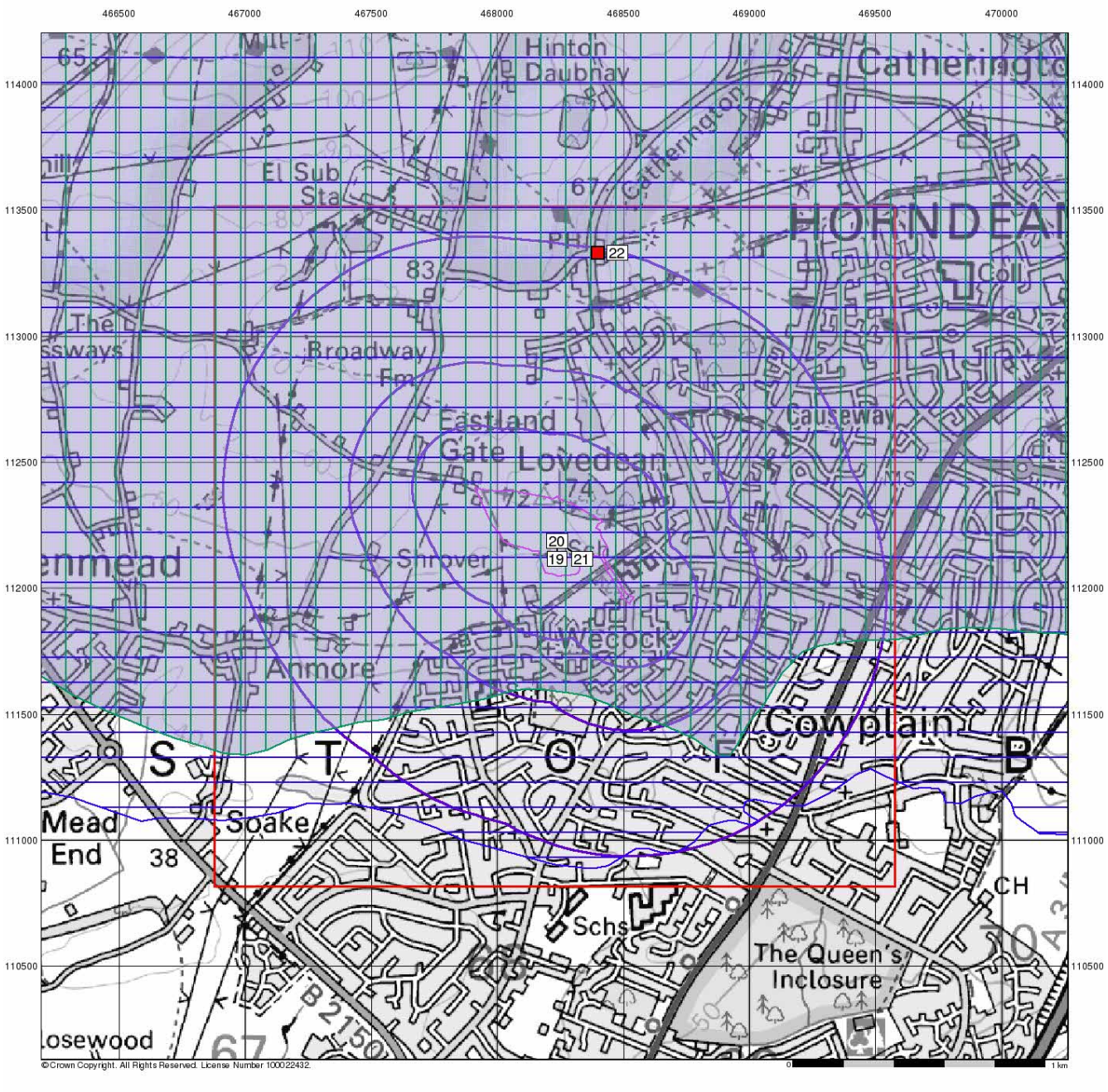
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Source Protection Zones

General

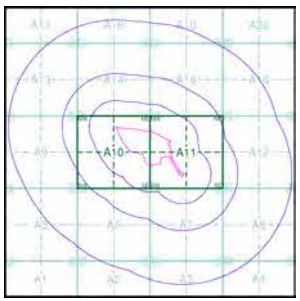
Specified Site | Specified Buffer(s) | Bearing Reference Point

Slice | Map ID

Agency and Hydrological

- Source Protection Zone I
- Source Protection Zone II
- Source Protection Zone III
- Zone of Special Interest
- Source Protection Zone Borehole

Site Sensitivity Context Map - Slice A



Order Details

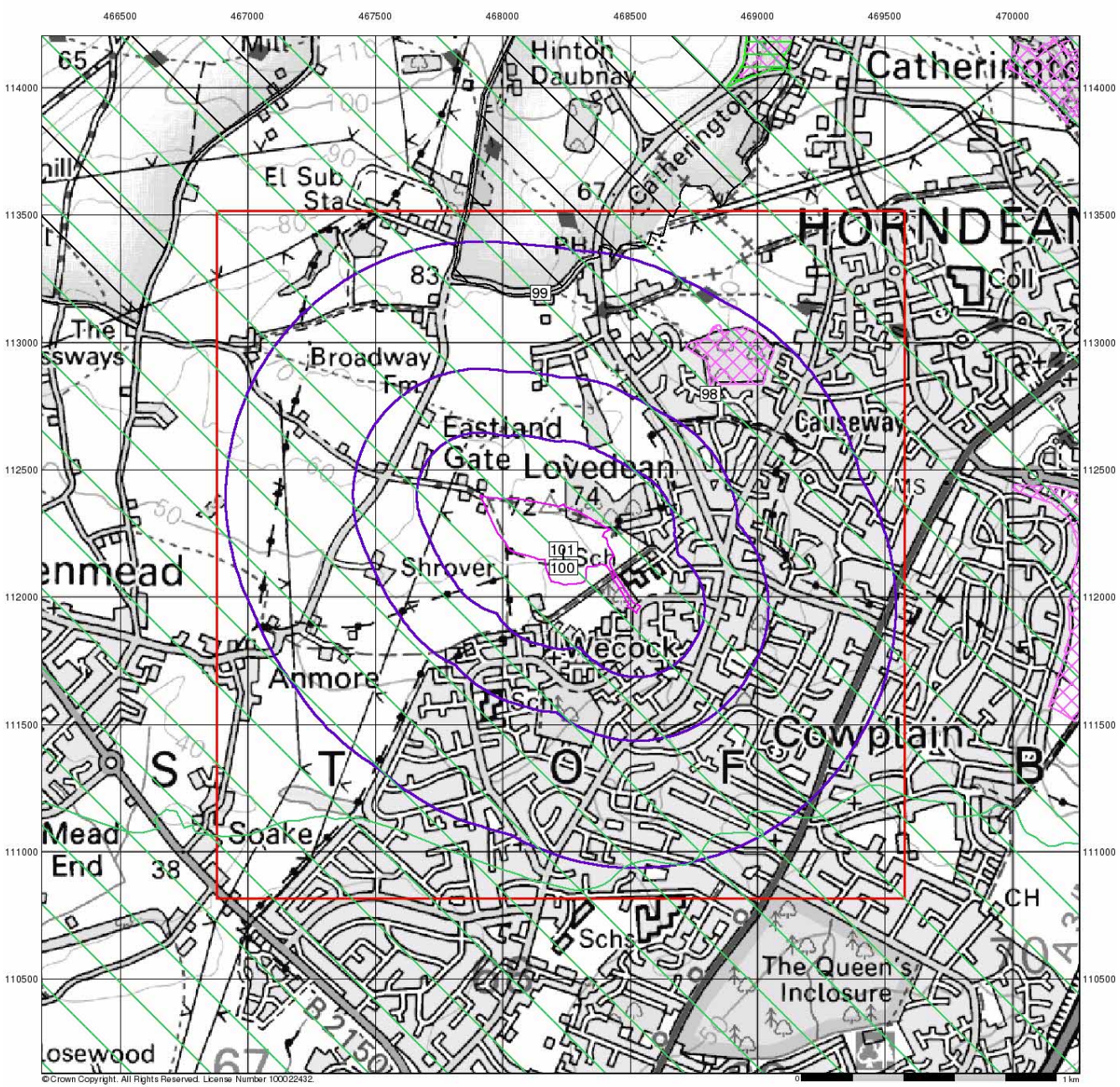
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Sensitive Land Uses

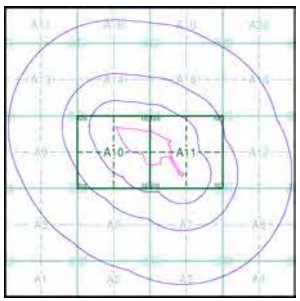
General

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

Sensitive Land Uses

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

Site Sensitivity Context Map - Slice A



Order Details

Order Number:	62099871_1_1
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Envirocheck® Report:

Datasheet

Order Details:

Order Number:
62099871_1_1

Customer Reference:
21834

National Grid Reference:
468240, 112190

Slice:
A

Site Area (Ha):
10.8

Search Buffer (m):
1000

Site Details:

Woodcroft Farm, Woodcroft Lane
Waterlooville
PO8 9QA

Client Details:

Ms K Riley
Brett Consulting Ltd
Caversham Bridge House
Waterman Place
Reading
Berkshire
RG1 8DN

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Introduction

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

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

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Radon Potential dataset Copyright Notice

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Report Version v49.0

Summary

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

Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Waste					
BGS Recorded Landfill Sites					
Historical Landfill Sites	pg 9		1		1
Integrated Pollution Control Registered Waste Sites					
Licensed Waste Management Facilities (Landfill Boundaries)					
Licensed Waste Management Facilities (Locations)	pg 9				1
Local Authority Recorded Landfill Sites					
Registered Landfill Sites					
Registered Waste Transfer Sites					
Registered Waste Treatment or Disposal Sites					
Hazardous Substances					
Control of Major Accident Hazards Sites (COMAH)					
Explosive Sites					
Notification of Installations Handling Hazardous Substances (NIHHS)					
Planning Hazardous Substance Consents					
Planning Hazardous Substance Enforcements					
Geological					
BGS 1:625,000 Solid Geology	pg 10	Yes	n/a	n/a	n/a
BGS Estimated Soil Chemistry	pg 10	Yes	Yes	Yes	Yes
BGS Recorded Mineral Sites	pg 19	2	5	7	14
BGS Urban Soil Chemistry					
BGS Urban Soil Chemistry Averages					
Brine Compensation Area			n/a	n/a	n/a
Coal Mining Affected Areas			n/a	n/a	n/a
Mining Instability			n/a	n/a	n/a
Man-Made Mining Cavities					
Natural Cavities	pg 23	3	15	20	8
Non Coal Mining Areas of Great Britain	pg 30	Yes	Yes	n/a	n/a
Potential for Collapsible Ground Stability Hazards	pg 30	Yes		n/a	n/a
Potential for Compressible Ground Stability Hazards				n/a	n/a
Potential for Ground Dissolution Stability Hazards	pg 30	Yes	Yes	n/a	n/a
Potential for Landslide Ground Stability Hazards	pg 31	Yes	Yes	n/a	n/a
Potential for Running Sand Ground Stability Hazards	pg 31	Yes		n/a	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards	pg 31	Yes	Yes	n/a	n/a
Radon Potential - Radon Affected Areas			n/a	n/a	n/a
Radon Potential - Radon Protection Measures			n/a	n/a	n/a

Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Industrial Land Use					
Contemporary Trade Directory Entries	pg 32		6	5	42
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Areas of Unadopted Green Belt					
Areas of Outstanding Natural Beauty					
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National Nature Reserves					
National Parks	pg 37				1
Nitrate Sensitive Areas					
Nitrate Vulnerable Zones	pg 37	2			
Ramsar Sites					
Sites of Special Scientific Interest					
Special Areas of Conservation					
Special Protection Areas					

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
1	**Discharge Consents** Operator: Mrs Margaret Watson Property Type: Domestic Property (Multiple) Location: 1 & 2 Shrover Hall Anmore Lane, Waterlooville, ., Hampshire, Po7 6hn Authority: Environment Agency, Southern Region Catchment Area: Wallington Reference: Npswqd008630 Permit Version: 2 Effective Date: 21st December 2012 Issued Date: 21st December 2012 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Land/Soakaway Receiving Water: Gw Via Soakaway **Status: Varied under EPR 2010** Positional Accuracy: Located by supplier to within 10m	A9SE (W)	468	2	467504 112164
1	**Discharge Consents** Operator: Mrs Margaret Watson Property Type: Domestic Property (Multiple) Location: 1 & 2 Shrover Hall Anmore Lane, Waterlooville, ., Hampshire, Po7 6hn Authority: Environment Agency, Southern Region Catchment Area: Wallington Reference: Npswqd008630 Permit Version: 1 Effective Date: 5th August 2009 Issued Date: 5th August 2009 Revocation Date: 20th December 2012 Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Land/Soakaway Receiving Water: Gw Via Soakaway **Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A9SE (W)	468	2	467504 112164
2	**Discharge Consents** Operator: Mrs Valerie Brown Property Type: Domestic Property (Single) Location: Shrover Hall Anmore Lane, Denmeade, ., Hampshire, Po7 6hn Authority: Environment Agency, Southern Region Catchment Area: Wallington Reference: Npswqd008629 Permit Version: 2 Effective Date: 21st December 2012 Issued Date: 21st December 2012 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Land/Soakaway Receiving Water: Gw Via Soakaway **Status: Varied under EPR 2010** Positional Accuracy: Located by supplier to within 10m	A9SE (W)	533	2	467450 112126
2	**Discharge Consents** Operator: Mrs Valerie Brown Property Type: Domestic Property (Single) Location: Shrover Hall Anmore Lane, Denmeade, ., Hampshire, Po7 6hn Authority: Environment Agency, Southern Region Catchment Area: Wallington Reference: Npswqd008629 Permit Version: 1 Effective Date: 5th August 2009 Issued Date: 5th August 2009 Revocation Date: 20th December 2012 Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Land/Soakaway Receiving Water: Gw Via Soakaway **Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A9SE (W)	533	2	467450 112126

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
3	**Discharge Consents** Operator: Trenac Country Homes Limited Property Type: Domestic Property (Single) Location: A Stp Serving Broadway Farm Broadway Lane, Lovedean, Waterlooville, Hampshire, Po8 0sj Authority: Environment Agency, Southern Region Catchment Area: Wallington Reference: Npswqd001290 Permit Version: 2 Effective Date: 21st December 2012 Issued Date: 21st December 2012 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Land/Soakaway Receiving Water: Gw Via A Soakaway **Status:** **Varied under EPR 2010** Positional Accuracy: Located by supplier to within 10m	A14NW (NW)	628	2	467754 113005
3	**Discharge Consents** Operator: Trenac Country Homes Limited Property Type: Domestic Property (Single) Location: A Stp Serving Broadway Farm Broadway Lane, Lovedean, Waterlooville, Hampshire, Po8 0sj Authority: Environment Agency, Southern Region Catchment Area: Wallington Reference: Npswqd001290 Permit Version: 1 Effective Date: 19th May 2008 Issued Date: 19th May 2008 Revocation Date: 20th December 2012 Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Land/Soakaway Receiving Water: Gw Via A Soakaway **Status:** **New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A14NW (NW)	628	2	467754 113005
4	**Discharge Consents** Operator: Trenac Country Homes Limited Property Type: Domestic Property (Multiple) Location: Broadway Farm Barns Broadway Lane, Lovedean, Waterlooville, Hampshire, Po8 0sj Authority: Environment Agency, Southern Region Catchment Area: Wallington Reference: Npswqd004143 Permit Version: 2 Effective Date: 21st December 2012 Issued Date: 21st December 2012 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Land/Soakaway Receiving Water: Ground Waters, Via A Soakaway **Status:** **Varied under EPR 2010** Positional Accuracy: Located by supplier to within 10m	A14NW (NW)	652	2	467695 113012
4	**Discharge Consents** Operator: Trenac Country Homes Limited Property Type: Domestic Property (Multiple) Location: Broadway Farm Barns Broadway Lane, Lovedean, Waterlooville, Hampshire, Po8 0sj Authority: Environment Agency, Southern Region Catchment Area: Wallington Reference: Npswqd004143 Permit Version: 1 Effective Date: 14th November 2008 Issued Date: 14th November 2008 Revocation Date: 20th December 2012 Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Land/Soakaway Receiving Water: Ground Waters, Via A Soakaway **Status:** **New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A14NW (NW)	652	2	467695 113012

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
5	**Discharge Consents** Operator: Mr G P Sanders Property Type: Retail Distribution Location: Site Drainage From Ring & Bring Ring & Bring, 231 Lovedean Lane, Horndean, Hampshire, Po8 9rx Authority: Environment Agency, Southern Region Catchment Area: Not Supplied Reference: P06090 Permit Version: 2 Effective Date: 21st December 2012 Issued Date: 21st December 2012 Revocation Date: Not Supplied Discharge Type: Trade Effluent Discharge-Site Drainage Discharge Environment: Into Land Receiving Water: Into Land **Status: Varied under EPR 2010** Positional Accuracy: Located by supplier to within 10m	A15NW (N)	703	2	468390 113050
5	**Discharge Consents** Operator: Mr G P Sanders Property Type: Retail Distribution Location: Site Drainage From Ring & Bring Ring & Bring, 231 Lovedean Lane, Horndean, Hampshire, Po8 9rx Authority: Environment Agency, Southern Region Catchment Area: Not Given Reference: P06090 Permit Version: 1 Effective Date: 20th May 1996 Issued Date: 20th May 1996 Revocation Date: 20th December 2012 Discharge Type: Trade Effluent Discharge-Site Drainage Discharge Environment: Into Land Receiving Water: Into Land **Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A15NW (N)	703	2	468390 113050
6	**Discharge Consents** Operator: Grout Bicknell & Partners Property Type: General Construction Work Location: Residential Development, Keydell Nurseries Site, Bevan Road , Horndean Hampshire Authority: Environment Agency, Southern Region Catchment Area: Not Given Reference: P01606 Permit Version: 1 Effective Date: 29th April 1988 Issued Date: 29th April 1988 Revocation Date: 31st March 1997 Discharge Type: Discharge Of Other Matter-Surface Water Discharge Environment: Freshwater Stream/River Receiving Water: Freshwater River **Status: Lapsed (under Environment Act 1995, Schedule 23)** Positional Accuracy: Located by supplier to within 100m	A12SE (E)	744	2	469260 112160
7	**Discharge Consents** Operator: Mr Ben Trimmer Property Type: Domestic Property (Single) Location: Stp Serving 184 Anmore Road 184 Anmore Road, Denmean, Waterlooville, Hampshire, Po7 6hw Authority: Environment Agency, Southern Region Catchment Area: Wallington Reference: Npswqd006990 Permit Version: 2 Effective Date: 21st December 2012 Issued Date: 21st December 2012 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Land/Soakaway Receiving Water: Ground Waters, Via A Soakaway **Status: Varied under EPR 2010** Positional Accuracy: Located by supplier to within 10m	A9SE (W)	815	2	467262 111867

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
7	**Discharge Consents** Operator: Mr Ben Trimmer Property Type: Domestic Property (Single) Location: Stp Serving 184 Anmore Road 184 Anmore Road, Denmean, Waterlooville, Hampshire, Po7 6hw Authority: Environment Agency, Southern Region Catchment Area: Wallington Reference: Npswqd006990 Permit Version: 1 Effective Date: 20th May 2009 Issued Date: 20th May 2009 Revocation Date: 20th December 2012 Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Land/Soakaway Receiving Water: Ground Waters, Via A Soakaway **Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A9SE (W)	815	2	467262 111867
7	**Discharge Consents** Operator: Cmdr. P Coward Property Type: Domestic Property (Single) Location: Stanley Cottage Anmore Road, Denmead, Hampshire Authority: Environment Agency, Southern Region Catchment Area: Not Given Reference: N03026 Permit Version: 1 Effective Date: 9th April 1976 Issued Date: 9th April 1976 Revocation Date: 31st March 1997 Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Into Land Receiving Water: Into Land **Status: Lapsed (under Environment Act 1995, Schedule 23)** Positional Accuracy: Located by supplier to within 100m	A9SE (W)	850	2	467220 111870
8	**Discharge Consents** Operator: Dr Colin Herring Property Type: Domestic Property (Single) Location: Hope Cottage, 137 Anmore Road Hope Cottage, 137 Anmore Road, Denmead, Waterlooville, Hampshire, Po7 6hw Authority: Environment Agency, Southern Region Catchment Area: Wallington Reference: G01217 Permit Version: 2 Effective Date: 21st December 2012 Issued Date: 21st December 2012 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Land/Soakaway Receiving Water: Groundwater Via Soakaway **Status: Varied under EPR 2010** Positional Accuracy: Located by supplier to within 10m	A9SW (W)	986	2	467066 111876
8	**Discharge Consents** Operator: Dr Colin Herring Property Type: Domestic Property (Single) Location: Hope Cottage, 137 Anmore Road Hope Cottage, 137 Anmore Road, Denmead, Waterlooville, Hampshire, Po7 6hw Authority: Environment Agency, Southern Region Catchment Area: Wallington Reference: G01217 Permit Version: 1 Effective Date: 29th June 2007 Issued Date: 29th June 2007 Revocation Date: 20th December 2012 Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Land/Soakaway Receiving Water: Groundwater Via Soakaway **Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A9SW (W)	986	2	467066 111876

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
9	**Local Authority Pollution Prevention and Controls** Name: Anchor Service StationBp Location: 325 Milton Road, Cowplain, WATERLOOVILLE, Hampshire, PO8 8LH Authority: Havant Borough Council, Environmental Health Department Permit Reference: Epa1/15/98 Dated: 23rd December 1998 Process Type: Local Authority Air Pollution Control Description: PG1/14 Petrol filling station **Status: Authorisation revokedRevoked** Positional Accuracy: Automatically positioned to the address	A11SE (SE)	284	3	468825 111932
10	**Local Authority Pollution Prevention and Controls** Name: Westons Service StationEsso Location: 127-129 London Road, Cowplain, WATERLOOVILLE, Hampshire, PO8 8XJ Authority: Havant Borough Council, Environmental Health Department Permit Reference: HBC/IPPC/05/00174 Dated: 22nd December 1998 Process Type: Local Authority Pollution Prevention and Control Description: PG1/14 Petrol filling station **Status: Permitted** Positional Accuracy: Automatically positioned to the address	A8SW (SE)	930	3	469234 111335
11	**Local Authority Pollution Prevention and Controls** Name: Black & White Garage Ltd Location: 164 London Road, COWPLAIN, PO7 7TF Authority: Havant Borough Council, Environmental Health Department Permit Reference: Not Given Dated: 7th September 1998 Process Type: Local Authority Air Pollution Control Description: PG1/1Waste oil burners, less than 0.4MW net rated thermal input **Status: Authorised** Positional Accuracy: Manually positioned to the road within the address or location	A12SE (E)	960	3	469501 111920
	Nearest Surface Water Feature	A10SE (SW)	62	-	468142 112022
12	**Pollution Incidents to Controlled Waters** Property Type: Other General Premises Location: Sparrow Close, Wecock Farm Estate, COWPLAIN Authority: Environment Agency, Southern Region Pollutant: Oils - Petrol Note: 10 Litres Of Petrol Into Surface Water Drain Incident Date: 14th April 1993 Incident Reference: 591 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Oils/Related Products Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A7NE (SE)	225	2	468650 111750
13	**Pollution Incidents to Controlled Waters** Property Type: Industrial: Other Location: LOVEDEAN, Hampshire Authority: Environment Agency, Southern Region Pollutant: Oils - Tars/Bitumen Note: Petrol Spill From Pump; Industrial: Other Incident Date: 26th March 1995 Incident Reference: 1758 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Oils/Related Products Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A14SW (NW)	232	2	467800 112600
14	**Pollution Incidents to Controlled Waters** Property Type: Road Location: COWPLAIN Authority: Environment Agency, Southern Region Pollutant: Oils - Petrol Note: Petrol Washed To Drains After Road Traffic Accident Incident Date: 1st June 1993 Incident Reference: 702 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Water Company STW Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A6NE (S)	449	2	468200 111600

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
15	**Pollution Incidents to Controlled Waters** Property Type: Other General Premises Location: Riders Lane, LEIGH PARK Authority: Environment Agency, Southern Region Pollutant: Oils - Petrol Note: Petrol On Stream; Miscellaneous Premises: Unknown Incident Date: 16th May 1994 Incident Reference: 1264 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Oils/Related Products Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A6SE (S)	629	2	468200 111400
16	**Pollution Incidents to Controlled Waters** Property Type: Wholesale & Retail Trade Location: A B A Vans & Trucks, Lovedean Lane, WATERLOOVILLE Authority: Environment Agency, Southern Region Pollutant: Contaminated Water : Vehicle Washings Note: Not Supplied Incident Date: 19th July 1999 Incident Reference: 1319 Catchment Area: Hermitage Stream Receiving Water: Freshwater Stream/River Cause of Incident: Structural Failure : Pipe Failure (Above Ground) Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 10m	A19SW (N)	839	2	468300 113200
	River Quality Name: Sheepwash Trib GQA Grade: River Quality C Reach: Wallington Conf - B2150 Estimated Distance (km): 5.5 Flow Rate: Flow less than 0.31 cumecs Flow Type: River Year: 2000	A3NW (S)	917	2	468295 111047
17	**Substantiated Pollution Incident Register** Authority: Environment Agency - Southern Region, Solent and South Downs Incident Date: 16th October 2008 Incident Reference: 629163 Water Impact: Category 2 - Significant Incident Air Impact: Category 4 - No Impact Land Impact: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 10m Pollutant: Organic Chemicals/Products: Pesticides And Biocides	A10NW (NW)	73	2	467846 112428
18	**Water Abstractions** Operator: Portsmouth Water Ltd Licence Number: 11/42/33.1/1 Permit Version: 101 Location: Point A At Lovedean Pumping Station. Authority: Environment Agency, Southern Region Abstraction: Public Water Supply: Potable Water Supply - Direct Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Abstraction Site Located By Point Marked A On Licence Map. Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 11th June 2009 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A19SW (N)	980	2	468400 113330
18	**Water Abstractions** Operator: Portsmouth Water Co Licence Number: 11/42/33.1/1 Permit Version: 100 Location: Point A At Lovedean Pumping Station. Authority: Environment Agency, Southern Region Abstraction: Public Water Supply: Potable Water Supply - Direct Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Abstraction Site Located By Point Marked A On Licence Map. Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 23rd December 1965 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A19SW (N)	980	2	468400 113330

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Winchester College Licence Number: 11/42/33.2/3 Permit Version: 100 Location: Denmead Farm, Denmead Authority: Environment Agency, Southern Region Abstraction: General Farming And Domestic Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: See Licence Map Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 23rd December 1965 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	(W)	1356	2	466600 112740
	Groundwater Vulnerability Soil Classification: Soils of Low Leaching Potential - Soils in which pollutants are unlikely to penetrate the soil layer because water movement is largely horizontal or they have large ability to attenuate diffuse pollutants. Lateral flow from these soils contribute to groundwater recharge elsewhere in the catchment Map Sheet: Sheet 52 Southern Hampshire Scale: 1:100,000	A11NW (SW)	0	2	468239 112188
	Groundwater Vulnerability Soil Classification: Soils of High Leaching Potential (U) - Soil information for restored mineral workings and urban areas is based on fewer observations than elsewhere. A worst case vulnerability classification (H) assumed, until proved otherwise Map Sheet: Sheet 52 Southern Hampshire Scale: 1:100,000	A11SW (SE)	0	2	468370 112028
	Groundwater Vulnerability Soil Classification: Soils of Intermediate Leaching Potential (I1) - Soils which can possibly transmit a wide range of pollutants Map Sheet: Sheet 52 Southern Hampshire Scale: 1:100,000	A10NE (W)	0	2	468123 112177
	Drift Deposits None				
	Bedrock Aquifer Designations Aquifer Designation: Principal Aquifer	A10NE (NW)	0	4	467966 112420
	Bedrock Aquifer Designations Aquifer Designation: Secondary Aquifer - A	A11NW (SW)	0	4	468239 112188
	Superficial Aquifer Designations Aquifer Designation: Secondary Aquifer - Undifferentiated	A11SW (S)	0	4	468228 112160
19	**Source Protection Zones** Name: Lovedean Source: Environment Agency, Head Office Reference: Su295 Type: Zone II (Outer Protection Zone): Either 25% of the source area or a 400 day travel time whichever is greater.	A11NW (SW)	0	2	468239 112188
20	**Source Protection Zones** Name: Lovedean Source: Environment Agency, Head Office Reference: Su295 Type: Zone I (Inner Protection Zone): Travel time of 50 days or less to the groundwater source.	A11NW (SW)	0	2	468239 112188
21	**Source Protection Zones** Name: Various Source: Environment Agency, Head Office Reference: Not Supplied Type: Zone III (Total Catchment): The total area needed to support the discharge from the protected groundwater source.	A11NW (SW)	0	2	468239 112188
22	**Source Protection Zones** Name: Lovedean Source: Environment Agency, Head Office Reference: Su295 Type: Groundwater Source	A19SW (N)	980	2	468400 113330
	Extreme Flooding from Rivers or Sea without Defences None				

