Land at Stakers Farm, Yapton

Ground Investigation – Interpretative Report
A112666

Dandara Ltd
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Prepared on behalf of WYG Group Limited.

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[redacted]

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Executive Summary

Introduction
The site forms undeveloped farmland part of Stakers Farm, which is proposed to be developed. Two planning consents are in place for the development of 108No. dwellings, consisting of 2No. planning consents (38 and 70 units respectively), with two areas of public open space subject to discharge of a number of conditions under reserved matters. To address the planning application conditions a geotechnical and ground contamination desk top study with a subsequent ground investigation was proposed. This report presents the factual desk top study, ground investigation findings and subsequent interpretation and an environmental and geotechnical assessment.
Site Location and Status
The site is located off North End Road in Yapton, approximately 4.7 km to the southwest of Arundel and occupies an area of approximately 4.6 ha centred on National Grid Reference 497628, 103673. The site is currently undeveloped and occupied by two agricultural fields separated by an electric fence. The electric fence was removed prior to commencement of site works.
Historical Site Development
The earliest historical map pertaining to the site is dated 1876-1877 (OS Map - 1:2,500) and shows the site as undeveloped agricultural land with two footpaths mapped in the northern field. There is little change to the site until 1982 (OS Map - 1:2,500) where a building is shown in the south-east of the site as part of Stakers Farm (off-site). There are no further changes of note within the site boundary between 1982 and the recent 2019 OS Map (1:10,000).
Anticipated Geology
Made Ground - Based on the historical development of the site (Section 2.3) a significant thickness of Made Ground is not anticipated. **Superficial Deposits** - The British Geological Survey (BGS) online map viewer indicates the site is underlain by River Terrace deposits composed of sands, silts and clays. Historic borehole logs available online indicate superficial deposits were encountered beneath a thin layer (0.30m – 0.50m) of topsoil to depths of between 3.30m and 3.90m bgl. Deposits generally comprised a layer of silty clay underlain by sands and gravels. **Solid Geology -** The BGS online map viewer indicates the bedrock beneath the site is the Lewes Nodular Chalk Formation, Seaford Chalk Formation, Newhaven Chalk Formation, Culver Chalk Formation and Portsdown Chalk Formation (undifferentiated).
Hydrogeology
The Chalk Formations (bedrock) and River Terrace deposits (superficial) underneath the site are classified by the Environment Agency (EA) as a Principal Aquifer and Secondary A Aquifer, respectively. There are 4No. groundwater abstractions within 1km of the site, the closest is located adjacent to the northern site boundary and pertains to agricultural use.
Hydrology
No major surface water bodies are located within 500m of the site boundary, the closest appears to be a surface drain or ditch feature located 161m west. A Flood risk assessment (Version 1.1, June 2017) for the site was prepared by the Civil Engineering Practice (CEP) and notes the site is located within 'Flood Zone 1' and is not at risk of flooding from rivers or the sea from anything less extreme than a 1 in 1000 year flood event. The Envirocheck 2019 report indicates there is the potential for groundwater flooding of property situated below ground level within the site boundary. This is confirmed as a low risk by the CEP 2017 report. The report also indicates there is a low risk of surface water flooding within the site.
Ground Investigation
The site investigation was undertaken between the 7th and 8th March 2019 and included the following: • Review of above and below-ground infrastructure plans; • GPR clearance of exploratory hole positions in addition to Cable Avoidance Tool (CAT) and Genny prior to breaking ground;

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- 9No. Machine-excavated trial pits (TP01 to TP04, TP06 to TP10) excavated to a maximum depth of 3.60m bgl (TP09);
- Soakaway Testing in 3No. trial pits (TP03, TP08 and TP09) undertaken in general accordance with BRE365;
- 9No. Windowless sample boreholes (WS01, WS02, WS04 to WS10) hand-excavated to a maximum depth of 1.2mbgl and drilled to a maximum of 6.00m bgl;
- 6No. boreholes were installed with 50mm diameter ground gas / groundwater standpipes with response zones in the base of the superficial River Terrace Deposits into Chalk bedrock;
- Two subsequent soil gas and groundwater monitoring visits;
- CBR testing using a TRL probe in 5No. locations; and
- Collection of soil samples for subsequent chemical and geotechnical analysis.

All exploratory holes were logged and sampled by a suitably qualified and experienced WYG Engineer.

Envountered Ground Conditions

Surface Cover - Topsoil comprising brown slightly gravelly sandy clay with frequent rootlets.
Made Ground was not encountered.
Superficial Deposits - River terrace deposits were encountered beneath topsoil and generally comprised firm to stiff orange brown clay with varying sand and gravel content. Gravel is noted to be sub-angular to angular flint. Bands of clayey gravelly fine to coarse sand were encountered in TP01, TP03, TP06, TP07, in thicknesses between 0.20m and 0.80m.
Bedrock - highly weathered chalk underlain by structureless chalk generally recovered as silty gravel with occasional flint.
Groundwater – During the site investigation groundwater strikes were recorded between 3.80m and 5.20m bgl in chalk. During the return monitoring groundwater was recorded between 3.79m and 4.25m bgl in intallations screening chalk bedrock and at 2.55m bgl in boreholes screening the superficial river terrace deposits.
Ground gas - Methane was recorded at a maximum of 0.3% v/v in borehole WS09. Carbon dioxide was detected at concentrations between 1.9% v/v (WS5) and 3.7% v/v (WS01). Oxygen was measured at its lowest concentration (15.6.0% v/v) in WS01. Flow was measured at a maximum of 0.2l/hr.

Geotechnical Risk Assessment

The River Terrace Deposits were generally identified as a fine grained (cohesive) soil comprising soft to firm, orangish brown gravelly sandy clay. The characteristic value of undrained shear strength derived for the cohesive River Terrace Deposits is 25kN/m2. Coarse grained (granular) layers were encountered at depth within the River Terrace Deposits and were found to be variable in composition; typically sand with variable quantities of clay, silt, gravel and cobbles. No easily discernible trend in depth and thickness of the coarse grained soil across the site. Chalk was encountered at depths ranging between 2.6m and 4.9m bgl and generally comprised structureless Grade Dm chalk.

Conceptual Site Model

Information from the recently completed phase of fieldwork has been used to refine the Conceptual Site Model (CSM) and forms the basis of subsequent phases of risk assessment.
The following **sources** of potential contamination were identified:

- Agricultural use of the site (past and current)
- On-site building (unknown use)
- Asbestos
- Off-site farm (Unknown agricultural practices and associated fuel storage, buildings to the east of the site, agricultural land north, west and south)

Human Health Receptors: Current site workers; Public Open Space users; Future residents; Future site workers including those in excavations; Off-site residents and workers.
Controlled Waters Receptors: Principal Bedrock Aquifer; Secondary A Superficial Aquifer

Human Health Pathways: Direct dermal contact or ingestion of soils; Inhalation of dust / fibres; Migration and accumulation of gases

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Controlled Waters Pathways: Leaching and lateral migration of mobile contamination.
Generic Quantitative Risk Assessment – Human Health
Soils were screened against residential (with plant uptake) generic assessment criteria considered to be suitably protective of the current use of the site and future reidential redevelopment of the site. The gQRA identified one exceedance of pH in WS05, 0.2m bgl. No further exceedances were identified, and no visual or olfactory evidence of contamination observed during the site investigation. **Asbestos:** 16No. samples were analysed for the presence of asbestos. Asbestos was not identified in any sample.
Generic Quantitative Risk Assessment – Controlled Waters
3No. Soil-leachate samples were screened against relavent water quality standards (WQS). The CW-gQRA identified slight exceedances of heavy metals in the topsoil samples taken from WS02 and WS06. No Groundwater samples have been taken to date.
Generic Quantitative Risk Assessment – Ground Gas
Ground gas monitoring data (2No. rounds) was assessed against the revised Wilon and Card methodology presented in CIRIA 665 and Health and Safety Executive work place exposure limits. Based on this assessment a Characteristic Situation 1 was calculated for all boreholes which represents a very low risk from ground gas.
Contaminated Land Conclusions and Recomendations
Human Health: Following the quantitative risk assessment, the human health pollutant linkages have been evaluated as low to very low risk. Asbestos remains at a Moderate/low risk on the basis of the building on site which has the potential to represent a source of ACMs. A survey of the building should be undertaken prior to demolition. No further works or assessment is recommended at this time. Future contractors working on the development should consider including the potential risk in their risk assessments. **Controlled Waters:** The assessment has identified a Moderate/ Low risk to the Principal bedrock aquifer and Secondary A superficial Aquifer beneath the site from the off-site farm. Groundwater sampling and a review of the controlled water risk assessment following the analysis results is recommended. **Ground Gas:** A very low risk has been assessed such that gas protection measures are unlikely to be required, however, this was based on monitoring during high atmospheric pressure on two occasions only and further monitoring is likely to be required during falling atmospheric pressure to confirm this classification..
Geotechnical Conclusions and Recomendations
Traditional shallow foundations founded within the River Terrace Deposits at a minimum depth of 1.0m bgl may be designed for a net allowable bearing pressure of 60kN/m2, which will limit settlements to less than 25mm. Due to the variable nature of the River Terrace Deposits, founding at a deeper level, such as 2m will only result in a marginal increase in the net allowable bearing pressure (70kN/m2). It is recommended that additional investigation be undertaken once the layout of the development is known to give increase confidence in the geotechnical parameters for the shallow soils. Ground bearing floor slabs should be possible where placed onto the River Terrace Deposits for load no greater than 8kN/m2. However, where housing plots are within the influence of existing or proposed trees, floor slabs will need to be suspended. The Design Sulphate Class for the shallow soils has been determined to be DS1, in accordance BRE Special Digest 1. For the fine-grained, intermediate plasticity River Terrace Deposits (with PI up to 28%) a predicted CBR of 2 to 2.5% is recommended. Whilst the ground investigation did not encounter the presence of dissolution features, there presence cannot be discounted.

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1. Introduction

1.1 Instruction

WYG Environment Planning Transport Ltd (WYG) was commissioned by Dandara Ltd, to undertake an intrusive ground investigation to inform a geotechnical and contamination risk assessment at the land at Stakers Farm off North End Road in Yapton hereon referred to as 'the site'.

The location of the site is shown on **Figure 1**.

1.2 Proposed Development

The site forms undeveloped farmland part of Stakers Farm, which is proposed to be developed. Two planning consents are in place for the development of 108No. dwellings with two areas of public open space subject to discharge of a number of conditions under reserved matters. Condition 11 of planning application (Reference Y/44/17/OUT) relates to previous site uses and potential associated contaminants and requires completion of a number of items for the approval of the planning authority. These include:

- A preliminary risk assessment which has identified:
    - All previous uses
    - Potential contaminants associated with those uses
    - A conceptual model of the site indicating sources, pathways and receptors
    - Potentially unacceptable risks arising from contamination at the site.
- A site investigation scheme;
- Risk assessment, remediation options appraisal and remediation strategy;
- A verification plan to demonstrate that remedial works are complete.

1.3 Brief

To address the planning application conditions a geotechnical and ground contamination desk top study with a subsequent ground investigation was proposed. The scope of works is set out in our technical and commercial proposal of 29th January 2019 (Ref: Yapton – 290119).

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1.4 Report Scope

This report summarises the work undertaken and includes the following key elements:

- A review of desk-based information pertaining to the site, collated from available online resources and an Envirocheck Report (2019);
- Full factual records of the site works carried out;
- Ground conditions encountered;
- In-situ testing results;
- Geotechnical and environmental laboratory testing results; and
- Interpretation of all in-situ, geotechnical and chemical testing results.

1.5 Limitations

This report has been prepared in accordance with the requirements of Dandara Ltd. It is subject to the report conditions contained in Appendix A – **Report Conditions**.

The information contained in this report is intended for the use of the Dandara Ltd. WYG can take no responsibility for the use of this information by any third party or for uses other than that described in this report.

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2. Site Information & Environmental Setting

2.1 Location

The site is located off North End Road in Yapton, approximately 4.7 km to the southwest of Arundel and occupies an area of approximately 4.6 ha centred on National Grid Reference 497628, 103673.

A site location plan is presented in **Figure 1**.

2.2 Site description and Current Use

The site is currently undeveloped and occupied by two agricultural fields separated by an electric fence. The electric fence was removed prior to commencement of site works. The northern field is roughly rectangular, and the larger southern field is irregular in shape. The site slopes generally towards the northern and western boundaries with a high point in the south-eastern corner. The site is between 5.80m and 7.00m Above Ordinance Datum (AOD).

Access to the site is afforded via a gateway on the eastern site boundary off North End Road. The site has two stiles at the eastern and western perimeter of the northern field indicating a public right of way exists across the site.

Yapton CE Primary School is located to the east of the site with agricultural land to the north, west and south, and Stakers Farm to the immediate south-east.

The layout of the site is shown on **Figure 2**.

2.3 Historical Development

2.3.1 Site Development

The earliest historical map pertaining to the site is dated 1876-1877 (OS Map - 1:2,500) and shows the site as undeveloped agricultural land with two footpaths mapped in the northern field. There is little change to the site until 1938-1939 (OS Map - 1:2,500) when the eastern area of the southern field has been divided into plots. The size and shape of the plots change slightly and by 1982 (OS Map - 1:2,500) a building is shown within the site boundary in the south-east of the site as part of Stakers Farm (off-site). There are no further changes of note within the site boundary between 1982 and the recent 2019 OS Map (1:10,000).

2.3.2 Off-site Development

The earliest map dated 1876-1877 shows the site is located in the town of Yapton. The wider area is largely agricultural and comprises farm buildings with associated agricultural fields, residential buildings and notably a School located on the eastern site boundary of the site and Stakers Farm immediately to the south-east of the site. At this time a number of wells are mapped within 250m of the site, the closest is approximately 80m

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south-west. A smithy is located approximately 250m south-east of the site. Further to the north-west of the site (c. 900m) a flour windmill is mapped which is no longer shown in 1980.

By 1899, a brick yard has been established approximately 450m south-east of the site, this is later mapped as a Brick Works (c. 1913) with an associated brick field and is no longer shown in 1951.

The 1951 OS Map (1: 10,000 scale) shows an embankment labelled as 'Old Canal' approximately 300m south of the site. This was previously mapped as a footpath. The number of buildings in Yapton has increased by this time and larger farms are shown between 500m and 1.5km from the site.

By 1980 Yapton has extended southwards with numerous residential developments, the area remains largely unchanged on the subsequent OS Maps dated 1992 to 2019.

2.4 Anticipated Geology

The anticipated general succession of ground conditions as determined from publications by the British Geological Survey (BGS) is summarised below.

2.4.1 Made Ground

WYG are not aware of any previous ground investigations undertaken on site. Based on the historical use of the site (Section 2.3) a significant thickness of Made Ground is not anticipated.

2.4.2 Superficial Deposits

The BGS online map viewer accessed on 28th March 2019 indicates the site is underlain by River Terrace deposits composed of sands, silts and clays. Historic borehole logs available online indicate superficial deposits were encountered beneath a thin layer (0.30m – 0.50m) of topsoil to depths of between 3.30m and 3.90m bgl. Deposits generally comprised a layer of silty clay underlain by sands and gravels.

2.4.3 Solid Geology

The BGS online map viewer indicates the bedrock beneath the site is the Lewes Nodular Chalk Formation, Seaford Chalk Formation, Newhaven Chalk Formation, Culver Chalk Formation and Portsdown Chalk Formation. This succession forms the White Chalk Sub Group and is herein referred to as the White Chalk.

2.5 Mining and Mineral Extraction

The Envirocheck report (February, 2019) held in Appendix H – **Envirocheck Report (February 2019)**, indicates that there are 3No. BGS recorded mineral sites within 1km of the site boundary, the closest is 473m south of the site. All records relate to the Burndell Brick Yard and the opencast mining (Unknown Operator) of common clay and shale, operations now ceased.

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The Coal Authority interactive map (available online) indicated the site is not in an area affected by coal mining.

2.6 Ground Stability Hazards

The Envirocheck report (February, 2019) identified the following hazards relating to ground stability within the site boundary:

- Collapsible Ground, Running Sand, Shrinking or Swelling Clay – Low Hazard
- Ground Dissolution, Landslide – Very Low Hazard

No hazard was identified related to compressible ground.

2.7 Hydrogeology

2.7.1 Aquifer Classification

The Chalk Formations (bedrock) and River Terrace deposits (superficial) underneath the site are classified by the Environment Agency (EA) as a Principal Aquifer and Secondary A Aquifer, respectively. Principal aquifers are described as having high intergranular permeability and therefore provide a high level of water storage and may support water supply and/or river base flow on a strategic scale. Secondary A aquifers are described as having a high groundwater vulnerability. These aquifers are typically characterised by permeable layers capable of supporting supplies at local level rather than on a strategic scale and may provide important base flow to rivers.

The site is not located within a groundwater Source Protection Zone (SPZ) relating to drinking water supply, and there are no source protection zones within 1km of the site.

2.7.2 Groundwater Abstractions

Table 2.1: Groundwater Abstraction Consents within 1km of the site

Operator	Reference number	Abstraction	Location from site	Issue Date
Mr A Clay Esq	10/41/411007	Agriculture: Horticultural Watering – water may be abstracted from a single point	17m NE (adjacent to the northern site boundary)	18th July 1979
Eric Wall Holdings Ltd.	10/441/542208	Horticulture and Nurseries: Spray irrigation (direct) – water may be abstracted from a single point	921 NW	10th June 2009
Keith Langmead	10/41/412007	General agriculture: Spray	950 E	31st March 2016

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Operator	Reference number	Abstraction	Location from site	Issue Date
Ltd.		irrigation (direct) – water may be abstracted from a single point		
Mr A C Langmead Esq	10/41/412007	General agriculture: Spray irrigation (direct) – water may be abstracted from a single point	950 E	30th May 1989

2.7.3 Groundwater Discharges

There are no groundwater discharges within 1km of the site boundary.

2.8 Hydrology

The Envirocheck report (2019) indicates there are several water bodies within 500m of the site including 'West Streams' located 161m west, however, these appear to be field drains and are not major water bodies.

There is no formal drainage system for the site and surface water drainage is expected to infiltrate through the surface of the field into the sub-surface and bedrock aquifers.

2.8.1 Surface Water Abstractions

There are no surface water abstractions within 500m of the site boundary. The nearest surface water abstraction is located 607m north-east of the site boundary and relates to the operator Adviserate T/A Southdown Flowers for spray irrigation, no other information is supplied.

2.8.2 Surface Water Discharges

There is one surface water discharge consent within 500m of the site boundary. Details are provided in Table 2.2 below.

Table 2.2: Surface Water Discharge Consents within 500m of the site

Operator	Reference number	Discharge Type	Receiving Water	Location from site	Issue Date
Micham Tyre Mart	P11155	Sewage Discharges – Final/Treated Effluent – Not Water Company	Soakaway	493 N	8th July 2003

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2.8.3 Flooding

A Flood risk assessment (Version 1.1, June 2017) for the site was prepared by the Civil Engineering Practice (CEP) to support the planning application submitted for the aforementioned development. The report notes the site is located within 'Flood Zone 1' and is not at risk of flooding from rivers or the sea from anything less extreme than a 1 in 1000 year flood event.

The report notes the Environment Agency and West Sussex County Council hold no information relating to records of flooding of the site.

The Envirocheck 2019 report indicates there is the potential for groundwater flooding of property situated below ground level within the site boundary. This is confirmed as a low risk by the CEP 2017 report. The report also indicates there is a low risk of surface water flooding within the site.

CEP (2017) note that there is not anticipated to be significant runoff from the site based on the topography. In addition, any water accumulation is likely to be along the north-western site boundary.

2.9 Pollution Incidents

The Envirocheck 2019 report indicates there is one pollution incident to controlled waters, located 543m north of the site boundary. The incident was identified as a Category 3 (minor) incident where surcharging sewage was noted to be flooding gardens and running along road. The cause of the incident was 'Water Company STW' dated 7th January 1998. No further information is provided.

2.10 Waste Treatment and Disposal

2.10.1 Landfill Sites

There is one historical landfill site located within 500m of the site boundary. The site is 233m south-west of the site in Barnham, Sussex dated 31st December 1970. The waste was 'deposited waste included inert waste' no other information is provided, and the licence holder is not supplied.

There are no Local Authority recorded landfill sites within 500m of the site boundary. The closest is located 771m south-east of the site at 'Old Canal, East of Downview Road – Yapton. No further information, including the waste type, is supplied.

There are no registered landfill sites within 500m of the site boundary. The closest is located 790m south-east of the site and is registered to A C Langmead (Ref: 5/AP/79) dated 10th December 1979. Construction and demolition wastes accepted with contaminated rubble and soil prohibited. The licence status is 'lapsed / cancelled'.

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2.10.2 Waste Management and Transfer Facilities

There are no active waste management facilities within 500m of the site.

2.10.3 Local Authority Pollution Prevention and Control

There are no LPPC licensed facilities located with 500m of the site.

2.10.4 Integrated Pollution Prevention and Control (IPPC)

No IPPC licences are located within 500m of the site.

2.10.5 Control of Major Accident Hazards (COMAH) Reports

There are no Control of Major Accident Hazards (COMAH) relating to or within 500m of the site.

2.10.6 Potentially Infilled Land

There following records of potentially infilled land were identified in the Envirocheck 2019 report:

Infilled land Type	Use	Date of mapping	Location from site
Non-water	Unknown filled ground (pit, quarry etc)	1992	418m SE Location of the former Brick works and associated brick field
Water	Unknown filled ground (Pond, marsh, river, stream, dock etc)	1962	171m S

2.11 Sensitive Land Use

There are no Sites of Special Scientific Interest (SSSI) located within 500m of the site. Stakers Farmhouse (Reference 1274601) is a grade II listed building (England) located to the east of the site boundary.

The site is located within a Nitrate Vulnerable Zone.

2.12 Ecology

There are no designated nature conservation sites within, or immediately adjacent to the site boundary.

2.13 Unexploded Ordnances (UXO)

The Zetica website identified the site at low risk from unexploded bombs.

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2.14 Radon

The UK maps of radon are available online via Public Health England and indicate the site is in the lowest band of radon potential with less than 1% of homes above the action level. The Envirocheck report (February, 2019) for the site indicates that no radon protective measures are necessary in the construction of new dwellings or extensions.

2.15 Previous Investigations

GTA Civils Ltd carried out a SUDS report (report ref 5836/2.3, dated 10th June 2015). WYG understand that Dandara Ltd do not have reliance on the reports outlined above and as such the data is presented for information only.

The assessment identified the following geotechnical conclusions:

- The use of the site may have involved the use of chemical fertilisers, weed killers and other substances.
- 4 no. window sample boreholes were advanced to depths of between 3.0m and 6.0m and were located across the northern half of the site.
- Borehole records indicate topsoil extended to a maximum depth of 0.5m in a single borehole in the north-eastern corner of the site only. Soft to firm light brown silty clay with flint gravel and occasional chalk fragments with occasional bands of medium subangular flint gravel extended below this to the full depth of all boreholes.
- Borehole records also indicate that groundwater was encountered within BH04 at a depth of 4.0m during drilling.
- Subsequent continuous groundwater monitoring indicated the depths to groundwater to vary between 2.5m and 4.8m over an approximately 11 week period were carried out between January and April 2015.
- 4 no. soakaway tests were carried out within the boreholes and the results show variable soakage between 8×10^{-8} m/s (negligible) and 6×10^{-6} m/s (slow).

The report concluded that the results will need to be examined by a drainage engineer to consider whether infiltration drainage is feasible.

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3. Site Investigation

The intrusive site investigation was undertaken by WYG on the 7th and 8th March 2019.