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Flooding from Rivers or Sea without Defences None				
	Areas Benefiting from Flood Defences None				
	Flood Water Storage Areas None				
	Flood Defences None				
	Detailed River Network Lines None				
	Detailed River Network Offline Drainage None				

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
23	**Historical Landfill Sites** Licence Holder: F F F Plant Hire Company Limited Location: Lovedean, Chalton, Waterlooville, Hampshire Name: Woodcroft Farm Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD20817 First Input Date: Not Supplied Last Input Date: Not Supplied Specified Waste Type: Deposited Waste included Industrial Waste EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: Not Supplied BGS Ref: Not Supplied Other Ref: 13/5, FHA1	A10SE (SW)	102	2	468084 112045
24	**Historical Landfill Sites** Licence Holder: Dr J Sheppard Location: Denmead, Hamsphire Name: Anmore Dell Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD20423 First Input Date: 12th May 1992 Last Input Date: Not Supplied Specified Waste Type: Deposited Waste included Inert Waste EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: 1700/5091 BGS Ref: Not Supplied Other Ref: FW18, W91	A9SW (W)	982	2	467074 111869
25	**Licensed Waste Management Facilities (Locations)** Licence Number: 10244 Location: 231 Lovedean Lane, Lovedean, Waterlooville, Hampshire, PO8 9RX Operator Name: David Nichols Operator Location: Not Supplied Authority: Environment Agency - South East Region, Solent & South Downs Area Site Category: End of Life Vehicles **Licence Status: Issued** Issued: 20th August 2004 Last Modified: Not Supplied Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m	A15NW (N)	714	2	468392 113061
	Local Authority Landfill Coverage Name: Havant Borough Council - Has supplied landfill data		0	3	468247 112155
	Local Authority Landfill Coverage Name: East Hampshire District Council - Has no landfill data to supply		0	9	468239 112188
	Local Authority Landfill Coverage Name: Hampshire County Council - Had landfill data but passed it to the relevant environment agency		0	10	468239 112188
	Local Authority Landfill Coverage Name: Winchester City Council - Has supplied landfill data		104	11	468012 112078

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS 1:625,000 Solid Geology Description: Chalk including Red Chalk	A10NE (NW)	0	4	467987 112463
	BGS 1:625,000 Solid Geology Description: Oldhaven, Blackheath, Woolwich, and Reading and Thanet beds	A11NW (SW)	0	4	468239 112188
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A10NE (W)	0	5	468000 112188
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 90 - 120 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A11SW (S)	0	5	468229 112162
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A11SW (S)	0	5	468239 112000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A10NE (NW)	0	5	467964 112421
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A11NW (SW)	0	5	468239 112188

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A10NE (NW)	79	5	468000 112464
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 90 - 120 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A10SE (SW)	84	5	468135 112000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 90 - 120 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A10SE (SW)	113	5	468000 112074
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: <15 mg/kg	A10NW (W)	123	5	467809 112302
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A10SE (S)	146	5	468185 111831
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 90 - 120 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A10SE (SW)	182	5	468000 112000

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 90 - 120 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A11SE (E)	215	5	468777 112000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A10SE (SW)	228	5	468000 111939
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 90 - 120 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A10NW (W)	231	5	467719 112264
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 90 - 120 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A11SE (E)	237	5	468785 112122
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A10SW (SW)	246	5	467866 112000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: <15 mg/kg	A11SE (E)	260	5	468804 112000

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: <15 mg/kg	A11NE (E)	262	5	468676 112333
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A6NE (SW)	326	5	468000 111799
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A7NW (S)	366	5	468364 111602
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A11NE (NE)	415	5	468799 112442
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A12SW (E)	423	5	468970 111921
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 90 - 120 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A12SW (E)	438	5	468979 112000

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A12SW (E)	456	5	469000 112017
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A12SW (E)	458	5	469000 112000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A12SW (E)	459	5	469000 112017
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 90 - 120 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A12SW (E)	461	5	469000 112037
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: <15 mg/kg	A12SW (E)	464	5	469000 112150
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A12NW (E)	482	5	468942 112276

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A12NW (E)	494	5	469000 112188
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A14NE (N)	603	5	468000 113000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: <15 mg/kg	A12NW (E)	608	5	469000 112456
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A15NW (N)	610	5	468239 113000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A15SE (NE)	621	5	468799 112760
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 90 - 120 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A8NW (SE)	634	5	469000 111516

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A7SW (S)	634	5	468413 111277
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: <15 mg/kg	A15NW (N)	650	5	468370 113000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A15NW (N)	687	5	468498 113000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 90 - 120 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A9SE (W)	695	5	467330 112000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: <15 mg/kg	A9SE (W)	745	5	467275 112000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A15NE (NE)	768	5	468681 113000

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 90 - 120 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A6SE (S)	897	5	468000 111183
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A4NW (SE)	906	5	468972 111149
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A9NW (W)	912	5	467000 112188
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A8SW (SE)	913	5	469000 111157
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A3NE (SE)	927	5	468827 111060
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A16NW (NE)	935	5	469000 113000

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A3NW (S)	937	5	468281 111000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A4NW (SE)	968	5	469000 111093
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 90 - 120 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A3NW (S)	969	5	468239 111000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: 15 - 30 mg/kg	A3NW (S)	971	5	468533 110961
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: <15 mg/kg	A9SW (W)	992	5	467000 112007
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <150 mg/kg Nickel Concentration: <15 mg/kg	A9SW (W)	995	5	467000 112000

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
26	**BGS Recorded Mineral Sites** Site Name: Eastland Gate Chalk Pit Location: , Lovedean, Waterlooville, Hampshire Source: British Geological Survey, National Geoscience Information Service Reference: 162716 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Cretaceous Geology: Tarrant Chalk Member Commodity: Chalk Positional Accuracy: Located by supplier to within 10m	A10NE (NW)	0	4	468195 112224
27	**BGS Recorded Mineral Sites** Site Name: Eastland Gate Chalk Pit Location: , Lovedean, Waterlooville, Hampshire Source: British Geological Survey, National Geoscience Information Service Reference: 162717 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Cretaceous Geology: Tarrant Chalk Member Commodity: Chalk Positional Accuracy: Located by supplier to within 10m	A11SW (S)	0	4	468230 112163
28	**BGS Recorded Mineral Sites** Site Name: Woodcroft Chalk Pit Location: , Lovedean, Waterlooville, Hampshire Source: British Geological Survey, National Geoscience Information Service Reference: 162715 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Cretaceous Geology: Tarrant Chalk Member Commodity: Chalk Positional Accuracy: Located by supplier to within 10m	A10SE (SW)	40	4	468091 112123
29	**BGS Recorded Mineral Sites** Site Name: Eastland Gate Chalk Pit Location: , Lovedean, Waterlooville, Hampshire Source: British Geological Survey, National Geoscience Information Service Reference: 162705 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Cretaceous Geology: Tarrant Chalk Member Commodity: Chalk Positional Accuracy: Located by supplier to within 10m	A10NE (NW)	49	4	467922 112445
30	**BGS Recorded Mineral Sites** Site Name: Eastland Gate Chalk Pit Location: , Lovedean, Waterlooville, Hampshire Source: British Geological Survey, National Geoscience Information Service Reference: 162718 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Cretaceous Geology: Tarrant Chalk Member Commodity: Chalk Positional Accuracy: Located by supplier to within 10m	A10NE (W)	52	4	467927 112241
31	**BGS Recorded Mineral Sites** Site Name: Woodcroft Chalk Pit Location: , Lovedean, Waterlooville, Hampshire Source: British Geological Survey, National Geoscience Information Service Reference: 162714 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Cretaceous Geology: Tarrant Chalk Member Commodity: Chalk Positional Accuracy: Located by supplier to within 10m	A10SE (SW)	150	4	468052 112007

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
32	**BGS Recorded Mineral Sites** Site Name: Eastland Gate Chalk Pit Location: , Eastland Gate, Lovedean, Waterlooville, Hampshire Source: British Geological Survey, National Geoscience Information Service Reference: 162704 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Cretaceous Geology: Tarrant Chalk Member Commodity: Chalk Positional Accuracy: Located by supplier to within 10m	A10NW (NW)	169	4	467744 112415
33	**BGS Recorded Mineral Sites** Site Name: James'S Copse Chalk Pit Location: , Lovedean, Waterlooville, Hampshire Source: British Geological Survey, National Geoscience Information Service Reference: 162711 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Cretaceous Geology: Tarrant Chalk Member Commodity: Chalk Positional Accuracy: Located by supplier to within 10m	A11NE (NE)	256	4	468647 112389
34	**BGS Recorded Mineral Sites** Site Name: James'S Copse Chalk Pit Location: , Lovedean, Waterlooville, Hampshire Source: British Geological Survey, National Geoscience Information Service Reference: 162708 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Cretaceous Geology: Tarrant Chalk Member Commodity: Chalk Positional Accuracy: Located by supplier to within 10m	A11NE (NE)	283	4	468611 112476
35	**BGS Recorded Mineral Sites** Site Name: Eastland Gate Chalk Pit Location: , Lovedean, Waterlooville, Hampshire Source: British Geological Survey, National Geoscience Information Service Reference: 162707 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Cretaceous Geology: Tarrant Chalk Member Commodity: Chalk Positional Accuracy: Located by supplier to within 10m	A14SE (NW)	298	4	467958 112691
36	**BGS Recorded Mineral Sites** Site Name: Eastland Gate Chalk Pit Location: , Lovedean, Waterlooville, Hampshire Source: British Geological Survey, National Geoscience Information Service Reference: 162706 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Cretaceous Geology: Tarrant Chalk Member Commodity: Chalk Positional Accuracy: Located by supplier to within 10m	A14SW (NW)	334	4	467872 112728
37	**BGS Recorded Mineral Sites** Site Name: James'S Copse Chalk Pit Location: , Lovedean, Waterlooville, Hampshire Source: British Geological Survey, National Geoscience Information Service Reference: 162712 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Cretaceous Geology: Tarrant Chalk Member Commodity: Chalk Positional Accuracy: Located by supplier to within 10m	A11NE (E)	337	4	468761 112249

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
38	**BGS Recorded Mineral Sites** Site Name: Lovedean Chalk Pit Location: , Lovedean, Waterlooville, Hampshire Source: British Geological Survey, National Geoscience Information Service Reference: 162710 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Cretaceous Geology: Tarrant Chalk Member Commodity: Chalk Positional Accuracy: Located by supplier to within 10m	A11NE (E)	470	4	468867 112419
39	**BGS Recorded Mineral Sites** Site Name: Keydell House Sand Pit Location: , Lovedean, Waterlooville, Hampshire Source: British Geological Survey, National Geoscience Information Service Reference: 162713 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Quaternary Geology: Head Commodity: Sand Positional Accuracy: Located by supplier to within 10m	A12NW (E)	476	4	468959 112195
40	**BGS Recorded Mineral Sites** Site Name: Lovedean Chalk Pit Location: , Lovedean, Waterlooville, Hampshire Source: British Geological Survey, National Geoscience Information Service Reference: 162814 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Cretaceous Geology: Tarrant Chalk Member Commodity: Chalk Positional Accuracy: Located by supplier to within 10m	A15NW (N)	519	4	468324 112875
41	**BGS Recorded Mineral Sites** Site Name: Yoells Chalk Pit Location: , Lovedean, Waterlooville, Hampshire Source: British Geological Survey, National Geoscience Information Service Reference: 162709 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Cretaceous Geology: Tarrant Chalk Member Commodity: Chalk Positional Accuracy: Located by supplier to within 10m	A15SE (NE)	533	4	468786 112655
42	**BGS Recorded Mineral Sites** Site Name: Broadway Farm Chalk Pit Location: , Lovedean, Waterlooville, Hampshire Source: British Geological Survey, National Geoscience Information Service Reference: 162824 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Cretaceous Geology: Tarrant Chalk Member Commodity: Chalk Positional Accuracy: Located by supplier to within 10m	A14NW (NW)	547	4	467629 112865
43	**BGS Recorded Mineral Sites** Site Name: Broadway Farm Chalk Pit Location: , Lovedean, Waterlooville, Hampshire Source: British Geological Survey, National Geoscience Information Service Reference: 162823 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Cretaceous Geology: Tarrant Chalk Member Commodity: Chalk Positional Accuracy: Located by supplier to within 10m	A14NE (N)	573	4	468001 112963

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
44	**BGS Recorded Mineral Sites** Site Name: Broadway Farm Chalk Pit Location: , Lovedean, Waterlooville, Hampshire Source: British Geological Survey, National Geoscience Information Service Reference: 162822 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Cretaceous Geology: Tarrant Chalk Member Commodity: Chalk Positional Accuracy: Located by supplier to within 10m	A14NW (NW)	639	4	467833 113031
45	**BGS Recorded Mineral Sites** Site Name: Frogmore Copse Chalk Pit Location: , Lovedean, Waterlooville, Hampshire Source: British Geological Survey, National Geoscience Information Service Reference: 162721 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Cretaceous Geology: Tarrant Chalk Member Commodity: Chalk Positional Accuracy: Located by supplier to within 10m	A16SW (E)	694	4	469070 112515
46	**BGS Recorded Mineral Sites** Site Name: Coldhill Copse Chalk Pit Location: , Lovedean, Waterlooville, Hampshire Source: British Geological Survey, National Geoscience Information Service Reference: 162812 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Cretaceous Geology: Tarrant Chalk Member Commodity: Chalk Positional Accuracy: Located by supplier to within 10m	A15NE (NE)	700	4	468607 112962
47	**BGS Recorded Mineral Sites** Site Name: Anmore Chalk Pit Location: Anmore Lane, Denmead, Waterlooville, Hampshire Source: British Geological Survey, National Geoscience Information Service Reference: 162703 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Cretaceous Geology: Tarrant Chalk Member Commodity: Chalk Positional Accuracy: Located by supplier to within 10m	A9SE (W)	741	4	467254 112054
48	**BGS Recorded Mineral Sites** Site Name: Denmead Chalk Pit Location: , Denmead, Waterlooville, Hampshire Source: British Geological Survey, National Geoscience Information Service Reference: 162702 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Cretaceous Geology: Tarrant Chalk Member Commodity: Chalk Positional Accuracy: Located by supplier to within 10m	A9NW (W)	750	4	467164 112446
49	**BGS Recorded Mineral Sites** Site Name: Denmead Farm Chalk Pit Location: , Denmead, Waterlooville, Hampshire Source: British Geological Survey, National Geoscience Information Service Reference: 162692 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Cretaceous Geology: Tarrant Chalk Member Commodity: Chalk Positional Accuracy: Located by supplier to within 10m	A13NE (NW)	796	4	467285 112887

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
50	**BGS Recorded Mineral Sites** Site Name: Coldhill Copse Chalk Pit Location: , Lovedean, Waterlooville, Hampshire Source: British Geological Survey, National Geoscience Information Service Reference: 162811 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Cretaceous Geology: Tarrant Chalk Member Commodity: Chalk Positional Accuracy: Located by supplier to within 10m	A15NE (NE)	870	4	468696 113108
51	**BGS Recorded Mineral Sites** Site Name: Bulls Copse Chalk Pit Location: , Causeway, Horndean, Waterlooville, Hampshire Source: British Geological Survey, National Geoscience Information Service Reference: 162719 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Cretaceous Geology: Tarrant Chalk Member Commodity: Chalk Positional Accuracy: Located by supplier to within 10m	A16SE (NE)	910	4	469241 112663
52	**BGS Recorded Mineral Sites** Site Name: Cow Plain Brick Field Location: , Cowplain, Horndean, Waterlooville, Hampshire Source: British Geological Survey, National Geoscience Information Service Reference: 162695 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Palaeocene Geology: Lambeth Group Commodity: Common Clay and Shale Positional Accuracy: Located by supplier to within 10m	A3NE (SE)	920	4	468896 111095
53	**BGS Recorded Mineral Sites** Site Name: Dovedean Farm Chalk Pit Location: , Horndean, Waterlooville, Hampshire Source: British Geological Survey, National Geoscience Information Service Reference: 162686 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Unknown Operator Periodic Type: Cretaceous Geology: Tarrant Chalk Member Commodity: Chalk Positional Accuracy: Located by supplier to within 10m	A19SW (N)	996	4	468478 113330
	BGS Measured Urban Soil Chemistry No data available				
	BGS Urban Soil Chemistry Averages No data available				
	Coal Mining Affected Areas In an area that might not be affected by coal mining				
	Natural Cavities Easting: 468200 Northing: 112200 Distance: 0 Quadrant Reference: A10 Quadrant Reference: NE Bearing Ref: W Cavity Type: Swallow Hole Solid Geology Detail: Chalk Group, Lambeth Group Superficial Geology Detail: Head	A10NE (W)	0	6	468200 112200

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Natural Cavities Easting: 468240 Northing: 112170 Distance: 0 Quadrant Reference: A11 Quadrant Reference: NW Bearing Ref: S Cavity Type: Sinkhole x 1 Solid Geology Detail: Chalk Group, Lambeth Group Superficial Geology Detail: No Details	A11NW (S)	0	6	468240 112170
	Natural Cavities Easting: 468200 Northing: 112220 Distance: 0 Quadrant Reference: A10 Quadrant Reference: NE Bearing Ref: NW Cavity Type: Sinkhole x 1 Solid Geology Detail: Chalk Group, Lambeth Group Superficial Geology Detail: Head	A10NE (NW)	0	6	468200 112220
	Natural Cavities Easting: 468210 Northing: 112040 Distance: 17 Quadrant Reference: A10 Quadrant Reference: SE Bearing Ref: S Cavity Type: Sinkhole x 1 Solid Geology Detail: Chalk Group, Lambeth Group Superficial Geology Detail: Head	A10SE (S)	17	6	468210 112040
	Natural Cavities Easting: 468050 Northing: 112420 Distance: 35 Quadrant Reference: A10 Quadrant Reference: NE Bearing Ref: NW Cavity Type: Sinkhole x 1 Solid Geology Detail: Chalk Group, Lambeth Group Superficial Geology Detail: No Details	A10NE (NW)	35	6	468050 112420
	Natural Cavities Easting: 467940 Northing: 112240 Distance: 41 Quadrant Reference: A10 Quadrant Reference: NE Bearing Ref: W Cavity Type: Sinkhole x 1 Solid Geology Detail: Chalk Group, Lambeth Group Superficial Geology Detail: No Details	A10NE (W)	41	6	467940 112240
	Natural Cavities Easting: 468050 Northing: 112120 Distance: 53 Quadrant Reference: A10 Quadrant Reference: SE Bearing Ref: W Cavity Type: Sinkhole x 1 Solid Geology Detail: Chalk Group, Lambeth Group Superficial Geology Detail: Head	A10SE (W)	53	6	468050 112120
	Natural Cavities Easting: 468100 Northing: 112100 Distance: 60 Quadrant Reference: A10 Quadrant Reference: SE Bearing Ref: SW Cavity Type: Swallow Hole Solid Geology Detail: Chalk Group, Lambeth Group Superficial Geology Detail: Head	A10SE (SW)	60	6	468100 112100

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Natural Cavities Easting: 468150 Northing: 112010 Distance: 67 Quadrant Reference: A10 Quadrant Reference: SE Bearing Ref: SW Cavity Type: Sinkhole x 1 Solid Geology Detail: Chalk Group, Lambeth Group Superficial Geology Detail: Head	A10SE (SW)	67	6	468150 112010
	Natural Cavities Easting: 468500 Northing: 112300 Distance: 85 Quadrant Reference: A11 Quadrant Reference: NW Bearing Ref: NE Cavity Type: Swallow Hole Solid Geology Detail: Chalk Group, Lambeth Group Superficial Geology Detail: No Details	A11NW (NE)	85	6	468500 112300
	Natural Cavities Easting: 467880 Northing: 112200 Distance: 113 Quadrant Reference: A10 Quadrant Reference: NW Bearing Ref: W Cavity Type: Sinkhole x 1 Solid Geology Detail: Chalk Group, Lambeth Group Superficial Geology Detail: No Details	A10NW (W)	113	6	467880 112200
	Natural Cavities Easting: 468150 Northing: 112520 Distance: 148 Quadrant Reference: A14 Quadrant Reference: SE Bearing Ref: N Cavity Type: Sinkhole x 1 Solid Geology Detail: Chalk Group, Lambeth Group Superficial Geology Detail: No Details	A14SE (N)	148	6	468150 112520
	Natural Cavities Easting: 468600 Northing: 112300 Distance: 180 Quadrant Reference: A11 Quadrant Reference: NE Bearing Ref: E Cavity Type: Swallow Hole Solid Geology Detail: Chalk Group, Lambeth Group Superficial Geology Detail: No Details	A11NE (E)	180	6	468600 112300
	Natural Cavities Easting: 468611 Northing: 112350 Distance: 206 Quadrant Reference: A11 Quadrant Reference: NE Bearing Ref: NE Cavity Type: Sinkhole x 6 Solid Geology Detail: Chalk Group, Lambeth Group Superficial Geology Detail: No Details	A11NE (NE)	206	6	468611 112350
	Natural Cavities Easting: 467870 Northing: 112050 Distance: 208 Quadrant Reference: A10 Quadrant Reference: SW Bearing Ref: W Cavity Type: Sinkhole x 1 Solid Geology Detail: Chalk Group, Lambeth Group Superficial Geology Detail: Head	A10SW (W)	208	6	467870 112050

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Natural Cavities Easting: 467740 Northing: 112240 Distance: 222 Quadrant Reference: A10 Quadrant Reference: NW Bearing Ref: W Cavity Type: Sinkhole x 1 Solid Geology Detail: Chalk Group, Lambeth Group Superficial Geology Detail: Head	A10NW (W)	222	6	467740 112240
	Natural Cavities Easting: 468200 Northing: 112600 Distance: 237 Quadrant Reference: A14 Quadrant Reference: SE Bearing Ref: N Cavity Type: Swallow Hole Solid Geology Detail: Chalk Group, Lambeth Group Superficial Geology Detail: No Details	A14SE (N)	237	6	468200 112600
	Natural Cavities Easting: 467840 Northing: 112020 Distance: 250 Quadrant Reference: A10 Quadrant Reference: SW Bearing Ref: SW Cavity Type: Sinkhole x 1 Solid Geology Detail: Chalk Group, Lambeth Group Superficial Geology Detail: No Details	A10SW (SW)	250	6	467840 112020
	Natural Cavities Easting: 468210 Northing: 112620 Distance: 258 Quadrant Reference: A14 Quadrant Reference: SE Bearing Ref: N Cavity Type: Unknown x 1 Solid Geology Detail: Chalk Group, Lambeth Group Superficial Geology Detail: No Details	A14SE (N)	258	6	468210 112620
	Natural Cavities Easting: 467960 Northing: 111920 Distance: 270 Quadrant Reference: A10 Quadrant Reference: SE Bearing Ref: SW Cavity Type: Sinkhole x 1 Solid Geology Detail: Chalk Group, Lambeth Group Superficial Geology Detail: Head	A10SE (SW)	270	6	467960 111920
	Natural Cavities Easting: 467930 Northing: 111920 Distance: 282 Quadrant Reference: A10 Quadrant Reference: SE Bearing Ref: SW Cavity Type: Sinkhole x 1 Solid Geology Detail: Chalk Group, Lambeth Group Superficial Geology Detail: Head	A10SE (SW)	282	6	467930 111920
	Natural Cavities Easting: 468230 Northing: 112650 Distance: 287 Quadrant Reference: A15 Quadrant Reference: SW Bearing Ref: N Cavity Type: Unknown x 1 Solid Geology Detail: Chalk Group, Lambeth Group Superficial Geology Detail: No Details	A15SW (N)	287	6	468230 112650

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Natural Cavities Easting: 468220 Northing: 112650 Distance: 288 Quadrant Reference: A14 Quadrant Reference: SE Bearing Ref: N Cavity Type: Unknown x 1 Solid Geology Detail: Chalk Group, Lambeth Group Superficial Geology Detail: No Details	A14SE (N)	288	6	468220 112650
	Natural Cavities Easting: 468160 Northing: 112660 Distance: 288 Quadrant Reference: A14 Quadrant Reference: SE Bearing Ref: N Cavity Type: Unknown x 1 Solid Geology Detail: Chalk Group, Lambeth Group Superficial Geology Detail: No Details	A14SE (N)	288	6	468160 112660
	Natural Cavities Easting: 468600 Northing: 112500 Distance: 294 Quadrant Reference: A11 Quadrant Reference: NE Bearing Ref: NE Cavity Type: Swallow Hole Solid Geology Detail: Chalk Group, Lambeth Group Superficial Geology Detail: No Details	A11NE (NE)	294	6	468600 112500
	Natural Cavities Easting: 467900 Northing: 112700 Distance: 303 Quadrant Reference: A14 Quadrant Reference: SE Bearing Ref: NW Cavity Type: Swallow Hole Solid Geology Detail: Chalk Group Superficial Geology Detail: No Details	A14SE (NW)	303	6	467900 112700
	Natural Cavities Easting: 467780 Northing: 112010 Distance: 303 Quadrant Reference: A10 Quadrant Reference: SW Bearing Ref: W Cavity Type: Sinkhole x 1 Solid Geology Detail: Chalk Group, Lambeth Group Superficial Geology Detail: Head	A10SW (W)	303	6	467780 112010
	Natural Cavities Easting: 468300 Northing: 112660 Distance: 303 Quadrant Reference: A15 Quadrant Reference: SW Bearing Ref: N Cavity Type: Sinkhole x 1 Solid Geology Detail: Chalk Group, Lambeth Group Superficial Geology Detail: No Details	A15SW (N)	303	6	468300 112660
	Natural Cavities Easting: 467750 Northing: 111970 Distance: 351 Quadrant Reference: A10 Quadrant Reference: SW Bearing Ref: SW Cavity Type: Sinkhole x 1 Solid Geology Detail: Chalk Group, Lambeth Group Superficial Geology Detail: No Details	A10SW (SW)	351	6	467750 111970

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Natural Cavities Easting: 467750 Northing: 111940 Distance: 370 Quadrant Reference: A10 Quadrant Reference: SW Bearing Ref: SW Cavity Type: Sinkhole x 1 Solid Geology Detail: Chalk Group, Lambeth Group Superficial Geology Detail: No Details	A10SW (SW)	370	6	467750 111940
	Natural Cavities Easting: 468400 Northing: 112700 Distance: 373 Quadrant Reference: A15 Quadrant Reference: SW Bearing Ref: N Cavity Type: Swallow Hole Solid Geology Detail: Chalk Group, Lambeth Group Superficial Geology Detail: No Details	A15SW (N)	373	6	468400 112700
	Natural Cavities Easting: 467750 Northing: 111920 Distance: 384 Quadrant Reference: A10 Quadrant Reference: SW Bearing Ref: SW Cavity Type: Sinkhole x 1 Solid Geology Detail: Chalk Group, Lambeth Group Superficial Geology Detail: No Details	A10SW (SW)	384	6	467750 111920
	Natural Cavities Easting: 467710 Northing: 111950 Distance: 395 Quadrant Reference: A10 Quadrant Reference: SW Bearing Ref: SW Cavity Type: Sinkhole x 1 Solid Geology Detail: Chalk Group, Lambeth Group Superficial Geology Detail: No Details	A10SW (SW)	395	6	467710 111950
	Natural Cavities Easting: 467760 Northing: 111870 Distance: 414 Quadrant Reference: A10 Quadrant Reference: SW Bearing Ref: SW Cavity Type: Sinkhole x 1 Solid Geology Detail: Chalk Group, Lambeth Group Superficial Geology Detail: Head	A10SW (SW)	414	6	467760 111870
	Natural Cavities Easting: 468200 Northing: 112800 Distance: 433 Quadrant Reference: A14 Quadrant Reference: SE Bearing Ref: N Cavity Type: Sinkhole x 1, Solution Pipe x 1 Solid Geology Detail: Chalk Group, Lambeth Group Superficial Geology Detail: No Details	A14SE (N)	433	6	468200 112800
	Natural Cavities Easting: 467740 Northing: 111800 Distance: 481 Quadrant Reference: A6 Quadrant Reference: NW Bearing Ref: SW Cavity Type: Sinkhole x 1 Solid Geology Detail: Chalk Group, Lambeth Group Superficial Geology Detail: Head	A6NW (SW)	481	6	467740 111800