3.1 Scope of Investigation Works

The scope of the site investigation included the following:

- Review of above and below-ground infrastructure plans;
- GPR clearance of exploratory hole positions in addition to Cable Avoidance Tool (CAT) and Genny prior to breaking ground;
- 9No. Machine-excavated trial pits (TP01 to TP04, TP06 to TP10) excavated to a maximum depth of 3.60m bgl (TP09);
- Soakaway Testing in 3No. trial pits (TP03, TP08 and TP09) undertaken in general accordance with BRE365;
- 9No. Windowless sample boreholes (WS01, WS02, WS04 to WS10) hand-excavated to a maximum depth of 1.2mbgl and drilled to a maximum of 6.00m bgl;
- 6No. boreholes were installed with 50mm diameter ground gas / groundwater standpipes with response zones in the base of the superficial River Terrace Deposits into Chalk bedrock;
- Two subsequent soil gas and groundwater monitoring visits;
- CBR testing using a TRL probe in 5No. locations; and
- Collection of soil samples for subsequent chemical and geotechnical analysis.

All exploratory holes were logged and sampled by a suitably qualified and experienced WYG Engineer.

The locations of all exploratory holes were surveyed by Intersect Surveys Ltd following the completion of intrusive works and are shown on **Figure 2**.

3.2 Gas and Groundwater Monitoring

The gas and groundwater monitoring of the recently installed WYG 2019 boreholes (WS01, WS04, WS05, WS06, WS09 and WS10) was completed on the 20th March 2019 and 12th April 2019.

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Monitoring included the measurement of groundwater levels using a dual phase dip meter in all well installations. A gas monitor (GA5000) was used to obtain ground gas and vapour measurements, respectively (CH4, CO2, O2, H2S and CO) from all borehole monitoring wells.

Results from monitoring are included in Appendix G – **Groundwater and Gas Monitoring Results**.

3.3 Laboratory Analysis

3.3.1 Geotechnical Laboratory Testing

Geotechnical testing was scheduled by WYG and undertaken by GSTL Ltd, an approved supplier in accordance with the requirements of WYG'S quality system and UKAS accredited for a range of geotechnical tests. The test procedures used in each case are given in Table 3.1 below. The results of these analyses are included as Appendix E – **Geotechnical Laboratory Testing Results**.

Table 3.1 Summary of Geotechnical Testing

Test	Standard (BS1377:1990) and Accreditation	No.
PSD Dry Sieve Method	BS1377:1990 Part2:9.2	3
Intact dry density	ASTM (non-accredited test)	8
Saturated Moisture Content (Chalk)	ASTM (non-accredited test)	8
Moisture Content	BS1377:1990 Part 2:3.2	4
Atterberg Limits	BS1377:1990 Part 2:4.3&5.3	4
pH and sulphate	BS1377:1990 Part 3 & BRE CP2/79 (non-accredited test)	4

* 2No geotechnical test results are outstanding and will be reported as an addendum to this report.

3.3.2 Environmental Laboratory Testing

Analytical testing was undertaken by ALS Environmental Laboratories in Deeside, a UKAS and MCERTS accredited laboratory. The testing was scheduled by WYG and is summarised in Table 3.2.

A full set of the chemical analytical results is presented in Appendix F – **Environmental Laboratory Testing Results**.

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Table 3.2 - Summary of environmental testing

Test suite	No.
Soil Analysis	
Asbestos Screen	16
FOC	16
Free Cyanide	16
pH	16
Heavy Metals	16
Total Phenol	16
EPH (>C10 – C40)	8
Speciated TPH	8
PAHs	16
Pesticides and Organics	3
Soil Leachate Analysis	
pH	3
Heavy Metals	3
Total Phenol	3
EPH (>C10 – C40)	3
PAHs	3

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4. Ground Investigation Findings

4.1 Ground Conditions

A summary description of the ground conditions encountered during the 2019 ground investigation is presented below, exploratory hole logs and photographic plates are provided in Appendix B. The exploratory hole location plan is presented as **Figure 2**.

- **Surface Cover:** Topsoil comprising brown slightly gravelly sandy clay with frequent rootlets.
- Made Ground was not encountered.
- **Superficial Deposits**: River Terrace Deposits generally comprised firm to stiff orange brown clay with varying sand and gravel content. Gravel is noted to be sub-angular to angular flint. Bands of clayey gravelly fine to coarse sand were encountered in TP01, TP03, TP06, TP07, in thicknesses between 0.20m and 0.80m.
- **Bedrock**: weathered structureless (Grade Dm) White Chalk generally recovered as silty chalk gravel with occasional flint.

A summary of the depth of each stratum is provided in Table 4.1 below.

Table 4.1 Summary of Strata Depths for all Exploratory Holes

Exploratory Hole	Topsoil (m bgl)	River Terrace Deposits (m bgl)	White Chalk (m bgl)
TP01	GL – 0.05	0.05 – 3.50*	Not Encountered
TP02	GL – 0.05	0.05 – 2.30*	Not Encountered
TP03	GL – 0.05	0.05 – 2.30*	Not Encountered
TP04	GL – 0.05	0.05 – 3.50*	Not Encountered
TP06	GL – 0.10	0.10 – 3.00	3.00 – 3.20*
TP07	GL – 0.20	0.20 – 3.20	3.20 – 3.30*
TP08	GL – 0.15	0.15 – 2.20*	Not Encountered
TP09	GL – 0.10	0.10 – 3.20	3.20 – 3.60*
TP10	GL – 0.10	0.10 – 2.90	2.90 – 3.50*
WS01	GL – 0.40	0.40 – 2.90	2.90 – 6.00*
WS02	GL – 0.30	0.30 – 4.00	4.00 – 6.00*
WS04	GL – 0.30	0.30 – 3.60	3.60 – 6.00*
WS05	GL – 0.30	0.30 – 2.90	2.90 – 6.00*
WS06	GL – 0.45	0.45 – 3.80	3.80 – 5.00*
WS07	GL – 0.35	0.35 – 4.90	4.90 – 5.00*
WS08	GL – 0.50	0.50 – 2.60	2.60 – 6.00*
WS09	GL – 0.40	0.40 – 2.60	2.60 – 6.00*
WS10	GL – 0.40	0.40 – 3.60	3.60 – 6.00*

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* Base of stratum not proven

4.2 Groundwater

A summary of groundwater observations made during the 2019 ground investigation and follow up monitoring is presented below in Table 4.2 Full details of each monitoring round are provided in Appendix G – **Groundwater and Gas Monitoring Results**.

Table 4.2 Summary of Groundwater Observations (2019)

Exploratory Hole	Screened Strata*	Depth of Water Strike during Investigation			Groundwater Level during Monitoring		
		mbgl	mAOD	Strata	mbgl	mAOD	Strata
WS01	RTD + Top of Chalk	No strike			DRY		
WS02	Not installed	5.20	1.68	Chalk	Not installed		
WS04	RTD	No strike			DRY		
WS05	Chalk	5.00	1.35	Chalk	3.89-4.25	2.46-2.1	Chalk
WS06	RTD	3.80	1.41	Chalk	DRY-2.55	DRY-2.66	RTD
WS08	Not installed	4.00	2.62	Chalk	Not installed		
WS09	Base of RTD + Chalk	4.20	2.34	Chalk	3.79-4.16	2.75-4.90	Chalk
WS10	RTD	4.20	2.46	Chalk	DRY		

RTD = River Terrace Deposits

4.3 Ground Gas Observations

A summary of ground gas readings from the 6No. installed standpipes recorded during the initial monitoring event is presented in Table 4.3 below, with full details presented on the gas monitoring data sheets held in Appendix C – **Soakaway Test Results**.

Table 4.3: Ground gas monitoring summary

Exploratory Hole	Response Zone (mbgl)	Strata Monitored	% v/v[2]			ppm[3]			Max. Flow[4] (l/hr)
			CH_4 (max)	CO_2 (max)	O_2 (min)	H_2S (max)	CO (max)	PID (max)	
WS01	1.00 – 3.00	RTD + Top of Chalk	0.2	3.7	15.6	0	0	-	0.0
WS04	1.00 – 3.00	RTD	0.2	2.3	18.3	0	0	-	-0.2
WS05	5.00 – 6.00	Chalk	0.2	1.9	16.2	0	3	-	0.1

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Exploratory Hole	Response Zone (mbgl)	Strata Monitored	% v/v[2]			ppm[3]			Max. Flow[1] (l/hr)
			CH_4 (max)	CO_2 (max)	O_2 (min)	H_2S (max)	CO (max)	PID (max)	
WS06	1.00 – 3.00	RTD	0.2	2.4	17.9	0	2	-	0.0
WS09	2.00 – 6.00	Base of RTD + Chalk	0.3	2.8	16.0	0	0	-	-0.1
WS10	1.00 – 3.00	RTD	0.2	2.1	17.1	0	0	-	0.0

Note: [1]Maximum magnitude of flow rate given irrespective of whether it was positive or negative.
[2] Volume by volume
[3] Parts per million

Methane was recorded at a maximum of 0.3% v/v in borehole WS09. Carbon dioxide was detected at concentrations between 1.9% v/v (WS5) and 3.7% v/v (WS01). Oxygen was measured at its lowest concentration (15.6% v/v) in WS01. Flow was measured at a maximum of 0.2l/hr. Atmospheric conditions during the two monitoring visits were recorded to be 1034 (rising) and 1027 (rising).

4.4 In Situ Testing

4.4.1 Standard Penetration Testing

Standard Penetration Tests (SPTs) were undertaken in all boreholes. The results are presented on the exploratory logs included in Appendix B.

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5. Geotechnical Assessment

5.1 Soil and Rock Properties

Encountered ground conditions compared well to those described in published literature and previous investigation and comprised turf and topsoil over superficial deposits (River Terrace Deposits) overlying the structureless White Chalk.

Groundwater was encountered at depths ranging between 3.80m and 5.20m bgl.

Detailed description of the soils encountered are presented on the Engineering Logs (Appendix B).

To aid in the selection of characteristic geotechnical parameters the ranges of the various soil and rock properties measured are discussed in the following sections. It is noted that appropriate design values will depend on the specific design criteria being considered, and where characteristic values are indicated, these are reasonably conservative estimates of a measured or assessed properties representing the overall behaviour of the material. Design values will also need to consider the ground-structure interaction for a given structure.

5.1.1 Topsoil

The topsoil ranged in thickness between 0.1m and 0.4m and was relatively uniform in composition consisting of predominantly fine soils.

No in-situ or laboratory assessment was undertaken on the Topsoil which was described as predominantly fine soil, consisting of slightly gravelly, sandy clay with roots and rootlets.

5.1.2 Superficial Deposits (River Terrace Deposits) – Fine

Although coarse soil horizons were noted at deeper levels as described in Section Ground Conditions, the superficial deposits were generally identified as fine soils (cohesive).

The consistency of these soils was generally described by the engineer as soft to firm, and typically firm or occasionally stiff from by a depth of 2.00m bgl. This was generally confirmed by SPT N values ranging from 4 to 12 in the upper 2m of soil.

Using the relationship Shear Strength (Cu) = 4.5 x N, equates to an undrained shear strength ranging between 18 and 54kN/m^2.

Cu was generally observed to increase with depth, however soft soil horizons were also noted to be present by the engineer at deeper levels as indicated in Table 5.1 below.

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Table 5.1 Summary of the Depth and Location of Soft Fine Soil Horizons

Location	Depth Top (m bgl)	Depth Base (m bgl)
WS05	2.30	2.90
WS08	2.30	2.60
WS09	2.30	2.60

Based on the limited information available and factoring in the presence of soft soil horizons at deeper levels, which showed no clear lateral consistency across the site, a characteristic Cu of the Superficial Deposits is considered to be **25kN/m^2.**

Atterberg Limits were determined on four representative samples of the superficial deposits (TP4 at 1.50, WS10 at 1.20m bgl, WS07 at 2.00m bgl and WS201 at 1.0m bgl), with moisture contents of 18 to 24%, liquid limits of 34 to 48%, plastic limits of 21 to 23% and plasticity indices of 13 and 28% respectively. With 100% of the sample passing the 425µm sieve, the plasticity index (PI) also equates to the modified Plasticity Index (PI'). These results indicate that the clay soils are of low to intermediate plasticity.

5.1.3 Superficial Deposits (River Terrace Deposits) – Coarse

Predominantly coarse soil horizons were noted at deeper levels within the Superficial Deposits as indicated in Table 5.2 below.

Table 5.2 Summary of the Depth and Location of Coarse Soil Horizons

Location	Depth Top (m bgl)	Depth Base (m bgl)	Thickness (m)
TP01	2.20	3.40	1.20
TP03	1.50	1.70	0.20
TP06	2.70	3.00	0.30
TP07	1.80	2.00	0.20
TP08	1.80	>2.20	>0.40
TP09	2.50	3.20	0.70
WS06	1.30	1.70	0.50
WS07	1.80	1.90	0.10
WS07	3.20	3.30	0.10
WS10	2.30	2.50	0.20

No easily discernible trend in the depth and thickness of the coarse soil horizons across the site has been established, and it is noted that some horizons were intercalated with deeper fine soil horizons.

Coarse superficial deposits were variable in composition, consisting of fine to coarse sand with lessor variable quantities of clay, silt, and flint gravel and cobbles. The engineer's soils descriptions were confirmed by Particle Size Distributions testing on four samples.

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5.1.1 White Chalk

The White Chalk was encountered in thirteen of the exploratory holes at depths ranging between 2.60 and 4.90m bgl. The variable depth of the chalk surface is typical of karstic environments and arises via the weathering of the chalk surface through dissolution.

The White Chalk was relatively uniform in composition and comprised structureless chalk recovered as chalk and flint gravel and cobbles within a sandy silt matrix.

Weathering grades of the chalk, assessed in accordance with CIRIA 574, have been assigned to the chalk horizons encountered within the exploratory holes as detailed on the engineering log strata descriptions.

8No. Laboratory Saturation Moisture Content assessments were undertaken on selected cobbles of chalk and results are summarised in Table 5.3 below.

Table 5.3 Summary of Laboratory Saturation Moisture Content

Sample Location	Depth from (m)	Intact Dry Density (Mg/m^3)	Saturated Moisture Content (%)
TP6	3.20	1.48	31
TP7	3.20	1.60	25
TP9	3.50	1.59	26
TP10	3.20	1.67	23
WS1	4.00	1.65	24
WS4	5.00	1.66	23
WS5	6.00	1.57	27
WS7	5.00	1.60	26

Based on the engineer's description of the recovered soils and SPT N Values which ranged between 11 and 50, a CIRIA C574 Weathering grade of Dm and Dc has been assigned for structureless chalk as indicated on the Engineering Logs.

It is recommended that unless the presence of Grade Dc chalk can be confirmed in local areas, the more conservative parameters of the Grade Dm chalk should be considered for overall characterisation of the site.

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6. Geotechnical Design Considerations

6.1 Introduction

It is understood that the proposed development is to consist of up to 108 conventional residential buildings, consisting of 2No. planning consents (38 and 70 units respectively), with associated landscaped areas (as summarised in Section 1.2). At the time of compiling this report details of proposed structural loadings were not available, and therefore the following discussion provides an in principal assessment of the most viable foundation options for foundation loads considered typical for this kind of development.

6.2 Shallow Foundations

Due to the lateral and vertical variability of the Superficial Deposits it is recommended that foundations are assessed on the basis of the more conservative characteristic parameters of the fine soil horizons.

The near surface soils were typically of lower and more variable consistency, potentially giving rise to unacceptable total or differential settlements under load. The NHBC recommended minimum foundation depths of 1.00m bgl would reduce the risk of unacceptable settlements, however, due to the variability, it is recommended that lower bound values are adopted for preliminary assessments. Less conservative local parameters can be reviewed and used if appropriate once the layout / footprint of individual structures is confirmed.

On this basis, illustrative calculations of allowable bearing pressures have been calculated for foundations constructed at various depths on soft soils are summarised in Table 6.1 below. These calculations have been undertaken, limiting settlements to less than 25mm and assume an average groundwater level of 2.5m.

Table 6.1 Estimates of Allowable Bearing Pressures based on 1.0m wide strip footings bearing onto the fine superficial deposits.

Depth of Foundation (mbgl)	Net Allowable Bearing Pressure (kN/m2)
1.0	60
1.5	70
2.0	70

It is noted that positive contributions to bearing capacity from coarse soil horizons have not been considered in the assessment in Table 6.1.

Structural loads higher than those accommodated by the foundation depths assessed in Table 6.1 may need to consider piled foundations as pressure bulbs would likely be extended into the weathered chalk horizon where settlements are difficult to predict.

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It is recommended that the bases of all foundations are inspected by a qualified engineer prior to construction and where necessary any identified areas of any particularly soft or loose soils be replaced with a suitably compacted coarse-grained fill. It is also recommended that the inside faces of external foundations are protected with proprietary void former or compressible material in order to protect against potential swelling.

6.3 Floor Slabs

In the absence of specific information relating to likely floor slab loadings it has been assumed that these are unlikely to be greater than 8kN/m^2, consistent with other typical two-storey residential developments. Based on this approximation of maximum floor loadings it is considered that ground bearing floor slabs, bearing onto the soft Superficial Deposits would not generate settlements in excess of anticipated slab tolerances, provided that the upper layer of soft/loose topsoil has been removed.

The formation level should also be proof rolled using a heavy vibrating roller and inspected by a suitably-experienced engineer or inspector. Any material such as soft clay, deleterious material containing weak or degradable contaminants, or other unsuitable material, should be excavated and replaced by well-compacted granular fill.

Where housing plots are within the zone of influence of existing or proposed trees, floor slabs should be suspended in accordance with NHBC Chapter 4.2.

6.4 Chemical Attack on Buried Concrete

Chemical tests show low levels of water-soluble sulphates and near neutral conditions.

Based on these conditions, it is recommended that for all concrete, the Design Sulphate Class for the site, as defined in BRE Special Digest 1, be taken as DS1, and the Aggressive Chemical Environment for Concrete (ACEC) site classification be taken as AC-1, assuming mobile water conditions. The recommendations of BRE Special Digest 1 should be followed for concrete foundations and ground bearing floor slabs.

6.5 Pavements

In situ CBR values in the upper 1m beneath existing ground level have been derived from the TRRL DCP data using the TRL Road Note 31 and 8 test procedures. TRL Road Note 31 recommends the following interpretative method:

$$Log10(CBR) = 2.480 - 1.057 \times Log10(T)$$

Where T = *mm per blow with TRL DCP*

Plots derived from the TRL software using this correlation are given in Appendix D – **CBR Test Results**.

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CBR at a minimum of 3 to 4 was recorded between depths of 400mm – 800mm below ground level.

Equilibrium CBR values have been assessed with reference to the Highways Agency design guidance HD25/94 (Table 2 "Equilibrium Subgrade CBR Estimation" within Volume 7 of the Department of Transport Design Manual for Roads and Bridges). For the fine-grained low to medium plasticity Superficial Deposits (with PI up to 28%) a predicted CBR of 2 to 2.5% is suggested for high water table and average conditions.

The in situ CBR data is representative of the soil conditions at the time of testing and pavement design should always be considered against equilibrium CBR values as discussed above. Assuming that all topsoil will be removed prior to pavement construction, it is recommended that a CBR value of 2.5% is adopted for preliminary design for an average pavement thickness for internal access roads and pavements.

As with good construction practice it is recommended the formation level be inspected and that any areas of soft/loose deleterious strata are replaced with an appropriately compacted coarse-grained medium. Proof rolling/compaction of the formation level should be carried out prior to laying of new pavement.

6.6 Temporary Works

Excavated pits generally remained open and stable during the investigation and it is considered that most shallow excavation for foundations and service runs should remain stable in the short term. However, where soft or variable materials are encountered some collapse may occur, requiring localised support or battering to a safe angle of repose. All excavations requiring man entry should be fully supported to prevent unexpected collapse.

It is considered unlikely that groundwater will be encountered within shallow excavations, and any perched water should be manageable using small scale pumps and sumps, although it should be noted that groundwater levels can vary seasonally.

6.7 Drainage

Soil infiltration rates of the superficial deposits were not established due to the low infiltration rate during the soakaway testing (Appendix C – **Soakaway Test Results**) indicating negligible permeability. Therefore, soakaways at the depths assessed during the investigation are not considered to be a viable drainage option.

Subject to regulatory approval, deep bore soakaways into the underlying White Chalk could be considered, however infiltration rates of these soils would need to be confirmed via borehole infiltration testing. It is also noted that concentrated ingress of water into chalk can initiate new dissolution features, particularly in low-density chalk. Soakaways boreholes should therefore be sited a minimum of 10m away from any structure or foundation in line with CIRIA Guidance.

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6.8 Dissolution Features

The ground investigation did not encounter any features that would indicate the presence of dissolution features on the site (or signs of metastability within the superficial deposits potentially associated with underlying chalk dissolution). However, given the susceptibility of calcium carbonate in chalk to dissolution by water containing carbon dioxide and the random occurrence of such features, their presence cannot be discounted. Should dissolution features be encountered during construction, treatment options will need to be implemented and may comprise infilling or bridging the feature. The design of any remedial measures should be undertaken following an appropriate assessment of the feature.

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7. Conceptual Site Model

Information from the recently completed phase of fieldwork has been used to refine the Conceptual Site Model (CSM) and forms the basis of subsequent phases of risk assessment. Component sources, pathways and receptors based upon the current and potential future residential use of the land and surrounding area are summarised below.

Sources:

- Agricultural use of the site (past and current) – Herbicides, pesticides, possible hydrocarbons
- On-site building (unknown use) – potential for Asbestos, TPH, PAHs
- Off-site farm – Unknown agricultural practices and associated fuel storage, buildings to the east of the site, agricultural land north, west and south – potential for herbicides, pesticides, Hydrocarbons, heavy metals

Other potentially contaminative sources identified during the historical use review (Section 2.3) such as the former Brick Works (450m south-east), landfill (232m south) and potentially infilled land (171m south-east) have been assessed as likely to be too great a distance from the site to have a significant impact on the subject site.

Pathways:

- Direct dermal contact or ingestion of soils
- Inhalation of dust / fibres
- Leaching and lateral migration of mobile contamination, and;
- Migration and accumulation of gases though permeable sub-surface materials and/or preferential pathways.

Receptors:

- Current site workers - farm workers;
- Public Open Space users - members of the public using the right of way in the north of the site
- Future residents – residents of the planned development
- Future site workers – ground workers including those in excavations (utilities installation)
- Off-site residents and workers – residents in the surrounding area and pupils, parents and teachers of the primary school adjacent to the site
- Principal Bedrock Aquifer / Secondary A Superficial Aquifer

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The desk-based review indicated that no major surface water body is located within 1km of the site boundary and therefore no viable surface water receptors have been identified as part of the CSM.

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8. Ground Contamination Assessment – Human Health

8.1 Methodology and Relevant Assessment Criteria

A Generic Quantitative Risk Assessment (gQRA) has been undertaken by comparing recorded contaminant concentrations in soil to Generic Assessment Criteria (GAC) to identify the contaminants of concern that have the potential to adversely affect the health of site users. Generic assessment criteria are contaminant concentration values used for comparison purposes to assess the risk associated with contaminant concentrations found on site and are derived using non-site-specific information. If the observed concentration of a particular contaminant is below the GAC for a pollutant linkage then the risk is generally considered to be acceptable and does not generally warrant further assessment. Furthermore, a substance recorded in excess of a particular GAC does not necessarily indicate that a particular risk is present to an extent that would require remediation. Where the GAC is exceeded, further appraisal is recommended to assess the significance in line with the current UK tiered risk assessment framework.

The following sections introduce the derivation of the GAC used to identify contaminants of concern at the site and the statistical methods by which localised areas of contamination at the site can be isolated if applicable. In addition, it provides a review of the soil, soil vapour, soil-leachate and groundwater analytical results at the site and a discussion of the distribution of the soil and water contamination.

8.2 Assessment Criteria

8.2.1 Soils

In order to assess the soil analysis results with regard to potential human health risks, WYG have sourced Tier 1 Soil Screening Values (SSV) principally from Category 4 Screening Levels (C4SL) derived by DEFRA with CL:AIRE (Contaminated Land: Assessment in Real Environment)1. Where C4SLs are unavailable Suitable For Use Levels (S4ULs) developed by LQM/CIEH (2015)2 have been used. Both these sets of screening values are consistent with the updated CLEA v1.071 Model.

C4SLs have been published for arsenic, benzene, benzo(a)pyrene, cadmium, chromium VI and lead3 for soil using the CLEA Model. The C4SLs are considered suitable by DEFRA for use for Part 2A decisions and planning, i.e. change of use. Contaminant concentrations below C4SLs are considered to pose an acceptably low risk to human health. The LQM/CIEH S4ULs provide GACs based on minimal or tolerable risk intended

[1] DEFRA, 2014. SP1010: Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination – Policy Companion Document
[2] LQM/CIEH (3rd Edition) "Suitable for Use Levels (S4ULs) for Human Health Risk Assessment (2015)"
[3] Arsenic, benzene, benzo(a)pyrene, cadmium, chromium VI, lead assuming 6% SOM (1% SOM C4SL also published for benzene)

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to be protective of human health for individual or mixtures of substances. It is considered conservative and appropriate to use these values for contaminants for which C4SLs are unavailable.

SSV for volatile and semi-volatile organic compounds (VOC and SVOC) not presented in the S4UL document are sourced from CL:AIRE "Soil Generic Assessment Criteria for Human Health Risk Assessment" (January 2010). These SSV have been generated using the CLEA v1.06 model. The input parameters included in the CLEA v1.06 Model are generally considered to be more conservative than those in the updated CLEA v1.071 Model therefore the use of these SSV are deemed conservatively appropriate.

An Easily Liberatable Cyanide SSV has been generated by WYG considering short term exposure risks from inorganic cyanide using an approach consistent with that used by the UK Health Protection Agency.

Soil Organic Matter (SOMs) have been assumed for the purposes of screening, a mean SOM of 1.57% was calculated for samples taken from the topsoil and a mean SOM of 0.72% was calculated for samples taken in superficial river terrace deposits. For this reason, GACs corresponding to a SOM of 1% have been used for the screening of the samples.

For each contaminant, SSV have been derived for various land use types. These include:

- Residential with plant uptake;
- Residential without plant uptake;
- Commercial;
- Allotment
- Public Open Space Residential (POS_{resi})
- Public Open Space Park (POS_{park})

In consideration of the ultimate residential end use of the site SSVs protective of a residential with plant uptake have been applied.

The derivation of SSV is an ongoing developing process and as such, methodologies and input parameter values may alter as new guidance is published. This may result in temporary inconsistencies in the SSV and regular updates as research and development work progresses.

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8.3 Characterisation and Assessment

8.3.1 Soils

In order to identify potential contaminants of concern, 8No. samples of topsoil and 8No. samples of river terrace deposits collected during the WYG 2019 ground investigation have been screened against GACs derived to be protective of human health, as detailed in Section 8.2 above. The results of the screening exercise is presented in Table 8.1 below.

Table 8.1: HH-gQRA Screening Results

Contaminant	Units	GAC	No. Samples	No. > GAC	Exceedance Concentration	Location and depth of exceedance
pH	pH Units	5 – 9	16	1	4.69	WS05, 0.2m bgl (Topsoil)
No further exceedances to GAC						

The exceedance of pH is considered as an isolated marginal exceedance and is not considered to present a risk to human health. Based on the 8No. topsoil samples taken it is considered that it would be suitable to reuse the topsoil on site as part of any future development.

No further exceedances were identified, and no visual or olfactory evidence of contamination observed during the site investigation.

8.3.2 Asbestos Screening

16No. samples were analysed for the presence of asbestos including 14No. taken between 0.30m and 0.5m bgl and a further 2No. samples taken below 1m bgl across the site. Asbestos was not identified in any sample.

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9. Generic Quantitative Assessment – Controlled Waters

9.1 Methodology

The potential for soil contamination to impact the controlled waters receptors has been assessed by comparing analytical data from soil leaching tests directly against relevant WQS.

9.2 Water Quality Standards

The CSM identifies a plausible migration pathway from the site soils to the aquifers beneath the site. The aquifers underlying the site are classified as a Secondary A (superficial) and Principal (bedrock) Aquifers and there are 4No. recorded groundwater abstraction within 1km of the site, the nearest is located adjacent to the northern site boundary which relates to the abstraction of groundwater for agricultural use. As detailed in section 7 no viable surface water receptor has been identified. In recognition of sensitive groundwater receptors in the vicinity of the site, the most conservative criteria applicable have been chosen for screening of soil leachate.

The adopted water quality targets are principally taken from Water Framework Directive (WFD 2015) Environmental Quality Standards (EQS)[4] and Drinking Water Standards[5]. Soil-leachate samples and groundwater samples have been assessed against freshwater EQS and in the absence of this have been screened against the most conservative of River Water EQS, Freshwater EQS, Transitional and Coastal Waters EQS and Drinking Water Standards.

9.3 Assessment of Soil-Leachate Potential

A total of 3No. soil-leachate preparations were analysed, 2No. from topsoil and 1No. from the superficial deposits. It is noted that contaminants identified in concentrations less than the analytical limit of detection (LOD), but exceeding the relevant WQS, are not considered to present a significant risk to Controlled Waters in the context of the site and are not included below.

The distribution and concentration of contaminants of concern recorded in excess of the WQS in soil-leachate samples are summarised below in Table 9.1.

[4] Where WFD 2015 are not presented revoked WFD 2010 standards are used
[5] WHO 2005; WHO 2008; UK Water Supply Regulations 2010 and 1989 Regulations. Priority given to UK drinking water standards

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Table 9.1: CW gQRA Screening Results

Contaminant	Units	WQS	No. Samples	No. > GAC	Maximum Exceedance Concentration	Minimum Exceedance Concentration	Location and depth of exceedance
Copper	mg/l	0.001	3	1	0.0327	0.0327	WS02, 0.3m bgl
Nickel	mg/l	0.004	3	1	0.00726	0.00726	
Zinc	mg/l	0.0109	3	2	0.0146	0.0112	WS02, 0.3m bgl WS06, 0.4m bgl

The leachate analysis essentially provides a worst-case scenario regarding the contaminants that have the potential to leach from the soil.

The CW-gQRA has identified exceedances of heavy metals in the topsoil samples taken from WS02 and WS06. The exceedances are considered marginal and are not considered to present a significant risk to the underlying Principal and Secondary A Aquifers.

9.4 Assessment of Groundwater

No visual or olfactory evidence of groundwater contamination was observed during the monitoring visit (20th March) nor during the ground investigation. No groundwater samples have been taken to date.

Whilst the soil-leachate results (Section 9.3) indicate the soils within the site are unlikely to present a significant risk to the underlying Principal and Secondary A Aquifers it is recommended that further groundwater samples are taken from the recently installed WYG boreholes (where possible), to provide information on the quality of groundwater in order to provide further clarity on the potential risk from off-site sources (Section 7).

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10. Generic Quantitative Assessment – Ground Gas Risks

10.1 Background

Ground gases including methane, carbon dioxide and small concentrations of trace gases can occur naturally in soils containing organic material and are produced in greatest concentrations in soils with high organic content such as peat and Alluvial soils. These gases can also be generated from the degradation of buried organic materials. Methane is the principal hazardous gas associated with the degradation of organic material in both natural organic soils and from any organic fraction within Made Ground. Methane is biochemically reactive and is readily oxidised to carbon dioxide under aerobic conditions. Carbon dioxide can also be generated directly in soils. High methane and carbon dioxide concentrations may also be evidence of leaks from gas mains and/or equipment.

The risks posed from ground gases are primarily from explosion or inhalation, both following accumulation in a confined space. The risks to site users from ground gas in areas of open space are not normally deemed to be significant.

Explosion of ground gases can only occur if the following elements are present:-

1. A source of flammable gas;
2. A confined or enclosed space;
3. A source of ignition; and
4. Sufficient oxygen to support combustion.

The flammability of a particular gas mixture is dependent on a number of factors including composition, temperature and pressure. The potential flammability of methane in a mixture increases with the relative concentration of oxygen. In addition, the presence of carbon dioxide within a gas mixture will change the potential flammability as it will alter the upper explosive limit of methane.

Methane is a low toxicity gas and carbon dioxide a high toxicity gas. Adverse health effects of carbon dioxide include headaches and shortness of breath (3% v/v), increased heart rates, dizziness and rapid loss of unconscious (6 to 11%) and death (>22%).

Any gas or mixture of gases will cause physiological effects if it displaces oxygen in a confined space, to an extent when oxygen concentrations fall below 18 % v/v. This begins with impairment of judgement (17% oxygen in air), followed by anoxia and abnormal fatigue (10–16%), nausea and unconsciousness (6–10%)

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leading to death (<6 %). Physiological effects can be more severe if carbon dioxide is the cause of oxygen depletion.

10.2 Assessment Criteria

A generic ground gas risk assessment has been undertaken to assess the risks to site workers occupying the site within Section 11 below. The assessment of carbon dioxide and methane levels has been undertaken in accordance with the principles set out in the CIRIA guidance (Assessing risk posed by hazardous ground gases to buildings, CIRIA C659, 2006 now revised as CIRIA C665).

The assessment has been undertaken against the Modified Wilson and Card Classification as set out in C665 based on a commercial/ industrial end use. The guidance provided in Tables 5.5a and 5.5b of C665 regarding typical/idealised periods and frequency of monitoring indicate an insufficient amount of data is available to undertake a complete gas risk assessment. Consequently, the following assessment is indicative only and further monitoring would be necessary should a more comprehensive assessment be required.

It should be noted that the site is occupied on a part time basis and so there is only limited use of buildings on site. The ground investigation was designed primarily to assess the risks from land contamination to environmental receptors. The data used to address risks from ground gases has generally been obtained from exploratory hole positions to target pathways and receptors associated with control waters.

Gas Screening Values (GSVs) have been calculated using the formula:

GSV = borehole flow rate (l/hr) x gas concentration (v/v %) / 100

This calculation has been applied to the maximum methane, carbon dioxide and flow rates recorded over the monitoring period to reflect a worst-case-scenario. The GSV is compared with the Characteristic Situation (Modified Wilson and Card classification) as detailed in the CIRIA guidance from which the risk is evaluated.

Carbon monoxide and hydrogen sulphide levels have been assessed against Workplace Long Term Exposure Limits (LTEL), relating to an 8 hours' exposure period, published in the Health and Safety Executive in 2005 in "Guidance Note EH40: Occupational Exposure". The LTEL for carbon monoxide is 30ppm and for hydrogen sulphide is 5ppm.

10.3 Characterisation

A summary of gas readings recorded is presented in Table 10.1 below. Full details of the gas monitoring rounds are contained on the gas monitoring data sheets held in Appendix G – Groundwater and Gas Monitoring Results.

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Table 10.1 Ground Gas Monitoring Results

Exploratory Hole	Response Zone (mbgl)	Strata Monitored	% v/v[2]			Max. Flow[1] (l/hr)	CH_4 Gas Screening Value (l/hr)	CO_2 Gas Screening Value (l/hr)	Characteristic Situation (CIRIA C665)
			CH_4 (max)	CO_2 (max)	O_2 (min)				
WS01	1.00 – 3.00	RTD + Top of Chalk	0.2	3.7	15.6	0.0	0.0	0.0	1 Very Low Risk
WS04	1.00 – 3.00	RTD	0.2	2.3	18.3	-0.2	0.0004	0.0046	1 Very Low Risk
WS05	5.00 – 6.00	Chalk	0.2	1.9	16.2	0.1	0.0038	0.0019	1 Very Low Risk
WS06	1.00 – 3.00	RTD	0.2	2.4	17.9	0.0	0.0	0.0	1 Very Low Risk
WS09	2.00 – 6.00	Base of RTD + Chalk	0.3	2.8	16.0	-0.1	0.0003	0.0028	1 Very Low Risk
WS10	1.00 – 3.00	RTD	0.2	2.1	17.1	0.0	0.0	0.0	1 Very Low Risk
Worst Case Scenario			0.3	3.7	15.6	0.2	0.0006	0.0074	**1 Very Low Risk**

Atmospheric conditions during the two monitoring visits were recorded to be 1034 (rising) and 1027 (rising).

10.4 Gas Assessment

Based on the Modified Wilson and Card assessment a worst-case Characteristic Situation of 1 was calculated for the site, corresponding to a very low risk to human-health receptors. The calculation is based on a conservative scenario with maximum methane and carbon dioxide concentrations and highest flow rates.

However, the assessment is based on two rounds of monitoring data, taken during high atmospheric pressure which is unlikely to represent worst case conditions. CIRIA guidance recommends that assessment should normally be based on at least 6 rounds of monitoring including monitoring undertaken during a period of falling atmospheric pressure. Consideration should be given to undertaking additional monitoring to confirm the classification. These requirements should be discussed with the planning authority.

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11. Qualitative Risk Assessment

11.1 Introduction

The pollutant linkages derived from the CSM set out in Section 7 and a qualitative risk assessment are presented in the table below. The risk assessment considers the site within an area context and assesses potential risks to identified receptors in relation to the existing site setting and the proposed development. CIRIA C552 has been used to define the risk rating presented in the Qualitative Risk Assessment matrix, methodology for which is presented in Appendix I – **CIRIA C552 Qualitative Risk Assessment Matrix**.

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Table 11.1 CIRIA C552 Qualitative Risk Assessment

Source	Pathway	Receptor	Consequence of risk being realised	Probability of risk being realised	Risk Classification	Potential risk management requirements
Agricultural use of the site - Past and Present Potential for Pesticides, herbicides and other contaminants including hydrocarbons	Leaching/ dissolution from contaminated soils	Principal and Secondary A Aquifers	Medium	Unlikely	Low Risk	Low pH was identified in one topsoil sample with marginal exceedances of heavy metals identified in soil-leachate preparations of the topsoil. All other analysed contaminants were identified as below the relevant screening criteria. To provide a suitably robust controlled waters risk assessment groundwater samples will be taken during the next monitoring round.
	Direct dermal contact or ingestion of soils, Inhalation of Dust	Current site workers, public open space users, future residents, off-site worker/residents, future site workers	Mild	Unlikely	Very Low risk	Low pH was identified in one topsoil sample. All other measured contaminants were identified as below the relevant screening criteria. From the results there is thought to be a very low risk to all human health receptors.
	Migration and accumulation of gas	Future residents	Medium	Unlikely	Low Risk	The ground gas risk assessment identified a very low risk to human health receptors. However this is based on only two monitoring rounds during high atmospheric pressure which is unlikely to represent worst case conditions. Consideration should be given to undertaking additional monitoring, subject to planning authority requirements.
Asbestos	Inhalation of fibres	Current site workers, public open space users, future residents, off-site worker/residents	Severe	Unlikely	Moderate/Low Risk	Asbestos was not detected in any soil samples (16No.) collected during the ground investigation. There is no information available pertaining to the on-site building or off-site farm buildings – for example an Asbestos survey and this therefore remains a potential source. No risk mitigation required at present.

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Source	Pathway	Receptor	Consequence of risk being realised	Probability of risk being realised	Risk Classification	Potential risk management requirements
		Future site workers	Severe	Unlikely	Moderate/Low Risk	Asbestos was not detected in any soil samples (16No.) collected during the ground investigation. There is no information available pertaining to the on-site building or off-site farm buildings – for example an Asbestos survey there therefore remains a potential source. Future workers, including those in excavations will be disturbing the soils, whilst unlikely, there remains a limited potential for exposure to asbestos fibres. It is recommended that consideration of the potential presence of previously unidentified asbestos is included in the risk assessment for future ground works, however no risk mitigation required at present.
On site building Potential for PAHs, hydrocarbons, other contaminants	Direct dermal contact or ingestion of soils, Inhalation of Dust	Current site workers, public open space users, future residents, off-site worker/residents, future site workers	Mild	Unlikely	Very Low Risk	Low pH was identified in one topsoil sample, no other contaminants were identified as exceeding relevant screening criteria. From the results there is thought to be a very low risk to human health receptors despite the unknown use of the building.
Off-site Farm Unknown fuel storage and agricultural practices. Potential for PAHs, hydrocarbons, herbicides, pesticides, other contaminants	Leaching/ dissolution from contaminated soils	Principal and Secondary A Aquifers	Medium	Low Likelihood	Moderate / Low Risk	Groundwater samples are recommended to determine groundwater quality.

12. Conclusions and Recommendations

12.1 Ground Contamination Assessment

12.1.1 Human Health

Following the quantitative risk assessment, the human health pollutant linkages have been evaluated as low to very low risk (Table 8.1) with the exception of Asbestos, which remains at a Moderate/low Risk based on the severity of consequence of inhalation of asbestos fibres. No further works or assessment as part of these works is recommended, however, future contractors working on the development should consider including the potential risk in their risk assessments.

12.1.2 Controlled Waters

The assessment has identified a Moderate/ Low risk to the Principal bedrock aquifer and Secondary A superficial Aquifer beneath the site from the off-site farm. Groundwater sampling and a review of the controlled water risk assessment following the analysis results is recommended.

12.1.3 Ground Gas

Based on the initial ground gas monitoring, the site has been classified as Characteristic Situation 1 (Very Low Risk) as such land gas protection measures are not required for new developments on the site. Monitoring under falling atmospheric pressure conditions and a review of the gas risk assessment is recommended.

The site is located in a lower probability radon area (<1% of homes are above the action level), as such no radon protection measures are required for new developments.

12.2 Geotechnical Assessment

Traditional shallow foundations founded within the River Terrace Deposits at a minimum depth of 1.0m bgl may be designed for a net allowable bearing pressure of 60kN/m2, which will limit settlements to less than 25mm. Due to the variable nature of the River Terrace Deposits, founding at a deeper level, such as 2m will only result in a marginal increase in the net allowable bearing pressure (70kN/m2).

Whilst the ground investigation did not encounter the presence of dissolution features, there presence cannot be discounted. It is recommended that additional investigation be undertaken once the layout of the development is known to give increase confidence in the geotechnical parameters for the shallow soils.

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13. Notes

Standards

All boring operations, sampling of soils, in situ testing and geotechnical laboratory testing have been carried out in accordance with the recommendations of the British Standards BS 5930 (2015)(1), BS 1377 (1990)(2) and BS10175 (2001)(3).

Soil and rock descriptions follow the recommendations of BS 5930. Where descriptions or classifications are based on other documents (e.g. BS 8004 (1986) or CIRIA Project Report 11 (1993)), this is stated in the report text.

Site methods

Unless specifically stated otherwise, the following methods are used for exploratory holes.

- Holes described as cable percussive are bored using a light cable percussive rig. Standard penetration tests are carried out where appropriate, as shown in the logs. Disturbed and undisturbed samples are taken from the exploratory holes at the depths on the records.
- Window sampling generally uses the windowless sampling method, using a tracked Geotool.
- Dynamic probes are usually heavy dynamic probes, using the same tracked Geotool used for window sampling.

Definitions and abbreviations

The following terms are used in the exploratory hole logs

Samples

U	Undisturbed 102mm dia. sample
TW	Thin Walled undisturbed 102mm dia. sample
B	Bulk sample
D	Small disturbed sample
W	Water sample
CBR	California Bearing Ratio test or CBR value obtained from Mexiprobe test

In situ tests

S	Standard penetration test (SPT)
N	SPT N value (blows/300mm)
HP	Hand penetrometer – shear strength
SV	Hand shear vane – shear strength
VOC	Volatile organic compounds (ppm)
PID	Photo-ionisation detector – used to detect the presence of VOCs.

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Core recovery and rock quality

TCR	Total core recovery (%)
SCR	Solid core recovery (%)
RQD	Rock quality designation (%)
FI	Fracture index
NR	No recovery
NI	Not intact

Rotary drilling sizes

	Nominal diameter (mm)	
Index letter	**Borehole**	**Core**
N	75	54
H	99	76
P	120	92
S	146	113

Water strikes

▽	Level of water strike
▼	Water level rose to this level (see Remarks at foot of log for details)

Depth means depth below existing ground level unless otherwise specified. Values specified in soil descriptions given in the exploratory hole logs are depths unless otherwise specified.

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Abbreviations

AOD	above Ordnance Datum
bgl	below ground level
BGS	British Geological Survey
BTEX	Benzene, Toluene, Ethylbenzene and Xylenes
C4SL	Category 4 Screening Levels
CIEH	Chartered Institute of Environmental Health
CLEA	Contaminated Land Exposure Assessment
CoC	Constituent of Concern
CSM	Conceptual Site Model
DEFRA	Department of Environment, food and Rural Affairs
DQRA	Detailed Quantitative Risk Assessment
DTS	Desktop Study
DRO	Diesel Range Organics
DWS	Drinking Water Standard
EA	Environment Agency (England)
EPH	Extractable Petroleum Hydrocarbons
EQS	Environmental Quality Standards
FOC	Fraction Organic Carbon
GPR	Ground Penetrating Radar
LOD	Limit of detection
LQM	Land Quality Management
NRW	Natural Resources Wales
OS	Ordnance Survey
PAH	Polycyclic aromatic hydrocarbon
PCB	Polychlorinated biphenyl
PPE	Personal Protection Equipment
ppm	parts per million
PRO	Petroleum Range Organics
SGV	Soil Guideline Values
SOM	Soil Organic Matter
SVOC	Semi-volatile organic compounds
TPH	Total Petroleum Hydrocarbon
TSV	Tier 1 Screening Values
VOC	Volatile Organic Carbon
VPH	Volatile Petroleum Hydrocarbons

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Figures

Figure 1 – Site Location Plan

Figure 2 – Exploratory Layout Plan

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DO NOT SCALE: CONTRACTOR TO CHECK ALL DIMENSIONS AND REPORT ANY OMISSIONS OR ERRORS



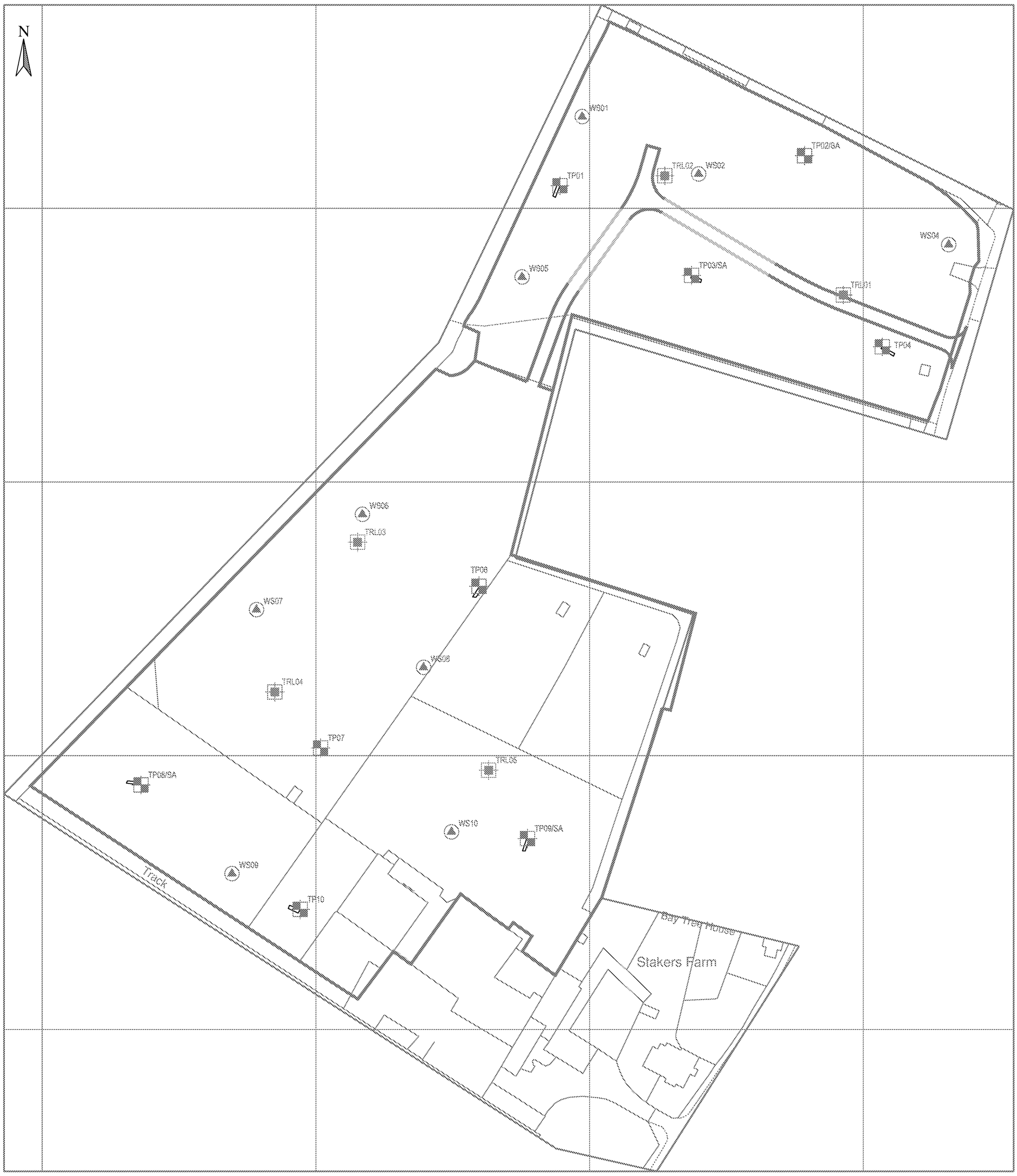
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REV	DESCRIPTION	BY	CHK	APP	DATE

Client: DANDARA LTD (SOUTHERN)	Project: LAND AT STAKERS FARM, YAPTON	Drawing Title: SITE LOCATION PLAN	Scale: 1:2500 @ A1
			Project No.: A112666
			Originator: CDH
			Zone: N
			Level: 1
			Drawing No.: 60

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LEGEND:

- SITE BOUNDARY
- WINDOWLESS SAMPLE LOCATIONS
- TRIAL PIT LOCATIONS
- TRL LOCATIONS

NOTE:
DRAWING BASED ON INTERSECT SURVEYS WINDOW SAMPLE LAYOUT/DRG REF 19607-001/MARCH 2019.