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Natural Cavities Easting: 467690 Northing: 111840 Distance: 483 Quadrant Reference: A10 Quadrant Reference: SW Bearing Ref: SW Cavity Type: Sinkhole x 1 Solid Geology Detail: Chalk Group, Lambeth Group Superficial Geology Detail: Head	A10SW (SW)	483	6	467690 111840
	Natural Cavities Easting: 469040 Northing: 112000 Distance: 499 Quadrant Reference: A12 Quadrant Reference: SW Bearing Ref: E Cavity Type: Unknown x 1 Solid Geology Detail: Chalk Group, Lambeth Group Superficial Geology Detail: No Details	A12SW (E)	499	6	469040 112000
	Natural Cavities Easting: 467500 Northing: 111900 Distance: 595 Quadrant Reference: A9 Quadrant Reference: SE Bearing Ref: W Cavity Type: Sinkhole x 1, Solution Pipe x 1 Solid Geology Detail: Chalk Group, Lambeth Group Superficial Geology Detail: No Details	A9SE (W)	595	6	467500 111900
	Natural Cavities Easting: 467800 Northing: 113000 Distance: 614 Quadrant Reference: A14 Quadrant Reference: NW Bearing Ref: NW Cavity Type: Swallow Hole Solid Geology Detail: Chalk Group Superficial Geology Detail: No Details	A14NW (NW)	614	6	467800 113000
	Natural Cavities Easting: 468810 Northing: 112750 Distance: 621 Quadrant Reference: A15 Quadrant Reference: SE Bearing Ref: NE Cavity Type: Sinkhole x 2 Solid Geology Detail: Chalk Group, Lambeth Group Superficial Geology Detail: No Details	A15SE (NE)	621	6	468810 112750
	Natural Cavities Easting: 468900 Northing: 112700 Distance: 646 Quadrant Reference: A15 Quadrant Reference: SE Bearing Ref: NE Cavity Type: Swallow Hole Solid Geology Detail: Chalk Group, Lambeth Group Superficial Geology Detail: No Details	A15SE (NE)	646	6	468900 112700
	Natural Cavities Easting: 469220 Northing: 112190 Distance: 714 Quadrant Reference: A12 Quadrant Reference: NW Bearing Ref: E Cavity Type: Unknown x 1 Solid Geology Detail: Chalk Group, Lambeth Group Superficial Geology Detail: No Details	A12NW (E)	714	6	469220 112190

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Natural Cavities Easting: 468400 Northing: 113100 Distance: 754 Quadrant Reference: A15 Quadrant Reference: NW Bearing Ref: N Cavity Type: Swallow Hole Solid Geology Detail: Chalk Group Superficial Geology Detail: No Details	A15NW (N)	754	6	468400 113100
	Natural Cavities Easting: 469000 Northing: 112900 Distance: 858 Quadrant Reference: A16 Quadrant Reference: NW Bearing Ref: NE Cavity Type: Swallow Hole Solid Geology Detail: Chalk Group, Lambeth Group Superficial Geology Detail: No Details	A16NW (NE)	858	6	469000 112900
	Natural Cavities Easting: 468500 Northing: 113300 Distance: 972 Quadrant Reference: A19 Quadrant Reference: SW Bearing Ref: N Cavity Type: Swallow Hole Solid Geology Detail: Chalk Group Superficial Geology Detail: No Details	A19SW (N)	972	6	468500 113300
	Non Coal Mining Areas of Great Britain Risk: Highly Unlikely Source: British Geological Survey, National Geoscience Information Service	A11NW (E)	0	4	468275 112188
	Non Coal Mining Areas of Great Britain Risk: Unlikely Source: British Geological Survey, National Geoscience Information Service	A10SE (S)	0	4	468195 112075
	Non Coal Mining Areas of Great Britain Risk: Likely Source: British Geological Survey, National Geoscience Information Service	A11SW (S)	0	4	468229 112162
	Non Coal Mining Areas of Great Britain Risk: Unlikely Source: British Geological Survey, National Geoscience Information Service	A11NW (SW)	0	4	468239 112188
	Non Coal Mining Areas of Great Britain Risk: Rare Source: British Geological Survey, National Geoscience Information Service	A14SE (NW)	120	4	467900 112550
	Non Coal Mining Areas of Great Britain Risk: Unlikely Source: British Geological Survey, National Geoscience Information Service	A11NE (E)	138	4	468575 112188
	Non Coal Mining Areas of Great Britain Risk: Unlikely Source: British Geological Survey, National Geoscience Information Service	A10SE (S)	146	4	468185 111831
	Non Coal Mining Areas of Great Britain Risk: Likely Source: British Geological Survey, National Geoscience Information Service	A11SE (E)	215	4	468785 112122
	Non Coal Mining Areas of Great Britain Risk: Likely Source: British Geological Survey, National Geoscience Information Service	A10NW (W)	231	4	467719 112264
	Potential for Collapsible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A11NW (SW)	0	4	468239 112188
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A11NW (SW)	0	4	468239 112188
	Potential for Ground Dissolution Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A11NW (SW)	0	4	468239 112188

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Potential for Ground Dissolution Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A10NE (NW)	0	4	467964 112421
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A11NW (E)	0	4	468285 112190
	Potential for Ground Dissolution Stability Hazards Hazard Potential: High Source: British Geological Survey, National Geoscience Information Service	A10NW (W)	123	4	467809 112302
	Potential for Ground Dissolution Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A14SW (NW)	130	4	467879 112527
	Potential for Landslide Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A10NE (NW)	0	4	467964 112421
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A11NW (SW)	0	4	468239 112188
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A11NW (N)	0	4	468263 112282
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A11NW (N)	1	4	468257 112362
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A11NW (E)	106	4	468526 112290
	Potential for Landslide Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A10NE (N)	120	4	468221 112482
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A10NE (NW)	0	4	467964 112421
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A11NW (SW)	0	4	468239 112188
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A10SE (S)	146	4	468185 111831
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A10NE (NW)	0	4	467964 112421
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A11NW (SW)	0	4	468239 112188
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A10NW (W)	123	4	467809 112302
	Radon Potential - Radon Protection Measures Protection Measure: No radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	A11NW (SW)	0	4	468239 112188
	Radon Potential - Radon Affected Areas Affected Area: The property is in a lower probability radon area, as less than 1% of homes are above the action level Source: British Geological Survey, National Geoscience Information Service	A11NW (SW)	0	4	468239 112188

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
54	**Contemporary Trade Directory Entries** Name: Universal Cleaners Location: 6, Curlew Gardens, Waterlooville, Hampshire, PO8 9UD Classification: Commercial Cleaning Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A11SE (SE)	131	-	468673 111962
55	**Contemporary Trade Directory Entries** Name: Mah Clearances Location: 41, Hobby Close, Waterlooville, Hampshire, PO8 9AY Classification: Waste Disposal Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A11SW (S)	159	-	468229 111889
56	**Contemporary Trade Directory Entries** Name: Martin Prior Location: 1, Dove Close, Waterlooville, Hampshire, PO8 9UF Classification: Cabinet Makers **Status: Active** Positional Accuracy: Automatically positioned to the address	A7NE (SE)	162	-	468598 111792
57	**Contemporary Trade Directory Entries** Name: Homemaids Location: 32, Renown Gardens, Waterlooville, Hampshire, PO8 9QP Classification: Cleaning Services - Domestic **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A11SE (E)	199	-	468717 112058
58	**Contemporary Trade Directory Entries** Name: Harley Clean Location: 17, Merlin Close, Waterlooville, Hampshire, PO8 9AZ Classification: Cleaning Services - Domestic **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A11SW (S)	211	-	468254 111838
59	**Contemporary Trade Directory Entries** Name: Hampshire Installations Ltd Location: 19, Hobby Close, WATERLOOVILLE, Hampshire, PO8 9AY Classification: Air Conditioning & Refrigeration Contractors **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A10SE (S)	214	-	468196 111838
60	**Contemporary Trade Directory Entries** Name: Hampshire Woodworm Location: 34, Linnet Close, Waterlooville, Hampshire, PO8 9UY Classification: Woodworm Control **Status: Active** Positional Accuracy: Automatically positioned to the address	A6NE (S)	272	-	468108 111803
61	**Contemporary Trade Directory Entries** Name: Anchor Service Station Location: 325, Milton Road, Cowplain, Waterlooville, Hampshire, PO8 8LH Classification: Petrol Filling Stations **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A11SE (SE)	284	-	468825 111932
62	**Contemporary Trade Directory Entries** Name: Neil Gunner Location: 5, Kingfisher Close, Waterlooville, Hampshire, PO8 9XD Classification: Engineers - General **Status: Active** Positional Accuracy: Automatically positioned to the address	A6NE (S)	345	-	468133 111719
63	**Contemporary Trade Directory Entries** Name: Portsmouth Metal Recycling Ltd Location: 47, Magpie Walk, Waterlooville, Hampshire, PO8 9UZ Classification: Scrap Metal Merchants **Status: Active** Positional Accuracy: Automatically positioned to the address	A6NE (S)	435	-	468118 111630
64	**Contemporary Trade Directory Entries** Name: Cursor Designs Location: 8, Frogmore Lane, Waterlooville, Hampshire, PO8 9QQ Classification: Printed Circuit Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A12NW (E)	446	-	468906 112224
65	**Contemporary Trade Directory Entries** Name: Auto Tune Location: 30, Passingham Walk, Waterlooville, Hampshire, PO8 8JH Classification: Car Engine Tuning & Diagnostic Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A12SW (E)	607	-	469147 111907

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
66	**Contemporary Trade Directory Entries** Name: Advanced Power Clean Location: 17, Albretia Avenue, Waterlooville, Hampshire, PO8 8QS Classification: Carpet, Curtain & Upholstery Cleaners **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A6SE (S)	607	-	467983 111492
66	**Contemporary Trade Directory Entries** Name: D & B Pest Control Services Location: 24, Albretia Avenue, Waterlooville, Hampshire, PO8 8QS Classification: Pest & Vermin Control **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A6SE (S)	637	-	468004 111453
67	**Contemporary Trade Directory Entries** Name: K W E Ltd Location: 19, Yoells Lane, Waterlooville, Hampshire, PO8 9SG Classification: Classic Car Specialists **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A15SE (NE)	618	-	468788 112764
68	**Contemporary Trade Directory Entries** Name: Spelgraphics Location: 31, Albretia Avenue, Waterlooville, Hampshire, PO8 8QS Classification: Car Painters & Sprayers **Status: Active** Positional Accuracy: Automatically positioned to the address	A6SE (S)	638	-	468083 111429
69	**Contemporary Trade Directory Entries** Name: A L Motors Location: 2, Newbolt Close, Waterlooville, Hampshire, PO8 8SS Classification: Garage Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A7SW (S)	649	-	468261 111345
70	**Contemporary Trade Directory Entries** Name: Birdscarer Products & Net Supplies Ltd Location: 24, Lovedean Lane, Waterlooville, Hampshire, PO8 8HJ Classification: Pest & Vermin Control **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A12SW (E)	695	-	469236 111993
71	**Contemporary Trade Directory Entries** Name: South Coast Shutters Location: 11, Rose Hill, Waterlooville, Hampshire, PO8 9QU Classification: Roller Shutter Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A16SW (E)	704	-	469082 112513
72	**Contemporary Trade Directory Entries** Name: Atos Uk Ltd Location: A, 17, Longwood Avenue, Waterlooville, Hampshire, PO8 8HX Classification: Hydraulic Systems & Equipment Manufacturers **Status: Active** Positional Accuracy: Automatically positioned to the address	A8SW (SE)	706	-	469065 111483
73	**Contemporary Trade Directory Entries** Name: C W S Contract Cleaning Location: 43, Robin Gardens, Waterlooville, Hampshire, PO8 9XE Classification: Cleaning Services - Commercial **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A6NW (SW)	707	-	467684 111568
74	**Contemporary Trade Directory Entries** Name: K & D Autos Location: 231 Lovedean La, Waterlooville, Hampshire, PO8 9RX Classification: Garage Services **Status: Active** Positional Accuracy: Manually positioned to the road within the address or location	A15NW (N)	711	-	468399 113056
74	**Contemporary Trade Directory Entries** Name: Bryan Parfoot Location: 231 Lovedean La, Waterlooville, Hampshire, PO8 9RX Classification: Garage Services **Status: Active** Positional Accuracy: Manually positioned to the road within the address or location	A15NW (N)	712	-	468398 113057
74	**Contemporary Trade Directory Entries** Name: Ring & Bring Ltd Location: 231, Lovedean Lane, Waterlooville, Hampshire, PO8 9RX Classification: Car Breakers & Dismantlers **Status: Active** Positional Accuracy: Automatically positioned in the proximity of the address	A15NW (N)	713	-	468394 113059

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
74	**Contemporary Trade Directory Entries** Name: L Katterhorn & Partners Ltd Location: 231 Lovedean La, Waterlooville, Hampshire, PO8 9RX Classification: Asphalt & Coated Macadam Laying Contractors **Status: Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A15NW (N)	717	-	468398 113062
75	**Contemporary Trade Directory Entries** Name: Venntic Location: 10, Gladys Avenue, Cowplain, Waterlooville, Hampshire, PO8 8HT Classification: Carpet, Curtain & Upholstery Cleaners **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8NW (SE)	728	-	469154 111570
76	**Contemporary Trade Directory Entries** Name: Pro Clean Location: 8, Farmhouse Way, Waterlooville, Hampshire, PO8 9LF Classification: Carpet, Curtain & Upholstery Cleaners **Status: Active** Positional Accuracy: Automatically positioned to the address	A12NW (E)	738	-	469232 112226
77	**Contemporary Trade Directory Entries** Name: National Grid Co Plc Location: Broadway La, Lovedean, Waterlooville, Hampshire, PO8 0SJ Classification: Electricity Companies **Status: Active** Positional Accuracy: Manually positioned to the road within the address or location	A14NW (NW)	760	-	467772 113144
78	**Contemporary Trade Directory Entries** Name: D B Domestic Services Location: 6, Chaplains Avenue, Waterlooville, Hampshire, PO8 8QL Classification: Domestic Appliances - Servicing, Repairs & Parts **Status: Active** Positional Accuracy: Automatically positioned to the address	A6SW (SW)	779	-	467816 111380
79	**Contemporary Trade Directory Entries** Name: Established Plastics Location: 1, Dorrita Avenue, Waterlooville, Hampshire, PO8 8HU Classification: Plaster Manufacturers & Suppliers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8NW (SE)	810	-	469239 111551
80	**Contemporary Trade Directory Entries** Name: H F Bath & Sons Location: 118, Sutton Road, Waterlooville, Hampshire, PO8 8PT Classification: Road Haulage Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A6SW (SW)	816	-	467648 111454
81	**Contemporary Trade Directory Entries** Name: J G Autos Ltd Location: 251, Lovedean Lane, Waterlooville, Hampshire, PO8 9RX Classification: Garage Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A19SW (N)	832	-	468381 113183
81	**Contemporary Trade Directory Entries** Name: J M Autos Location: 251, Lovedean Lane, Waterlooville, Hampshire, PO8 9RX Classification: Car Body Repairs **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A19SW (N)	832	-	468381 113183
82	**Contemporary Trade Directory Entries** Name: Auto Barn Location: The Barn, 259, Lovedean Lane, Waterlooville, Hampshire, PO8 9RX Classification: Commercial Vehicle Servicing, Repairs, Parts & Accessories **Status: Active** Positional Accuracy: Automatically positioned to the address	A19SW (N)	862	-	468344 113219
82	**Contemporary Trade Directory Entries** Name: Country Caravans & Leisure Ltd Location: The Barn, 259, Lovedean Lane, Waterlooville, Hampshire, PO8 9RX Classification: Caravans - Servicing & Repairs **Status: Active** Positional Accuracy: Automatically positioned to the address	A19SW (N)	862	-	468344 113219
82	**Contemporary Trade Directory Entries** Name: Theme Garage Location: 251, Lovedean Lane, Waterlooville, Hampshire, PO8 9RX Classification: Garage Services **Status: Inactive** Positional Accuracy: Automatically positioned in the proximity of the address	A19SW (N)	864	-	468382 113215

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
83	**Contemporary Trade Directory Entries** Name: 1st 4 Mobile Mechanic F R M Autos Location: 11, Wheatsheaf Drive, Waterlooville, Hampshire, PO8 8PX Classification: Garage Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A6SW (SW)	878	-	467838 111258
84	**Contemporary Trade Directory Entries** Name: F J W Electrical Services Location: 149a, London Road, Cowplain, Waterlooville, Hampshire, PO8 8ER Classification: Domestic Appliances - Servicing, Repairs & Parts **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8SE (SE)	891	-	469278 111462
85	**Contemporary Trade Directory Entries** Name: Graffiti Removal (South) Ltd Location: 20, Summerhill Road, Waterlooville, Hampshire, PO8 8XE Classification: Graffiti Removers **Status: Active** Positional Accuracy: Automatically positioned to the address	A8SW (SE)	893	-	469052 111216
86	**Contemporary Trade Directory Entries** Name: Collison Motoring Services Ltd Location: 127-129, London Road, Cowplain, Waterlooville, Hampshire, PO8 8XJ Classification: Garage Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A8SW (SE)	895	-	469197 111346
86	**Contemporary Trade Directory Entries** Name: Collison Motoring Services Ltd Location: 127-129, London Road, Cowplain, Waterlooville, Hampshire, PO8 8XJ Classification: Garage Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8SW (SE)	895	-	469197 111346
86	**Contemporary Trade Directory Entries** Name: Westons Location: 127, London Road, Cowplain, Waterlooville, Hampshire, PO8 8XJ Classification: Petrol Filling Stations **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8SW (SE)	930	-	469234 111335
87	**Contemporary Trade Directory Entries** Name: P Rafferty Location: 31, Bulls Copse Lane, Waterlooville, Hampshire, PO8 9QX Classification: Asphalt & Coated Macadam Laying Contractors **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A12NE (E)	898	-	469292 112491
88	**Contemporary Trade Directory Entries** Name: United Carpet Cleaning Masters Location: 269a Lovedean La, Waterlooville, Hampshire, PO8 9RX Classification: Carpet, Curtain & Upholstery Cleaners **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A19SW (N)	927	-	468358 113282
89	**Contemporary Trade Directory Entries** Name: C J Location: 102a, London Road, Cowplain, Waterlooville, Hampshire, PO8 8EW Classification: Waste Disposal Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A8NE (SE)	930	-	469411 111633
90	**Contemporary Trade Directory Entries** Name: M M Caravans Location: 84, London Road, Cowplain, Waterlooville, Hampshire, PO8 8EW Classification: Caravan Dealers & Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8SE (SE)	937	-	469317 111436
90	**Contemporary Trade Directory Entries** Name: Cowplain Car Centre Location: 84, London Road, Cowplain, Waterlooville, Hampshire, PO8 8EW Classification: Car Dealers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8SE (SE)	942	-	469330 111448
91	**Contemporary Trade Directory Entries** Name: Electramech Ltd Location: 6, Glenwood Gardens, Waterlooville, Hampshire, PO8 8TN Classification: Industrial Engineers **Status: Active** Positional Accuracy: Automatically positioned to the address	A3NE (S)	944	-	468681 111007

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
91	**Contemporary Trade Directory Entries** Name: Super Bike Services Location: Silvester Rd, Waterlooville, Hampshire, PO8 8TL Classification: Motor Cycle Repairs **Status: Active** Positional Accuracy: Manually positioned to the road within the address or location	A3NE (S)	984	-	468681 110966
92	**Contemporary Trade Directory Entries** Name: Henley Plumbing & Heating Ltd Location: 44, Winkfield Row, Waterlooville, Hampshire, PO8 9TL Classification: Boilers - Servicing, Replacements & Repairs **Status: Active** Positional Accuracy: Automatically positioned to the address	A12NE (E)	948	-	469461 112198
93	**Contemporary Trade Directory Entries** Name: Reed'S Hardware Location: 109b, London Road, Cowplain, Waterlooville, Hampshire, PO8 8XJ Classification: Hardware **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8SW (SE)	970	-	469208 111248
93	**Contemporary Trade Directory Entries** Name: Safecoat Europe Ltd Location: Latchmore House,99-101 London Rd, Cowplain, Waterlooville, Hampshire, PO8 8XJ Classification: Safety Glazing **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A8SW (SE)	995	-	469202 111208
94	**Contemporary Trade Directory Entries** Name: Nationwide Cleaners (West Hampshire) Location: 6, Hartwood Gardens, Waterlooville, Hampshire, PO8 8RA Classification: Cleaning Services - Domestic **Status: Active** Positional Accuracy: Automatically positioned to the address	A3NW (S)	982	-	468492 110956
95	**Fuel Station Entries** Name: Anchor Service Station Location: 325 Milton Road, Cowplain, WATERLOOVILLE, Hampshire, PO8 8LH Brand: Bp Premises Type: Not Applicable **Status: Obsolete** Positional Accuracy: Automatically positioned to the address	A11SE (SE)	284	-	468825 111932
96	**Fuel Station Entries** Name: Westons Service Station Location: 127, London Road, Cowplain, Waterlooville, Hampshire, PO8 8XJ Brand: ESSO Premises Type: Petrol Station **Status: Open** Positional Accuracy: Automatically positioned to the address	A8SW (SE)	930	-	469234 111335
97	**Fuel Station Entries** Name: Cowplain Service Station Location: 84 London Road, Cowplain, WATERLOOVILLE, Hampshire, PO8 8EW Brand: Bp Premises Type: Not Applicable **Status: Obsolete** Positional Accuracy: Automatically positioned to the address	A8SE (SE)	942	-	469330 111448

Sensitive Land Use

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
98	**Local Nature Reserves** Name: Yeoll'S Copse Multiple Area: N Area (m2): 54823.06 Source: Natural England Designation Date: 28th March 2012	A15SE (NE)	660	7	468814 112797
99	**National Parks** Name: South Downs Multiple Area: N Area (m2): 1652679314.31 Source: Natural England **Status: Fully Designated - designated as a National Park** Designation Date: 2nd November 2009	A18SE (N)	802	7	468147 113193
100	**Nitrate Vulnerable Zones** Name: Not Supplied Description: Eutrophic Water Source: Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	A11NW (SW)	0	8	468239 112188
101	**Nitrate Vulnerable Zones** Name: Not Supplied Description: Groundwater Source: Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	A11NW (SW)	0	8	468239 112188

Agency & Hydrological	Version	Update Cycle
Contaminated Land Register Entries and Notices		
East Hampshire District Council - Environmental Health Department	April 2013	Annual Rolling Update
Havant Borough Council - Environmental Health Department	April 2013	Annual Rolling Update
Chichester District Council - Environmental Health Department	July 2013	Annual Rolling Update
Portsmouth City Council - Health and Trading Standards	October 2014	Annual Rolling Update
Winchester City Council - Environmental Health Department	September 2014	Annual Rolling Update
Discharge Consents		
Environment Agency - Southern Region	November 2014	Quarterly
Enforcement and Prohibition Notices		
Environment Agency - Southern Region	March 2013	As notified
Integrated Pollution Controls		
Environment Agency - Southern Region	October 2008	Not Applicable
Integrated Pollution Prevention And Control		
Environment Agency - Southern Region	November 2014	Quarterly
Local Authority Integrated Pollution Prevention And Control		
Winchester City Council - Environmental Health Department	April 2013	Annual Rolling Update
Portsmouth City Council - Environmental Health Department	August 2014	Annual Rolling Update
East Hampshire District Council - Environmental Health Department	March 2013	Annual Rolling Update
Havant Borough Council - Environmental Health Department	October 2012	Annual Rolling Update
Chichester District Council - Environmental Health Department	October 2014	Annual Rolling Update
Local Authority Pollution Prevention and Controls		
Winchester City Council - Environmental Health Department	April 2013	Annual Rolling Update
Portsmouth City Council - Environmental Health Department	August 2014	Annual Rolling Update
East Hampshire District Council - Environmental Health Department	March 2013	Annual Rolling Update
Havant Borough Council - Environmental Health Department	October 2012	Annual Rolling Update
Chichester District Council - Environmental Health Department	October 2014	Annual Rolling Update
Local Authority Pollution Prevention and Control Enforcements		
Winchester City Council - Environmental Health Department	April 2013	Annual Rolling Update
Portsmouth City Council - Environmental Health Department	August 2014	Annual Rolling Update
East Hampshire District Council - Environmental Health Department	March 2013	Annual Rolling Update
Havant Borough Council - Environmental Health Department	October 2012	Annual Rolling Update
Chichester District Council - Environmental Health Department	October 2014	Annual Rolling Update
Nearest Surface Water Feature		
Ordnance Survey	July 2012	Quarterly
Pollution Incidents to Controlled Waters		
Environment Agency - Southern Region	December 1999	Not Applicable
Prosecutions Relating to Authorised Processes		
Environment Agency - Southern Region	March 2013	As notified
Prosecutions Relating to Controlled Waters		
Environment Agency - Southern Region	March 2013	As notified
Registered Radioactive Substances		
Environment Agency - Southern Region	November 2014	Quarterly
River Quality		
Environment Agency - Head Office	November 2001	Not Applicable
River Quality Biology Sampling Points		
Environment Agency - Head Office	July 2012	Annually
River Quality Chemistry Sampling Points		
Environment Agency - Head Office	July 2012	Annually
Substantiated Pollution Incident Register		
Environment Agency - Southern Region - Hampshire and Isle of Wight Area Office	November 2014	Quarterly
Environment Agency - Southern Region - Solent and South Downs	November 2014	Quarterly
Environment Agency - Southern Region - Sussex Area	November 2014	Quarterly

Agency & Hydrological	Version	Update Cycle
Water Abstractions Environment Agency - Southern Region	October 2014	Quarterly
Water Industry Act Referrals Environment Agency - Southern Region	November 2014	Quarterly
Groundwater Vulnerability Environment Agency - Head Office	January 2011	Not Applicable
Drift Deposits Environment Agency - Head Office	January 1999	Not Applicable
Bedrock Aquifer Designations British Geological Survey - National Geoscience Information Service	October 2012	Annually
Superficial Aquifer Designations British Geological Survey - National Geoscience Information Service	October 2012	Annually
Source Protection Zones Environment Agency - Head Office	August 2014	Quarterly
Extreme Flooding from Rivers or Sea without Defences Environment Agency - Head Office	August 2014	Quarterly
Flooding from Rivers or Sea without Defences Environment Agency - Head Office	August 2014	Quarterly
Areas Benefiting from Flood Defences Environment Agency - Head Office	August 2014	Quarterly
Flood Water Storage Areas Environment Agency - Head Office	August 2014	Quarterly
Flood Defences Environment Agency - Head Office	August 2014	Quarterly
Detailed River Network Lines Environment Agency - Head Office	March 2012	Annually
Detailed River Network Offline Drainage Environment Agency - Head Office	March 2012	Annually

Data Currency

Waste	Version	Update Cycle
BGS Recorded Landfill Sites		
British Geological Survey - National Geoscience Information Service	June 1996	Not Applicable
Historical Landfill Sites		
Environment Agency - Southern Region - Hampshire and Isle of Wight Area Office	August 2014	Quarterly
Environment Agency - Southern Region - Solent and South Downs	August 2014	Quarterly
Environment Agency - Southern Region - Sussex Area	August 2014	Quarterly
Integrated Pollution Control Registered Waste Sites		
Environment Agency - Southern Region	October 2008	Not Applicable
Licensed Waste Management Facilities (Landfill Boundaries)		
Environment Agency - Southern Region - Hampshire and Isle of Wight Area Office	August 2014	Quarterly
Environment Agency - Southern Region - Solent and South Downs	August 2014	Quarterly
Environment Agency - Southern Region - Sussex Area	August 2014	Quarterly
Licensed Waste Management Facilities (Locations)		
Environment Agency - South East Region - Solent & South Downs Area	November 2014	Quarterly
Environment Agency - Southern Region - Hampshire and Isle of Wight Area Office	November 2014	Quarterly
Environment Agency - Southern Region - Solent and South Downs	November 2014	Quarterly
Environment Agency - Southern Region - Sussex Area	November 2014	Quarterly
Local Authority Landfill Coverage		
Chichester District Council - Environmental Health Department	May 2000	Not Applicable
East Hampshire District Council	May 2000	Not Applicable
Hampshire County Council - Minerals and Waste Planning	May 2000	Not Applicable
Havant Borough Council - Environmental Health Department	May 2000	Not Applicable
Portsmouth City Council - Environmental Health Department	May 2000	Not Applicable
West Sussex County Council - Environment & Development	May 2000	Not Applicable
Winchester City Council - Environmental Health Department	May 2000	Not Applicable
Local Authority Recorded Landfill Sites		
Chichester District Council - Environmental Health Department	May 2000	Not Applicable
East Hampshire District Council	May 2000	Not Applicable
Hampshire County Council - Minerals and Waste Planning	May 2000	Not Applicable
Havant Borough Council - Environmental Health Department	May 2000	Not Applicable
Portsmouth City Council - Environmental Health Department	May 2000	Not Applicable
West Sussex County Council - Environment & Development	May 2000	Not Applicable
Winchester City Council - Environmental Health Department	May 2000	Not Applicable
Registered Landfill Sites		
Environment Agency - Southern Region - Hampshire Area	March 2003	Not Applicable
Environment Agency - Southern Region - Sussex Area	March 2003	Not Applicable
Registered Waste Transfer Sites		
Environment Agency - Southern Region - Hampshire Area	March 2003	Not Applicable
Environment Agency - Southern Region - Sussex Area	March 2003	Not Applicable
Registered Waste Treatment or Disposal Sites		
Environment Agency - Southern Region - Hampshire Area	March 2003	Not Applicable
Environment Agency - Southern Region - Sussex Area	March 2003	Not Applicable

Hazardous Substances	Version	Update Cycle
Control of Major Accident Hazards Sites (COMAH)		
Health and Safety Executive	August 2014	Bi-Annually
Explosive Sites		
Health and Safety Executive	October 2014	Bi-Annually
Notification of Installations Handling Hazardous Substances (NIHHS)		
Health and Safety Executive	November 2000	Not Applicable
Planning Hazardous Substance Enforcements		
Havant Borough Council - Commercial Team	April 2013	Annual Rolling Update
Portsmouth City Council - Planning Office	August 2013	Annual Rolling Update
West Sussex County Council - Environment & Development	October 2006	Annual Rolling Update
Hampshire County Council - Minerals and Waste Planning	September 2013	Annual Rolling Update
Chichester District Council - Planning Department	September 2014	Annual Rolling Update
East Hampshire District Council	September 2014	Annual Rolling Update
Winchester City Council - Planning Department	September 2014	Annual Rolling Update
Planning Hazardous Substance Consents		
Havant Borough Council - Commercial Team	April 2013	Annual Rolling Update
Portsmouth City Council - Planning Office	August 2013	Annual Rolling Update
West Sussex County Council - Environment & Development	October 2006	Annual Rolling Update
Hampshire County Council - Minerals and Waste Planning	September 2013	Annual Rolling Update
Chichester District Council - Planning Department	September 2014	Annual Rolling Update
East Hampshire District Council	September 2014	Annual Rolling Update
Winchester City Council - Planning Department	September 2014	Annual Rolling Update

Data Currency

Geological	Version	Update Cycle
BGS 1:625,000 Solid Geology British Geological Survey - National Geoscience Information Service	August 1996	Not Applicable
BGS Estimated Soil Chemistry British Geological Survey - National Geoscience Information Service	January 2010	Annually
BGS Recorded Mineral Sites British Geological Survey - National Geoscience Information Service	October 2014	Bi-Annually
Brine Compensation Area Cheshire Brine Subsidence Compensation Board	August 2011	Not Applicable
Coal Mining Affected Areas The Coal Authority - Mining Report Service	December 2013	As notified
Mining Instability Ove Arup & Partners	October 2000	Not Applicable
Non Coal Mining Areas of Great Britain British Geological Survey - National Geoscience Information Service	July 2014	Not Applicable
Potential for Collapsible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2014	Annually
Potential for Compressible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2014	Annually
Potential for Ground Dissolution Stability Hazards British Geological Survey - National Geoscience Information Service	June 2014	Annually
Potential for Landslide Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2014	Annually
Potential for Running Sand Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2014	Annually
Potential for Shrinking or Swelling Clay Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2014	Annually
Radon Potential - Radon Affected Areas British Geological Survey - National Geoscience Information Service	July 2011	Annually
Radon Potential - Radon Protection Measures British Geological Survey - National Geoscience Information Service	July 2011	Annually
Industrial Land Use	**Version**	**Update Cycle**
Contemporary Trade Directory Entries Thomson Directories	August 2014	Quarterly
Fuel Station Entries Catalist Ltd - Experian	November 2014	Quarterly

Data Currency

Sensitive Land Use	Version	Update Cycle
Areas of Outstanding Natural Beauty Natural England	August 2014	Bi-Annually
Environmentally Sensitive Areas Natural England	August 2014	Annually
Forest Parks Forestry Commission	April 1997	Not Applicable
Local Nature Reserves Natural England	October 2014	Bi-Annually
Marine Nature Reserves Natural England	July 2013	Bi-Annually
National Nature Reserves Natural England	September 2014	Bi-Annually
National Parks Natural England	August 2014	Bi-Annually
Nitrate Sensitive Areas Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	February 2012	Not Applicable
Nitrate Vulnerable Zones Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	July 2014	Annually
Ramsar Sites Natural England	March 2014	Bi-Annually
Sites of Special Scientific Interest Natural England	September 2014	Bi-Annually
Special Areas of Conservation Natural England	March 2014	Bi-Annually
Special Protection Areas Natural England	September 2014	Bi-Annually

Data Suppliers

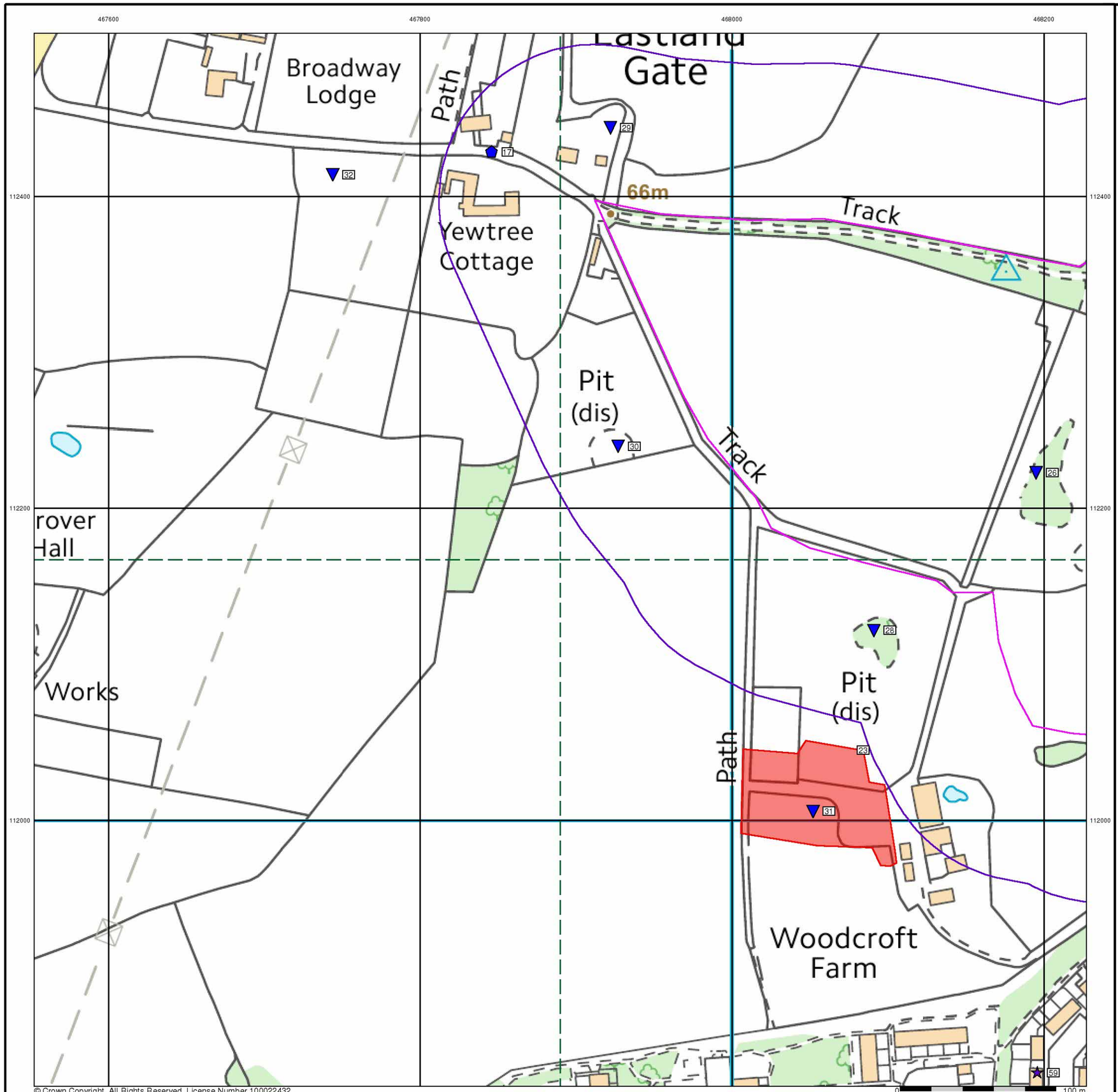
A selection of organisations who provide data within this report

Data Supplier	Data Supplier Logo
Ordnance Survey	
Environment Agency	
Scottish Environment Protection Agency	
The Coal Authority	
British Geological Survey	
Centre for Ecology and Hydrology	
Natural Resources Wales	
Scottish Natural Heritage	
Natural England	
Public Health England	
Ove Arup	
Peter Brett Associates	

Useful Contacts

Contact	Name and Address	Contact Details
2	**Environment Agency - National Customer Contact Centre (NCCC)** PO Box 544, Templeborough, Rotherham, S60 1BY	Telephone: 08708 506 506 Email: enquiries@environment-agency.gov.uk
3	**Havant Borough Council - Environmental Health Department** Public Service PLaza, Civic Centre Road, Havant, Hampshire, PO9 2AX	Telephone: 023 9244 6677 Email: env.services@havant.gov.uk Website: www.havant.gov.uk
4	**British Geological Survey - Enquiry Service** British Geological Survey, Kingsley Dunham Centre, Keyworth, Nottingham, Nottinghamshire, NG12 5GG	Telephone: 0115 936 3143 Fax: 0115 936 3276 Email: enquiries@bgs.ac.uk Website: www.bgs.ac.uk
5	**Landmark Information Group Limited** Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	Telephone: 0844 844 9952 Fax: 0844 844 9951 Email: customerservices@landmark.co.uk Website: www.landmarkinfo.co.uk
6	**Peter Brett Associates** Caversham Bridge House, Waterman Place, Reading, Berkshire, RG1 8DN	Telephone: 0118 950 0761 Fax: 0118 959 7498 Email: reading@pba.co.uk Website: www.pba.co.uk
7	**Natural England** Suite D, Unex House, Bourges Boulevard, Peterborough, Cambridgeshire, PE1 1NG	Telephone: 0845 600 3078 Email: enquiries@naturalengland.org.uk Website: www.naturalengland.org.uk
8	**Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)** Government Buildings, Otley Road, Lawnswood, Leeds, West Yorkshire, LS16 5QT	Telephone: 0113 2613333 Fax: 0113 230 0879
9	**East Hampshire District Council** Penns Place, Petersfield, Hampshire, GU31 4EX	Telephone: 01730 266551 Fax: 01730 267366 Website: www.easthants.gov.uk
10	**Hampshire County Council - Minerals and Waste Planning** Room 130, Ashburton Court West, The Castle, Winchester, Hampshire, SO23 8UD	Telephone: 01962 841841 Fax: 01962 847055 Website: www.hants.gov.uk
11	**Winchester City Council - Environmental Health Department** City Offices, Colebrook Street, Winchester, Hampshire, SO23 9LJ	Telephone: 01962 848519 Fax: 01962 849101 Website: www.winchester.gov.uk
-	**Public Health England - Radon Survey, Centre for Radiation, Chemical and Environmental Hazards** Chilton, Didcot, Oxfordshire, OX11 0RQ	Telephone: 01235 822622 Fax: 01235 833891 Email: radon@phe.gov.uk Website: www.ukradon.org
-	**Landmark Information Group Limited** Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	Telephone: 0844 844 9952 Fax: 0844 844 9951 Email: customerservices@landmarkinfo.co.uk Website: www.landmarkinfo.co.uk

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



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General

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

Agency and Hydrological

- Contaminated Land Register Entry or Notice (Location)
- Contaminated Land Register Entry or Notice
- Discharge Consent
- Enforcement or Prohibition Notice
- Integrated Pollution Control
- Integrated Pollution Prevention Control
- Local Authority Integrated Pollution Prevention and Control
- Local Authority Pollution Prevention and Control
- Local Authority Pollution Prevention and Control Enforcement
- Pollution Incident to Controlled Waters
- Prosecution Relating to Authorised Processes
- Prosecution Relating to Controlled Waters
- Registered Radioactive Substance
- River Network or Water Feature
- River Quality Sampling Point
- Substantiated Pollution Incident Register
- Water Abstraction
- Water Industry Act Referral

Waste

- BGS Recorded Landfill Site (Location)
- BGS Recorded Landfill Site
- EA Historic Landfill (Buffered Point)
- EA Historic Landfill (Polygon)
- Integrated Pollution Control Registered Waste Site
- Licensed Waste Management Facility (Landfill Boundary)
- Licensed Waste Management Facility (Location)
- Local Authority Recorded Landfill Site (Location)
- Local Authority Recorded Landfill Site
- Registered Landfill Site
- Registered Landfill Site (Location)
- Registered Landfill Site (Point Buffered to 100m)
- Registered Landfill Site (Point Buffered to 250m)
- Registered Waste Transfer Site (Location)
- Registered Waste Transfer Site
- Registered Waste Treatment or Disposal Site (Location)
- Registered Waste Treatment or Disposal Site

Geological

- BGS Recorded Mineral Site

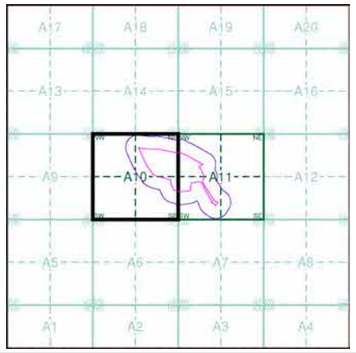
Hazardous Substances

- COMAH Site
- Explosive Site
- NIHHS Site
- Planning Hazardous Substance Consent
- Planning Hazardous Substance Enforcement

Industrial Land Use

- Contemporary Trade Directory Entry
- Fuel Station Entry

Site Sensitivity Map - Segment A10



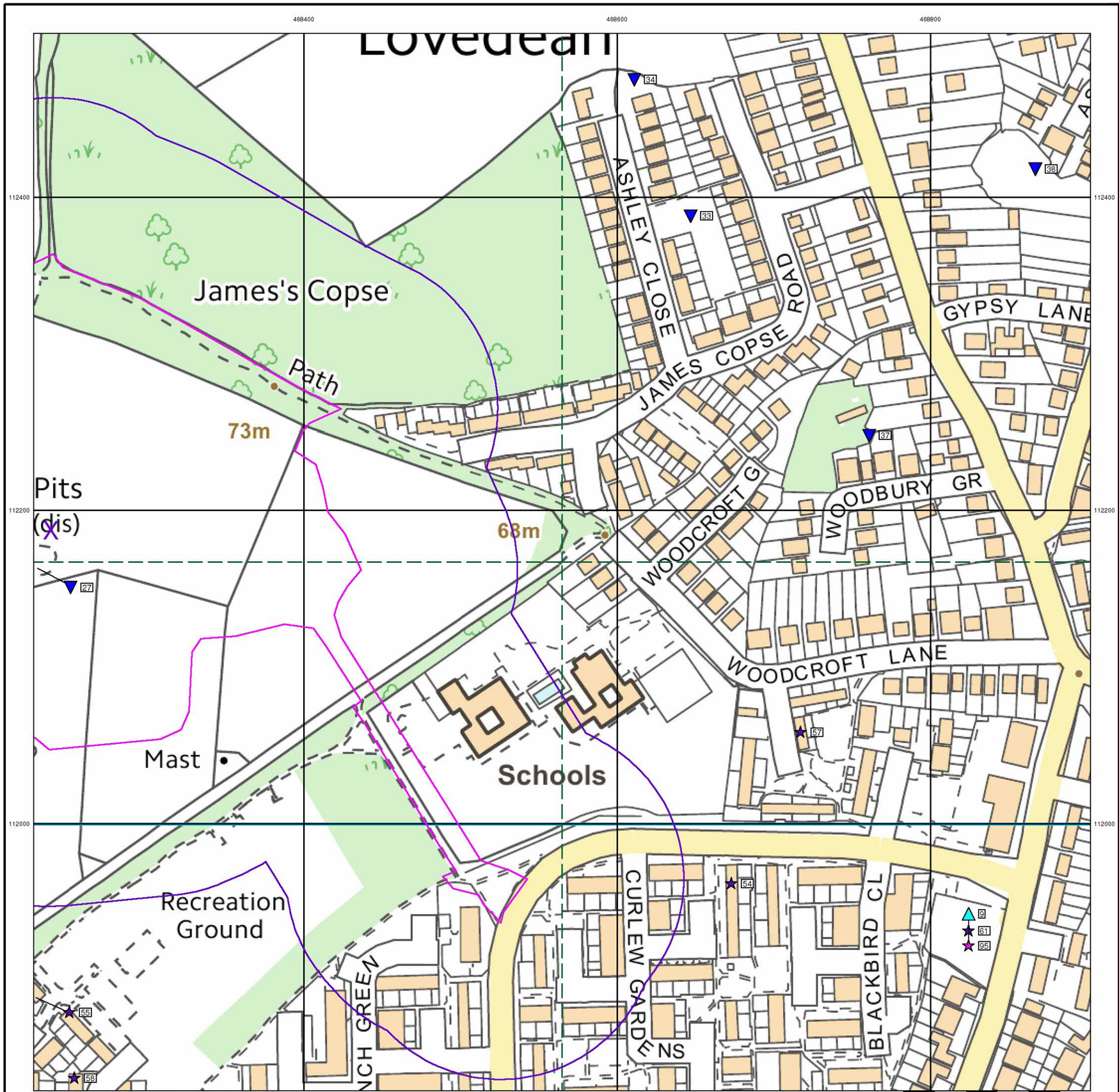
Order Details

Order Number:	62099871_1_1
Customer Ref:	21834
National Grid Reference:	468240, 112190
Slice:	A
Site Area (Ha):	10.8

Site Details

Woodcroft Farm, Woodcroft Lane, Waterlooville, PO8 9QA

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



pba peterbrett

General

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

Agency and Hydrological

- Contaminated Land Register Entry or Notice (Location)
- Contaminated Land Register Entry or Notice
- Discharge Consent
- Enforcement or Prohibition Notice
- Integrated Pollution Control
- Integrated Pollution Prevention Control
- Local Authority Integrated Pollution Prevention and Control
- Local Authority Pollution Prevention and Control
- Local Authority Pollution Prevention and Control Enforcement
- Pollution Incident to Controlled Waters
- Prosecution Relating to Authorised Processes
- Prosecution Relating to Controlled Waters
- Registered Radioactive Substance
- River Network or Water Feature
- River Quality Sampling Point
- Substantiated Pollution Incident Register
- Water Abstraction
- Water Industry Act Referral

Geological

- BGS Recorded Mineral Site

Industrial Land Use

- Contemporary Trade Directory Entry
- Fuel Station Entry

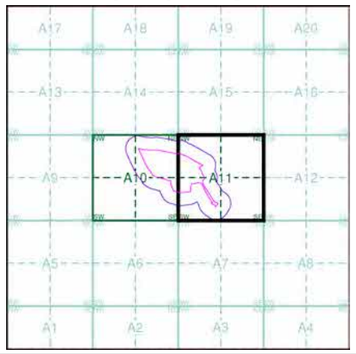
Waste

- BGS Recorded Landfill Site (Location)
- BGS Recorded Landfill Site
- EA Historic Landfill (Buffered Point)
- EA Historic Landfill (Polygon)
- Integrated Pollution Control Registered Waste Site
- Licensed Waste Management Facility (Landfill Boundary)
- Licensed Waste Management Facility (Location)
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- Local Authority Recorded Landfill Site
- Registered Landfill Site
- Registered Landfill Site (Location)
- Registered Landfill Site (Point Buffered to 100m)
- Registered Landfill Site (Point Buffered to 250m)
- Registered Waste Transfer Site (Location)
- Registered Waste Transfer Site
- Registered Waste Treatment or Disposal Site (Location)
- Registered Waste Treatment or Disposal Site

Hazardous Substances

- COMAH Site
- Explosive Site
- NIHHS Site
- Planning Hazardous Substance Consent
- Planning Hazardous Substance Enforcement

Site Sensitivity Map - Segment A11



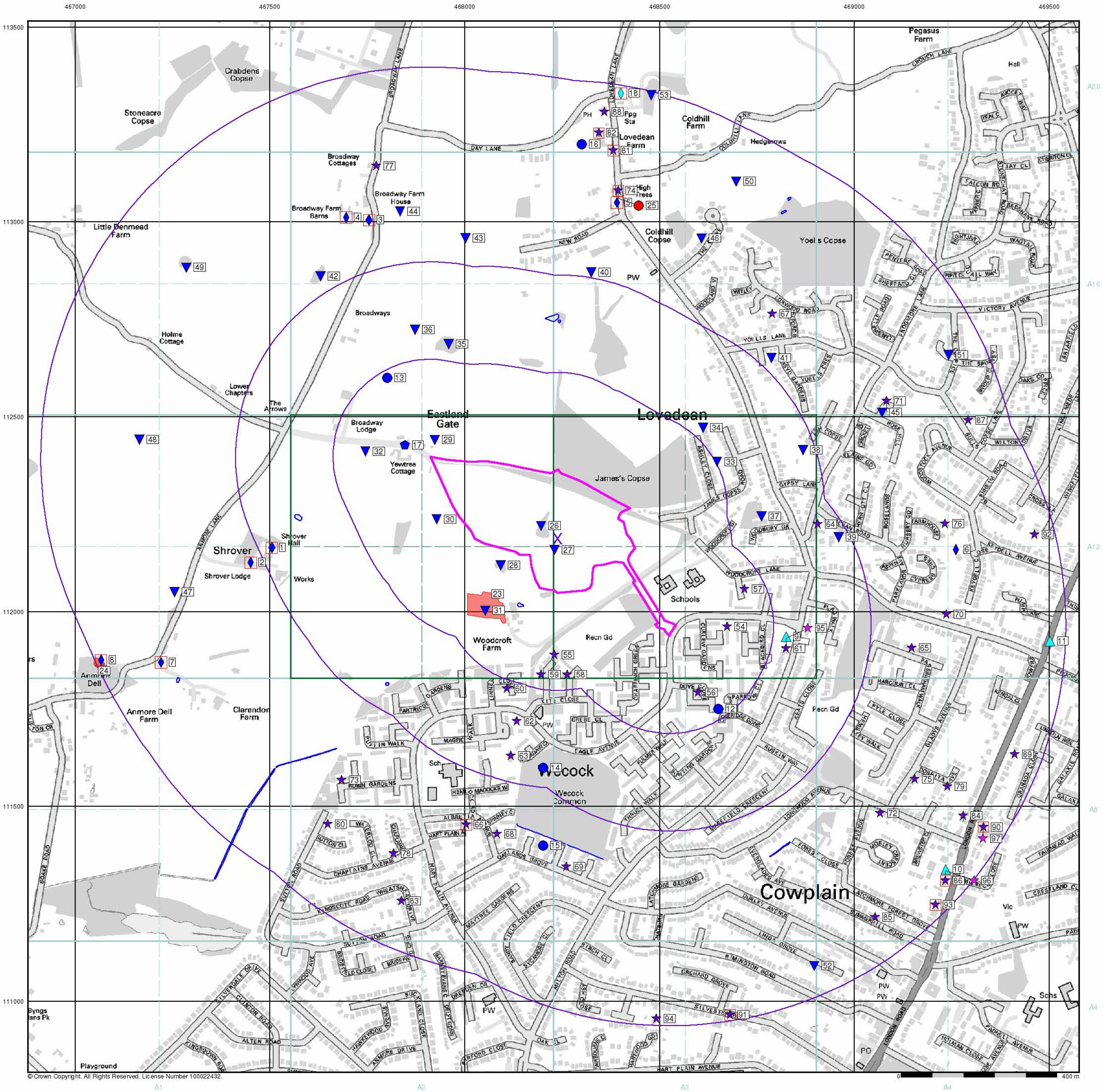
Order Details

Order Number:	62099871_1_1
Customer Ref:	21834
National Grid Reference:	468240, 112190
Slice:	A
Site Area (Ha):	10.8

Site Details

Woodcroft Farm, Woodcroft Lane, Waterlooville, PO8 9QA

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Web: www.envirocheck.co.uk



General

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

Agency and Hydrological

- Contaminated Land Register Entry or Notice (Location)
- Contaminated Land Register Entry or Notice
- Discharge Consent
- Enforcement or Prohibition Notice
- Integrated Pollution Control
- Integrated Pollution Prevention Control
- Local Authority Integrated Pollution Prevention and Control
- Local Authority Pollution Prevention and Control
- Local Authority Pollution Prevention and Control Enforcement
- Pollution Incident to Controlled Waters
- Prosecution Relating to Authorised Processes
- Prosecution Relating to Controlled Waters
- Registered Radioactive Substance
- River Network or Water Feature
- River Quality Sampling Point
- Substantiated Pollution Incident Register
- Water Abstraction
- Water Industry Act Referral

Geological

- BGS Recorded Mineral Site

Industrial Land Use

- Contemporary Trade Directory Entry
- Fuel Station Entry

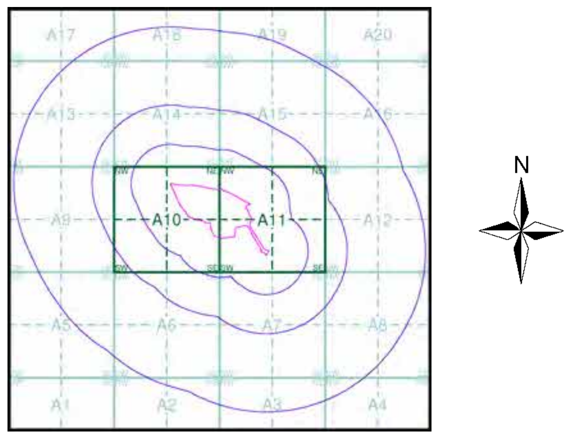
Waste

- BGS Recorded Landfill Site (Location)
- BGS Recorded Landfill Site
- EA Historic Landfill (Buffered Point)
- EA Historic Landfill (Polygon)
- Integrated Pollution Control Registered Waste Site
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- Registered Waste Transfer Site
- Registered Waste Treatment or Disposal Site (Location)
- Registered Waste Treatment or Disposal Site

Hazardous Substances

- COMAH Site
- Explosive Site
- NIHHS Site
- Planning Hazardous Substance Consent
- Planning Hazardous Substance Enforcement

Site Sensitivity Map - Slice A



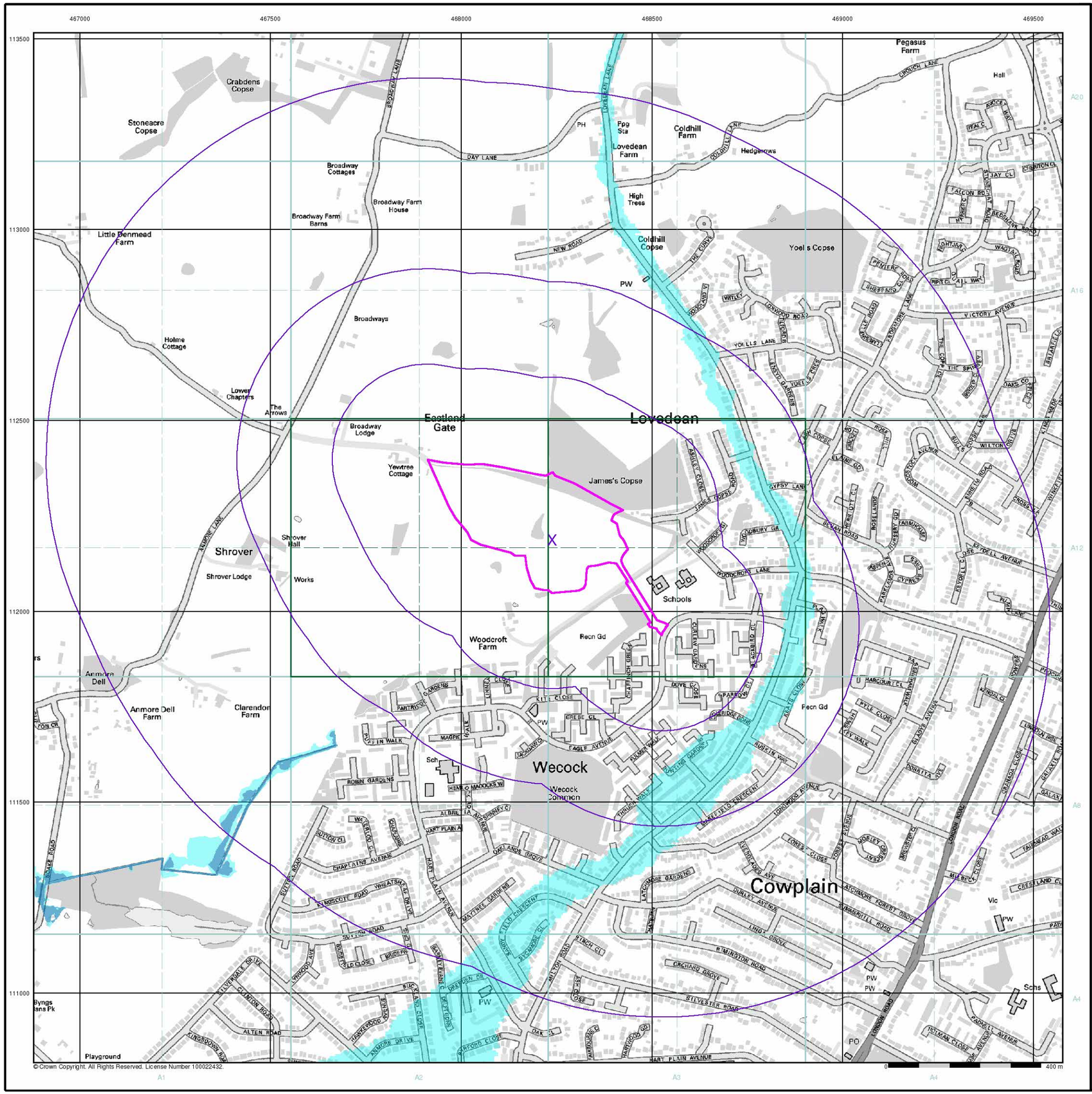
Order Details

Order Number:	62099871_1_1
Customer Ref:	21834
National Grid Reference:	468240, 112190
Slice:	A
Site Area (Ha):	10.8
Search Buffer (m):	1000