REV	DESCRIPTION	BY	CHK	APP	DATE

5th FLOOR
LONGCROSS COURT
47 NEWPORT ROAD
CARDIFF
CF24 0AD
TEL: +44 (0)29 2082 9200
FAX: +44 (0)29 2045 5321
e-mail: cardiff@wyg.com

Client: DANDARA LTD (SOUTHERN)

Project: LAND AT STAKERS FARM, NORTH END ROAD, YAPTON

Drawing Title: SITE INVESTIGATION LAYOUT PLAN

Scale @ A2	Drawn	Date	Checked	Date	Approved	Date
1:1,000	PP	01.04.19	CA	01.04.19		

Project No.	Office	Type	Drawing No.	Revision
A112666	CDF	N	2	00

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Appendices

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Appendix A – Report Conditions

GROUND INVESTIGATION

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

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

This report is based on a visual site inspection, reference to accessible referenced historical records, information supplied by those parties referenced in the text and preliminary discussions with local and Statutory Authorities. Some of the opinions are based on unconfirmed data and information and are presented as the best that can be obtained without further extensive research. Where ground contamination is suspected but no physical site test results are available to confirm this, the report must be regarded as initial advice only, and further assessment should be undertaken prior to activities related to the site. Where test results undertaken by others have been made available these can only be regarded as a limited sample. The possibility of the presence of contaminants, perhaps in higher concentrations, elsewhere on the site cannot be discounted.

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

The assessment of ground conditions within this report is based upon the findings of the study undertaken. We have interpreted the ground conditions in between locations on the assumption that conditions do not vary significantly. However, no investigation can inspect each and every part of the site and therefore changes or variances in the physical and chemical site conditions as described in this report cannot be discounted.

The report is limited to those aspects of land contamination specifically reported on and is necessarily restricted and no liability is accepted for any other aspect especially concerning gradual or sudden pollution incidents. The opinions expressed cannot be absolute due to the limitations of time and resources imposed by the agreed brief and the possibility of unrecorded previous use and abuse of the site and adjacent sites. The report concentrates on the site as defined in the report and provides an opinion on surrounding sites. If migrating pollution or contamination (past or present) exists further extensive research will be required before the effects can be better determined.

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Appendix B – Exploratory Hole Logs & Photographic Plates

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Project: **Land at Stakers Farm** Location: **Yapton** Client: **Dandara**	Location Details Easting: 497689.18 Northing: 103808.24 Level: 6.30mAOD Depth: 3.50m Logger: KW Type: TP	Status PRELIM	Pit Number **TP01** Sheet 1 of 1

Hole Information		Groundwater				
Pit Dimensions 0.60m 2.50m	Orientation: ° Shoring: None Stability: Good Plant: JCB	Strike (m)	Rose To (m)	After (mins)	Remarks	Scale: 1:25 Checked By: Approved By: Start Date: 08/03/2019 Finish Date: 08/03/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Brown slightly gravelly sandy CLAY. Gravel is fine to medium calcareous fragments. (Topsoil).		0.05	6.25					
Firm orangish brown gravelly sandy CLAY. Gravel is angular to sub angular fine to coarse flint and calcareous fragments. (RTD)						0.40 0.50	B1 ES1	
Firm orangish brown gravelly very sandy CLAY. Gravel is sub angular fine to coarse flint and calcareous fragments. (RTD)		1.00	5.30			1.00 1.20	ES2 B2	
Stiff orangish brown gravelly very sandy CLAY with low cobble content. Gravel is angular to sub angular fine to coarse flint and calcareous fragments. Cobbles are angular flint. (RTD)		1.80	4.50			2.00 2.00	B3 ES3	
Orangish brown gravelly clayey fine to coarse SAND with high cobble content. Gravel is sub angular fine to medium flint and calcareous fragments. Cobbles are angular flint. (RTD)		2.20	4.10			2.50	B4	
Light yellowish brown very gravelly fine to medium SAND with high cobble content. Gravel is angular to sub angular fine to coarse flint and chalk. Cobbles are angular to sub angular flint. (RTD)		3.00	3.30			3.10	B5	
Light brown very gravelly sandy CLAY. Gravel is sub angular to sub rounded fine to coarse chalk and flint (RTD)		3.40 3.50	2.90 2.80			3.50	B6	
EOH at 3.50m - Target depth achieved								

Observations / Remarks

1. Groundwater not encountered
2. Upon completion exploratory hole backfilled with arisings

Project Number

A112666

Project: **Land at Stakers Farm** Location: **Yapton** Client: **Dandara**	Location Details Easting: 497779.24 Northing: 103820.11 Level: 7.06mAOD Depth: 2.30m Logger: KW Type: TP	Status PRELIM	Pit Number **TP02** Sheet 1 of 1

Hole Information		Groundwater				
Pit Dimensions	Orientation: °	Strike (m)	Rose To (m)	After (mins)	Remarks	Scale: 1:25
0.60m / 2.50m	Shoring: None Stability: Good Plant: JCB					Checked By: Approved By: Start Date: 08/03/2019 Finish Date: 08/03/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Brown slightly gravelly sandy CLAY. Sand is fine to coarse. Gravel is sub angular fine to medium calcareous fragments. (Topsoil)		0.05	7.01					
Firm orangish brown gravelly sandy CLAY. Sand is fine to coarse Gravel is angular and sub angular fine to course flint and occasional chalk fragments. (RTD)						0.40 0.40	B1 ES1	
Firm orangish brown slightly gravelly very sandy CLAY. Sand is fine to coarse. Gravel is fine to coarse angular to sub angular flint and calcareous fragments. (RTD) *From 1.20m bgl occasional lenses of orangish brown very clayey fine to coarse SAND*		1.20	5.86			1.50 1.50	B2 ES2	
						2.10	B3	
EOH at 2.30m - Target depth achieved		2.30	4.76					

Observations / Remarks

1. Groundwater not encountered
2. Soakaway test undertaken at 2.3m bgl
2. Following completion of soakaway test, exploratory hole backfilled with arisings.

Project Number

A112666

Project: **Land at Stakers Farm** Location: **Yapton** Client: **Dandara**	Location Details Easting: 497737.25 Northing: 103775.49 Level: 7.02mAOD Depth: 2.30m Logger: KW Type: TP	Status PRELIM	Pit Number **TP03** Sheet 1 of 1

Hole Information		Groundwater				
Pit Dimensions	Orientation: °	Strike (m)	Rose To (m)	After (mins)	Remarks	Scale: 1:25
0.60m / 2.50m	Shoring: None Stability: Good Plant: JCB					Checked By: Approved By: Start Date: 08/03/2019 Finish Date: 08/03/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Brown slightly gravelly sandy CLAY. Sand is fine to coarse. Gravel is sub angular fine to medium flint. (Topsoil) TOP		0.05	6.96					
Firm orangish brown gravelly sandy CLAY. Sand is fine to coarse. Gravel is angular and sub angular fine to coarse flint and calcareous fragments. (RTD) RTD						0.40 0.40	B1 ES1	
Firm to stiff orangish brown gravelly very sandy CLAY. Sand is fine to coarse. Gravel is angular to sub angular fine to coarse flint and calcareous fragments. (RTD) RTD		0.80	6.22			1.20 1.20	B2 ES2	
Brown gravelly slightly clayey fine to coarse SAND. Gravel is angular to sub angular fine to coarse flint and calcareous fragments. (RTD) RTD		1.50	5.52					
Stiff brown very gravelly sandy CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is angular and sub angular fine to coarse flint and calcareous fragments. Cobbles are angular flint. Boulders are angular flint boulders. (RTD) RTD		1.70	5.32			2.00	B3	
EOH at 2.30m - Target depth achieved		2.30	4.72					

Observations / Remarks

1. Groundwater not encountered
2. Soakaway test undertaken at 2.3m bgl
2. Following completion of soakaway test, exploratory hole backfilled with arisings.

Project Number
A112666

Project: **Land at Stakers Farm** Location: **Yapton** Client: **Dandara**	Location Details Easting: 497806.92 Northing: 103749.40 Level: 7.33mAOD Depth: 3.50m Logger: KW Type: TP	Status PRELIM	Pit Number **TP04** Sheet 1 of 1

Hole Information		Groundwater				
Pit Dimensions	Orientation: °	Strike (m)	Rose To (m)	After (mins)	Remarks	Scale: 1:25
0.60m / 2.50m	Shoring: None Stability: Good Plant: JCB					Checked By: Approved By: Start Date: 08/03/2019 Finish Date: 08/03/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Brown slightly gravelly sandy CLAY. Sand is fine to coarse. Gravel is sub angular fine to medium flint. (Topsoil) TOP		0.05	7.28					
Firm brown gravelly sandy CLAY. Gravel is fine and medium sub-angular flint and calcareous fragments. (RIVER TERRACE DEPOSITS) RTD						0.50 0.50 0.50	B1 ES1 ES2	
Brown gravelly very sandy CLAY. Sand is fine to coarse. Gravel is sub angular fine to medium flint and calcareous fragments. (RTD) RTD		0.90	6.43			1.50	B2	
Firm light brown very gravelly sandy CLAY with high cobble content. Sand is fine to coarse. Gravel is angular to sub rounded fine to coarse chalk and flint. Cobbles sub-angular chalk and occasional angular flint. (RTD) RTD		1.80	5.53			2.10	B3	
						3.10	B4	
EOH at 3.50m - Target depth achieved		3.50	3.83					

Observations / Remarks

1. Groundwater not encountered
2. Upon completion exploratory hole backfilled with arisings

Project Number

A112666

Project: **Land at Stakers Farm** Location: **Yapton** Client: **Dandara**	Location Details Easting: 497659.59 Northing: 103661.62 Level: 5.80mAOD Depth: 3.20m Logger: KW Type: TP	Status PRELIM	Pit Number **TP06** Sheet 1 of 1

Hole Information		Groundwater				
Pit Dimensions	Orientation: °	Strike (m)	Rose To (m)	After (mins)	Remarks	Scale: 1:25
0.60m / 2.50m	Shoring: None Stability: Good Plant: JCB					Checked By: Approved By: Start Date: 07/03/2019 Finish Date: 07/03/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Dark brown slightly gravelly sandy CLAY with frequent rootlets. (Topsoil) TOP		0.10	5.70					
Firm orange brown gravelly sandy CLAY. Gravel is angular fine to coarse flint and calcareous fragments. (RIVER TERRACE DEPOSITS) RTD *From 0.80m bgl becoming stiff.*						0.50 0.50 1.20 1.20	B1 ES1 B2 ES2	
Orangish brown gravelly very sandy CLAY with high cobble content. Sand is fine to coarse. Gravel is fine to coarse flint. Cobbles are angular to sub angular flint and calcareous fragments. (RTD) RTD		1.60	4.20			1.80	B3	
Light brown gravelly clayey fine to coarse SAND. Gravel is sub-angular to sub-rounded fine to coarse flint and chalk. (RTD) RTD		2.70	3.10			2.80	B4	
Structureless CHALK. Recovered as whitish brown gravelly sandy SILT with low cobble content. Sand is fine to coarse. Gravel is sub angular fine to coarse chalk and occasional flint. Cobbles are sub-angular. (Upper Chalk - Class Dm).		3.00	2.80					
EOH at 3.20m - Target depth achieved		3.20	2.60			3.20	B5	

Observations / Remarks

1. Groundwater not encountered
2. Upon completion exploratory hole backfilled with arisings

Project Number

A112666

Project: **Land at Stakers Farm** Location: **Yapton** Client: **Dandara**	Location Details Easting: 497601.72 Northing: 103602.85 Level: 6.80mAOD Depth: 3.30m Logger: KW Type: TP	Status PRELIM	Pit Number **TP07** Sheet 1 of 1

Hole Information		Groundwater				
Pit Dimensions 0.60m 2.50m	Orientation: ° Shoring: None Stability: Good Plant: JCB	Strike (m)	Rose To (m)	After (mins)	Remarks	Scale: 1:25 Checked By: Approved By: Start Date: 07/03/2019 Finish Date: 07/03/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Brown slightly gravelly sandy CLAY with frequent rootlets. (Topsoil) TOP		0.20	6.60			0.50 0.50	B1 ES1	
Soft reddish brown gravelly silty CLAY. Gravel is angular to sub-angular fine to coarse flint and calcareous fragments. (RTD) RTD *From 0.70m bgl firm.*		1.60	5.20			1.00 1.20	ES2 B2	
Orangish brown gravelly very sandy CLAY. Gravel is sub angular to sub rounded fine to medium flint and calcareous fragments. (RTD) RTD		1.80	5.00					
Brown gravelly fine to coarse SAND. Gravel is sub angular to sub rounded fine to course flint and calcareous fragments. (RTD) RTD		2.00	4.80					
Stiff light brown gravelly sandy CLAY. Sand is fine to coarse. Gravel is sub angular to sub rounded fine to medium flint and calcareous fragments. (RTD) RTD		2.60	4.20			2.40	B3	
Light brown very gravelly CLAY with low cobble content. Gravel is sub angular to sub rounded fine to coarse chalk . Cobbles are flint. (RTD) RTD		3.20	3.60			3.00 3.20	B4 B5	
Structureless CHALK . Recovered as cream sandy very gravelly silt with high cobble content. Sand is fine to coarse. Gravel is sub angular to sub rounded fine to coarse chalk and occasional angular fine to coarse flint. Cobbles are sub-angular chalk. (Upper Chalk - Class Dm) EOH at 3.30m - Target depth achieved		3.30	3.50					

Observations / Remarks

1. Groundwater not encountered
2. Upon completion exploratory hole backfilled with arisings

Project Number

A112666

Project: **Land at Stakers Farm** Location: **Yapton** Client: **Dandara**	Location Details Easting: 497536.10 Northing: 103589.31 Level: 6.19mAOD Depth: 2.20m Logger: KW Type: TP	Status PRELIM	Pit Number **TP08** Sheet 1 of 1

Hole Information		Groundwater				
Pit Dimensions	Orientation: °	Strike (m)	Rose To (m)	After (mins)	Remarks	Scale: 1:25
0.60m / 2.50m	Shoring: None Stability: Good Plant: JCB					Checked By: Approved By: Start Date: 08/03/2019 Finish Date: 08/03/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Brown slightly gravelly sandy CLAY with frequent rootlets. Sand is fine to coarse. Gravel is fine to medium flint and calcareous fragments. (Topsoil) TOP		0.15	6.04					
Firm orangish brown gravelly sandy CLAY. Sand is fine to coarse. Gravel is sub-angular fine to medium calcareous fragments and flint. (RTD) RTD *From 0.80m bgl becoming stiff.*						0.50 0.50	B1 ES1	
Light brown mottled orange slightly gravelly very sandy CLAY. Sand is fine to medium. Gravel is angular and sub rounded fine to coarse flint and calcareous fragments. (RTD) RTD		1.20	4.99			1.50 1.50	B2 ES2	
Brown gravelly very clayey fine to coarse SAND. Gravel is angular to sub angular fine to coarse flint and occasional calcareous fragments. (RTD) RTD		1.80	4.39					
EOH at 2.20m - Target depth achieved		2.20	3.99			2.50	B3	

Observations / Remarks

1. Groundwater not encountered
2. Soakaway test undertaken at 2.2m bgl
2. Following completion of soakaway test, exploratory hole backfilled with arisings.

Project Number

A112666

Project: **Land at Stakers Farm** Location: **Yapton** Client: **Dandara**	Location Details Easting: 497677.04 Northing: 103569.87 Level: 6.84mAOD Depth: 3.60m Logger: KW Type: TP	Status PRELIM	Pit Number **TP09** Sheet 1 of 1

Hole Information		Groundwater				
Pit Dimensions	Orientation: °	Strike (m)	Rose To (m)	After (mins)	Remarks	Scale: 1:25
0.50m × 2.30m	Shoring: None Stability: Good Plant: JCB					Checked By: Approved By: Start Date: 08/03/2019 Finish Date: 08/03/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Brown slightly gravelly very sandy CLAY with frequent rootlets. Sand is fine to coarse. Gravel is angular to sub angular fine to coarse flint and calcareous fragments. TOP		0.10	6.74					
Firm orangish brown gravelly sandy CLAY. Sand is fine to coarse. Gravel is angular and sub rounded fine to coarse flint and calcareous fragments (RTD) RTD						0.40 0.50	B1 ES1	
Brown slightly gravelly sandy CLAY. Sand is fine to coarse. Gravel is angular to sub angular fine to medium calcareous and flint fragments. (RTD) RTD		0.90	5.94			1.00 1.20	ES2 B2	
Brown gravelly very sandy CLAY with low cobble content. Sand is fine to coarse. Gravel is sub angular to sub rounded fine to coarse calcareous and flint fragments. Cobbles are angular flint. (RTD) RTD		1.50	5.34			1.70 1.70	B3 ES3	
Light brown very gravelly sandy CLAY with low cobble content. Sand is fine to coarse. Gravel is sub angular and sub rounded fine to coarse chalk and flint. Cobbles are angular flint. (RTD) RTD		2.20	4.64					
Light brown gravelly slightly clayey fine to coarse SAND with low cobble and boulder content. Gravel is sub angular to sub rounded fine to coarse chalk and flint. Cobbles and boulders are angular flint. (RTD) RTD		2.50	4.34			2.50 3.00	B4 B5	
Structureless CHALK. Recovered as of cream very gravelly SILT with low cobble content. Gravel is sub angular to sub rounded fine to coarse chalk and occasional angular flint. Cobbles are sub angular chalk. (Upper Chalk - Class Dm)		3.20	3.64			3.50	B6	
EOH at 3.60m - Target depth achieved		3.60	3.24					

Observations / Remarks

1. Groundwater not encountered
2. Upon completion exploratory hole backfilled with arisings

Project Number
A112666

Project: **Land at Stakers Farm** Location: **Yapton** Client: **Dandara**	Location Details Easting: 497594.27 Northing: 103543.86 Level: 6.60mAOD Depth: 3.50m Logger: KW Type: TP	Status PRELIM	Pit Number **TP10** Sheet 1 of 1

Hole Information		Groundwater				
Pit Dimensions	Orientation: °	Strike (m)	Rose To (m)	After (mins)	Remarks	Scale: 1:25
0.60m / 2.50m	Shoring: None Stability: Good Plant: JCB					Checked By: Approved By: Start Date: 07/03/2019 Finish Date: 07/03/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Dark brown slightly gravelly sandy CLAY with frequent rootlets. Gravel is sub angular to sub rounded fine to medium flint and calcareous fragments. TOP		0.10	6.50					
Firm brown gravelly sandy CLAY. Sand is fine to coarse. Gravel is sub angular to sub rounded fine to medium flint and calcareous fragments. (RTD) RTD *From 0.70m bgl becoming stiff.*						0.40 0.50 1.00 1.00	B1 ES1 B2 ES2	
Brown gravelly very sandy CLAY with low cobble content. Sand is fine to coarse. Gravel is angular to sub angular fine to coarse flint and chalk. Cobbles are angular to sub angular flint and chalk. (RTD) RTD		1.60	5.00			1.60 1.80	ES3 B3	
Light brown sandy very gravelly CLAY. Sand is fine to coarse. Gravel is sub angular to sub rounded fine to coarse flint and chalk. (RTD) RTD		2.40	4.20			2.50	B4	
Structureless CHALK. Recovered as cream very gravelly silt with low cobble content. Gravel is sub angular to sub rounded fine to coarse chalk and occasional angular flints. Cobbles are sub angular chalk. (Upper Chalk - Class Dm)		2.90	3.70			3.20	B5	
EOH at 3.50m - Target depth achieved		3.50	3.10					

Observations / Remarks

1. Groundwater not encountered
2. Upon completion exploratory hole backfilled with arisings

Project Number

A112666

Project: **Land at Stakers Farm**

Location: **Yapton**

Client: **Dandara**

Location Details			
Easting:	497697.29	Northing:	103833.48
Level:	6.52mAOD	Depth:	6.00m
Logger:	DN	Type:	WS
		Inclination:	90°

Status: PRELIM

Borehole Number: **WS01**

Sheet 1 of 1

Scale: 1:50

Checked By:

Approved By:

Start Date: 08/03/2019

Finish Date: 08/03/2019

Method, Plant and Crew					Diameter		Casing		Groundwater					
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks
0.00	1.20	Inspection Pit	Hand Excavated	D Horridge & S Walton	1.20	200								
1.20	6.00	Window Sampler	Tracked Terrier Rig	D Horridge & S Walton	3.00	87								
					5.00	77								
					6.00	67								

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Brown slightly gravelly slightly sandy CLAY. Sand is fine to coarse. (Topsoil)								
TOP		0.40	6.12			0.30	ES1	
Firm orangish brown slightly gravelly slightly sandy CLAY with occasional rootlets. Gravel is sub-angular fine flint. (RTD)								
RTD						1.00	ES2	
						1.20	B1	SPT(C) 1.20m, N=8 (1,1/1,2,2,3)
						1.50	ES3	
						2.00	B2	SPT(C) 2.00m, N=4 (0,0/1,1,1,1)
Firm light brown gravelly slightly sandy CLAY. Gravel is sub-rounded fine chalk and occasional sub-angular fine flint (RTD)		2.60	3.92					
RTD		2.90	3.62			3.00	B3	SPT(C) 3.00m, N=23 (4,9/8,5,5,5)
Highly weathered CHALK. Recovered as light brown gravelly fine to coarse SAND. Gravel is sub angular to sub rounded coarse flint and fine calcareous nodules.		3.40	3.12					
Structureless weak CHALK. Recovered as creamy white silty GRAVEL with low cobble content. Gravel is sub angular medium to coarse chalk. Cobbles are angular flint (Upper Chalk - Class Dc)						4.00	B4	SPT(C) 4.00m, N=13 (2,3/2,3,4,4)
						5.00	B5	SPT(C) 5.00m, N=15 (4,4/4,3,4,4)
EOH at 6.00m - Target depth achieved		6.00	0.52					SPT(C) 6.00m, N=14 (3,3/4,3,3,4)

Observations / Remarks

1. Groundwater not encountered
2. Upon completion exploratory hole installed with 50mm diameter standpipe to 3.00m bgl.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks
1.20	2.00	87	100	
2.00	3.00	87	90	
3.00	4.00	77	60	
4.00	5.00	77	60	
5.00	6.00	67	70	

Hammer Information

Serial No.	Energy Ratio %
DART - EQU2195	71

Project Number: **A112666**

Project: **Land at Stakers Farm**

Location: **Yapton**

Client: **Dandara**

Location Details			
Easting:	497739.82	Northing:	103812.51
Level:	6.88mAOD	Depth:	6.00m
Logger:	KW	Type:	WS
		Inclination:	90°

Status: PRELIM

Borehole Number: **WS02**

Sheet 1 of 1

Scale: 1:50

Checked By:

Approved By:

Start Date: 08/03/2019

Finish Date: 08/03/2019

Method, Plant and Crew					Diameter		Casing		Groundwater					
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks
0.00	1.20	Inspection Pit	Hand excavated	D Horridge & S Walton	1.20	200								
1.20	6.00	Window Sampler	Tracked Terrier Rig	D Horridge & S Walton	3.00	87			5.20	0	-	5.20	20	
					5.00	77								
					6.00	67								

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Brown slightly gravelly slightly sandy CLAY with frequent rootlets (Topsoil) TOP								
Firm orangish brown slightly gravelly slightly sandy CLAY with frequent rootlets. Gravel is sub-angular fine flint and occasional calcareous nodules. (RTD) RTD		0.30	6.58			0.30	ES1	
						1.00	ES2	
Firm orangish brown gravelly very sandy CLAY. Gravel is fine calcareous nodules. (RTD) RTD *Between 1.90m and 4.0m bgl lenses of orange sand*		1.90	4.98					
Highly weathered CHALK with flint		4.00	2.88					
Structureless CHALK. Recovered as creamy white silty GRAVEL. Gravel is angular and sub-angular coarse chalk. (Upper Chalk - Class Dc)		5.30	1.58					
EOH at 6.00m - Target depth achieved		6.00	0.88					

Observations / Remarks

1. Groundwater encountered at 5.20m bgl
2. Upon completion exploratory hole backfilled with arisings

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks
1.20	2.00	87	100	
2.00	3.00	87	100	
3.00	4.00	77	85	
4.00	5.00	77	80	
5.00	6.00	67	80	

Hammer Information

Serial No.	Energy Ratio %

Project Number: **A112666**

Project: **Land at Stakers Farm**

Location: **Yapton**

Client: **Dandara**

Location Details			
Easting:	497831.19	Northing:	103786.71
Level:	6.95mAOD	Depth:	6.00m
Logger:	DN	Type:	WS
		Inclination:	90°

Status: PRELIM

Borehole Number: **WS04**

Sheet 1 of 1

Scale: 1:50

Checked By:

Approved By:

Start Date: 08/03/2019

Finish Date: 08/03/2019

Method, Plant and Crew					Diameter		Casing		Groundwater					
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks
0.00	1.20	Inspection Pit	Hand Excavated	D Horridge & S Walton	1.20	200								
1.20	6.00	Window Sampler	Tracked Terrier Rig	D Horridge & S Walton	2.00	87								
					4.00	77								
					6.00	67								

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
TOPSOIL TOP								
Firm orangish brown slightly gravelly slightly sandy CLAY with frequent rootlets. Sand is fine to coarse. Gravel is sub-angular fine flint. (RTD) RTD		0.30	6.65			0.30	ES1	
						1.00	ES2	
						1.20	B1	SPT(C) 1.20m, N=10 (2,2/3,2,2,3)
						1.50	ES3	
								SPT(C) 2.00m, N=10 (2,2/3,2,2,3)
Angular flint cobbles between 2.2-2.3m bgl								
Firm light brown gravelly slightly sandy CLAY with low cobble content. Gravel is sub angular fine to medium chalk. Cobbles are angular flint. (RTD) RTD *Angular flint cobbles at 2.8m bgl*		2.80	4.15					SPT(C) 3.00m, N=17 (3,3/4,4,4,5)
Highly weathered CHALK		3.60	3.35					SPT(C) 4.00m, N=27 (6,6/10,7,6,4)
Structureless CHALK. Recovered as white silty GRAVEL. Gravel is angular and sub-angular medium to coarse chalk. (Upper Chalk - Class Dc) *Layer of angular flint cobbles at 4.6m bgl*		4.50	2.45					SPT(C) 5.00m, N=33 (5,6/8,9,8,8)
EOH at 6.00m - Target depth achieved		6.00	0.95					SPT(C) 6.00m, N=19 (5,4/6,4,4,5)

Observations / Remarks

1. Groundwater not encountered
2. Upon completion exploratory hole installed with 50mm diameter standpipe to 5.00m bgl

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks
1.20	2.00	87	100	
2.00	3.00	77	90	
3.00	4.00	77	90	
4.00	5.00	67	75	
5.00	6.00	67	80	

Hammer Information

Serial No.	Energy Ratio %
DART - EQU2195	71

Project Number: **A112666**

Project: **Land at Stakers Farm**

Location: **Yapton**

Client: **Dandara**

Location Details			
Easting:	497675.30	Northing:	103774.88
Level:	6.35mAOD	Depth:	6.00m
Logger:	DN	Type:	WS
		Inclination:	90°

Status: PRELIM

Borehole Number: **WS05**

Sheet 1 of 1

Scale: 1:50

Checked By:

Approved By:

Start Date: 08/03/2019

Finish Date: 08/03/2019

Method, Plant and Crew					Diameter		Casing		Groundwater					
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks
0.00	1.20	Inspection Pit	Hand Excavated	D Horridge & S Walton	1.20	200			5.00	0	-	5.00	20	
1.20	6.00	Window Sampler	Tracked Terrier Rig	D Horridge & S Walton	3.00	87								
					4.00	77								
					6.00	67								

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
TOPSOIL TOP						0.20	ES1	
Firm brown orange slightly gravelly slightly sandy CLAY with rootlets. Gravel is sub angular fine to medium flint and fine calcareous nodules. (RTD) RTD		0.30	6.05			1.00	ES2	
						1.20	B1	SPT(C) 1.20m, N=8 (1,1/2,2,2,2)
						2.00	B2	SPT(C) 2.00m, N=4 (1,1/1,1,1,1)
Orange brown soft very gravelly sandy CLAY. Sand is fine to coarse. Gravel is fine to medium sub angular chalk. RTD		2.30	4.05					
Highly weathered CHALK with frequent flint cobbles (Upper Chalk)		2.90	3.45			3.00	B3	SPT(C) 3.00m, N=17 (2,4/3,5,5,4)
Structureless CHALK. Recovered as creamy white silty GRAVEL. Gravel is angular and sub-angular fine to coarse chalk		3.70	2.65			4.00	B4	SPT(C) 4.00m, N=11 (4,4/3,3,3,2)
White CHALK. Recovered as sub angular to sub rounded coarse gravel and sub angular cobbles.		4.70	1.65			5.00	B5	SPT(C) 5.00m, N=11 (3,3/3,2,3,3)
EOH at 6.00m - Target depth achieved		6.00	0.35			6.00	B6	SPT(C) 6.00m, N=22 (2,44/7,4,4,7)

Observations / Remarks

1. Groundwater encountered at 5.00m bgl
2. Upon completion exploratory hole installed with 50mm diameter standpipe to 6.00m bgl.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks
1.20	2.00	87	90	
2.00	3.00	87	85	
3.00	4.00	77	80	
4.00	5.00	67	50	
5.00	6.00	67	70	

Hammer Information

Serial No.	Energy Ratio %
DART - EQU2195	71

Project Number: **A112666**

Project: **Land at Stakers Farm**

Location: **Yapton**

Client: **Dandara**

Location Details			
Easting:	497617.01	Northing:	103688.19
Level:	5.20mAOD	Depth:	5.00m
Logger:	DN	Type:	WS
		Inclination:	90°

Status: PRELIM

Borehole Number: **WS06**

Sheet 1 of 1

Scale: 1:50

Checked By:

Approved By:

Start Date: 07/03/2019

Finish Date: 07/03/2019

Method, Plant and Crew					Diameter	
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)
0.00	1.20	Inspection Pit	Hand Excavated	D Horridge & S Walton	1.20	200
1.20	5.00	Window Sampler	Tracked Terrier Rig	D Horridge & S Walton	3.00	87
					4.00	77
					5.00	67

Casing		Groundwater					
Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks
		3.80	0	-	3.80	20	

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Brown slightly gravelly slightly sandy CLAY with frequent roots. Gravel is sub rounded coarse flint. (Topsoil) TOP								
		0.45	4.76			0.40	ES1	
Firm orangish brown mottled light brown gravelly slightly sandy CLAY with frequent rootlets, low cobble content and lenses of coarse yellow sand. Gravel is sub angular to sub rounded fine to medium flint. Cobbles are flint. (RTD) RTD						1.00 1.00	B ES	SPT(C) 1.20m, N=12 (1,2/3,3,3,3)
		1.30	3.90					
Orangish brown clayey medium SAND. (RTD) RTD								
		1.70	3.50					
Firm light orangish brown gravelly slightly sandy CLAY. Sand is fine to coarse. Gravel is sub angular fine to medium flint and fine calcareous fragments. (RTD) RTD						2.00	B	SPT(C) 2.00m, N=10 (1,2/2,2,3,3)
						3.00	B	SPT(C) 3.00m, N=28 (3,4/5,7,7,9)
		3.80	1.40	▼				
Highly weathered CHALK. Recovered as light brown slightly sandy medium gravel. Sand is fine to coarse.						4.00	B	SPT(C) 4.00m, N=22 (4,5/4,5,5,8)
		4.40	0.80					
CHALK. Recovered as white medium to coarse gravel.								
		5.00	0.20			5.00	B	SPT(C) 5.00m, N=51 (11,10/11,15,13,12)
EOH at 5.00m - Target depth achieved								

Observations / Remarks

1. Groundwater encountered at 3.80m bgl
2. Upon completion exploratory hole installed with 50mm diameter standpipe to 3.00m bgl

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks
1.20	2.00	87	90	
2.00	3.00	87	90	
3.00	4.00	77	90	
4.00	5.00	67	100	

Hammer Information

Serial No.	Energy Ratio %
DART - EQU2195	71

Project Number: **A112666**

Project: **Land at Stakers Farm**

Location: **Yapton**

Client: **Dandara**

Location Details			
Easting:	497578.28	Northing:	103653.34
Level:	5.60mAOD	Depth:	5.00m
Logger:	DN	Type:	WS
		Inclination:	°

Status: PRELIM

Borehole Number: **WS07**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Groundwater						Remarks
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)		
0.00	1.20	Inspection Pit	Hand excavated	D Horridge & S Walton	1.20	200									
1.20	6.00	Window Sampler	Tracked Terrier Rig	D Horridge & S Walton	3.00	87									
					4.00	77									
					5.00	67									

Scale: 1:50

Checked By:

Approved By:

Start Date: 08/03/2019

Finish Date: 08/03/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Brown slightly gravelly slightly sandy CLAY with roots. Sand is fine to coarse. Gravel is sub rounded coarse flint. (Topsoil)		0.35	5.25			0.20 0.30	B1 ES1	
Firm orange brown slightly gravelly slightly sandy CLAY with rootlets. Sand is fine to coarse. Gravel is fine and medium sub-angular flint and fine calcareous nodules. (RTD)						0.70	ES2	
								SPT(C) 1.20m, N=7 (2,1/2,2,1,2)
						1.50	ES3	
Orange brown clayey fine to medium SAND (RTD)		1.80	3.80					
Firm orange brown mottled light grey slightly gravelly slightly sandy CLAY. Gravel is sub-angular fine to medium flint and fine calcareous nodules. (RTD)		1.90	3.70			2.00	B2	SPT(C) 2.00m, N=5 (1,1/1,2,1,1)
						3.00	B3	SPT(C) 3.00m, N=21 (3,4/4,5,5,7)
Orange brown gravelly clayey SAND. Gravel is sub-angular fine flint. (RTD) *From 3.20m bgl damp*		3.20	2.40					
Firm light brown slightly gravelly sandy CLAY. Sand is fine to medium. Gravel is sub rounded fine calcareous nodules. (RTD)		3.30	2.30			4.00	B4	SPT(C) 4.00m, N=27 (4,4/6,7,7,7)
Firm light brown very gravelly slightly sandy CLAY. Gravel is angular medium and coarse flint and calcareous nodules. (RTD)		4.70	0.90					
Structureless CHALK. Recovered as light brown silty GRAVEL. Gravel is sub angular coarse chalk. (Upper Chalk - Grade Dc)		4.90 5.00	0.70 0.60			5.00	B5	SPT(C) 5.00m, N=50 (6,8/14,16,15,5)
EOH at 5.00m - Target depth achieved								

Observations / Remarks

1. Groundwater not encountered
2. Upon completion exploratory hole backfilled with arisings

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks
1.20	2.00	87	90	
2.00	3.00	87	100	
3.00	4.00	77	100	
4.00	5.00	67	80	

Hammer Information

Serial No.	Energy Ratio %
DART - EQU2195	71

Project Number: **A112666**

Project: **Land at Stakers Farm**

Location: **Yapton**

Client: **Dandara**

Location Details			
Easting:	497639.32	Northing:	103632.26
Level:	6.62mAOD	Depth:	6.00m
Logger:	DN	Type:	WS
		Inclination:	90°

Status: PRELIM

Borehole Number: **WS08**

Sheet 1 of 1

Scale: 1:50

Checked By:

Approved By:

Start Date: 07/03/2019

Finish Date: 07/03/2019

Method, Plant and Crew					Diameter		Casing		Groundwater					
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks
0.00	1.20	Inspection Pit	Hand Excavated	D Horridge & S Walton	1.20	200			4.00	0	-	4.00	20	
1.20	6.00	Window Sampler	Tracked Terrier Rig	D Horridge & S Walton	3.00	87								
					4.00	77								
					6.00	67								

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
TOPSOIL.						0.30	ES1	
Firm orangish brown slightly gravelly slightly sandy CLAY with roots. Sand is fine to coarse. Gravel is sub angular coarse flint and calcareous nodules. (RTD)		0.50	6.12			1.00	ES	
						1.20	B	SPT(C) 1.20m, N=8 (1,1/2,2,2,2)
						1.50	ES	
						2.00	B	SPT(C) 2.00m, N=9 (1,1/2,3,2,2)
Soft brown very sandy gravelly CLAY locally grading to clayey SAND. Sand is fine to coarse. Gravel is sub rounded coarse chalk		2.30	4.32					
Highly weathered CHALK. Recovered as weak light brown fine to medium gravel in a comminuted matrix. (Grade Dm)		2.60	4.02					
White CHALK. Recovered as weak structureless gravel infilled comminuted matrix and occasional flint. (Grade Dc)		2.80	3.82			3.00	B	SPT(C) 3.00m, N=12 (1,2/2,2,4,4)
						4.00	B	SPT(C) 4.00m, N=25 (4,4/6,7,6,6)
						5.00	B	SPT(C) 5.00m, N=27 (5,5/6,7,7,7)
EOH at 6.00m - Target depth achieved		6.00	0.62			6.00	B	SPT(C) 6.00m, N=18 (5,4/4,4,5,5)

Observations / Remarks

1. Groundwater encountered at 4.00m bgl
2. Upon completion exploratory hole backfilled with arisings

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks
1.20	2.00	87	90	
2.00	3.00	87	95	
3.00	4.00	77	85	
4.00	5.00	67	80	
5.00	6.00	67	90	

Hammer Information

Serial No.	Energy Ratio %
DART - EQU2195	71

Project Number: **A112666**

Project: **Land at Stakers Farm**

Location: **Yapton**

Client: **Dandara**

Location Details			
Easting:	497569.34	Northing:	103556.93
Level:	6.54mAOD	Depth:	6.00m
Logger:	DN	Type:	WS
		Inclination:	90°

Status: PRELIM

Borehole Number: **WS09**

Sheet 1 of 1

Scale: 1:50

Checked By:

Approved By:

Start Date: 07/03/2019

Finish Date: 07/03/2019

Method, Plant and Crew					Diameter		Casing		Groundwater					
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks
0.00	1.20	Inspection Pit	Hand Excavated	D Horridge & S Walton	1.20	200			4.20	0	-	4.20	20	
1.20	6.00	Window Sampler	Tracked Terrier Rig	D Horridge & S Walton	2.00	87								
					5.00	77								
					6.00	67								

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
TOPSOIL.						0.30	ES1	
Firm orangish brown mottled grey gravelly slightly sandy CLAY with rootlets. Sand is fine to coarse. Gravel is sub angular fine flint and occasional coarse calcareous nodules. (RTD)		0.40	6.14					
From 0.80m bgl no rootlets						1.00	ES	
						1.20	B	SPT(C) 1.20m, N=9 (2,2/2,2,2,3)
						1.50	ES	
From 2.0m bgl becoming sandy						2.00	B	SPT(C) 2.00m, N=6 (2,2/1,2,2,1)
Soft light orangish brown slightly gravelly very sandy CLAY locally grading to slightly gravelly clayey SAND. Sand is fine to coarse. Gravel is flint and calcareous fragments. (RTD)		2.30	4.24					
Damp from 2.30m bgl		2.60	3.94					
Highly weathered CHALK. Recovered as light brown sandy fine gravel with light brown sandy clay matrix.						3.00	B	SPT(C) 3.00m, N=20 (3,4/5,4,5,6)
Structureless white CHALK. Firm gravel size depth weak. Some yellow staining in fissures and occasional flint cobble.		3.20	3.34					
				▼		4.00	B	SPT(C) 4.00m, N=10 (3,3/1,2,3,4)
								SPT(C) 5.00m, N=27 (5,9/7,6,7,7)
EOH at 6.00m - Target depth achieved		6.00	0.54					SPT(C) 6.00m, N=24 (7,6/5,6,6,7)

Observations / Remarks

1. Groundwater encountered at 4.20m bgl
2. Upon completion exploratory hole installed with 50mm diameter standpipe to 6.00m bgl

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks
1.20	2.00	87	100	
2.00	3.00	77	90	
3.00	4.00	77	80	
4.00	5.00	77	65	
5.00	6.00	67	60	

Hammer Information

Serial No.	Energy Ratio %
DART - EQU2195	71

Project Number: **A112666**

Project: **Land at Stakers Farm**

Location: **Yapton**

Client: **Dandara**

Location Details			
Easting:	497649.53	Northing:	103572.15
Level:	6.66mAOD	Depth:	6.00m
Logger:	DN	Type:	WS
		Inclination:	90°

Status: PRELIM

Borehole Number: **WS10**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Groundwater						
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks
0.00	1.20	Inspection Pit	Hand Excavated	D Horridge & S Walton	1.20	200								
1.20	6.00	Window Sampler	Tracked Terrier Rig	D Horridge & S Walton	3.00	87			4.20	0	-	4.20	20	
					5.00	77								
					6.00	67								

Scale: 1:50

Checked By:

Approved By:

Start Date: 07/03/2019

Finish Date: 07/03/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
TOPSOIL.						0.30	ES1	
Firm orangish brown mottled grey slightly gravelly slightly sandy CLAY with rootlets. Sand is fine to coarse. Gravel is sub angular to sub rounded fine to medium calcareous nodules. (RTD)		0.40	6.26			0.80	ES	
No rootlets from 1.10m bgl						1.20	B	SPT(C) 1.20m, N=6 (1,1/1,2,1,2)
						2.00	B	SPT(C) 2.00m, N=5 (1,1/2,1,1,1)
						2.00	ES	
Dark orangish brown slightly gravelly slightly clayey fine to coarse SAND with low cobble content. Gravel is medium calcareous nodules and occasional flint. Cobbles are flint (RTD)		2.30	4.36					
Firm light orangish brown slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is sub angular fine to medium flint and chalk fragments. (RTD)		2.50	4.16			3.00	B	SPT(C) 3.00m, N=9 (1,2/2,3,2,2)
Highly weathered CHALK.		3.60	3.06			4.00	B	SPT(C) 4.00m, N=26 (6,6/8,6,6,6)
White structureless CHALK medium to coarse gravel size clasts weak in comminuted material and occasional flint cobbles.		4.40	2.26			5.00	B	SPT(C) 5.00m, N=32 (6,6/6,7,9,10)
EOH at 6.00m - Target depth achieved		6.00	0.66			6.00	B	SPT(C) 6.00m, 50 (10,13/50 for 265mm)

Observations / Remarks

1. Groundwater encountered at 4.20m bgl
2. Upon completion exploratory hole installed with 50mm diameter standpipe to 3.00m bgl

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks
1.20	2.00	87	90	
2.00	3.00	87	75	
3.00	4.00	77	90	
4.00	5.00	77	80	
5.00	6.00	67	100	

Hammer Information

Serial No.	Energy Ratio %
DART - EQU2195	71

Project Number: **A112666**

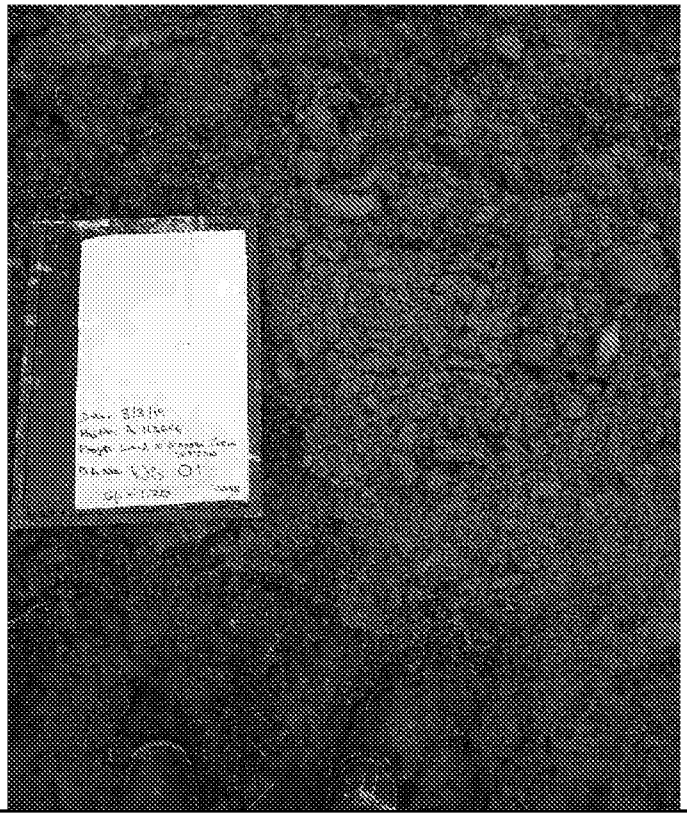


Plate 1 WS01 hand pit arisings



Plate 2 WS01

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Project :
Land at Stakers Farm, Yapton

Client: Dandara

Project No.: A112666

Date : March 2019



Plate 3 WS02

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Client: Dandara

Project No.: A112666

Date : March 2019



Plate 4 WS04 hand pit arisings



Plate 5 WS04

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Project :
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Client: Dandara