Site Details

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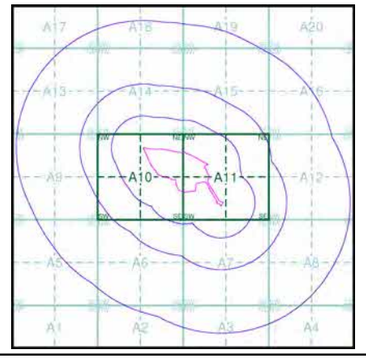
General

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

Agency and Hydrological (Flood)

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

Flood Map - Slice A



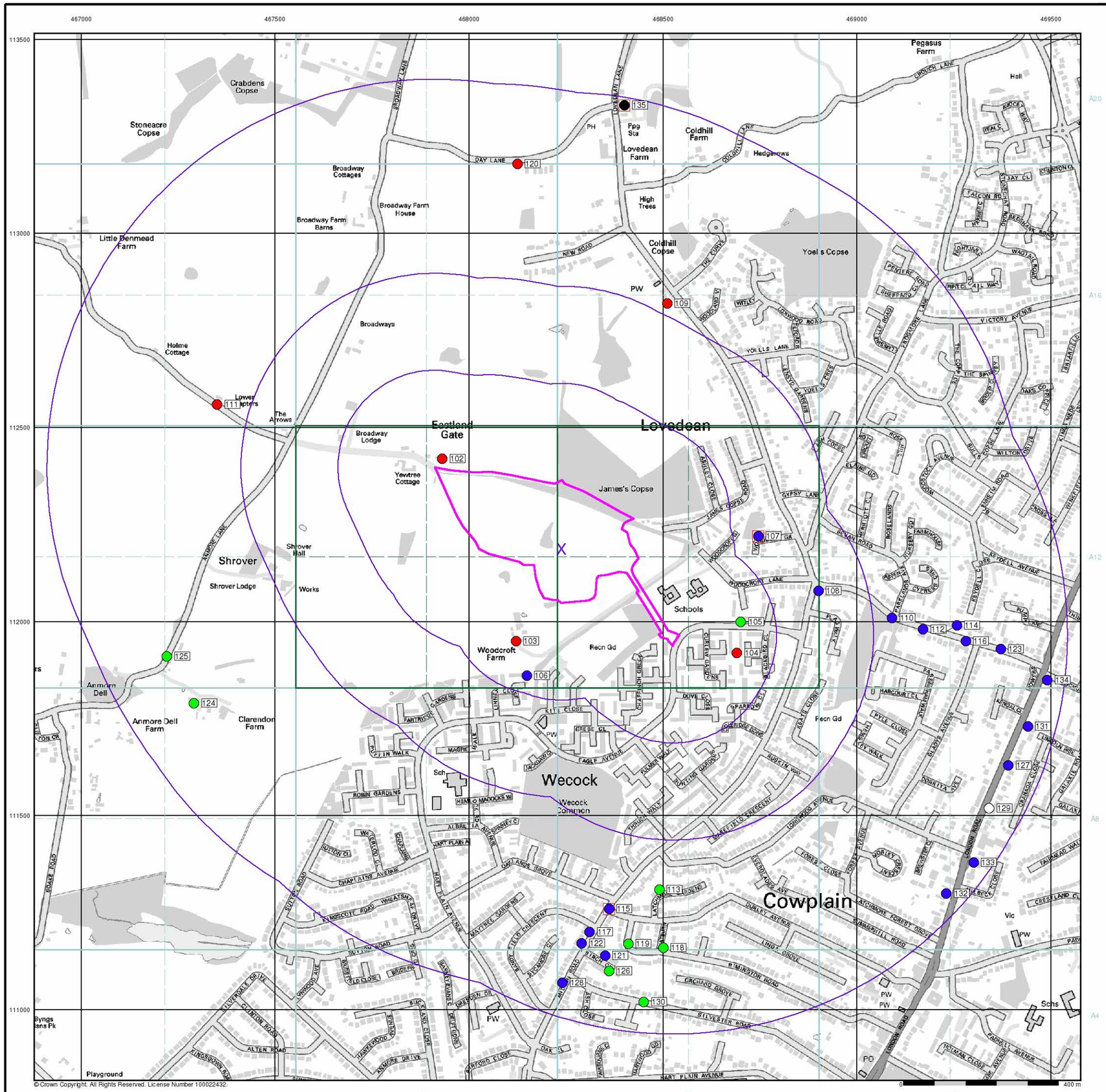
Order Details

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Customer Ref:	21834
National Grid Reference:	468240, 112190
Slice:	A
Site Area (Ha):	10.8
Search Buffer (m):	1000

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General

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

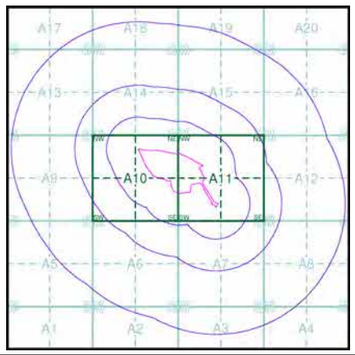
Agency and Hydrological (Boreholes)

- BGS Borehole Depth 0 - 10m
- BGS Borehole Depth 10 - 30m
- BGS Borehole Depth 30m +
- Confidential
- Other

For Borehole information please refer to the Borehole .csv file which accompanied this slice.

A copy of the BGS Borehole Ordering Form is available to download from the Support section of www.envirocheck.co.uk.

Borehole Map - Slice A



N

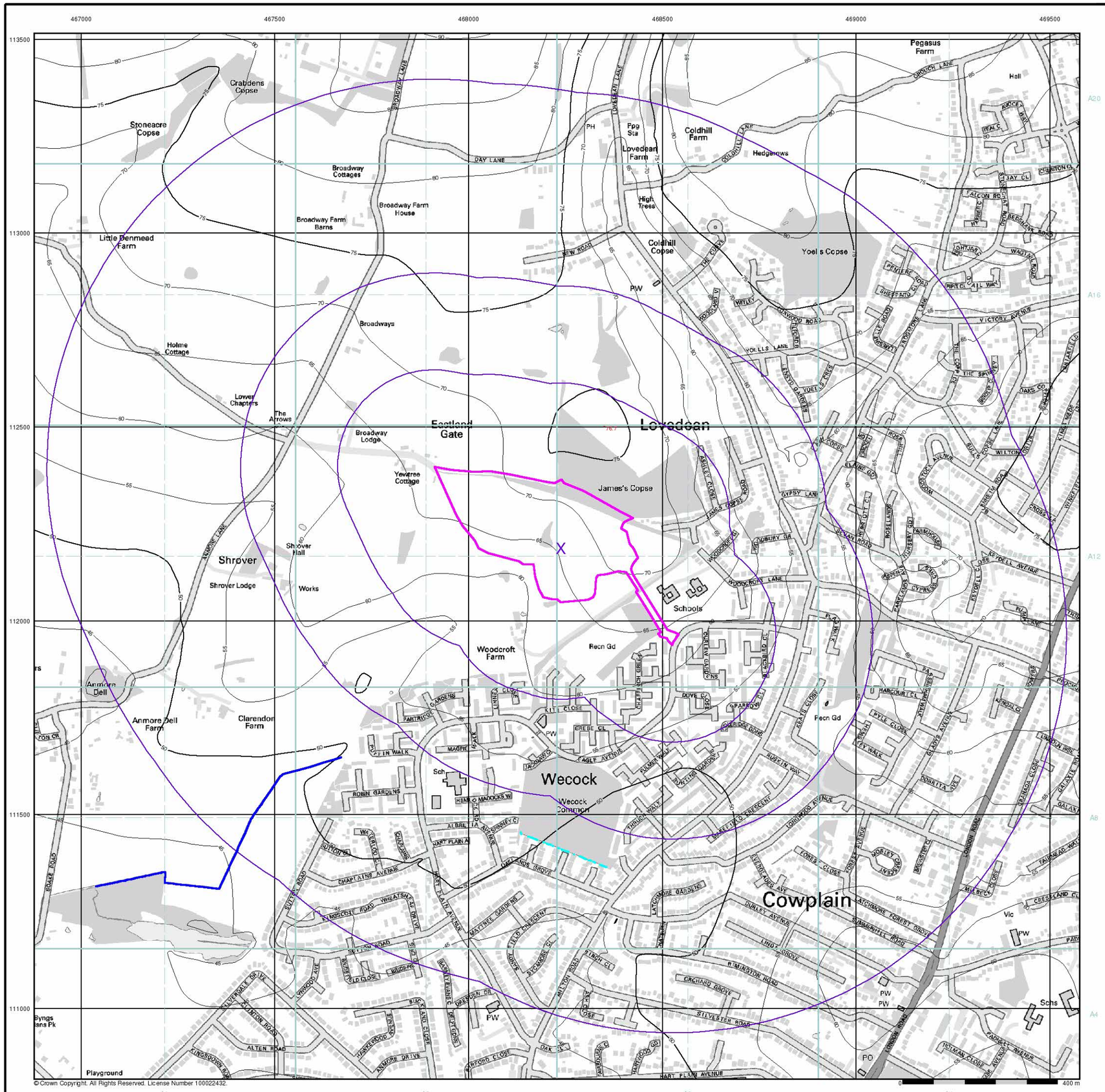
Order Details

Order Number:	62099871_1_1
Customer Ref:	21834
National Grid Reference:	468240, 112190
Slice:	A
Site Area (Ha):	10.8
Search Buffer (m):	1000

Site Details

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Web: www.envirocheck.co.uk



General

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

Detailed River Network Data

- Primary River
- Secondary River
- Tertiary River
- Canal
- Canal Tunnel
- Undefined River
- Lake/Reservoir
- Offline Drainage Feature
- Extended Culvert (greater than 50m)
- Underground River (inferred)
- Underground River (local knowledge)
- Downstream of High Water Mark
- Downstream of Seaward Extension
- Not assigned River feature

Contours (height in metres)

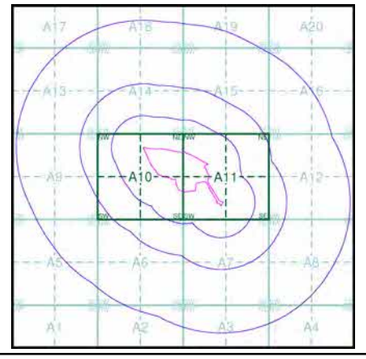
Standard Contour 105 100 95

Master Contour

Spot Height *167.3

- MLW Mean Low Water
- MHW Mean High Water

EA/NRW Detailed River Network Map - Slice A



Order Details

Order Number:	62099871_1_1
Customer Ref:	21834
National Grid Reference:	468240, 112190
Slice:	A
Site Area (Ha):	10.8
Search Buffer (m):	1000

Site Details

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General

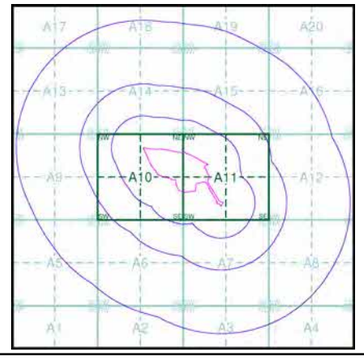
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Arsenic

Arsenic Concentrations mg/kg

- < 15
- 15 - 25
- 25 - 35
- 35 - 45
- 45 - 60
- 60 - 120
- > 120

Estimated Soil Chemistry Arsenic - Slice A



Order Details

Order Details:	62099871_1_1
Customer Ref:	21834
National Grid Reference:	468240, 112190
Slice:	A
Site Area (Ha):	10.8
Search Buffer (m):	1000

Site Details

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General

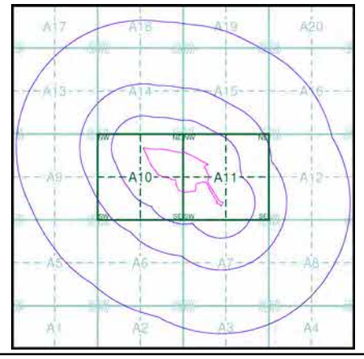
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Cadmium

Cadmium Concentrations mg/kg

< 1.8
1.8 - 2.2
2.2 - 3.0
> 3.0

Estimated Soil Chemistry Cadmium - Slice A



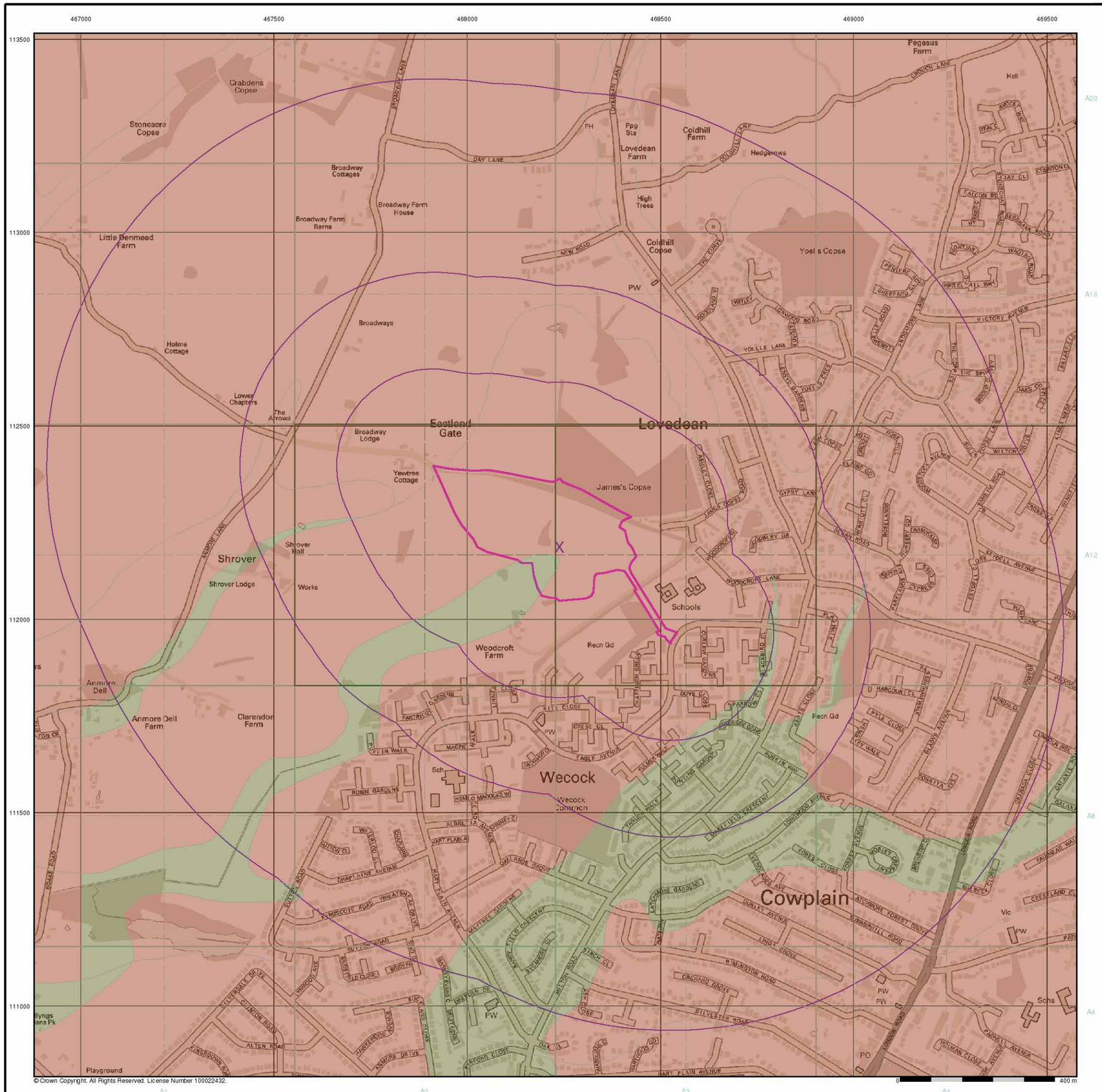
Order Details

Order Details:	62099871_1_1
Customer Ref:	21834
National Grid Reference:	468240, 112190
Slice:	A
Site Area (Ha):	10.8
Search Buffer (m):	1000

Site Details

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



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General

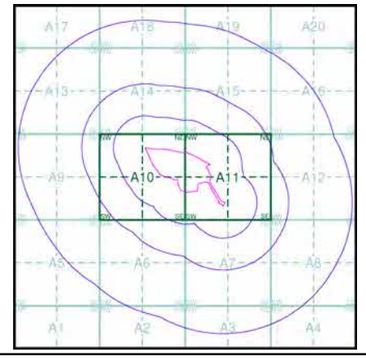
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Chromium

Chromium Concentrations mg/kg

- < 20
- 20 - 40
- 40 - 60
- 60 - 90
- 90 - 120
- 120 - 180
- > 180

Estimated Soil Chemistry Chromium - Slice A



Order Details

Order Details:	62099871_1_1
Customer Ref:	21834
National Grid Reference:	468240, 112190
Slice:	A
Site Area (Ha):	10.8
Search Buffer (m):	1000

Site Details

Woodcroft Farm, Woodcroft Lane, Waterlooville, PO8 9QA

Landmark Information Group

Tel: 0844 844 9952
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General

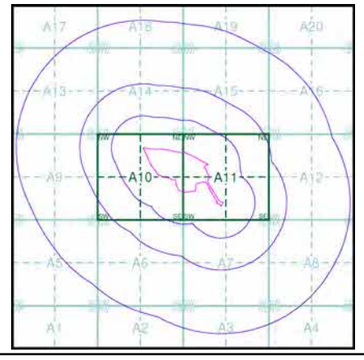
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Lead

Lead Concentrations mg/kg

- < 150
- 150 - 300
- 300 - 600
- 600 - 900
- > 900

Estimated Soil Chemistry Lead - Slice A



Order Details

Order Details:	62099871_1_1
Customer Ref:	21834
National Grid Reference:	468240, 112190
Slice:	A
Site Area (Ha):	10.8
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General

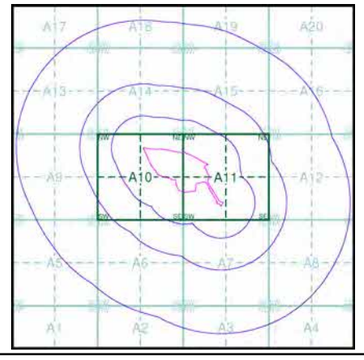
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Nickel

Nickel Concentrations mg/kg

< 15
15 - 30
30 - 45
45 - 60
60 - 80
80 - 100
> 100

Estimated Soil Chemistry Nickel - Slice A



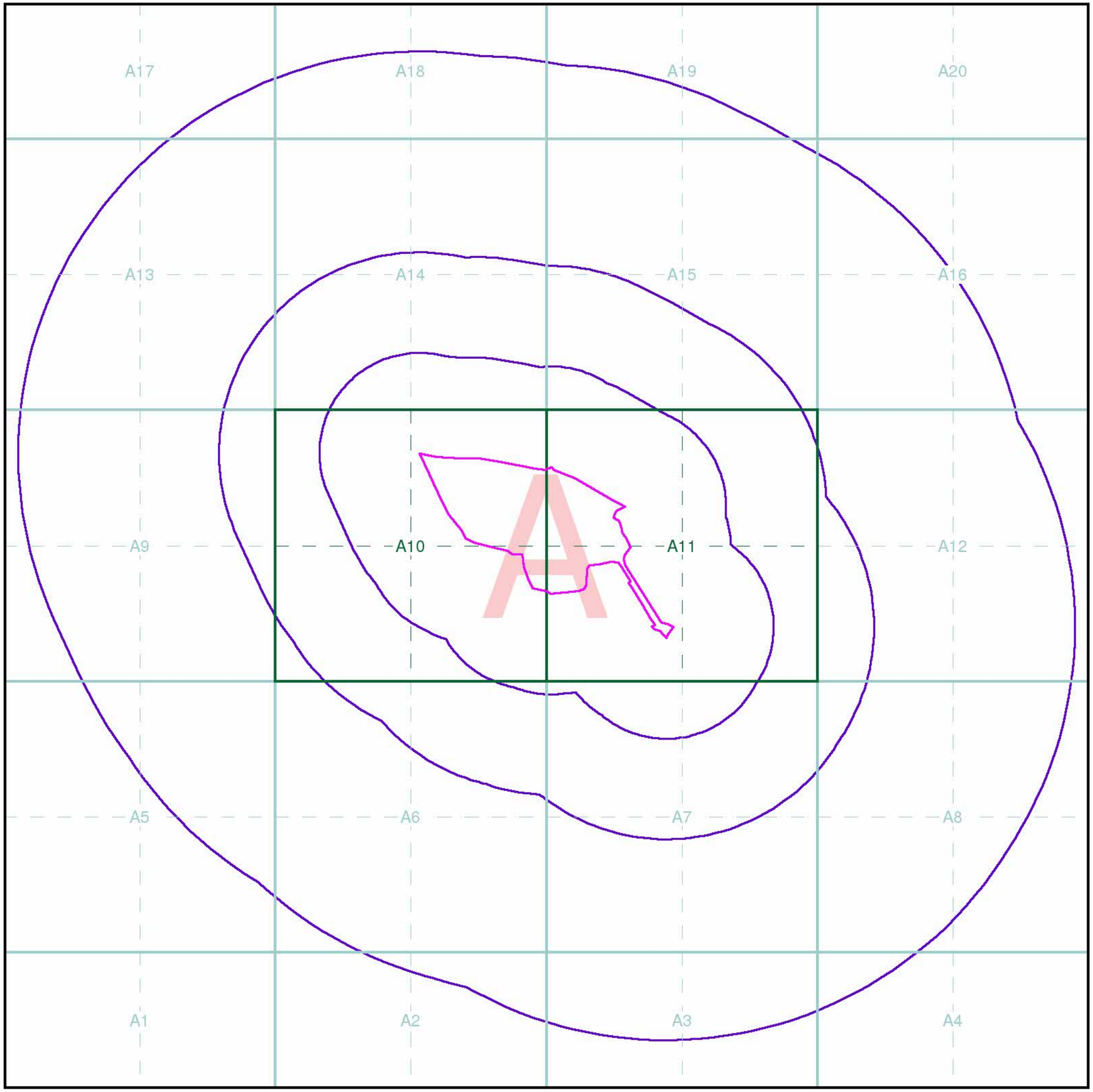
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Slice:	A
Site Area (Ha):	10.8
Search Buffer (m):	1000

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Web: www.envirocheck.co.uk



Index Map

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

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

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

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

A selection of organisations who provide data within this report:

Licensed Partner

Envirocheck reports are compiled from 136 different sources of data.

Client Details

Ms K Riley, Brett Consulting Ltd, Caversham Bridge House, Waterman Place, Reading, Berkshire, RG1 8DN

Order Details

Order Number:	62099871_1_1
Customer Ref:	21834
National Grid Reference:	468200, 112230
Site Area (Ha):	10.8
Search Buffer (m):	1000

Site Details

Woodcroft Farm, Woodcroft Lane, Waterlooville, PO8 9QA

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

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Web: www.envirocheck.co.uk

APPENDIX 5

Department of the Environment
CIVIL ENGINEERING LABORATORY Cardington

Investigation No. FGE/185

Appendix A

Sheet No. 2

37 M R Q's

LOVEDEAN
(HMS Mercury)

BOREHOLE LOG

SU61SE/12A
N.G.R. 687.120
1":316

Borehole No. 1

Ground Level 61·5 m O.D

Date 5th - 7th February 1975

Note:-
Standpipe inserted to 6m. Borehole grouted with bentonite/cement mix to depth of 1·0m

Description of Strata	Legend	Sample	Depth (m)	O.D. (m)
TOPSOIL: turf and organic CLAY with stones.	T		℄	61·5
CLAY: variegated in light brown and grey, with small stones (READING BEDS - Type C)			0·5	61·0
			0·8	60·7
			1·0 (approx)	60·5
CLAY: variegated in red, brown and grey. Nearly vertical curved slickensided fissure present in U100 at 2·0 - 2·5 m (READING BEDS - Type C)			1·3	60·2
			2·0	59·5
			2·5	59·0
			3·0	58·5
CLAY/SILT: sandy, variegated in yellow-brown, red and grey. 3·0 - 3·5m sandy SILT with scattered clay patches. (READING BEDS - Type CS)			3·5	58·0
			4·5	57·0
			5·0	56·5
CLAY: variably sandy, variegated in brown and grey, becoming dark grey in parts. Partings (usually thin) and patches of sand are present throughout. Ferruginous nodules occur between 6·0m and 6·5m (READING BEDS - Type CS)			5·5	56·0
			7·0	54·5
			7·5	54·0
			8·5	53·0
SAND: orange-brown, slightly clayey/silty, with small stones (READING BEDS - Type S)			8·7 (approx)	52·8
			9·0	52·5
			9·5	52·0
CLAY: sandy and gravelly (flints) grey/brown, with chalky streaks. (READING BEDS - Type CG)		85	9·7	51·8
			10·0	51·5

Remarks

Water levels in standpipe

8/2/75	dry	24/2/75	4·9m
9/2/75	5·5m	25/2/75	4·9m
10/2/75	5·4m	26/2/75	5·0m
11/2/75	5·1m	2/7/75	4·3m
12/2/75	5·3m		
13/2/75	3·2m		
14/2/75	3·2m		
15/2/75	3·1m		
16/2/75	3·2m		
17/2/75	1·3m		
18/2/75	4·8m		
19/2/75	4·7m		
20/2/75	5·0m		
21/2/75	4·9m		
22/2/75	5·0m		
23/2/75	5·0m		

℄ 4·3m

← Water entry 5·5m

contd.