Project No.: A112666

Date : March 2019

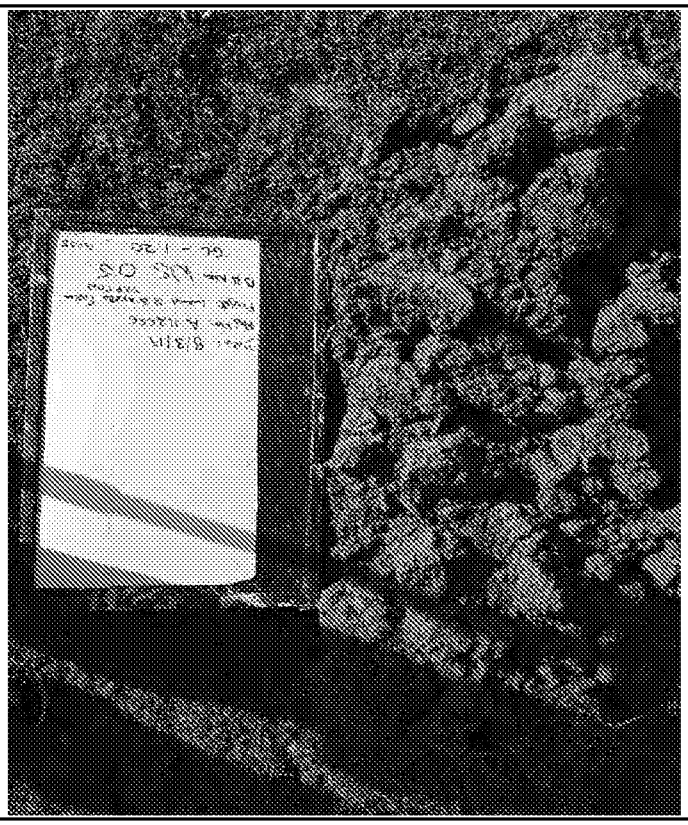


Plate 6 WS05 hand pit arisings



Plate 7 WS05

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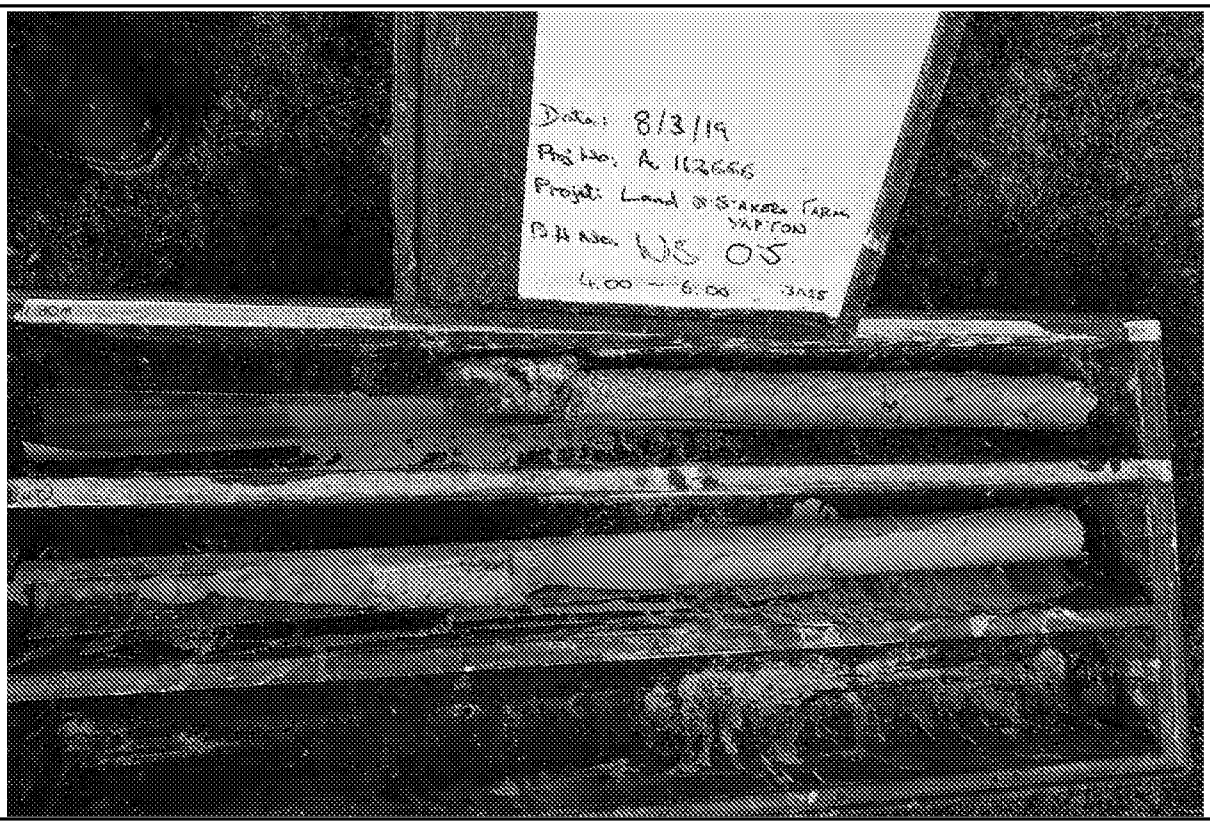


Plate 8 WS05

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Plate 9 WS06 hand pit arisings



Plate 10 WS06

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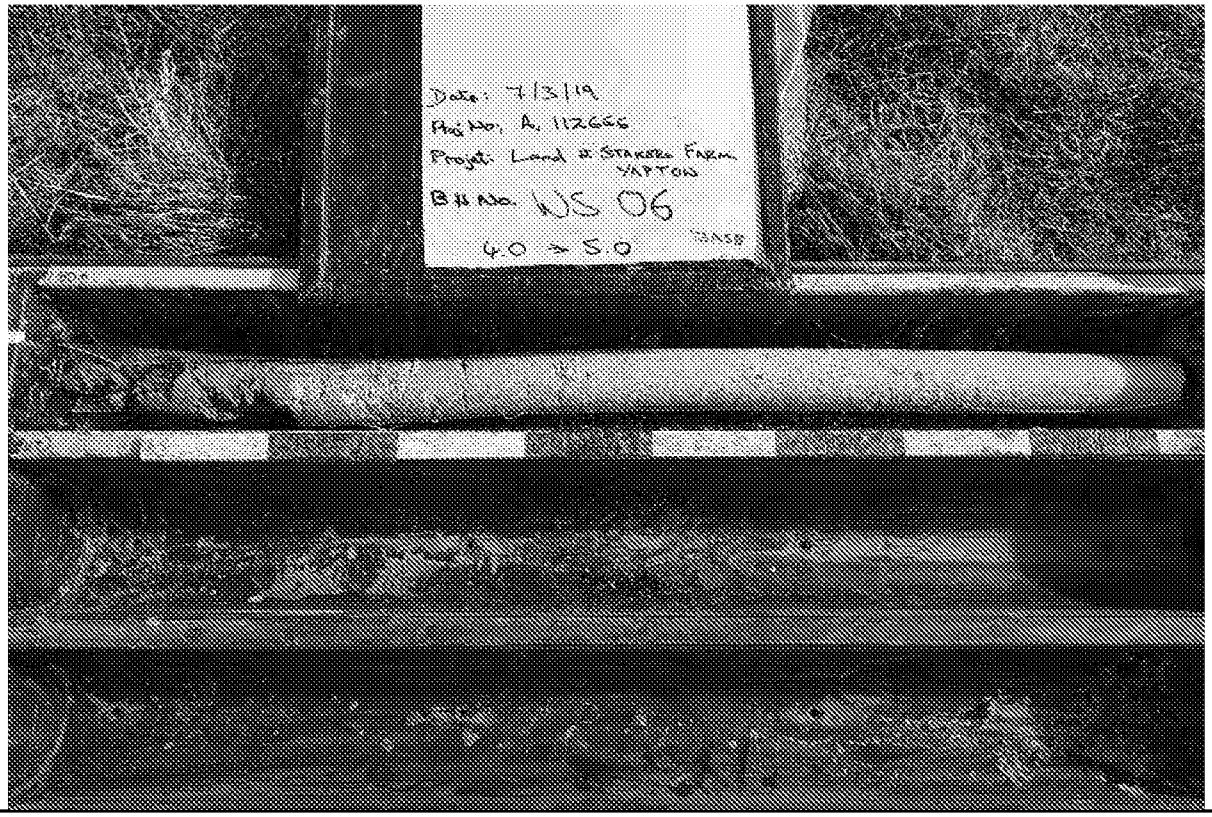


Plate 11 WS06

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Project No.: A112666

Date : March 2019



Plate 12 WS07 hand pit arisings

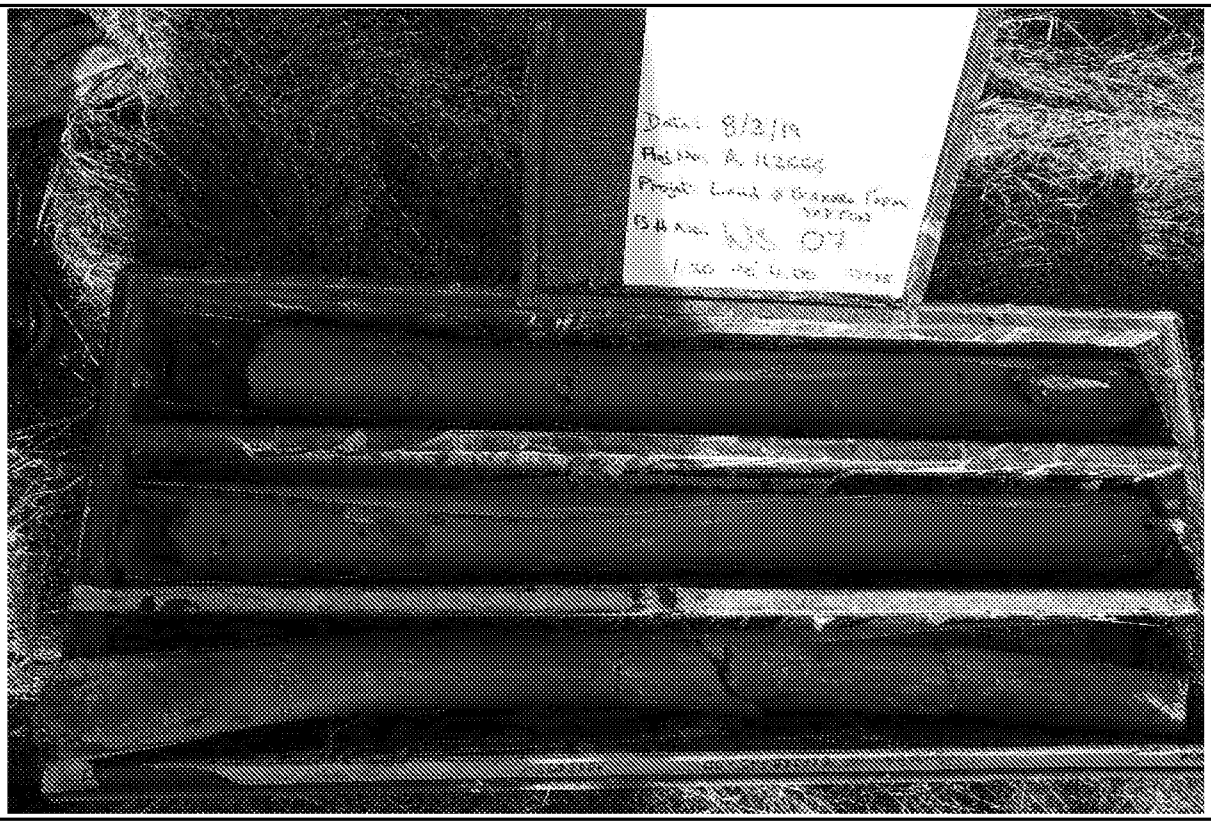


Plate 13 WS07

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Project :
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Client: Dandara

Project No.: A112666

Date : March 2019

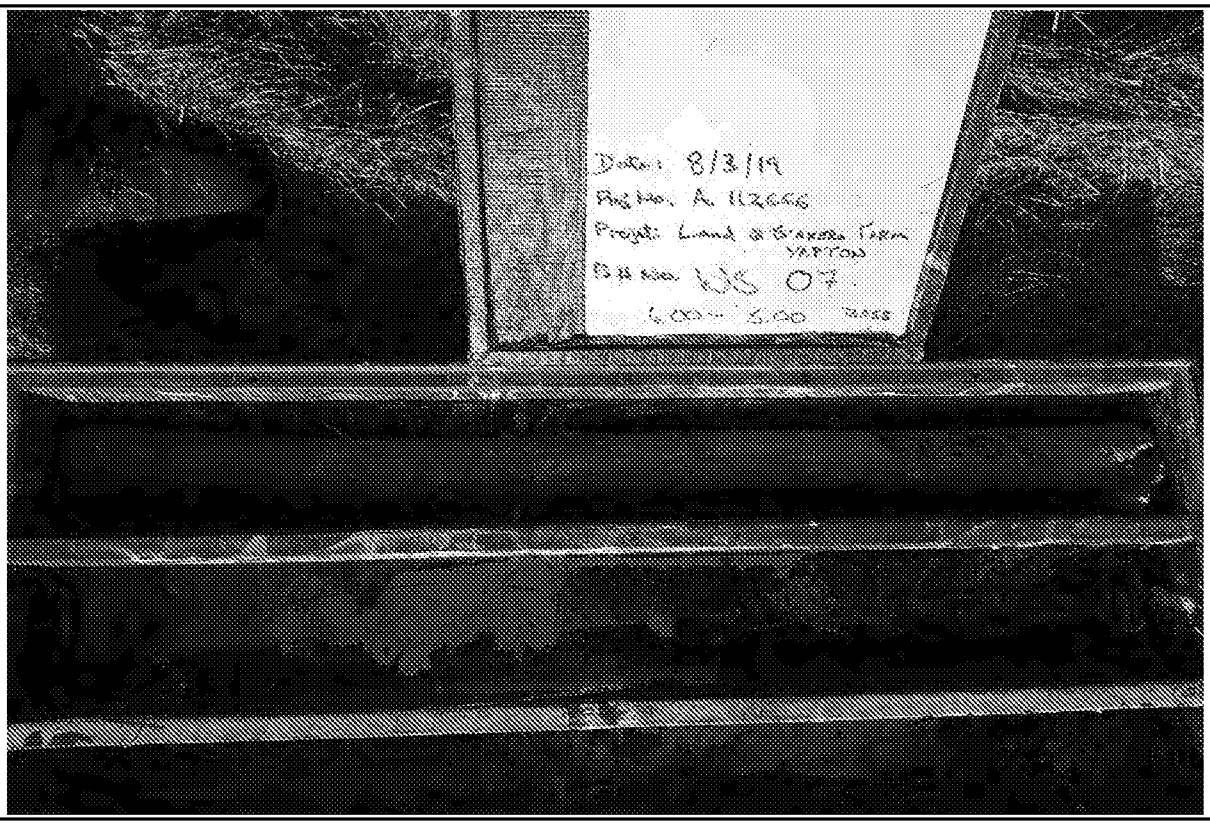


Plate 14 WS07

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Project :
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Date : March 2019

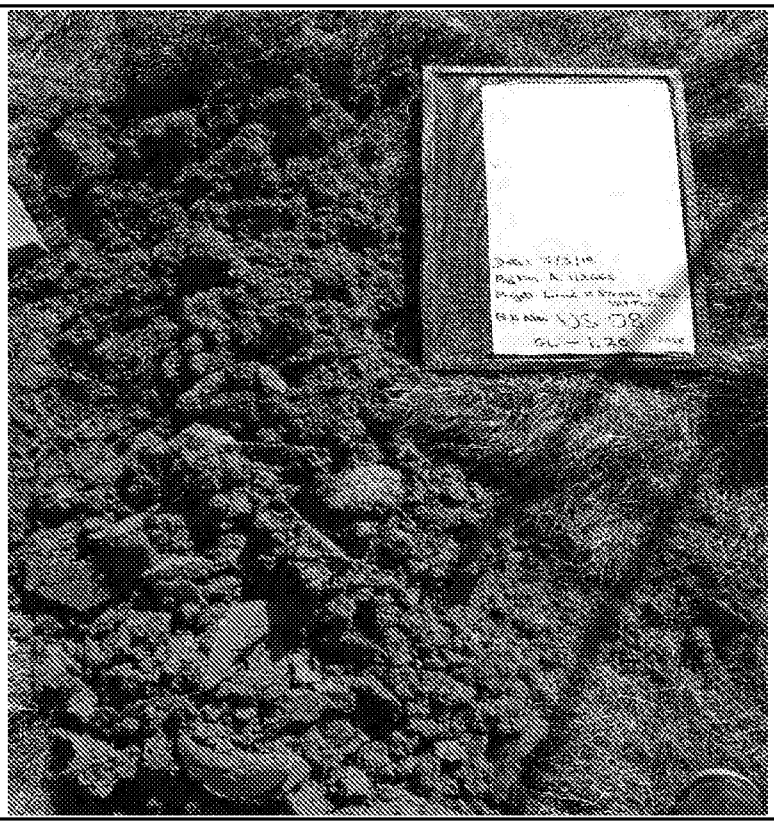


Plate 15 WS08 hand pit arisings



Plate 16 WS08

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Plate 17 WS08

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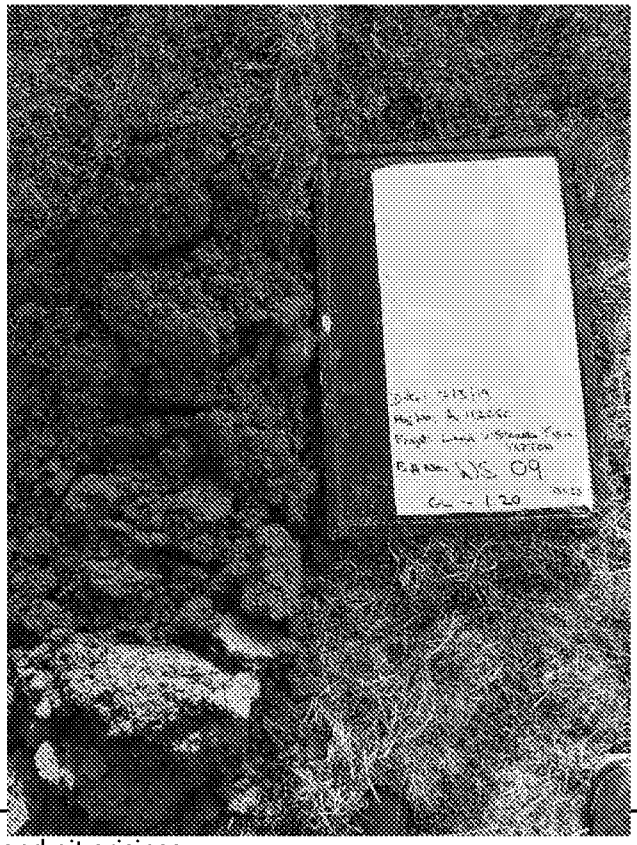


Plate 18 WS09 hand pit arisings



Plate 19 WS09

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Date : March 2019



Plate 20 WS09

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Client: Dandara

Project No.: A112666

Date : March 2019

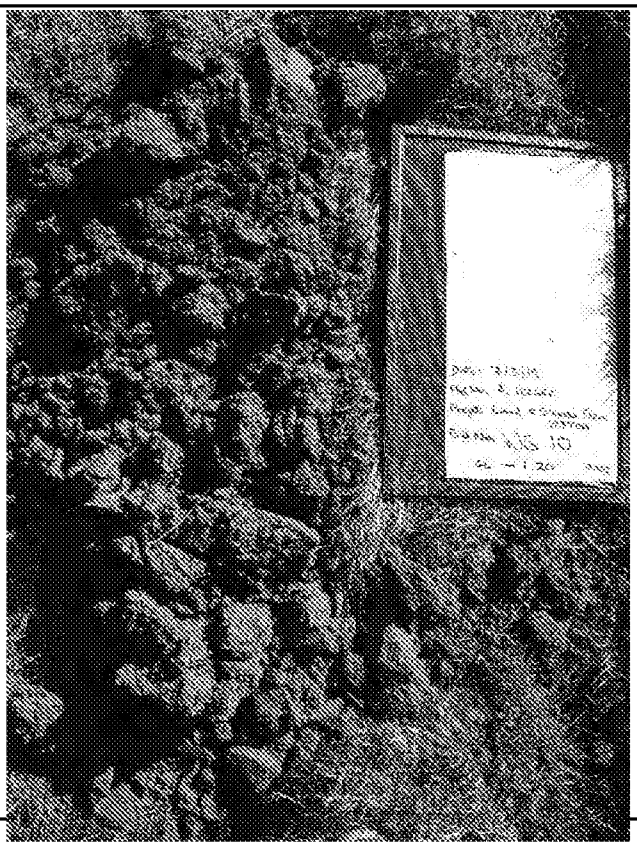


Plate 21 WS10 hand pit arisings



Plate 22 WS10

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Project :
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Client: Dandara

Project No.: A112666

Date : March 2019

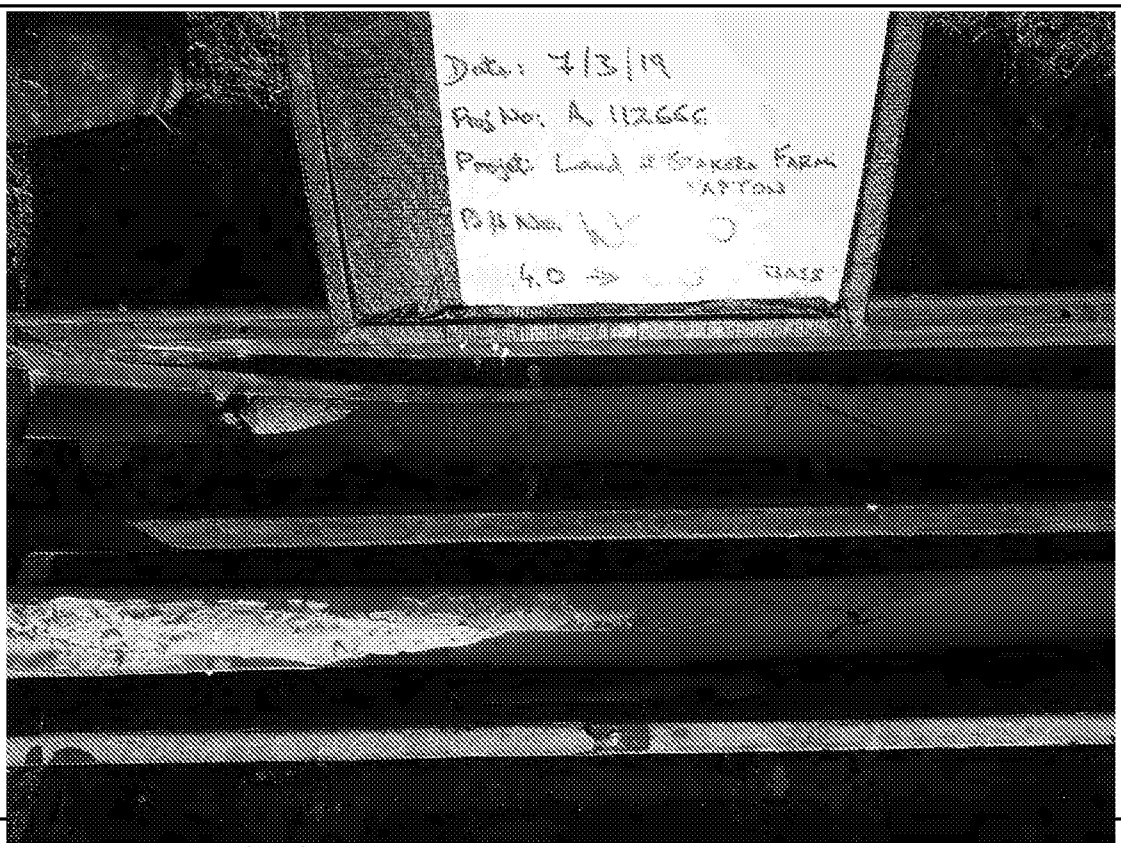


Plate 23 WS10 hand pit arisings

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Project No.: A112666 | Date : March 2019



Plate 24 TP01



Plate 25 TP01 arisings

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Project :
Land at Stakers Farm, Yapton

Client: Dandara

Project No.: A112666

Date : March 2019



Plate 26 TP02



Plate 27 TP02 arisings

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Project :
Land at Stakers Farm, Yapton