British Geological Survey
NATURAL ENVIRONMENT RESEARCH COUNCIL
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[SU61SE BJ 12 A-G]

Department of the Environment
CIVIL ENGINEERING LABORATORY Cardington

Investigation No. FGE / 185

Appendix A

Sheet No. 3

37 M R Q's

LOVEDEAN
(HMS Mercury)

BOREHOLE LOG

SU 61 SE | 12 A
N.G.R. 687. 120 1":316

Borehole No. 1 cont'd

Ground Level

Date

Note:-

Description of Strata	Legend	Sample	Depth (m)	O.D. (m)	Remarks
CLAY: gravelly (flints), grey-brown, with pockets of orange-brown sand. (READING BEDS – Type C G)			10·0	51·5	
CHALK: remoulded with sand pockets (resembles GRADE V)		I	10·5 10·6	51·0 50·9	UPPER CHALK
CHALK: rubbly. Also 'pipe' containing clay and sand with flints. (resembles GRADE IV)			10·8 11·0	50·7 50·5	End of borehole

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Department of the Environment
CIVIL ENGINEERING LABORATORY Cardington

Investigation No. FGE / 185

Appendix A

Sheet No. 4

37 M R Q's

LOVEDEAN
(HMS Mercury)

BOREHOLE LOG

SU 61 SE / 12 B
N.G.R. 687.120 1":316

Borehole No. 2

Ground Level 60·7 m O.D

Date 8th - 10th February 1975

Note:-
Standpipe inserted to 6m. Borehole grouted with bentonite / cement mix to depth of 1·0m

Description of Strata	Legend	Sample	Depth (m)	O.D. (m)
TOPSOIL: turf and organic CLAY	T		0	60·7
CLAY: with stones, grey-green changing to brown and grey variegated at approx. 1·0m (READING BEDS - Type C)			0·5	60·2
			0·8	59·9
CLAY: sandy, mottled brown/yellow (READING BEDS - Type CS)			1·3	59·4
			1·4	59·3
			1·5	59·2
			2·0	58·7
CLAY: variegated in red, brown and grey, becoming dark purple/brown or dark grey/brown between 4·5m and 5·0m. Occasional silt layers and pockets of brown sand are present between 4·5m and 5·0m. Plant remains noted at 5·0m. (READING BEDS - Type C)			3·0	57·7
			3·5	57·2
			4·5	56·2
			5·0	55·7
CLAY: dark grey, possibly slightly organic. Gypsum crystals present at 6·5m. (READING BEDS - Type C)			5·5	55·2
			6·0	54·7
			6·5	54·2
CLAY: sandy, orange-brown/grey (READING BEDS - Type CS)			6·9	53·8
CLAY: sandy and gravelly (flints), Patches of gypsum crystals and traces of chalk are present. (READING BEDS - Type CG			7·5	53·2
CHALK: hard and indurated, with brown clay.			8·2	52·5
			8·5	52·2
CHALK: buff, resembling rubbly chalk in matrix of remoulded chalk Flints present (up to 120mm seen) (resembles GRADE V → GRADE IV)		56	8·7	52·0
			9·5	51·2
CHALK: buff, rubbly, with patches of brown clay - possibly a 'pipe'. (resembles GRADE IV		133	9·7	51·0
			10·0	50·7

Remarks

Water levels in standpipe

11/2/75	5·0m	25/2/75	3·8m
12/2/75	5·2m	26/2/75	3·9m
13/2/75	5·3m	2/7/75	4·1m
14/2/75	5·4m		
15/2/75	5·1m		
16/2/75	4·0m		
17/2/75	4·0m		
18/2/75	4·1m		
19/2/75	4·0m		
20/2/75	4·0m		
21/2/75	4·0m		
22/2/75	3·9m		
23/2/75	4·0m		
24/2/75	3·3m		

4·1m

Water Entry 5·0m

chisel employed

no flints in SPT sample

flints present in SPT sample

UPPER CHALK

End of borehole

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[SU61SE BJ 12 A-G]

Department of the Environment | Investigation No. FGE/185 | Appendix A | Sheet No. 5

CIVIL ENGINEERING LABORATORY Cardington

37 M R Q's

LOVEDEAN
(HMS Mercury)

BOREHOLE LOG

SU61SE/12c 1":316
N.G.R. 687.120

Borehole No. 3

Ground Level 61.0m O.D

Date 11th – 13th February 1975

Note:- Standpipe inserted to 6.0m. Borehole grouted with bentonite/cement mix to depth of 1.0m

Description of Strata	Legend	Sample	Depth (m)	O.D. (m)	Remarks
TOPSOIL: turf and organic sandy CLAY with flints.	T		℄	61.0	
			0.6 (approx)	60.4	
CLAY: variegated in brown and grey, with a few small flints. Patches of organic clay with roots etc. between 1.5m and 2.0m. (MADE GROUND)			0.8	60.2	
			1.3	59.7	
			2.0	59.0	
			2.1	58.9	
CLAY: variegated in yellow, orange-brown and grey. Thin sandy streaks/partings present at 4.0m. Large flint at 4.6 – 4.8m. Limit of made or disturbed ground marked by well-defined inclined surface in U100 sample at 2.1m. (READING BEDS – Type C)			2.5	58.5	
			3.5	57.5	
			4.0	57.0	
			4.8	56.2	
CLAY: sandy, brown/grey (READING BEDS – Type CS)			5.0	56.0	
			5.3 (approx)	55.7	
CLAY: dark grey-brown, probably slightly organic. Stones and concentration of gypsum present at 5.5 – 6.0m (READING BEDS – Type C)			5.5	55.5	
CLAY: sandy and slightly chalky, yellow-brown (READING BEDS – Type CS)			6.2	54.8	
CLAY: gravelly (flints), light brown/grey (READING BEDS – Type CG)			6.5	54.5	
CHALK: rubble consisting of hard and indurated chalk with some brown clay matrix.			7.2	53.8	
CHALK: buff/brown, remoulded, clayey, with flints and fragments of hard chalk. (resembles GRADE V)			8.0	53.0	
CHALK: rubbly, cream to buff. Joints 10mm wide. Patches of brown and grey clay between 9.0m and 9.5m (resembles GRADE IV			8.5	52.5	
			9.0	52.0	
			9.5	51.5	
CHALK: hard and rather brittle, blocky, cream, no flints present. (GRADE I)		147	9.7	51.3	
			10.0	51.0	End of borehole

Water levels in Standpipe

14/2/75	5.6m	2/7/75	4.6m
15/2/75	5.1m		
16/2/75	4.3m		
17/2/75	4.2m		
18/2/75	4.0m		
19/2/75	3.9m		
20/2/75	3.8m		
21/2/75	3.9m		
22/2/75	3.9m		
23/2/75	3.8m		
24/2/75	3.8m		
25/2/75	3.9m		
26/2/75	3.9m		

4.6m

Water entry 6.0m (slow seepage)

Chiselling not required

UPPER CHALK

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[SU61SE BJ 12 A-G]

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Investigation No. FGE / 185

Appendix A
Sheet No. 6

37 MRQ's

LOVEDEAN
(HMS Mercury)

BOREHOLE LOG

SU61SE 12 D 1":316
N.G.R. 687.120

Borehole No. 4
Ground Level 57·3 m O.D
Date 18th - 20th February 1975

Note:- Standpipe inserted to depth of 3·0m. Bottom of borehole grouted up to 3·0m Top of borehole grouted from surface to depth of 1·0m with bentonite/cement mix.

Description of Strata	Legend	Sample	Depth (m)	O.D. (m)	Remarks
			G	57·3	
TOPSOIL: turf and organic CLAY with stones.	T		0·4	56·9	
CLAY: grey/brown (READING BEDS - Type C)			0·8	56·5	
			1·0 (approx)	56·3	
SAND: light grey, slightly silty/clayey (READING BEDS - Type S)			1·3	56·0	
CLAY: variegated in red, brown, and grey. (READING BEDS - Type C)			2·5	54·8	
			3·0	54·3	
CLAY: gravelly (flints), variegated. (READING BEDS - Type CG)			3·4	53·9	
CHALK: hard and indurated, with flints.		*	4·0	53·3	* SPT attempted - no penetration
			4·1	53·2	chisel employed
			4·4	52·9	UPPER CHALK
CHALK: cream, rubbly. Joints quite closely spaced with brown staining. (resembles GRADE IV			4·5	52·8	
			5·0	52·3	End of borehole
Inclusions of grey clay occur in the chalk at 5·0m.					

Water levels in standpipe

21/2/75	dry	26/2/75	dry
22/2/75	dry	2/7/75	dry
23/2/75	dry		
24/2/75	dry		
25/2/75	dry		

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[SU61SE BJ 12 A-G]

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Appendix A

Sheet No. 7

37 M R Q's

LOVEDEAN
(HMS Mercury)

BOREHOLE LOG

SU61SE/12 E 1":316

N.G.R. 687.120

Borehole No. 5

Ground Level 59.1 m O.D

Date 14th - 16th February 1975

Note:- Standpipe inserted to 6m. Borehole grouted with bentonite/cement mix to depth of 1.0m.

Description of Strata	Legend	Sample	Depth (m)	O.D. (m)	Remarks
Turf			0.1	59.1 / 59.0	
CLAY: gravelly, variegated in brown and grey. (READING BEDS? - Type CG)					0.5m MADE GROUND? Water entry 0.4m (probably surface water)
CLAY: variegated in brown and grey. (READING BEDS - Type C)		4	1.0 / 1.1	58.1 / 58.0	
CLAY: sandy, variegated in grey, brown and red. Partings of brown/grey clayey sand are present. Flints present between 2.0m and 2.5m. (READING BEDS - Type CG)			2.0 / 2.5 / 3.0	57.1 / 56.6 / 56.1	
CLAY: variegated in red, brown and grey. (READING BEDS - Type C)			4.0 / 4.5	55.1 / 54.6	
CLAY: gravelly (flints), brown/grey. Flints seen up to 100mm size (READING BEDS - Type CG)			5.5	53.6	
CHALK: rubble consisting of hard chalk & flints with clay.			6.3 / 6.5	52.8 / 52.6	chiselling not required
CHALK: rubbly, with flints and patches of brown clay. (resembles GRADE IV		147	6.7	52.4	flints present in SPT sample
CHALK: rubbly to blocky, but with some joints open to 10mm and filled with remoulded chalk. Many flints are present including a large one at 9.8m (resembles GRADE III)		*	8.0 / 8.5 / 9.0 / 10.0	51.1 / 50.6 / 50.1 / 49.1	(approx) UPPER CHALK; SPT attempted - no penetration *(large flint in sample)
					End of borehole

Water levels in standpipe

17/2/75	0.2m		
18/2/75	0.2m		
19/2/75	0.2m		
20/2/75	0.2m		
21/2/75	0.2m		
22/2/75	0.2m		
23/2/75	0.2m		
24/2/75	0.2m		
25/2/75	0.2m		
26/2/75	0.2m		
2/7/75	0.5m		

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Appendix A
Sheet No. 8

37 MRQ's

LOVEDEAN
(HMS Mercury)

BOREHOLE LOG

SU 61SE 12 F 1":316
N.G.R. 687.120

Borehole No. 6
Ground Level 58·1 m O.D
Date 20th - 22nd February 1975

Note:- Standpipe inserted to depth of 8·5m. Bottom of borehole grouted up to 8·5m Top of borehole grouted from surface to depth of 1·0m with bentonite/cement mix.

Description of Strata	Legend	Sample	Depth (m)	O.D. (m)	Remarks
TOPSOIL: turf and organic CLAY	T		GL	58·1	Water levels in standpipe: 23/2/75 5·2 m; 24/2/75 5·0 m; 25/2/75 5·0 m; 26/2/75 4·9 m; 2/7/75 Dry (to 7·7m)
CLAY: brown/grey sandy with stones (MADE GROUND)			0·4	57·7	
SAND: yellow-brown, gravelly and clayey. (MADE GROUND)			0·6	57·5	
CLAY: sandy, variegated in grey, brown and red. (READING BEDS - Type CS)		16	1·0	57·1	
			1·1	57·0	
CLAY: variegated in red, yellow and grey. Dark red concretions present. (READING BEDS - Type C)			1·7 (approx)	56·4	
			2·0	56·1	
CLAY: sandy, brown/grey, with small stones. (READING BEDS - Type CS)			2·5	55·6	
			3·5	54·6	
CLAY: variegated in red, grey and brown. (READING BEDS - Type C)			4·0	54·1	
CLAY: gravelly (flints), brown/grey. (READING BEDS - Type CG)			4·2	53·9	
			4·5	53·6	
CHALK: hard and indurated, with some brown clay. Possibly rubbly below 4·7m		*	4·7	53·4	* SPT attempted no penetration chiselling not required.
			5·2	52·9	
CHALK: cream, rubbly, with patches of buff/brown clay and remoulded chalk below 6·0m. Frequent flints present. (resembles GRADE IV)			5·5	52·6	
			6·0	52·1	
			7·0 (approx)	51·1	UPPER CHALK
CHALK: cream, rubbly to blocky with flints. Joints about 60 mm apart. (resembles GRADE III		45	7·2	50·9	no flints present in SPT sample ← Water Entry 7·5m
			8·5	49·6	
			9·0	49·1	
			10·0	48·1	End of borehole

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Appendix A

Sheet No. 9

37 MRQ's

LOVEDEAN
(HMS Mercury)

BOREHOLE LOG

SU61SE 12 F 1":316
N.G.R. 687 . 120

Borehole No. G contd

Ground Level

Date

Note:-

Description of Strata	Legend	Sample	Depth (m)	O.D. (m)	Remarks
CHALK: cream, blocky with a few flints. (resembles GRADE III)		51	10·0	48·1	UPPER CHALK (contd.)
			10·2	47·9	
			10·5	47·6	End of borehole

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[SU61SE BJ 12 A-G]

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Investigation No. FGE/185

Sheet No. 10

37 M R Q's

LOVEDEAN
(HMS Mercury)

BOREHOLE LOG

SU61SE 12 A-G 1":316
N.G.R. 687.120

Borehole No. 7

Ground Level 55.9 m O.D.

Date 17th - 18th February 1975

Note:- Standpipe inserted to 6m. Borehole grouted with bentonite / cement mix to depth of 1.5m.

Description of Strata	Legend	Sample	Depth (m)	O.D. (m)	Remarks
			0	55.9	
TOPSOIL : turf and grey CLAY with stones	T		0.4	55.5	
CLAY : variegated in red, brown and yellow. (READING BEDS - Type C)		I	0.8	55.1	
			1.3	54.6	
			1.8	54.1	
CHALK : remoulded and mixed with brown clay. Frequent flints including large ones (resembles GRADE V)		125	2.2	53.7	flints present in S.P.T. sample
			2.7	53.2	(approx)
CHALK : buff to cream, rubbly, with brown staining. Flints present. Appears softened between 3.5m and 4.5m (resembles GRADE IV)		I	3.0	52.9	
			3.5	52.4	UPPER CHALK
			4.5	51.4	
CHALK : cream, rubbly to blocky, with flints. Appears softened between 5.0m and 5.5m. (resembles GRADE III		I	5.0	50.9	
			6.0	49.9	
CHALK : cream, blocky, but some brown-staining is present. (resembles GRADE II		113	6.2	49.7	no flints in S.P.T sample
			6.5	49.4	End of borehole
			10.0		

Water levels in standpipe			
19/2/75	dry		
20/2/75	dry		
21/2/75	dry		
22/2/75	dry		
23/2/75	dry		
24/2/75	dry		
25/2/75	dry		
26/2/75	dry		
2/7/75	dry		

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[SU61SE BJ 12 A-G]

RECORD OF WELL (SHAFT OR BORE)

SU 61/37
For Survey use only
N.....

316/267
Licence No.....

EXACT SITE OF WELL

At Woodcroft Farm
SU 6812 1195

Town or Village Cobbsington Comptons

County Hants Six-inch quarter sheet 68 SW/W

For Observation well Portsmouth Water Co. State whether owner, tenant, builder, contractor, consultant, etc.:—

Address (if different from above).....

Level of ground surface above sea-level (O.D.) 198·78* ft. If well-top is not at ground level, state how far { above; below; .....ft.

SHAFT 104·56 ft.; diameter.....ft.; Full details of headings (dimensions and directions)

BORE.....ft.; diameter of bore: at top.....ins.; at bottom.....ins.

Full details of permanent lining tubes (position, length, diameter, plain, slotted etc.).....

TEST CONDITIONS

Water struck at depths of.....ft. below well-top.

Rest level of water.....ft. above / below well-top. Suction at.....ft. Yield on.....hours' / days' test pumping at.....galls. per.....with depression to.....ft. below well-top.

Recovery to rest-level in.....mins. / hours Capacity of pump.....g.p.h. Date of measurements.....

NORMAL CONDITIONS

DESCRIPTION OF PERMANENT PUMPING EQUIPMENT:

Make and/or type.....Motive power.....

Capacity.....gallons per hour. Suction at.....ft.

Amount pumped.....galls. per day. Estimated consumption.....galls. per week.

Well made by.....Date of well.....

Information from.....

ADDITIONAL NOTES

ANALYSIS (please attach copy if available)

Sited by ⊙ on 6" Hants 68 SW/W. MH 6/9/65

Data Bank

Visited – Concrete cover over well, with access hole 8" square. Suitable for recorder installation. MH Dec. 65.

Automatic water level recorder installed 11:3:66 Kerr

Visited and levelled. ~~Dumpy~~ Well top = ground level = +198.41 O.D.(N)
Recorder datum + 198.26 O.D.(N)

Recorder removed 12.9.68. Access hole covered by concrete slab. M.I.B. 7.10.66 ASR.

LOG OF STRATA OVERLEAF.

GEOLOGICAL SURVEY AND MUSEUM, SOUTH KENSINGTON, LONDON, S.W.7.		Section 6.	Date Received	1" O.S. Map No.	Site marked on 1" Map	(use symbol) on 6" Map

(1527) D3574/W137533 12,000 8/54 JC&S Gp689

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[SU61SE BJ 114 .]

(*For Survey use only*) Geological Classification	NATURE OF STRATA If measurements start below ground surface, state how far ..	Thickness		Depth	
		Feet ..	Inches ..	Feet	Inches

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ADDN INFO.

Reference SU61/37

316/267

WDN No. SU6137
Southern WA (Hants) No. 552

Portsmouth Water Company
Observation Well.

Ref No: Portsmouth No. 28
Woodcroft Farm, Cowplain, Havant.

Well head at +60·588 m A·OD.

Monthly water levels available in Manual Water Level file

IGS recorder installed 11-MAR-1966, removed 12-SEP-1968

DMT 27-SEP-1979

Data Bank

CODE 18-77

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1953-6

SU61/37 316/267

STATION ..... WOODCROFT FARM .....

DATUM POINT ..... O.D. ..... 198·78' .....

Date and Time	Water Level Ft.		Rate G.P.H.	Notes	Date and Time	Water Level Ft.		Rate G.P.H.	Notes
4·2·53	105·	8	—	FT. TO O.D.	30·3·55	110·	0	—	FT. TO O.D.
4·3·53	107·	1			27·4·55	107·	0		
1·4·53	104·	0			25·5·55	105·	6		
29·4·53	102·	4			22·6·55	104·	4		
27·5·53	101·	5			20·7·55	102·	6		
17·6·53	100·	4			17·8·55	101·	3		
22·7·53	99·	9			14·9·55	100·	0		
19·8·53	99·	6			12·10·55	99·	8		
16·9·53	99·	3			9·11·55	106·	0		
21·10·53	99·	0			7·12·55	101·	0		
11·11·53	103·	2			4·1·56	107·	7		
9·12·53	99·	9			1·2·56	122·	8		
6·1·54	99·	8			29·2·56	113·	3		
10·2·54	106·	5			28·3·56	108·	4		
3·3·54	107·	5			25·4·56	105·	4		
31·3·54	106·	5			23·5·56	102·	8		
28·4·54	105·	0			20·6·56	100·	6		
2·6·54	103·	0			18·7·56	99·	9		
23·6·54	104·	0			15·8·56	99·	2		
21·7·54	101·	7			12·9·56	101·	1		
18·8·54	102·	0			10·10·56	99·	2		
15·9·54	100·	8			7·11·56	99·	1		
13·10·54	100·	8			5·12·56	96·	8		
10·11·54	107·	2			2·1·57	104·	0		
8·12·54	115·	7			30·1·57	105·	8		
5·1·55	119·	0							
2·2·55	119·	4							
2·3·55	115·	0							
23·3·55	110·	0							

Data Bank

Continued.

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Su61/37 316

STATION ....Woodcroft Farm.....

DATUM POINT ..... O.D. 198.78' 267

Date and Time	Water Level Ft.	In.	Rate G.P.H.	Notes	Date and Time	Water Level Ft.	In.	Rate G.P.H.	Notes
2·1·57	104·	0	—	Ft. To O.D.	28·1·59	116·	6		
30·1·57	105·	8			25·2·59	111·	1		
27·2·57	115·	0			25·3·59	108·	6		
27·3·57	110·	9			22·4·59	107·	5		
24·4·57	110·	3			20·5·59	104·	8		
22·5·57	106·	5			18·6·59	103·	0		
17·7·57	101·	5			15·7·59	101·	2		
14·8·57	99·	8			13·8·59	100·	4		
11·9·57	99·	6			10·9·59	99·	5		
9·10·57	98·	6			7·10·59	99·	0		
6·11·57	103·	8			4·11·59	99·	3		
4·12·57	99·	4			2·12·59	102·	6		
1·1·58	101·	9			30·12·59	121·	0		
29·1·58	110·	2			27·1·60	124·	0		
26·2·58	—				24·2·60	122·	0		
26·3·58	108·	5			23·3·60	120·	5		
23·4·58	106·	5			20·4·60	112·	5		
21·5·58	104·	0			18·5·60	108·	1		
18·6·58	102·	4			15·6·60	104·	5		
16·7·58	101·	0			13·7·60	102·	4		
13·8·58	99·	7			10·8·60	101·	5		
10·9·58	100·	3			7·9·60	103·	2		
8·10·58	108·	6			5·10·60	115·	4		
5·11·58	112·	1							
3·12·58	106·	9							
31·12·58	112·	5							

Data Bank

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[SU61SE BJ 114 .]

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NATURAL ENVIRONMENT RESEARCH COUNCIL

Station ....Woodcroft...Farm.....

Datum point ..... O.D. ...198.78..

.....

Observation well during test on ...../.....

Su61/37

316/267

Date and Time	Water Level ft	Rate G.P.H.	Notes	Date and Time	Water Level ft	Rate G.P.H.	Notes
2·11·60	131·3		R.W.L. to O.D.	20·2·63	106·0		R.W.L. to O.D.
30·11·60	139·1			20·3·63	114·8		
28·12·60	138·8			17·4·63	115·8		
26·1·61	134·5			15·5·63	112·6		
22·2·61	133·1			12·6·63	107·0		
22·3·61	123·5			10·7·63	104·5		
19·4·61	115·8			7·8·63	102·1		
17·5·61	113·5						
14·6·61	109·4						
12·7·61	106·1						
9·8·61	103·7						
6·9·61	101·8						
4·10·61	100·6						
1·11·61	100·1						
29·11·61	100·0						
27·12·61	101·7						
24·1·62	117·8						
21·2·62	107·7						
21·3·62	106·2						
18·4·62	105·5						
16·5·62	103·0						
13·6·62	101·7						
11·7·62	100·4						
8·8·62	100·2						
5·9·62	99·4						
3·10·62	101·3						
31·10·62	99·2						
28·11·62	103·3						

JW

Data Bank

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[SU61SE BJ 114.]

Station ....Woodcroft...Farm.....

Datum point ..... O.D. ...198.78..

.....

Observation well during test on ...✓.....

SU61/37

316/267

Date and Time	Water Level ft	Rate G.P.H.	Notes	Date and Time	Water Level ft	Rate G.P.H.	Notes
2·11·60	131·3		R.W.L. to O.D.	20·2·63	106·0		R.W.L. to O.D.
30·11·60	139·1			20·3·63	114·8		
28·12·60	138·8			17·4·63	115·8		
26·1·61	134·5			15·5·63	112·6		
22·2·61	133·1			12·6·63	107·0		
22·3·61	123·5			10·7·63	104·5		
19·4·61	115·8			7·8·63	102·1		
17·5·61	113·5						
14·6·61	109·4						
12·7·61	106·1						
9·8·61	103·7						
6·9·61	101·8						
4·10·61	100·6						
1·11·61	100·1						
29·11·61	100·0						
27·12·61	101·7						
24·1·62	117·8						
21·2·62	107·7						
21·3·62	106·2						
18·4·62	105·5						
16·5·62	103·0						
13·6·62	101·7						
11·7·62	100·4						
8·8·62	100·2						
5·9·62	99·4						
3·10·62	101·3						
31·10·62	99·2						
28·11·62	103·3						

JW

Data Bank

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Contd. WORKING SHEET 1967

I.G.S. REF. NO. 316/267

SITE. WOODCROFT. LOVEDEAN

(O.D) + 198.26

Date	R.W.L. at beginning of trace	Rising trace	Falling trace	Weekly W.L. (below datum)	Weekly W.L. (O.D.)	Weekly W.L. to +140 O.D.	Weekly W.L. to
2-7	94.16		1.00	95.16	103.10	-36.90	
9			1.55	95.71	102.55	-37.45	
16			2.25	96.41	101.85	-38.15	
23	96.77		0.30	97.07	101.19	-38.81	
30			0.80	97.57	100.69	-39.31	
6-8			1.20	97.97	100.29	-39.71	
13			1.60	98.37	99.89	-40.11	
20	98.40		0.20	98.60	99.66	-40.34	
27			0.55	98.95	99.31	-40.69	
3-9			0.85	99.25	99.01	-40.99	
10			1.25	99.65	98.61	-41.39	
17	99.80		0.10	99.90	98.36	-41.64	
24			0.25	100.05	98.21	-41.79	
1-10			0.25	100.05	98.21	-41.79	
8			0.30	100.10	98.16	-41.84	
15	99.34	1.65		97.69	100.57	-39.43	
22		5.10		94.24	104.02	-35.98	
29		8.30		91.04	107.22	-32.78	
5-11		17.60		91.74	106.52	-33.48	
12							
19							
26							
3-12	No visits made due to Foot & Mouth Outbreak						
10							
17							
24							
31							

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SU61/37

WORKING SHEET 1968

I.G.S. Ref. No. 316/267

Site WOODCROFT

Measuring point (O.D.) 198.26'

Date	R.W.L. at beginning of trace	Rising trace	Falling trace	Weekly W.L. (below datum)	Weekly W.L. (O.D.)	Weekly W.L. to +140 O.D.	Weekly W.L. to
7 - 1							
14	no visits made - due to foot & mouth outbreak						
21							
28							
4 - 2	89.97	0.00		89.97	108.29	-31.71	
11		1.40		88.57	109.69	-30.31	
18		2.30		87.67	110.59	-29.41	
25		0.45		89.52	108.74	-31.26	
3 - 3	90.10		0.45 E	90.55 E	107.71 E	-32.29 E	
10			1.30 E	91.40 E	106.86 E	-33.14 E	
17			2.20 E	92.30 E	105.96 E	-34.04 E	
24			3.05 E	93.15 E	105.11 E	-34.89 E	
31							
7 - 4							
14							
21							
28							
5 - 5							
12							
19							
26							
2 - 6							
9							
16							
23							
30							

Over .....

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Contd. WORKING SHEET 1968

Date	R.W.L. at beginning of trace	Rising trace	Falling trace	Weekly W.L. (below datum)	Weekly W.L. (O.D.)	Weekly W.L. to +140 O.D.	Weekly W.L. to
7 - 7							
14							
21							
28							
4 - 8							
11							
18							
25							
1 - 9							
8							
15							
22							
29							
6 - 10							
13							
20							
27							
3 - 11							
10							
17							
24							
1 - 12							
8							
15							
22							
29							

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SU 61/37

WORKING SHEET 1968

I.G.S. REF. NO. 316/267

SITE Woodcroft, Lovedean.

MEASURING POINT (O.D) 60.430 metres

Date	No. of drum revs.	Correction to trace datum	Trace datum	Rising trace	Falling trace	Weekly water level (below datum)
31 Mar.			28.502		0.12	28.622
7 Apr.					0.21	28.712
14					0.47	28.972
21				0.03		28.472
28			28.872		0.01	28.882
5 May				0.68		28.192
12				1.08		27.792
19				0.25		28.622
26			28.918	0.56		28.358
2 June					0.15	29.068
9					0.04	28.958
16					0.42	29.338
23			29.457		0.01	29.467
30	1	- 1.25		0.55		27.657
7 July				0.50		28.957
14	1	- 1.25		0.22		27.987
21			28.497		0.66	29.157
28					0.95	29.447
4 Aug.					1.11	29.607
11	1	+1.25			0.02	29.767
18			29.819		0.04	29.859
25					0.13	29.949
1 Sept.					0.19	30.009
8					0.29	30.109
15						
22		Recorder	Removed	12-9-68		
29						
6 Oct.						
13						
20						
27						
3 Nov.						
10						
17						
24						
1 Dec.						
8						
15						
22						
29						

Maximum recorded level ..... metres below datum. Date .....

Minimum recorded level ..... metres below datum. Date .....

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316/SU61/37
267

SOUTHERN WATER AUTORITY
formerly:

HRA Well no 552

RWL	+ 29.90 M	=	+ 98' OD	Oct 72
	+ 30.20 M	=	+ 99' OD	April 73
	Dry	Oct 73		

Inf^m HRA Report on Well Surveys Jan 75 LW.

Data Bank 8/78

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[SU61SE BJ 114 .]

NGRC

BOREHOLE RECORDS

ADJUSTMENT FORM

QUARTER SHEET SU61SE

BH REGISTRATION NUMBER 91 — 124

RECORDS ENTERED AND HELD BY WALLINGFORD

BH REGISTRATION NUMBER(S)

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[SU61SE BJ 114 .]

Geo-Environmental

APPENDIX B

Exploratory Hole Logs & In-situ Test Results




Well


Well


Well


Well


Well


Well


Well

Samples & In Situ Testing			Strata Details		
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend
0.15	ES1		72.40	0.20	
0.50	B1				
0.50	D1			(1.00)	
1.00	B2				
1.00	D2		71.40	1.20	
1.50	D3	PP=3kg/cm2		(0.50)	
			70.90	1.70	
2.00	D4	PP=3.5kg/cm2		(0.90)	
2.50	D5	PP=4kg/cm2	70.00	2.60	
3.00	D6	PP=4.2kg/cm2		(0.60)	
3.20	D7	PP=4.5kg/cm2	69.40	3.20	

Samples & In Situ Testing			Strata Details		
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend
			68.30	0.20	
0.50	D1	PP=3.3kg/cm2		(0.50)	
			67.80	0.70	
1.00	D2	PP=3kg/cm2		(0.70)	
			67.10	1.40	
1.50	D3	PP=3.2kg/cm2			
			66.90	1.60	

Samples & In Situ Testing			Strata Details		
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend
			67.05	0.20	
0.50	D1			(0.70)	
			66.35	0.90	
1.00	D2	PP=2.1kg/cm2			
				(0.80)	
1.50	D3	PP=2.6kg/cm2			
			65.55	1.70	
2.00	D4	PP=4kg/cm2			
2.50	D5	PP=4kg/cm2			
				(1.80)	
3.00	D6	PP=2.5kg/cm2			
3.50	D7	PP=3kg/cm2	63.75	3.50	

Samples & In Situ Testing			Strata Details		
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend
			66.35	0.20	
0.50	D1	PP=2.4kg/cm2		(0.90)	
1.00	D2	PP=1.9kg/cm2	65.45	1.10	
				(0.30)	
1.50	D3	PP=1.9kg/cm2	65.15	1.40	
2.00	D4	PP=2.3kg/cm2			
2.50	D5	PP=2kg/cm2		(2.10)	
3.00	D6	PP=2.2kg/cm2			
3.50	D7	PP=3.5kg/cm2	63.05	3.50	

Samples & In Situ Testing			Strata Details		
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend
			66.80	0.20	
		PP=2.8kg/cm2			
				(1.40)	
		PP=2.5kg/cm2			
		PP=2.6kg/cm2			
			65.40	1.60	
		PP=3kg/cm2			
				(1.20)	
		PP=2.6kg/cm2			
			64.20	2.80	
		PP=4.5kg/cm2		(0.40)	
		PP=3.2kg/cm2	63.80	3.20	

Samples & In Situ Testing			Strata Details		
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend
0.10	ES1		69.44	0.20	
0.50	D1	PP=2kg/cm2		(1.10)	
1.00	D2	PP=2.5kg/cm2	68.34	1.30	
1.50	D3	PP=3kg/cm2			
2.00	D4	PP=2.9kg/cm2		(2.00)	
2.50	D5	PP=3kg/cm2			
3.00	D6	PP=3.6kg/cm2			
3.30	D7	PP=4kg/cm2	66.34	3.30	

Samples & In Situ Testing			Strata Details		
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend
			70.50	0.20	
0.50	D1	PP=4kg/cm2		(0.60)	
			69.90	0.80	
1.00	D2	PP=2.9kg/cm2			
				(0.80)	
1.50	D3	PP=2.4kg/cm2			
			69.10	1.60	

Samples & In Situ Testing			Strata Details		
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend
			67.50	0.20	
0.50	D1	PP=2kg/cm2			
				(1.00)	
1.00	D2	PP=2.6kg/cm2			
			66.50	1.20	
1.50	D3	PP=2.7kg/cm2		(0.60)	
			65.90	1.80	
2.00	D4	PP=3.1kg/cm2			
				(1.20)	
2.50	D5	PP=4kg/cm2			
3.00	D6	PP=4kg/cm2	64.70	3.00	

Samples & In Situ Testing			Strata Details		
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend
0.20	ES1		65.50	0.25	
0.50	D1	PP=1.7kg/cm2		(0.55)	
			64.95	0.80	
1.00	D2	PP=2.1kg/cm2			
				(1.00)	
1.50	D3	PP=2.5kg/cm2			
			63.95	1.80	
2.00	D4	PP=3.5kg/cm2			
				(1.20)	
2.50	D5	PP=2.6kg/cm2			
3.00	D6	PP=2.2kg/cm2	62.75	3.00	

Samples & In Situ Testing			Strata Details		
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend
			61.80	0.20	
				(0.40)	
0.50	B1				
0.50	D1		61.40	0.60	
1.00	D2				
				(1.30)	
1.50	D3				
			60.10	1.90	
2.00	D4	PP=4kg/cm2			
2.50	D5	PP=4.5kg/cm2			
				(1.60)	
3.00	D6	PP=3.2kg/cm2			
3.50	D7	PP=4kg/cm2	58.50	3.50	

Samples & In Situ Testing			Strata Details		
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend
			62.55	0.20	
0.50	D1				
				(1.00)	
1.00	D2				
			61.55	1.20	
				(0.40)	
1.50	D3				
			61.15	1.60	
2.00	D4				
				(1.30)	
2.50	D5				
			59.85	2.90	
3.00	D6		59.75	3.00	

Samples & In Situ Testing			Strata Details		
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend
0.15	ES1		63.80	0.20	
				(0.45)	
0.50	D1				
			63.35	0.65	
1.00	D2	PP=2.3kg/cm2		(0.75)	
			62.60	1.40	
1.50	D3	PP=2.6kg/cm2			
				(0.50)	
			62.10	1.90	
2.00	B1				
2.00	D4				
				(0.90)	
2.50	B2				
2.50	D5				
2.80	D6		61.20	2.80	

Samples & In Situ Testing			Strata Details		
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend
			65.10	0.20	
0.50	D1	PP=2.5kg/cm2			
1.00	D2	PP=4kg/cm2		(1.60)	
1.50	D3	PP=3.5kg/cm2			
			63.50	1.80	
2.00	D4	PP=3.5kg/cm2			
2.50	D5	PP=2.9kg/cm2		(1.40)	
3.00	D6	PP=3.1kg/cm2			
3.20	D7	PP=3kg/cm2	62.10	3.20	

Samples & In Situ Testing			Strata Details		
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend
			67.15	0.15	
0.50	D1	PP=2.5kg/cm2		(1.05)	
1.00	D2	PP=3.2kg/cm2	66.10	1.20	
1.50	D3	PP=1.5kg/cm2		(0.60)	
			65.50	1.80	
2.00	D4	PP=2.5kg/cm2		(0.60)	
2.50	D5	PP=3.4kg/cm2	64.90	2.40	
3.00	D6	PP=3kg/cm2		(1.00)	
3.40	D7	PP=4.0kg/cm2	63.90	3.40	

Samples & In Situ Testing			Strata Details		
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend
			68.65	0.20	
0.50	D1	PP=2.3kg/cm2			
				(1.00)	
1.00	D2	PP=2.0kg/cm2			
			67.65	1.20	
1.50	D3	PP=2.6kg/cm2		(0.50)	
			67.15	1.70	
2.00	D4	PP=2.9kg/cm2		(0.60)	
			66.55	2.30	
2.50	D5	PP=3.4kg/cm2			
				(1.20)	
3.00	D6	PP=2.5kg/cm2			
3.50	D7	PP=3.2kg/cm2	65.35	3.50	

Samples & In Situ Testing			Strata Details		
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend
			70.30	0.15	
0.50	D1	PP=2.5kg/cm2		(0.95)	
1.00	D2	PP=2.5kg/cm2	69.35	1.10	
				(0.50)	
1.50	D3	PP=2.1kg/cm2	68.85	1.60	

Samples & In Situ Testing			Strata Details		
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend
			65.25	0.15	
0.25	ES1				
0.50	D1	PP=3.1kg/cm2		(0.65)	
			64.60	0.80	
1.00	D2	PP=3kg/cm2		(0.40)	
			64.20	1.20	
1.50	D3	PP=2.9kg/cm2		(0.60)	
			63.60	1.80	
2.00	D4	PP=2.5kg/cm2		(0.60)	
			63.00	2.40	
2.50	D5	PP=1.1kg/cm2			
				(0.90)	
3.00	D6	PP=1.2kg/cm2			
3.30	D7		62.10	3.30	
		PP=2.5kg/cm2			

Samples & In Situ Testing			Strata Details		
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend
			64.20	0.20	
0.30	ES1				
0.50	D1	PP=4kg/cm2		(0.65)	
			63.55	0.85	
1.00	D2	PP=4.1kg/cm2			
1.50	D3	PP=3.3kg/cm2		(1.45)	
2.00	D4	PP=2.7kg/cm2			
			62.10	2.30	
2.50	D5	PP=1.5kg/cm2			
				(0.90)	
3.00	D6	PP=1.5kg/cm2			
			61.20	3.20	
				(0.30)	
3.50	D7	PP=3.5kg/cm2	60.90	3.50	

Samples & In Situ Testing			Strata Details		
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend
0.15	ES1		64.35	0.20	
0.50	D1	PP=2.1kg/cm2		(0.90)	
1.00	D2		63.45	1.10	
				(0.50)	
1.50	D3	PP=1.9kg/cm2	62.95	1.60	
2.00	D4	PP=2.8kg/cm2		(0.80)	
			62.15	2.40	
2.50	B1				
2.50	D5				
				(0.70)	
3.00	D6		61.45	3.10	
				(0.40)	
3.50	D7		61.05	3.50	

Samples & In Situ Testing			Strata Details		
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend
			65.10	0.20	
0.50	D1	PP=3kg/cm2		(0.55)	
			64.55	0.75	
1.00	D2	PP=3kg/cm2		(0.55)	
			64.00	1.30	
1.50	D3	PP=2kg/cm2		(0.40)	
			63.60	1.70	
2.00	D4	PP=3.5kg/cm2		(0.70)	
			62.90	2.40	
2.50	D5	PP=2kg/cm2			
3.00	D6	PP=2.9kg/cm2		(1.10)	
3.50	D7	PP=1.9kg/cm2	61.80	3.50	

Samples & In Situ Testing			Strata Details		
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend
			64.15	0.10	
				(0.60)	
0.50	B1	PP=3kg/cm2			
0.50	D1				
			63.55	0.70	
				(0.40)	
1.00	B2	PP=2.4kg/cm2			
1.00	D2		63.15	1.10	
			62.95	1.30	
				(0.30)	
1.50	D3				
			62.65	1.60	
				(0.50)	
2.00	D4				
			62.15	2.10	
			61.95	2.30	
2.50	D5				
				(0.90)	
3.00	D6				
3.20	D7		61.05	3.20	

Samples & In Situ Testing			Strata Details		
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend
			64.05	0.15	
				(0.35)	
			63.70	0.50	

Samples & In Situ Testing			Strata Details		
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend
0.10	ES1		67.09	0.15	
			66.84	0.40	
0.50	D1	PP=1.8kg/cm2			
				(1.05)	
1.00	D2				
			65.79	1.45	
1.50	B1				
1.50	D3				
				(0.65)	
2.00	B2				
2.00	D4		65.14	2.10	

Samples & In Situ Testing			Strata Details		
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend
			67.00	0.20	
0.50	D1			(0.45)	
			66.55	0.65	
1.00	D2				
				(1.05)	
1.50	D3				
			65.50	1.70	
2.00	D4				
				(1.30)	
2.40	B1				
2.50	D5				
3.00	B2		64.20	3.00	
3.00	D6				

Samples & In Situ Testing			Strata Details		
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend
				(0.30)	
			66.75	0.30	
				(0.80)	
			65.95	1.10	

Samples & In Situ Testing			Strata Details		
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend
0.15	ES1		67.80	0.20	
0.50	D1	PP=2.6kg/cm2			
				(1.00)	
1.00	D2				
			66.80	1.20	
				(0.40)	
1.50	D3				
			66.40	1.60	
				(0.30)	
			66.10	1.90	
2.00	D4				
2.30	B1				
2.50	D5				
				(1.40)	
3.00	B2				
3.00	D6				
			64.70	3.30	

Samples & In Situ Testing			Strata Details		
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend
			70.35	0.20	
0.50	D1	PP=2kg/cm2			
				(1.40)	
1.00	D2	PP=1.6kg/cm2			
1.50	D3	PP=2.4kg/cm2			
			68.95	1.60	

Samples & In Situ Testing			Strata Details		
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend
			64.25	0.25	
		PP=3.5kg/cm2		(0.45)	
			63.80	0.70	
		PP=4kg/cm2		(0.40)	
			63.40	1.10	
		PP=3.5kg/cm2		(0.70)	
		PP=3.2kg/cm2	62.70	1.80	
		PP=2.8kg/cm2			
		PP=3.4kg/cm2			
		PP=3.5kg/cm2		(1.60)	
		PP=2.6kg/cm2			
		PP=2.5kg/cm2			
		PP=2.7kg/cm2	61.10	3.40	

Samples & In Situ Testing			Strata Details		
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend
			67.04	0.20	
		PP=2.9kg/cm2		(0.90)	
		PP=2.8kg/cm2	66.14	1.10	
		PP=2.5kg/cm2			
		PP=1.8kg/cm2		(0.80)	
		PP=1.5kg/cm2	65.34	1.90	
		PP=1.1kg/cm2			
		PP=1.5kg/cm2			
		PP=2.5kg/cm2		(1.20)	
		PP=2.3kg/cm2			
		PP=1.5kg/cm2	64.14	3.10	


Well


Well


Well


Well


Well


Well


Well


Well


Well


Well


Well


Well

Geo-Environmental	Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net	Borehole Log	Borehole No. **WS12** Sheet 2 of 2

Project Name:	Woodcroft Farm Phase 3	Project No. GE20772	Co-ords: 468168E - 112177N	Hole Type WLS
Location:	Lovedean		Level: 62.50	Scale 1:25
Client:	Grainger plc		Dates: 29/09/2023	Logged By FG

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		5.00		N=37 (3,/3,10,12,12)				End of Borehole at 5.00m

Dynamic Sampling Run Details			Water Strike Details (mbgl)		Remarks
Depth Top	Depth Base	Diameter	Depth Strike	Rose To	Poor sample recovery From 3m bgl. SPTs, no readings between 3m and 5m, recovered soils very loose in composiϵon, comprised a backį ll type material.

AGS

Status
FINAL


Well


Well


Well

Geo-Environmental	Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net	Borehole Log	Borehole No. **WS15** Sheet 2 of 2

Project Name:	Woodcroft Farm Phase 3	Project No. GE20772	Co-ords:	468215E - 112207N	Hole Type WLS
Location:	Lovedean		Level:	66.55	Scale 1:25
Client:	Grainger plc		Dates:	28/09/2023	Logged By FG

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		5.00	PP	2.0kg/cm2				End of Borehole at 5.00m

Dynamic Sampling Run Details			Water Strike Details (mbgl)		Remarks
Depth Top	Depth Base	Diameter	Depth Strike	Rose To	Borehole stable and dry. Back| lled with arisings

AGS

Status
FINAL


Well


Well

Geo-Environmental	Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net	Borehole Log	Borehole No. **WS17** Sheet 2 of 2

Project Name:	Woodcroft Farm Phase 3	Project No. GE20772	Co-ords: 468282E - 112250N	Hole Type WLS
Location:	Lovedean		Level: 70.03	Scale 1:25
Client:	Grainger plc		Dates: 28/09/2023	Logged By FG

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		5.00	PP	3.0kg/cm2				End of Borehole at 5.00m

Dynamic Sampling Run Details			Water Strike Details (mbgl)		Remarks
Depth Top	Depth Base	Diameter	Depth Strike	Rose To	Borehole stable and dry. Back| lled with arisings

AGS

Status
FINAL

Geo-Environmental

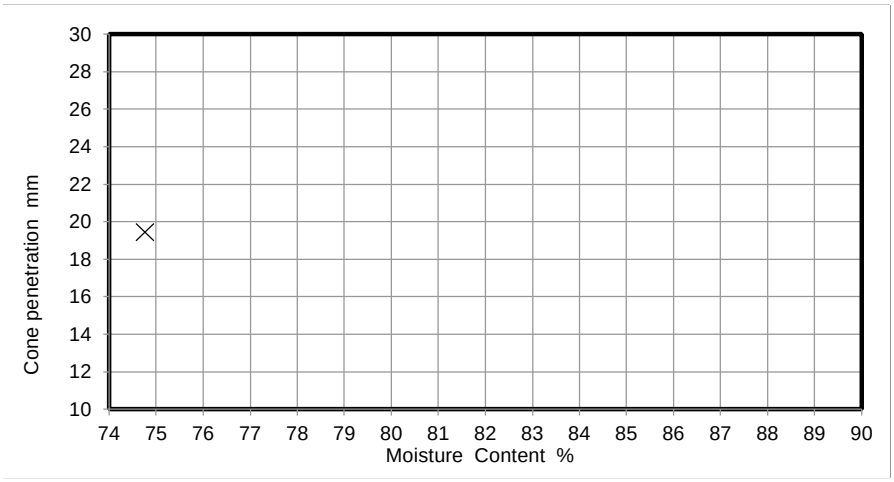
APPENDIX C

Geotechnical Laboratory Results



LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

				Job No.	34142
				Borehole/Pit No.	TP101
Site Name	Woodcroft Farm Phase 3			Sample No.	2
Project No.	GE20772	Client	GESL	Depth Top m	1.00
Soil Description	Grey and brown mottled slightly sandy gravelly silty CLAY (gravel is fmc and angular to sub-angular flint)			Depth Base m	-
				Sample Type	D
				Samples received	03/10/2023
				Schedules received	03/10/2023
				Project Started	04/10/2023
				Date Tested	17/10/2023



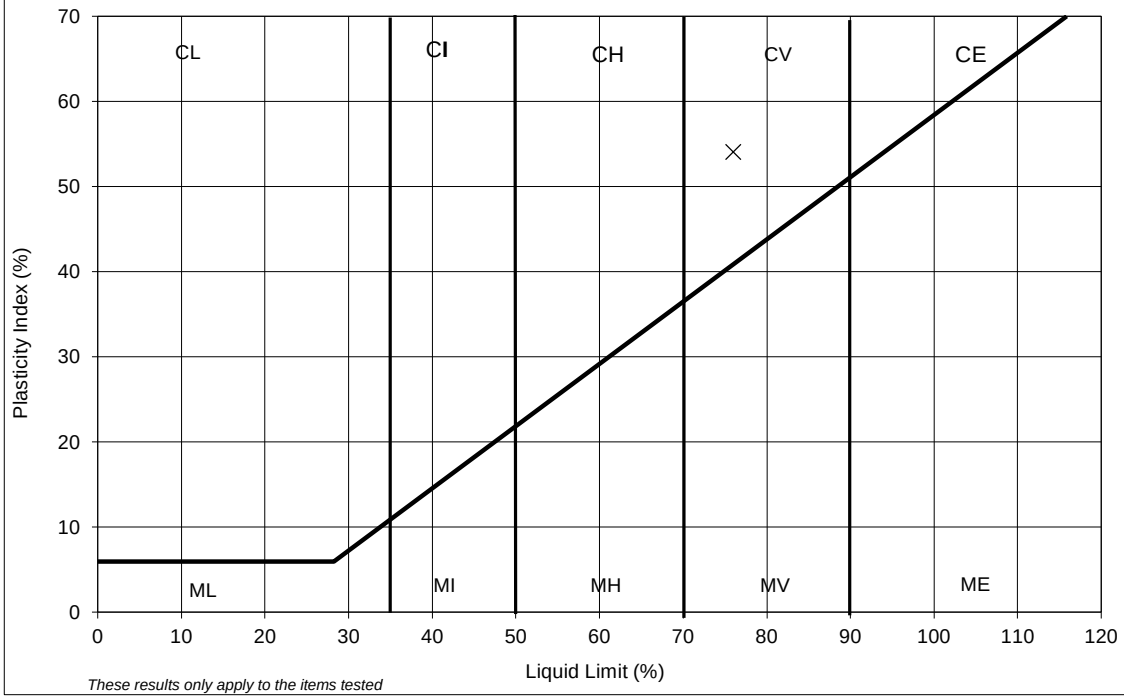
NATURAL MOISTURE CONTENT	**21**	**%**
% PASSING 425µm SIEVE	**43**	**%**
LIQUID LIMIT	**76**	**%**
PLASTIC LIMIT	**22**	**%**
PLASTICITY INDEX	**54**	**%**

Remarks

Sample washed to obtain test fraction

Factors corresponding to the cone penetration and moisture content range in Table 1 (BS1377:1990 ; Part 2)

PLASTICITY INDEX



These results only apply to the items tested

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TEST METHOD

BS1377: Part 2 :Clause 4.4 : 1990 Determination of the liquid limit by the cone penetrometer method
BS1377: Part 2 :Clause 5.0 : 1990: Determination of the plastic limit and plasticity index
BS1377: Part 2 :Clause 3.2 : 1990:Determination of the moisture content by the oven drying

Checked and Approved

Initials: J.P
Date: 20/10/2023

Test Report by K4 SOILS LABORATORY Unit 8 Olds Close Olds Approach Watford Herts WD18 9RU
Tel: 01923 711 288 Email: James@k4soils.com

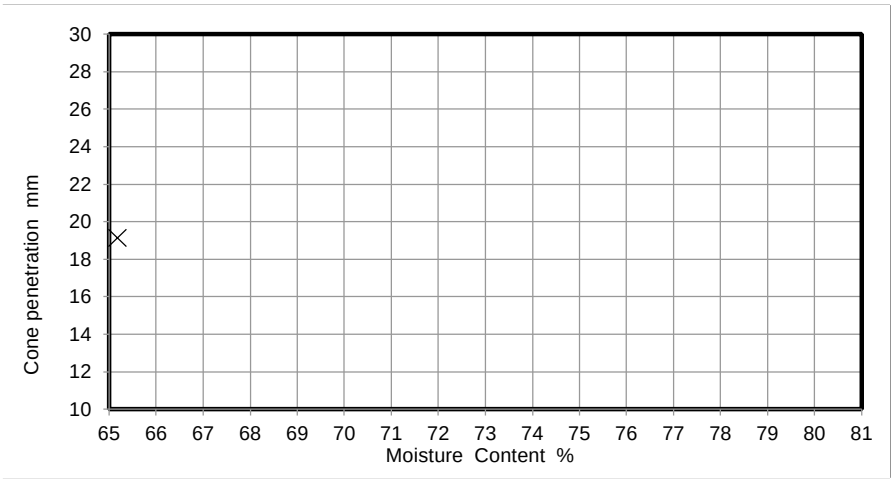
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Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)

LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

				Job No.	34142
				Borehole/Pit No.	TP104
Site Name	Woodcroft Farm Phase 3			Sample No.	4
Project No.	GE20772	Client	GESL	Depth Top m	2.00
Soil Description	Grey and reddish brown silty CLAY			Depth Base m	-
				Sample Type	D
				Samples received	03/10/2023
				Schedules received	03/10/2023
				Project Started	04/10/2023
				Date Tested	18/10/2023

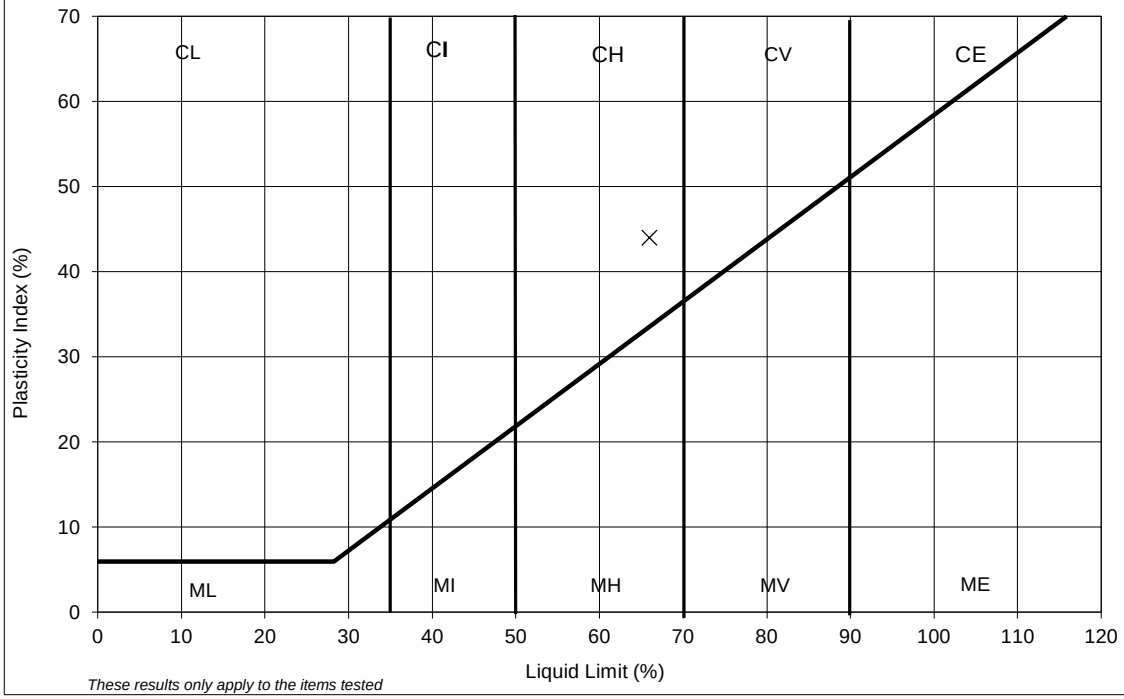


NATURAL MOISTURE CONTENT	**28**	**%**
% PASSING 425µm SIEVE	**100**	**%**
LIQUID LIMIT	**66**	**%**
PLASTIC LIMIT	**22**	**%**
PLASTICITY INDEX	**44**	**%**

Remarks

Factors corresponding to the cone penetration and moisture content range in Table 1 (BS1377:1990 ; Part 2)

PLASTICITY INDEX



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BS1377: Part 2 :Clause 3.2 : 1990:Determination of the moisture content by the oven drying

Checked and Approved

Initials: J.P
Date: 20/10/2023

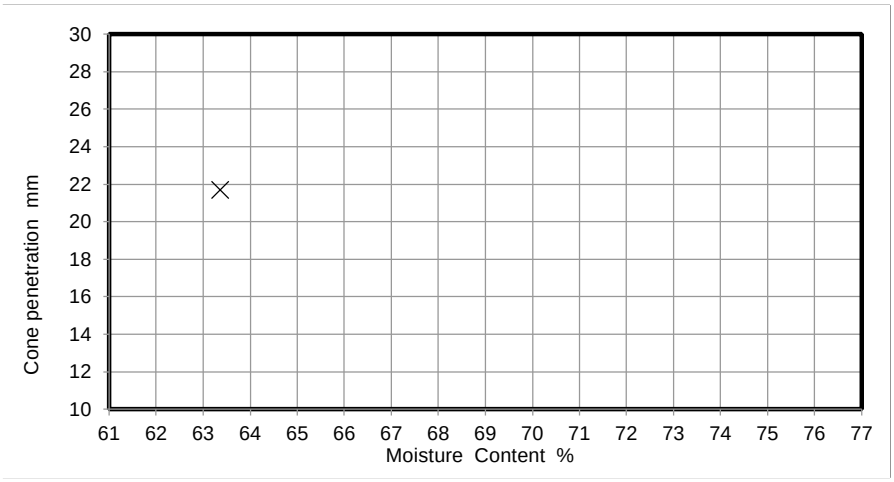
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Tel: 01923 711 288 Email: James@k4soils.com

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Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)

LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

				Job No.	34142
				Borehole/Pit No.	TP108
Site Name	Woodcroft Farm Phase 3			Sample No.	1
Project No.	GE20772	Client	GESL	Depth Top m	0.50
Soil Description	Yellowish brown slightly gravelly silty CLAY with traces of rootlets (gravel is fmc and angular to sub-rounded)			Depth Base m	-
				Sample Type	D
				Samples received	03/10/2023
				Schedules received	03/10/2023
				Project Started	04/10/2023
				Date Tested	18/10/2023

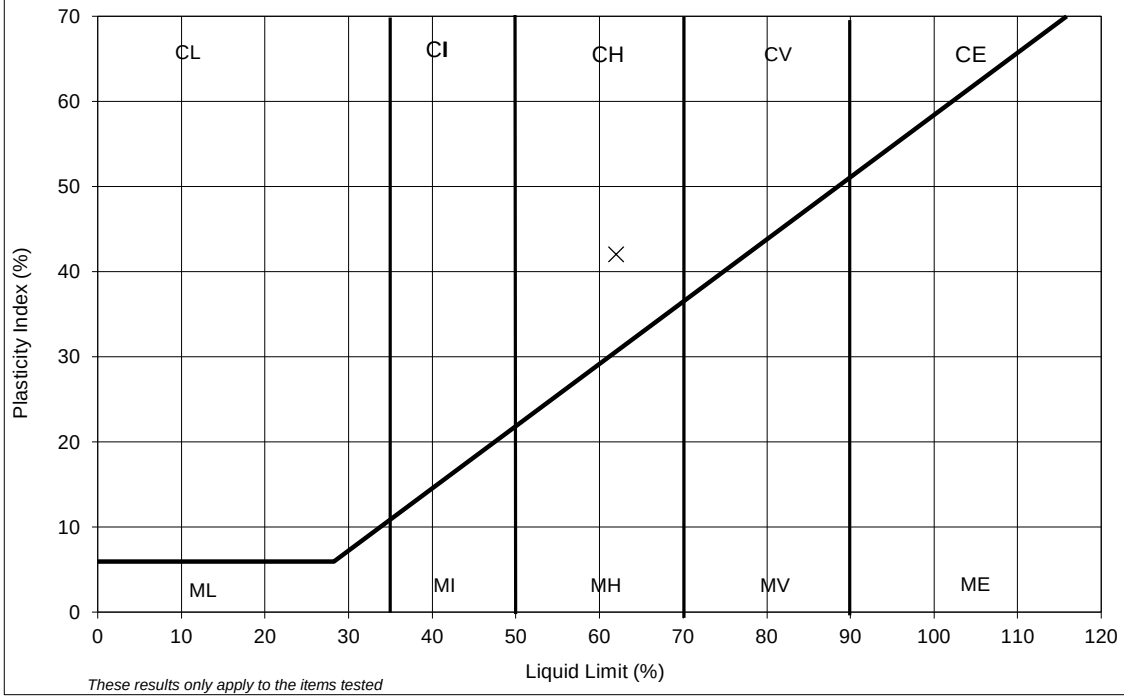


NATURAL MOISTURE CONTENT	**19**	**%**
% PASSING 425µm SIEVE	**75**	**%**
LIQUID LIMIT	**62**	**%**
PLASTIC LIMIT	**20**	**%**
PLASTICITY INDEX	**42**	**%**

Remarks

Factors corresponding to the cone penetration and moisture content range in Table 1 (BS1377:1990 ; Part 2)

PLASTICITY INDEX



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TEST METHOD

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BS1377: Part 2 :Clause 3.2 : 1990:Determination of the moisture content by the oven drying