Client: Dandara

Project No.: A112666

Date : March 2019

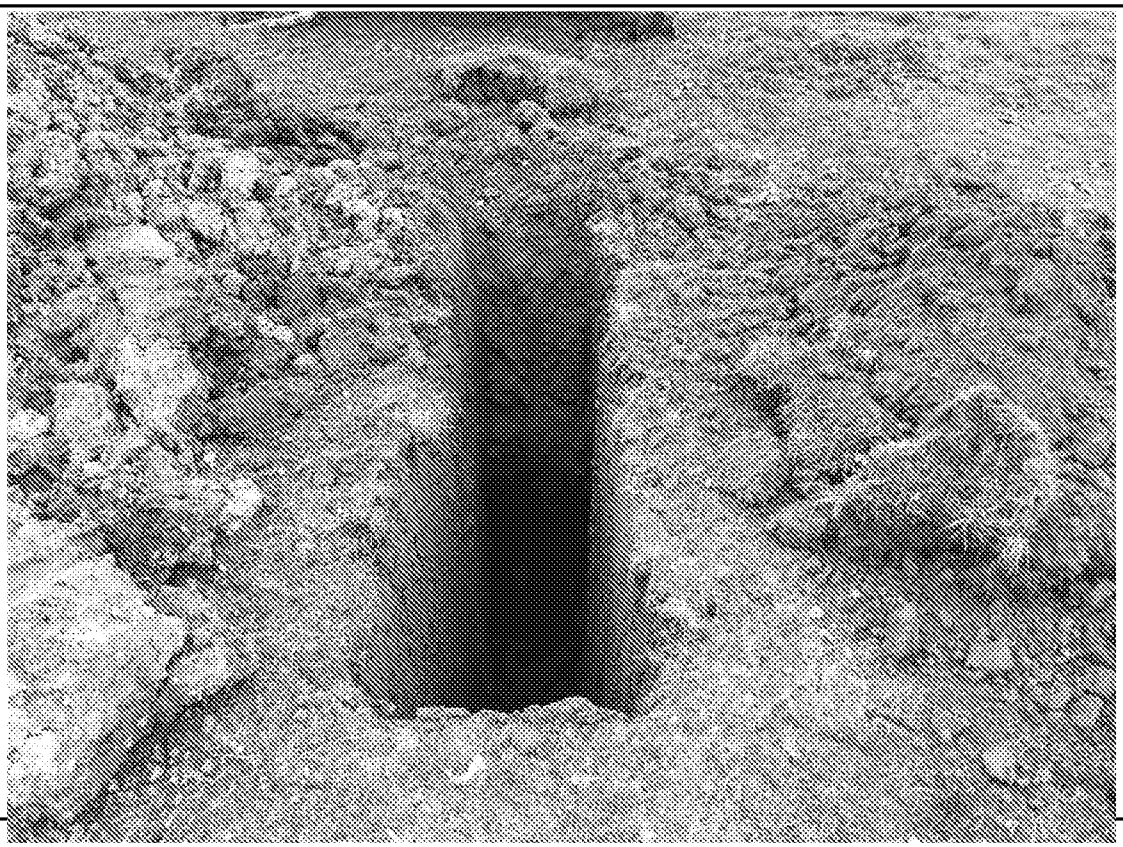


Plate 28 TP04

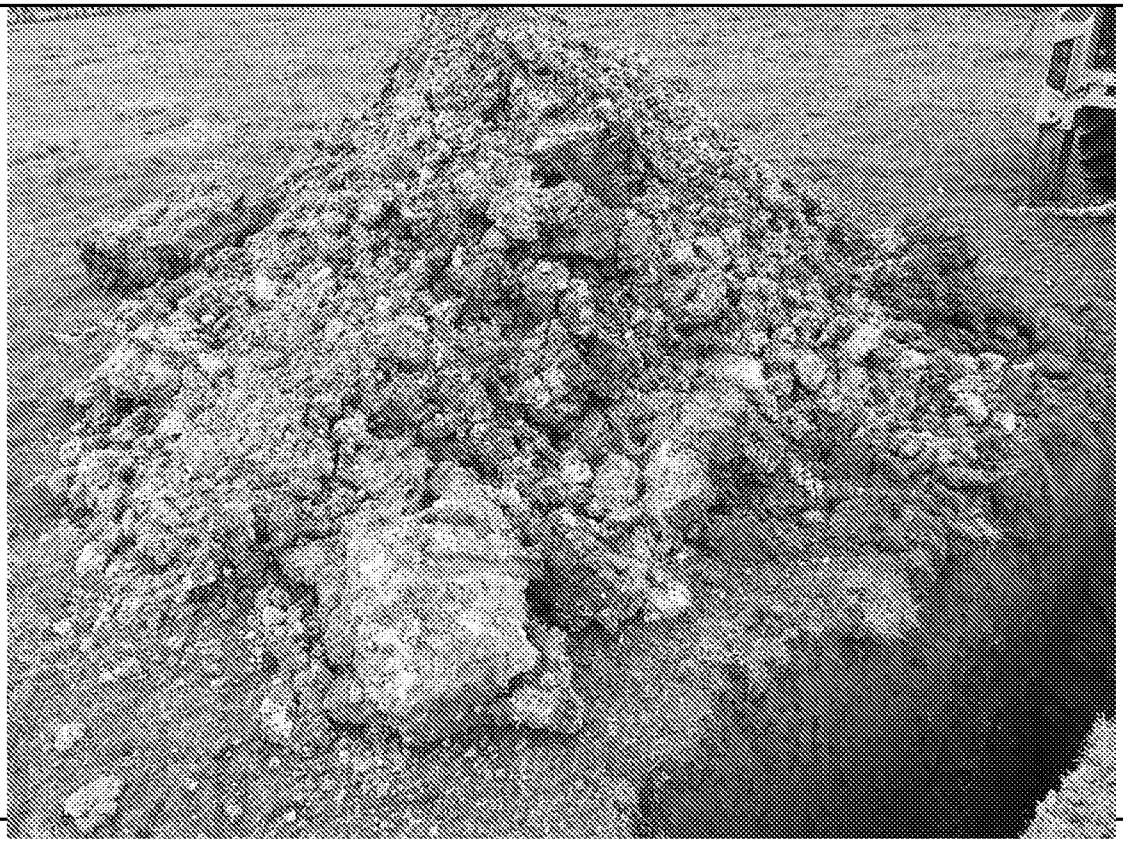


Plate 29 TP04 arisings

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Project :
Land at Stakers Farm, Yapton

Client: Dandara

Project No.: A112666

Date : March 2019



Plate 30 TP06



Plate 31 TP06 arisings

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Ground Technologies & Investigation

Project :
Land at Stakers Farm, Yapton

Client: Dandara

Project No.: A112666

Date : March 2019



Plate 32 TP07



Plate 33 TP07 arisings

WYG Environment
5th Floor, Longcross Court
47 Newport Road
Cardiff
CF24 0AD

[redacted]

Environmental Consultancy
Ground Technologies & Investigation

Project :
Land at Stakers Farm, Yapton

Client: Dandara

Project No.: A112666

Date : March 2019



Plate 34 WS07 hand pit arisings



Plate 35 WS07

WYG Environment
5th Floor, Longcross Court
47 Newport Road
Cardiff
CF24 0AD

[redacted]

Ground Technologies & Investigation

Project :
Land at Stakers Farm, Yapton

Client: Dandara

Project No.: A112666

Date : March 2019

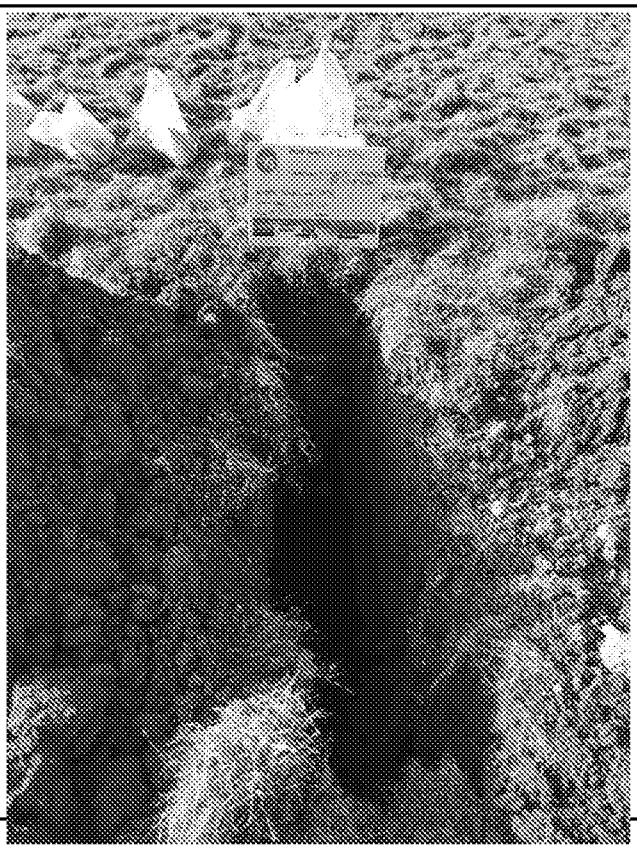


Plate 36 TP09



Plate 37 TP09 arisings

WYG Environment
5th Floor, Longcross Court
47 Newport Road
Cardiff
CF24 0AD

[redacted]
Ground Technologies & Investigation

Project :
Land at Stakers Farm, Yapton

Client: Dandara

Project No.: A112666 | Date : March 2019



Plate 38 TP10



Plate 16 TP10 arisings

WYG Environment
5th Floor, Longcross Court
47 Newport Road
Cardiff
CF24 0AD

[redacted]

Ground Technologies & Investigation

Project :
Land at Stakers Farm, Yapton

Client: Dandara

Project No.: A112666

Date : March 2019

Appendix C – Soakaway Test Results

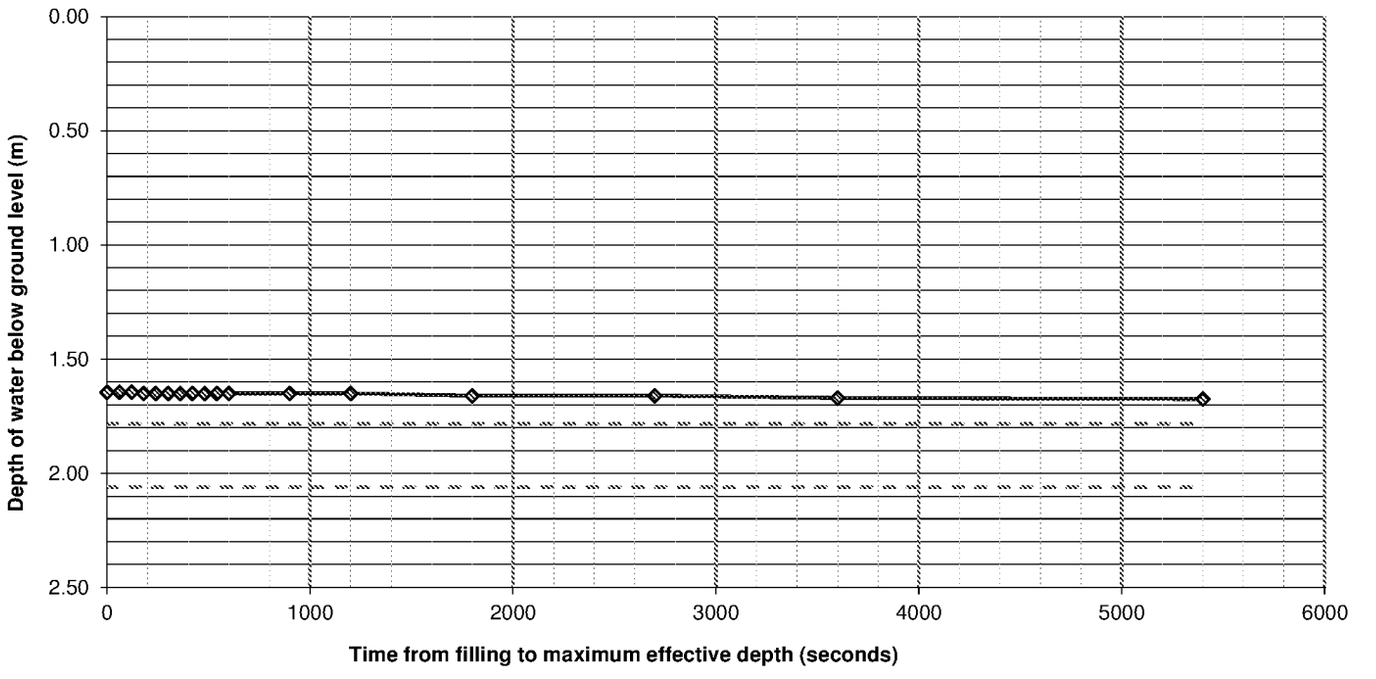
ARUN DISTRICT COUNCIL Y/72/20/RES

WYG Environment

Environmental Consultancy
Ground Engineering Services

DATE:	08/03/2019
PROJECT No:	A112666
PROJECT NAME:	Land at Stakers Farm, Yapton
CLIENT:	Dandara
TRIAL PIT ID:	TP08
TEST NUMBER:	1

SOAKAWAY TEST - SOIL INFILTRATION RATE/ PERMEABILITY CALCULATION



Time Elapsed (s)	Time Elapsed (mins)	Distance to water surface from ground level (m)
0	0.00	1.645
60	1.00	1.645
120	2.00	1.645
180	3.00	1.650
240	4.00	1.650
300	5.00	1.650
360	6.00	1.650
420	7.00	1.650
480	8.00	1.650
540	9.00	1.650
600	10.00	1.650
900	15.00	1.650
1200	20.00	1.650
1800	30.00	1.660
2700	45.00	1.660
3600	60.00	1.670
5400	90.00	1.675

PIT LENGTH (m):	2.50
PIT WIDTH (m):	0.50
PIT DEPTH (m):	2.20

Pit construction

INPUT PARAMETERS:

Total volume of pit	(m^3)	0.69
Pit volume between 75% and 25% depths = L x W x ½ D	(m^3)	0.35
Effective depth of Pit	(m)	0.56
Proportion of pit volume occupied by gravel solids	(0-1)	0.00
Maximum potential volume of Water	(m^3)	0.69
Level of water in pit at 75% effective depth (p_{75})	(m)	0.14
Level of water in pit at 25% effective depth (p_{25})	(m)	0.42
Effective volume between 75% & 25% depth Vp_{75-25} = V x Pg	(m^3)	0.35
Surface area of pit up to 50% effective depth (A_{p50})	(m^2)	2.92
Time at 75% effective depth (p_{75})	(s)	#N/A
Time at 25% effective depth (p_{25})	(s)	#N/A
Time for outflow for 75% and 25% effective depth (Tp75-25)	(s)	#N/A

OUTPUT:

SOIL INFILTRATION RATE (f)	$\frac{V_{p75-25}}{A_{p50} \times T_{p75-25}}$	(m/s)	#N/A

WATER INPUT: 300L in 2 minutes

GEOLOGY OF TEST SECTION:

Compiled by: KW
Checked by:

After BRE Digest 365, Soakaway Design, 2016

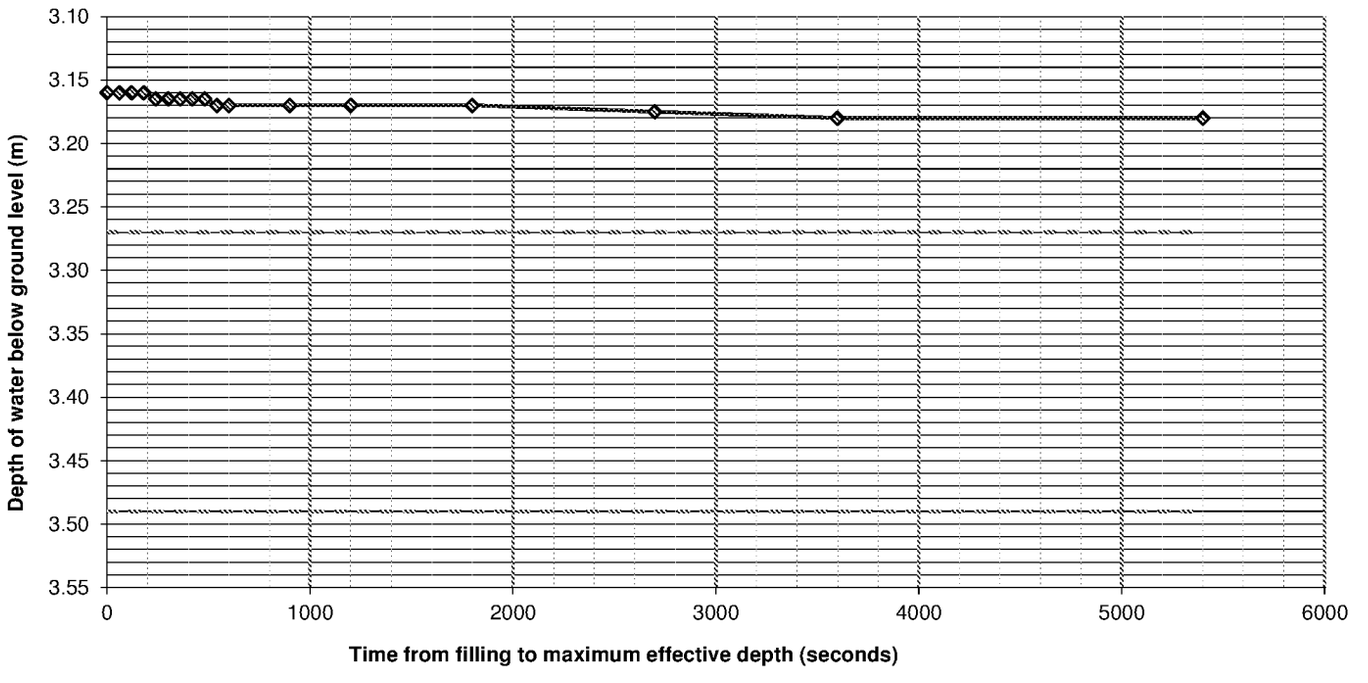
ARUN DISTRICT COUNCIL Y/72/20/RES

WYG Environment

Environmental Consultancy
Ground Engineering Services

DATE:	08/03/2019
PROJECT No:	A112666
PROJECT NAME:	Land at Stakers Farm, Yapton
CLIENT:	Dandara
TRIAL PIT ID:	TP09
TEST NUMBER:	1

SOAKAWAY TEST - SOIL INFILTRATION RATE/ PERMEABILITY CALCULATION



Time Elapsed (s)	Time Elapsed (mins)	Distance to water surface from ground level (m)
0	0.00	3.160
60	1.00	3.160
120	2.00	3.160
180	3.00	3.160
240	4.00	3.165
300	5.00	3.165
360	6.00	3.165
420	7.00	3.165
480	8.00	3.165
540	9.00	3.170
600	10.00	3.170
900	15.00	3.170
1200	20.00	3.170
1800	30.00	3.170
2700	45.00	3.175
3600	60.00	3.180
5400	90.00	3.180

PIT LENGTH (m):	2.50
PIT WIDTH (m):	0.50
PIT DEPTH (m):	3.60

Pit construction

INPUT PARAMETERS:

Total volume of pit	(m^3)	0.55
Pit volume between 75% and 25% depths = L x W x ½ D	(m^3)	0.28
Effective depth of Pit	(m)	0.44
Proportion of pit volume occupied by gravel solids	(0-1)	0.00
Maximum potential volume of Water	(m^3)	0.55
Level of water in pit at 75% effective depth (p_{75})	(m)	0.11
Level of water in pit at 25% effective depth (p_{25})	(m)	0.33
Effective volume between 75% & 25% depth Vp_{75-25} = V x Pg	(m^3)	0.28
Surface area of pit up to 50% effective depth (A_{p50})	(m^2)	2.57
Time at 75% effective depth (p_{75})	(s)	#N/A
Time at 25% effective depth (p_{25})	(s)	#N/A
Time for outflow for 75% and 25% effective depth (Tp75-25)	(s)	#N/A

OUTPUT:

SOIL INFILTRATION RATE (f)	$\frac{V_{p75-25}}{A_{p50} \times T_{p75-25}}$	(m/s)	#N/A

WATER INPUT: 350L in 2 minutes

GEOLOGY OF TEST SECTION:

Compiled by: KW
Checked by:

After BRE Digest 365, Soakaway Design, 2016

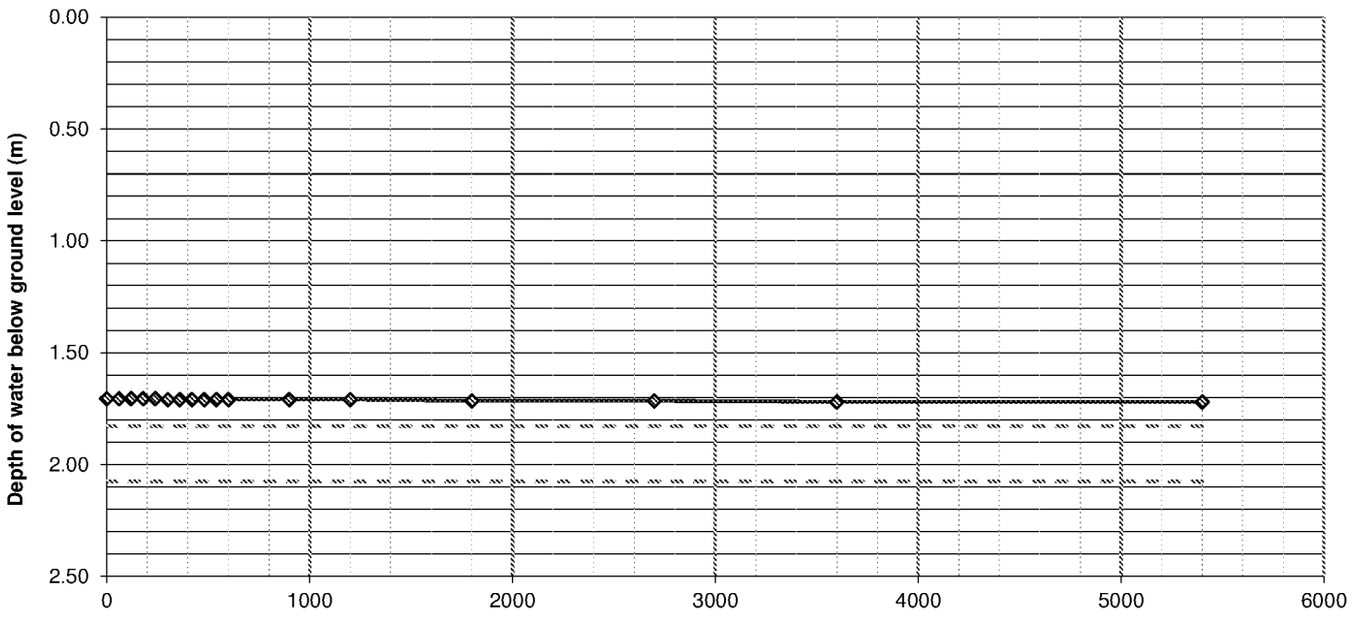
ARUN DISTRICT COUNCIL Y/72/20/RES

WYG Environment

Environmental Consultancy
Ground Engineering Services

DATE:	08/03/2019
PROJECT No:	A112666
PROJECT NAME:	Land at Stakers Farm, Yapton
CLIENT:	Dandara
TRIAL PIT ID:	TP03
TEST NUMBER:	1

SOAKAWAY TEST - SOIL INFILTRATION RATE/ PERMEABILITY CALCULATION



Time Elapsed (s)	Time Elapsed (mins)	Distance to water surface from ground level (m)
0	0.00	1.705
60	1.00	1.705
120	2.00	1.705
180	3.00	1.705
240	4.00	1.705
300	5.00	1.710
360	6.00	1.710
420	7.00	1.710
480	8.00	1.710
540	9.00	1.710
600	10.00	1.710
900	15.00	1.710
1200	20.00	1.710
1800	30.00	1.715
2700	45.00	1.715
3600	60.00	1.720
5400	90.00	1.720

PIT LENGTH (m):	2.50	**Pit construction**
PIT WIDTH (m):	0.50	
PIT DEPTH (m):	2.20	

INPUT PARAMETERS:		
Total volume of pit	(m^3)	0.62
Pit volume between 75% and 25% depths = L x W x ½ D	(m^3)	0.31
Effective depth of Pit	(m)	0.50
Proportion of pit volume occupied by gravel solids	(0-1)	0.00
Maximum potential volume of Water	(m^3)	0.62
Level of water in pit at 75% effective depth (p_{75})	(m)	0.12
Level of water in pit at 25% effective depth (p_{25})	(m)	0.37
Effective volume between 75% & 25% depth Vp_{75-25} = V x Pg	(m^3)	0.31
Surface area of pit up to 50% effective depth (A_{p50})	(m^2)	2.74
Time at 75% effective depth (p_{75})	(s)	#N/A
Time at 25% effective depth (p_{25})	(s)	#N/A
Time for outflow for 75% and 25% effective depth (Tp75-25)	(s)	#N/A