Checked and Approved

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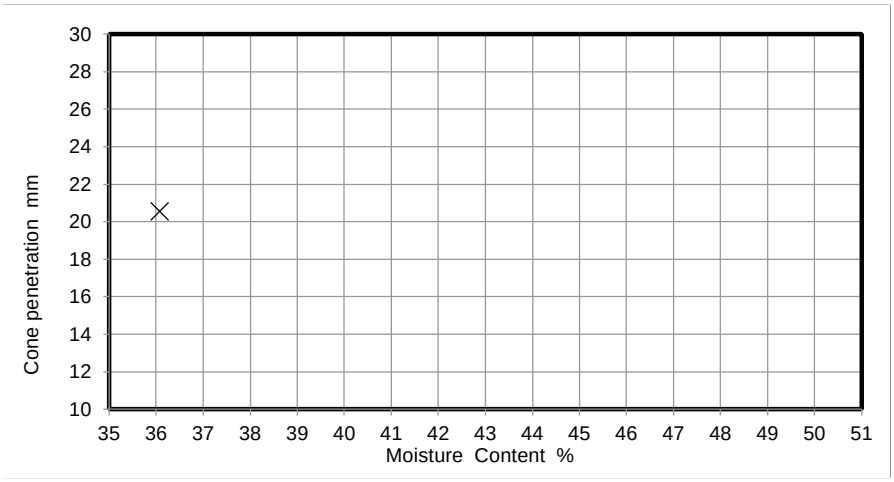
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LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

				Job No.	34142
				Borehole/Pit No.	TP110
Site Name	Woodcroft Farm Phase 3			Sample No.	1
Project No.	GE20772	Client	GESL	Depth Top m	0.50
Soil Description	Orangish brown slightly gravelly silty CLAY with occasional rootlets (gravel is fm and sub-angular to sub-rounded)			Depth Base m	-
				Sample Type	D
				Samples received	03/10/2023
				Schedules received	03/10/2023
				Project Started	04/10/2023
				Date Tested	18/10/2023

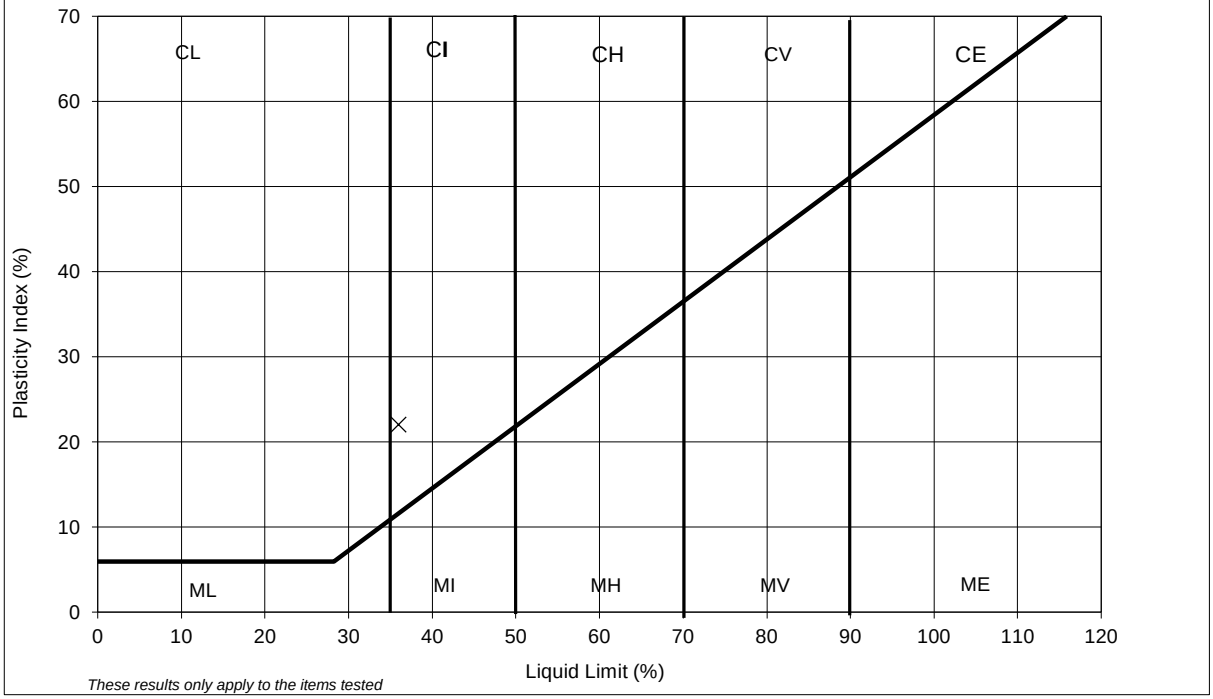


NATURAL MOISTURE CONTENT	**12**	**%**
% PASSING 425µm SIEVE	**80**	**%**
LIQUID LIMIT	**36**	**%**
PLASTIC LIMIT	**14**	**%**
PLASTICITY INDEX	**22**	**%**

Remarks

Factors corresponding to the cone penetration and moisture content range in Table 1 (BS1377:1990 ; Part 2)

PLASTICITY INDEX



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BS1377: Part 2 :Clause 3.2 : 1990:Determination of the moisture content by the oven drying

Checked and Approved

Initials: J.P
Date: 20/10/2023

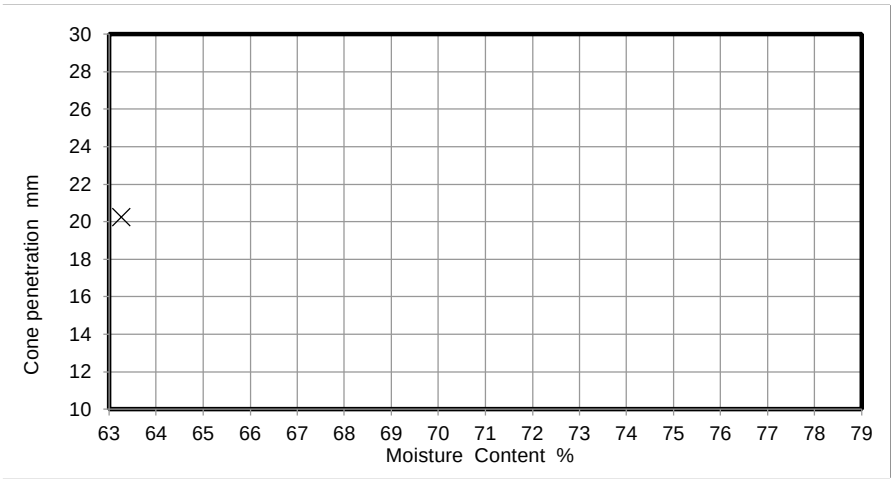
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Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)

LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

				Job No.	34142
				Borehole/Pit No.	TP117
Site Name	Woodcroft Farm Phase 3			Sample No.	3
Project No.	GE20772	Client	GESL	Depth Top m	1.50
Soil Description	Orangish brown slightly gravelly silty CLAY with traces of rootlets (gravel is fm and angular to sub-rounded)			Depth Base m	-
				Sample Type	D
				Samples received	03/10/2023
				Schedules received	03/10/2023
				Project Started	04/10/2023
				Date Tested	18/10/2023

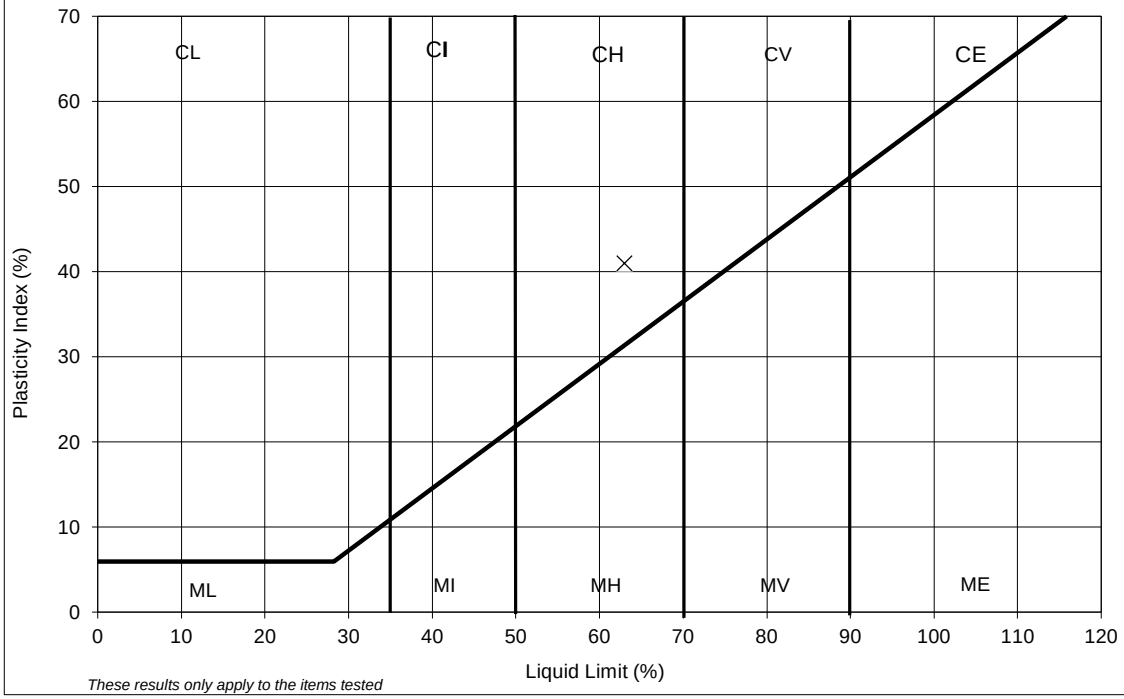


NATURAL MOISTURE CONTENT	**25**	**%**
% PASSING 425µm SIEVE	**89**	**%**
LIQUID LIMIT	**63**	**%**
PLASTIC LIMIT	**22**	**%**
PLASTICITY INDEX	**41**	**%**

Remarks

Factors corresponding to the cone penetration and moisture content range in Table 1 (BS1377:1990 ; Part 2)

PLASTICITY INDEX



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BS1377: Part 2 :Clause 3.2 : 1990:Determination of the moisture content by the oven drying

Checked and Approved

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Date: 20/10/2023

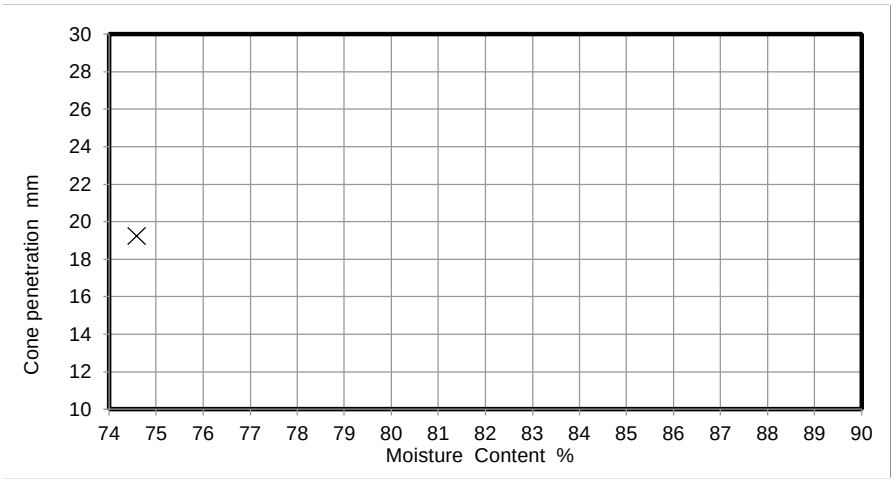
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LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

				Job No.	34142
				Borehole/Pit No.	TP121
Site Name	Woodcroft Farm Phase 3			Sample No.	2
Project No.	GE20772	Client	GESL	Depth Top m	1.00
Soil Description	Yellowish brown slightly gravelly silty CLAY (gravel is fm and angular to sub-angular)			Depth Base m	-
				Sample Type	D
				Samples received	03/10/2023
				Schedules received	03/10/2023
				Project Started	04/10/2023
				Date Tested	18/10/2023

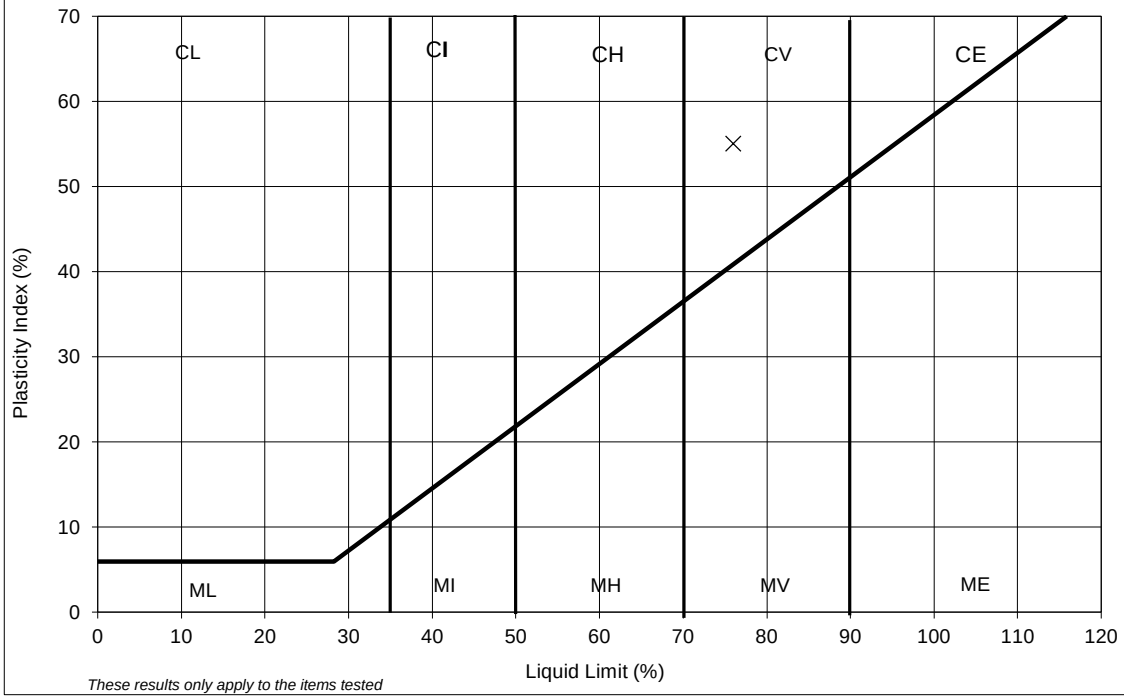


NATURAL MOISTURE CONTENT	**26**	**%**
% PASSING 425µm SIEVE	**96**	**%**
LIQUID LIMIT	**76**	**%**
PLASTIC LIMIT	**21**	**%**
PLASTICITY INDEX	**55**	**%**

Remarks

Factors corresponding to the cone penetration and moisture content range in Table 1 (BS1377:1990 ; Part 2)

PLASTICITY INDEX



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BS1377: Part 2 :Clause 5.0 : 1990: Determination of the plastic limit and plasticity index
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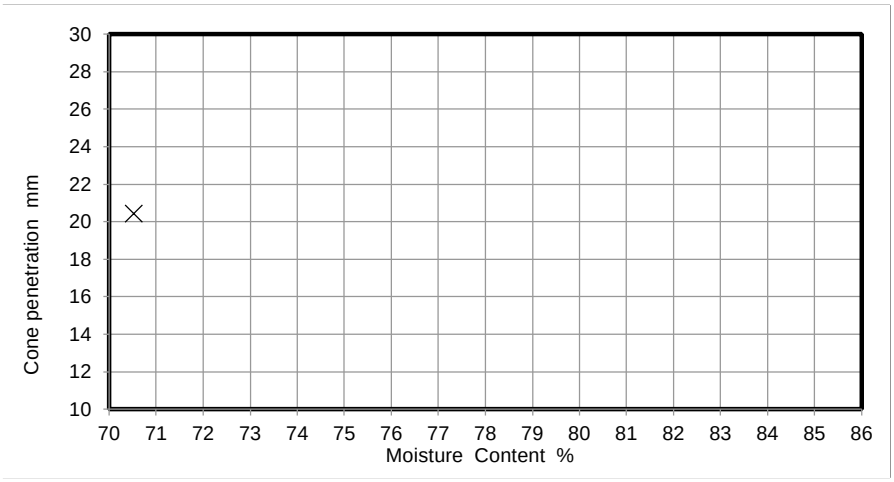
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LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

				Job No.	34142
				Borehole/Pit No.	TP124
Site Name	Woodcroft Farm Phase 3			Sample No.	3
Project No.	GE20772	Client	GESL	Depth Top m	1.50
Soil Description	Greyish brown slightly sandy gravelly silty CLAY (gravel is fmc and angular to sub-angular chalk)			Depth Base m	-
				Sample Type	D
				Samples received	03/10/2023
				Schedules received	03/10/2023
				Project Started	04/10/2023
				Date Tested	17/10/2023



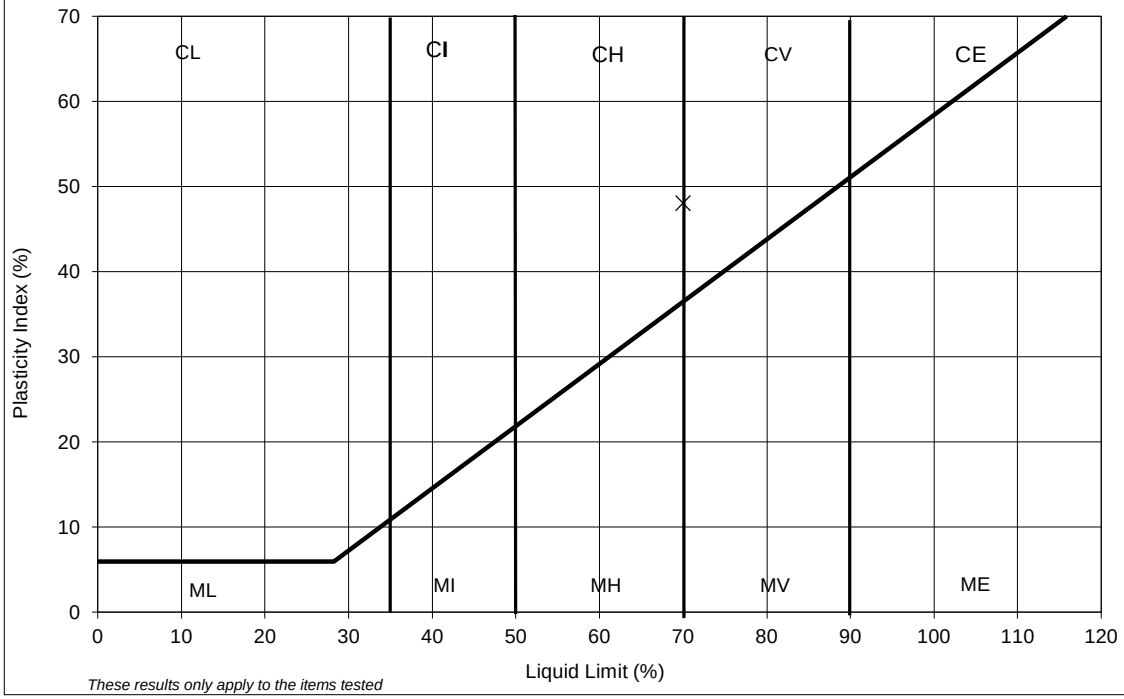
NATURAL MOISTURE CONTENT	**44**	**%**
% PASSING 425µm SIEVE	**52**	**%**
LIQUID LIMIT	**70**	**%**
PLASTIC LIMIT	**22**	**%**
PLASTICITY INDEX	**48**	**%**

Remarks

Sample washed to obtain test fraction

Factors corresponding to the cone penetration and moisture content range in Table 1 (BS1377:1990 ; Part 2)

PLASTICITY INDEX



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TEST METHOD

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WD18 8YS

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e: reception@i2analytical.com

Analytical Report Number : 23-60049

Project / Site name:	Woodcroft	Samples received on:	02/10/2023
Your job number:	GE20772	Samples instructed on/ Analysis started on:	03/10/2023
Your order number:	PO-6833	Analysis completed by:	10/10/2023
Report Issue Number:	1	Report issued on:	10/10/2023
Samples Analysed:	5 soil samples		

Signed: Izabela Wójcik

Izabela Wójcik
Reporting Specialist
For & on behalf of i2 Analytical Ltd.

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

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

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

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

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

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report relate only to the sample(s) submitted for testing.

Analytical Report Number: 23-60049
Project / Site name: Woodcroft
Your Order No: PO-6833

Lab Sample Number				2832192	2832193	2832194	2832195	2832196
Sample Reference				TP123	TP121	TP104	TP106	WS13
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.00	1.00	1.00	1.00	0.20
Date Sampled				28/09/2023	28/09/2023	28/09/2023	28/09/2023	29/09/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	17	15	24	18	13
Total mass of sample received	kg	0.001	NONE	1.2	1.2	1.2	1.5	1.5

Asbestos in Soil	Type	N/A	ISO 17025	-	-	-	-	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	N/A	N/A	N/A	N/A	IZJ

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	7.3	5.1	4.7	5.1	7.8
Total Cyanide	mg/kg	1	MCERTS	-	-	-	-	< 1.0
Total Sulphate as SO4	mg/kg	50	MCERTS	360	220	830	340	-
Total Sulphate as SO4	%	0.005	MCERTS	0.036	0.022	0.083	0.034	-
Water Soluble Sulphate as SO4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	-	-	-	-	68
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.0141	0.0745	0.081	0.0358	0.0339
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	-	-	-	-	33.9
Sulphide	mg/kg	1	MCERTS	-	-	-	-	< 1.0
Water Soluble Chloride (2:1)	mg/kg	1	MCERTS	-	-	-	-	6.7
Elemental Sulphur	mg/kg	5	MCERTS	-	-	-	-	6.2
Total Sulphur	mg/kg	50	MCERTS	270	89	350	150	-
Total Sulphur	%	0.005	MCERTS	0.027	0.009	0.035	0.015	-
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	-	-	-	-	0.9

Total Phenols

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

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-	-	-	-	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	-	-	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	-	-	-	-	< 0.05
Fluorene	mg/kg	0.05	MCERTS	-	-	-	-	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	-	-	-	-	0.17
Anthracene	mg/kg	0.05	MCERTS	-	-	-	-	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	0.2
Pyrene	mg/kg	0.05	MCERTS	-	-	-	-	0.16
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	0.09
Chrysene	mg/kg	0.05	MCERTS	-	-	-	-	0.1
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	-	-	-	-	0.15
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	-	-	-	-	0.06
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	0.09
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	0.07
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	-	-	0.08

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	-	-	-	-	1.17

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Sample Reference				TP123	TP121	TP104	TP106	WS13
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.00	1.00	1.00	1.00	0.20
Date Sampled				28/09/2023	28/09/2023	28/09/2023	28/09/2023	29/09/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	13
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	-	-	-	-	0.56
Boron (water soluble)	mg/kg	0.2	MCERTS	-	-	-	-	0.3
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	-	-	-	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	-	-	-	-	< 1.8
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	24
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	12
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	18
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	-	-	-	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	16
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	52
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	40
Monoaromatics & Oxygenates								
Benzene	µg/kg	5	MCERTS	-	-	-	-	< 5.0
Toluene	µg/kg	5	MCERTS	-	-	-	-	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	-	-	-	-	< 5.0
p & m-xylene	µg/kg	5	MCERTS	-	-	-	-	< 5.0
o-xylene	µg/kg	5	MCERTS	-	-	-	-	< 5.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	-	-	-	-	< 5.0
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$	mg/kg	0.1	NONE	-	-	-	-	< 0.10
TPH-CWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$	mg/kg	0.1	NONE	-	-	-	-	< 0.10
TPH-CWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$	mg/kg	0.1	NONE	-	-	-	-	< 0.10
TPH-CWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$	mg/kg	1	MCERTS	-	-	-	-	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$	mg/kg	2	MCERTS	-	-	-	-	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	-	-	-	-	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	-	-	-	-	< 8.0
TPH-CWG - Aliphatic > EC35 - EC44 $_{EH\_CU\_1D\_AL}$	mg/kg	8.4	NONE	-	-	-	-	< 8.4
TPH-CWG - Aliphatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	NONE	-	-	-	-	< 10
TPH-CWG - Aliphatic (EC5 - EC44) $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	NONE	-	-	-	-	< 10
TPH-CWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$	mg/kg	0.1	NONE	-	-	-	-	< 0.10
TPH-CWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$	mg/kg	0.1	NONE	-	-	-	-	< 0.10
TPH-CWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$	mg/kg	0.1	NONE	-	-	-	-	< 0.10
TPH-CWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$	mg/kg	1	MCERTS	-	-	-	-	< 1.0
TPH-CWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$	mg/kg	2	MCERTS	-	-	-	-	< 2.0
TPH-CWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	-	-	-	-	< 10
TPH-CWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	-	-	-	-	< 10
TPH-CWG - Aromatic > EC35 - EC44 $_{EH\_CU\_1D\_AR}$	mg/kg	8.4	NONE	-	-	-	-	< 8.4
TPH-CWG - Aromatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	NONE	-	-	-	-	< 10
TPH-CWG - Aromatic (EC5 - EC44) $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	NONE	-	-	-	-	< 10

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

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Project / Site name: Woodcroft

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

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

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2832192	TP123	None Supplied	2	Beige clay with chalk.
2832193	TP121	None Supplied	1	Light brown clay.
2832194	TP104	None Supplied	1	Brown clay.
2832195	TP106	None Supplied	1	Brown clay.
2832196	WS13	None Supplied	0.2	Brown clay and loam with gravel and vegetation.

Analytical Report Number : 23-60049
Project / Site name: Woodcroft

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
Chloride, water soluble, in soil	Determination of Chloride colorimetrically by discrete analyser.	In house method.	L082-PL	D	MCERTS
Elemental sulphur in soil	Determination of elemental sulphur in soil by extraction in acetonitrile followed by HPLC.	In-house method based on Secondsite Property Holdings Guidance for Assessing and Managing Potential	L021-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards. Refer to CoA for analyte specific accreditation.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Sulphide in soil	Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode.	In-house method	L010-PL	D	MCERTS
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total Sulphur in soil	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L009-PL	D	MCERTS

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Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS. Individual components MCERTS accredited	In-house method based on USEPA8260. Refer to CoA for analyte specific accreditation	L073B-PL	W	MCERTS
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID. Refer to CoA for band specific accreditation.	In-house method with silica gel split/clean up.	L088/76-PL	D	MCERTS
TPH in (Soil)	Determination of TPH bands by HS-GC-MS/GC-FID	In-house method, TPH with carbon banding and silica gel split/cleanup.	L076-PL	D	NONE
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Total Sulphate in soil as %	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
Total Sulphur in soil as %	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
Sulphate, water soluble, in soil	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS

For method numbers ending in 'UK or A' analysis have been carried out in our laboratory in the United Kingdom (WATFORD).
For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).
For method numbers ending in 'PL or B' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.
Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total

APPENDIX D

Emails to Local Operators



[redacted]

Hello,

We are currently writing a Mineral Resource Assessment for a site located in Lovedean, Hampshire (grid ref 468186, 112255) as the Hampshire Minerals and Waste Local Plan has defined the site to be within a mineral safeguarding area. I have attached a site boundary plan.

We have undertaken intrusive investigation works across the site and I have attached the exploratory hole logs of the encountered underlying soils.

As such, we need to consult with mineral operators who, more readily understand the economic and technical issues relevant to mineral extraction, to confirm with industry if the anticipated underlying ground conditions of the site; interbedded clay, sandy/gravelly clay, clay, sand and gravel of the Lambeth Group overlying Chalk, is a commercially viable resource.

We just need a quick response to: Do you feel this is a viable mineral resource?

If you have any queries, please do not hesitate to get in touch,

Fiona Goode

MSc, BSc (Hons), FGS, RSoBRA
Senior Consultant Engineer

T: 07703 036394 M: 07703036394

W: www.gesl.net

Head office: Unit 7, Danworth Farm, Cuckfield Rd, Hurstpierpoint, West Sussex, BN6 9GL, UK
Hatfield Peverel Office: Office 4 Wheelwrights Yard The Street, Hatfield Peverel, Essex CM3 2EA
Bristol Office: Bristol Broad Quay, Broad Quay House, Prince Street, Bristol, BS1 4DJ
Birmingham Office: Birmingham Fort Dunlop, Fort Dunlop, Fort Parkway, Birmingham, B24 9FEL

STEM AMBASSADORS Employer

Geo-Environmental

Geo-Environmental Services Limited has ISO9001, ISO14001 and ISO45001 accreditation.
The Company Registration No. is 3214980 and the VAT Registration No. is 679544479.

[redacted]

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Note –

Phone call received from waste manager at Tarmac Southern on 23/01/2025 he verbally confirmed that Tarmac Southern have no commercial interest in the Lovedean site.

Fiona Goode

Senior Consultant Engineer.