OUTPUT:

SOIL INFILTRATION RATE (f)	$\frac{V_{p75-25}}{A_{p50} \times T_{p75-25}}$	(m/s)	**#N/A**

WATER INPUT:	350L	in	2 minutes

GEOLOGY OF TEST SECTION:

Compiled by: KW
Checked by:

After BRE Digest 365, Soakaway Design, 2016

ARUN DISTRICT COUNCIL Y/72/20/RES

Appendix D – CBR Test Results

WYG Environment
5th Floor, Longcross Court, 47 Newport Road, Cardiff
Tel: 02920 829200
Fax: 02920 455321
Environmental Consultancy
Ground Engineering Services

PROJECT No.:	A112666
PROJECT NAME:	Land at Stakers Farm, Yapton
CLIENT:	Dandara
FIGURE No.:	TRL 01

DCP-CBR Corellation
$Log_{10}(CBR) = 2.48-1.057 \times Log_{10}$ (mm/blow)

DCP -Modulus E Corellation
$E = 17.6\ (CBR)^{0.64}$ MPa

In situ CBR by TRL Probe

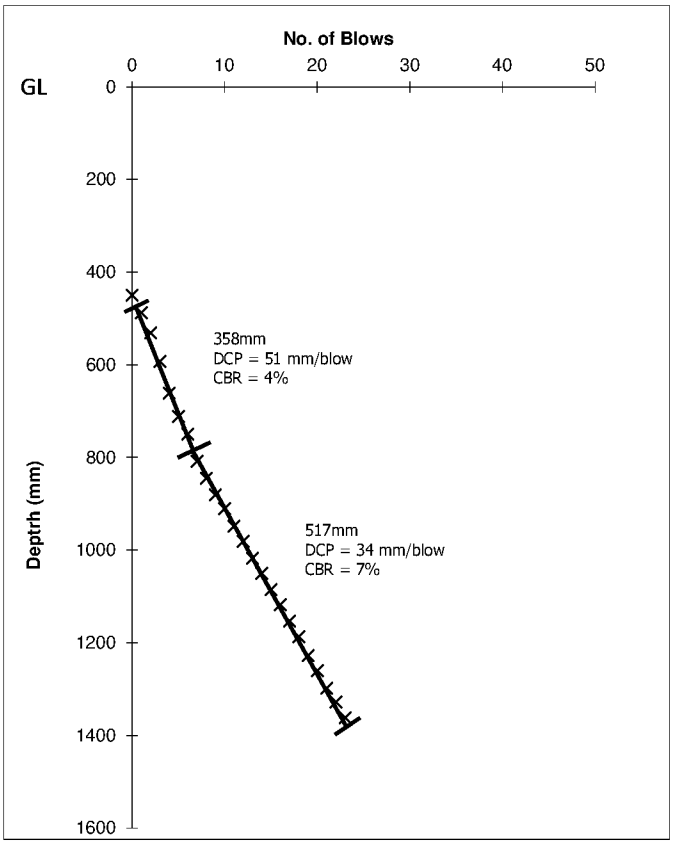
Reference: TRL 01 Position: Test 1 Date: 08 March 2019

mm per blow	Σ Blows	Reading on Scale (mm)	Depth from Ground Level (mm)	mm per blow	Σ Blows	Reading on Scale (mm)	Depth from Ground Level (mm)
	1	22	450				
38	2	60	488				
43	3	103	531				
62	4	165	593				
68	5	233	661				
50	6	283	711				
39	7	322	750				
58	8	380	808				
37	9	417	845				
35	10	452	880				
31	11	483	911				
37	12	520	948				
33	13	553	981				
36	14	589	1017				
33	15	622	1050				
35	16	657	1085				
33	17	690	1118				
35	18	725	1153				
34	19	759	1187				
40	20	799	1227				
33	21	832	1260				
38	22	870	1298				
30	23	900	1328				
34	24	934	1362				

Test started at: 0.5 m below ground level

Zero Reading: 22 mm

Zero reading = start depth below ground surface



After Design manual for Roads and Bridges, Volume 7 Pavement Design and maintenance, Section 3 Pavement Maintenace Assessment, Part 2 HD29/08

Data compiled by: CA
Data checked by: CA

WYG Environment
5th Floor, Longcross Court, 47 Newport Road, Cardiff
Tel: 02920 829200
Fax: 02920 455321
Environmental Consultancy
Ground Engineering Services

PROJECT No.:	A112666
PROJECT NAME:	Land at Stakers Farm, Yapton
CLIENT:	Dandara
FIGURE No.:	TRL 02

DCP-CBR Corellation
$Log_{10}(CBR) = 2.48-1.057 \times Log_{10}$ (mm/blow)

DCP -Modulus E Corellation
$E = 17.6\ (CBR)^{0.64}$ MPa

In situ CBR by TRL Probe

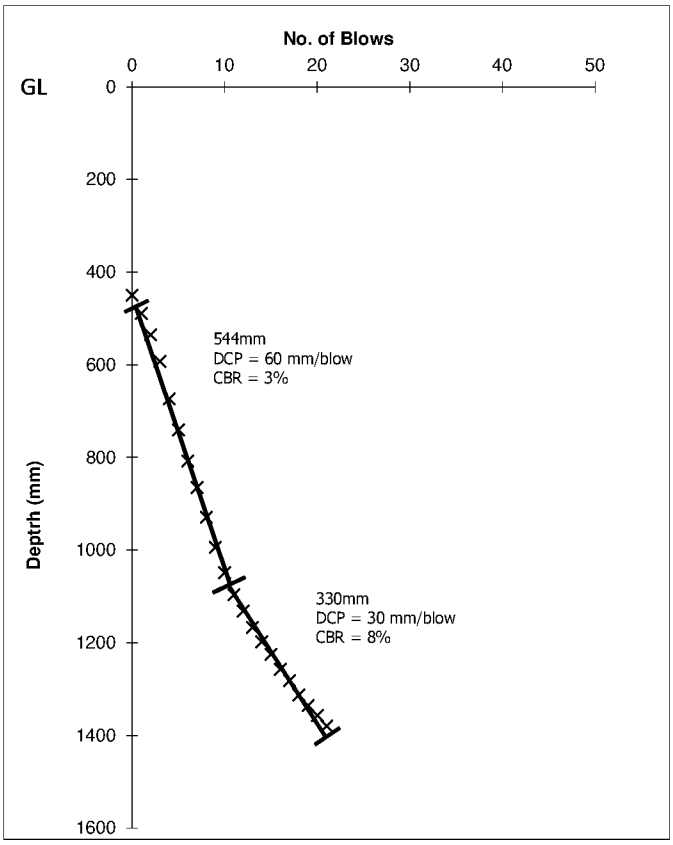
Reference: TRL 02 Position: Test 1 Date: 08 March 2019

mm per blow	Σ Blows	Reading on Scale (mm)	Depth from Ground Level (mm)	mm per blow	Σ Blows	Reading on Scale (mm)	Depth from Ground Level (mm)
	1	11	450				
39	2	50	489				
46	3	96	535				
58	4	154	593				
80	5	234	673				
68	6	302	741				
67	7	369	808				
57	8	426	865				
64	9	490	929				
65	10	555	994				
55	11	610	1049				
47	12	657	1096				
36	13	693	1132				
35	14	728	1167				
31	15	759	1198				
27	16	786	1225				
32	17	818	1257				
25	18	843	1282				
30	19	873	1312				
23	20	896	1335				
22	21	918	1357				
22	22	940	1379				

Test started at: 0.5 m below ground level

Zero Reading: 11 mm

Zero reading = start depth below ground surface



After Design manual for Roads and Bridges, Volume 7 Pavement Design and maintenance, Section 3 Pavement Maintenace Assessment, Part 2 HD29/08

Data compiled by: CA
Data checked by: CA

WYG Environment
5th Floor, Longcross Court, 47 Newport Road, Cardiff
Tel: 02920 829200
Fax: 02920 455321
Environmental Consultancy
Ground Engineering Services

PROJECT No.:	A112666
PROJECT NAME:	Land at Stakers Farm, Yapton
CLIENT:	Dandara
FIGURE No.:	TRL 03

DCP-CBR Corellation
$Log_{10}(CBR) = 2.48-1.057 \times Log_{10}$ (mm/blow)

DCP -Modulus E Corellation
$E = 17.6\ (CBR)^{0.64}$ MPa

In situ CBR by TRL Probe

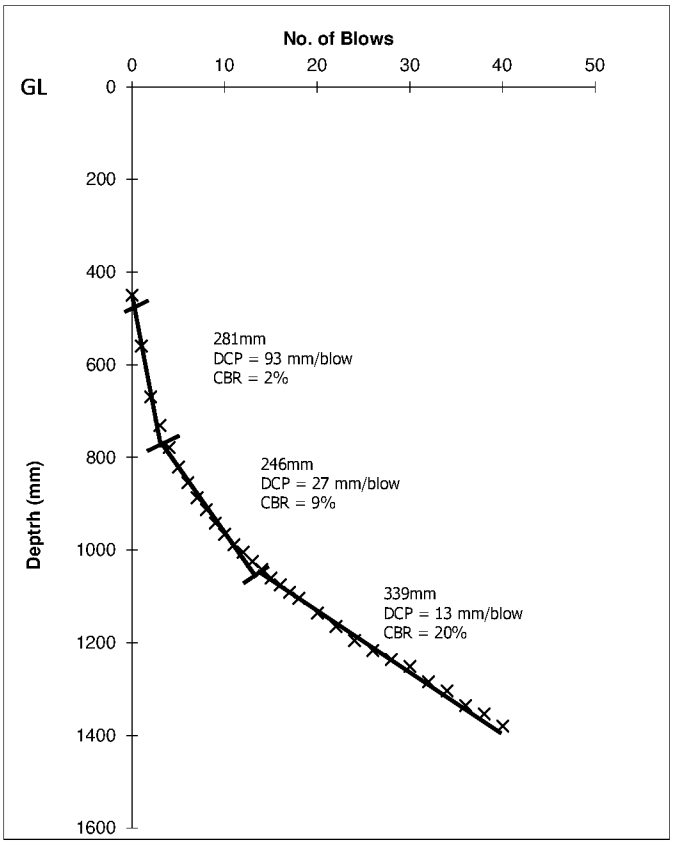
Reference: TRL 03 Position: Test 1 Date: 08 March 2019

mm per blow	Σ Blows	Reading on Scale (mm)	Depth from Ground Level (mm)	mm per blow	Σ Blows	Reading on Scale (mm)	Depth from Ground Level (mm)
	1	13	450				
110	2	123	560				
109	3	232	669				
62	4	294	731				
47	5	341	778				
42	6	383	820				
34	7	417	854				
33	8	450	887				
26	9	476	913				
29	10	505	942				
23	11	528	965				
23	12	551	988				
16	13	567	1004				
20	14	587	1024				
17	15	604	1041				
19	16	623	1060				
15	17	638	1075				
16	18	654	1091				
13	19	667	1104				
32	20	699	1136				
29	21	728	1165				
30	22	758	1195				
22	23	780	1217				
19	24	799	1236				

Test started at: 0.5 m below ground level

Zero Reading: 13 mm

Zero reading = start depth below ground surface



After Design manual for Roads and Bridges, Volume 7 Pavement Design and maintenance, Section 3 Pavement Maintenace Assessment, Part 2 HD29/08

Data compiled by: CA
Data checked by: CA

WYG Environment
5th Floor, Longcross Court, 47 Newport Road, Cardiff
Tel: 02920 829200
Fax: 02920 455321
Environmental Consultancy
Ground Engineering Services

PROJECT No.:	A112666
PROJECT NAME:	Land at Stakers Farm, Yapton
CLIENT:	Dandara
FIGURE No.:	TRL 04

DCP-CBR Corellation
$Log_{10}(CBR) = 2.48-1.057 \times Log_{10}$ (mm/blow)

DCP -Modulus E Corellation
$E = 17.6 (CBR)^{0.64}$ MPa

In situ CBR by TRL Probe

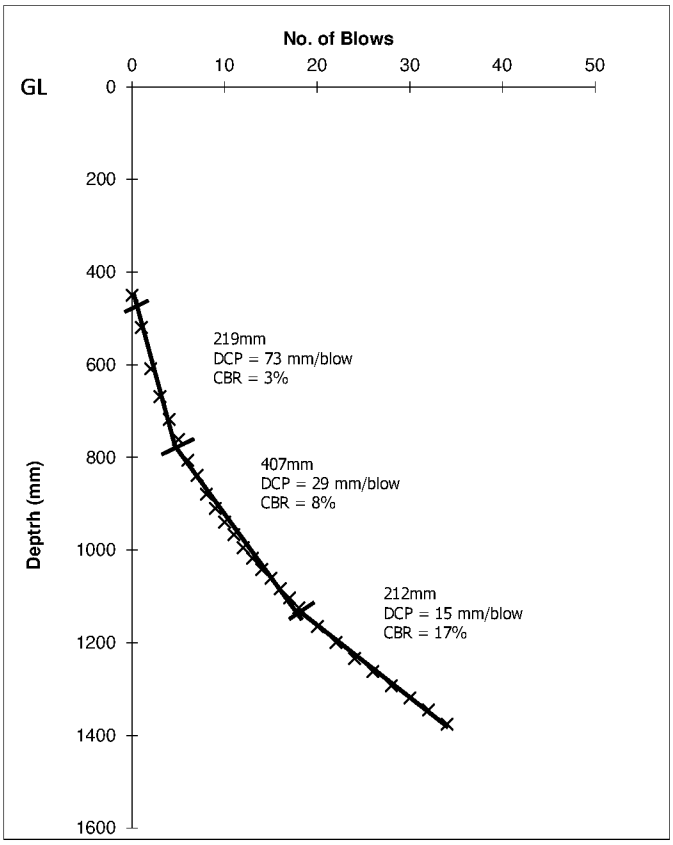
Reference: TRL 04 Position: Test 1 Date: 08 March 2019

mm per blow	Σ Blows	Reading on Scale (mm)	Depth from Ground Level (mm)	mm per blow	Σ Blows	Reading on Scale (mm)	Depth from Ground Level (mm)
	1	15	450				
69	2	84	519				
89	3	173	608				
61	4	234	669				
49	5	283	718				
43	6	326	761				
45	7	371	806				
32	8	403	838				
41	9	444	879				
31	10	475	910				
29	11	504	939				
28	12	532	967				
28	13	560	995				
22	14	582	1017				
24	15	606	1041				
20	16	626	1061				
22	17	648	1083				
20	18	668	1103				
22	19	690	1125				
39	20	729	1164				
35	21	764	1199				
35	22	799	1234				
28	23	827	1262				
31	24	858	1293				

Test started at: 0.5 m below ground level

Zero Reading: 15 mm

Zero reading = start depth below ground surface



After Design manual for Roads and Bridges, Volume 7 Pavement Design and maintenance, Section 3 Pavement Maintenace Assessment, Part 2 HD29/08

Data compiled by: CA
Data checked by: CA

WYG Environment
5th Floor, Longcross Court, 47 Newport Road, Cardiff
Tel: 02920 829200
Fax: 02920 455321
Environmental Consultancy
Ground Engineering Services

PROJECT No.:	A112666
PROJECT NAME:	Land at Stakers Farm, Yapton
CLIENT:	Dandara
FIGURE No.:	TRL 05

DCP-CBR Corellation
$Log_{10}(CBR) = 2.48-1.057 \times Log_{10}$ (mm/blow)

DCP -Modulus E Corellation
$E = 17.6\ (CBR)^{0.64}$ MPa

In situ CBR by TRL Probe

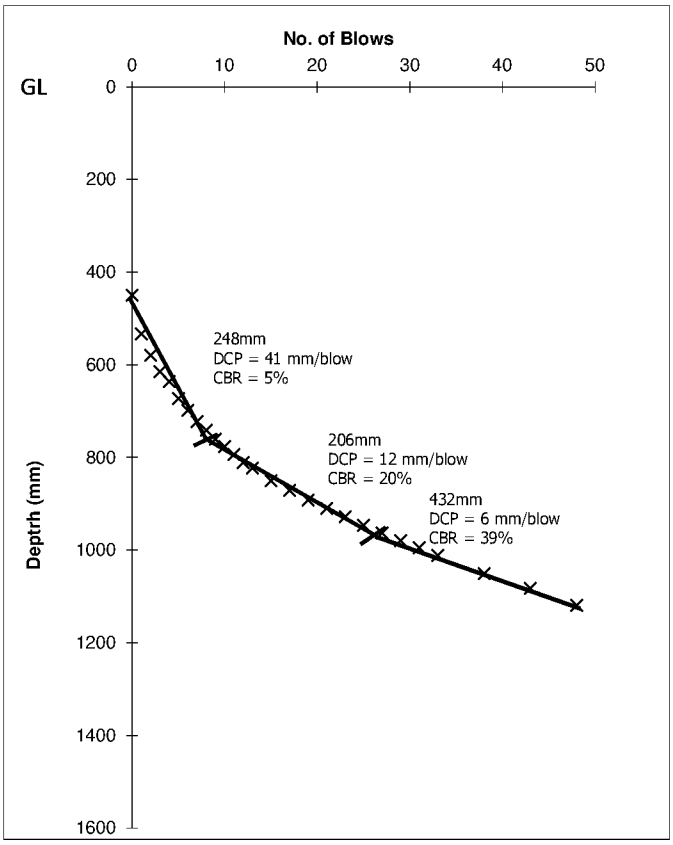
Reference: TRL 05 Position: Test 1 Date: 08 March 2019

mm per blow	Σ Blows	Reading on Scale (mm)	Depth from Ground Level (mm)	mm per blow	Σ Blows	Reading on Scale (mm)	Depth from Ground Level (mm)
	1	19	450				
83	2	102	533				
46	3	148	579				
35	4	183	614				
22	5	205	636				
37	6	242	673				
25	7	267	698				
24	8	291	722				
19	9	310	741				
19	10	329	760				
17	11	346	777				
16	12	362	793				
18	13	380	811				
12	14	392	823				
27	15	419	850				
21	16	440	871				
21	17	461	892				
18	18	479	910				
18	19	497	928				
18	20	515	946				
17	21	532	963				
17	22	549	980				
15	23	564	995				
16	24	580	1011				

Test started at: 0.5 m below ground level

Zero Reading: 19 mm

Zero reading = start depth below ground surface



After Design manual for Roads and Bridges, Volume 7 Pavement Design and maintenance, Section 3 Pavement Maintenace Assessment, Part 2 HD29/08

Data compiled by: CA
Data checked by: CA

Appendix E – Geotechnical Laboratory Testing Results

UKAS TESTING
2788

Laboratory Report

GSTL
GEO Site & Testing Services Ltd

Contract Number: 43335

Client Ref: **A112666**
Client PO: **C19/295**

Report Date: **30-03-2019**

Client **WYG Group**
Arndale Court
Headingly
Leeds
LS6 2UJ

Contract Title: **Land at Stakers Farm, Yapton**
For the attention of: **Paul Vincent**

Date Received: **12-03-2019**
Date Commenced: **12-03-2019**
Date Completed: **30-03-2019**

Test Description	Qty
Moisture Content BS 1377:1990 - Part 2 : 3.2 - * UKAS	2
4 Point Liquid & Plastic Limit BS 1377:1990 - Part 2 : 4.3 & 5.3 - * UKAS	2
Saturated Moisture Content of chalk (SMC) BS 1377:1990 - Part 2 : 3.3 - * UKAS	8
Particle Size Distribution (Dry Sieve method) **This test is for non-cohesive material only.** BS 1377:1990 - Part 2 : 9.3 - * UKAS	2
Water Soluble Sulphate 2:1 extract BS 1377:1990 - Part 3 : 5.3 - @ Non Accredited Test	2
pH value of soil BS 1377:1990 - Part 3 : 9.5 - @ Non Accredited Test	2
Disposal of samples for job	1

Notes: **Observations and Interpretations are outside the UKAS Accreditation**
*** - denotes test included in laboratory scope of accreditation**
- denotes test carried out by approved contractor
@ - denotes non accredited tests

This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved Signatories:
Ben Sharp (Contracts Manager) - Emma Sharp (Office Manager) - Paul Evans (Quality/Technical Manager)
Richard John (Advanced Testing Manager) - Sean Penn (Administrative/Accounts Assistant) - Wayne Honey (Administrative/Quality Assistant)

ARUN D[redacted]

GSTL	LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX (BS 1377 : Part 2 : 1990 Method 5) DESCRIPTIONS	
Contract Number	43335	
Site Name	Land at Stakers Farm, Yapton	

Sample/Hole Reference	Sample Number	Sample Type	Depth (m)			Descriptions
TP4			1.50	-		Brown silty CLAY
WS10			1.20	-		Brown silty CLAY
				-		
				-		
				-		
				-		
				-		
				-		
				-		
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				-		

Operators	Checked	30/03/2019	Paul Evans (Quality/Technical Manager)
Ieuan Williams	Approved	30/03/2019	Emma Sharp (Office Manager)

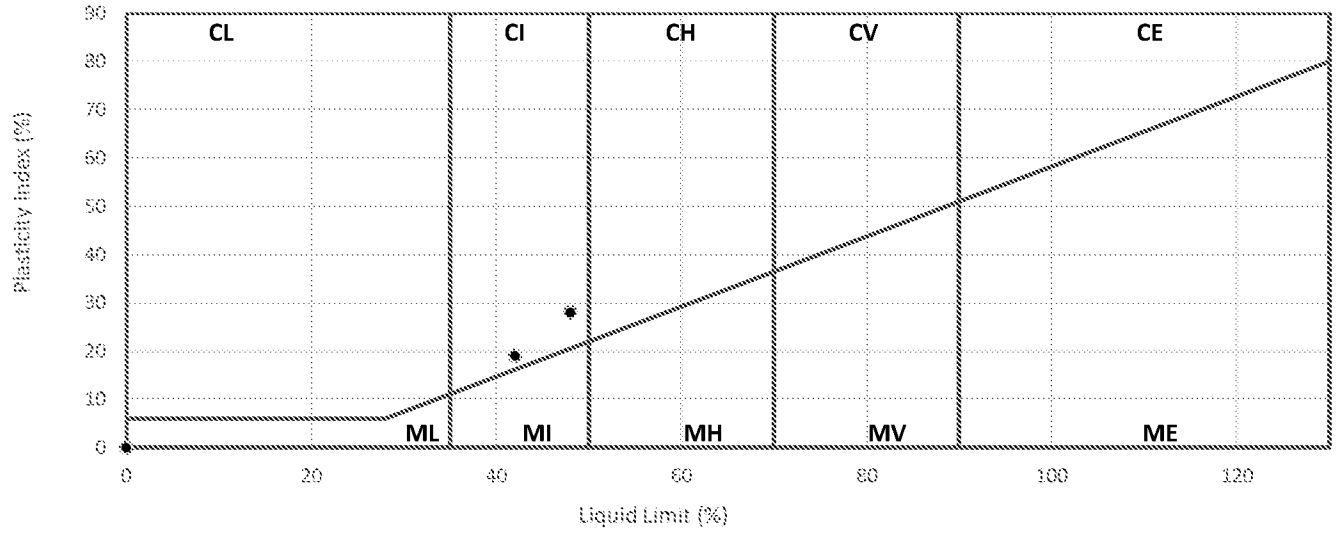
UKAS TESTING
2788

GSTL	LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX (BS 1377 : Part 2 : 1990 Method 5)	
Contract Number	43335	
Site Name	Land at Stakers Farm, Yapton	

Sample/Hole Reference	Sample Number	Sample Type	Depth (m)			Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity index %	Passing 0.425mm %	Remarks
TP4			1.50	-		24	42	23	19	100	CI Intermediate Plasticity
WS10			1.20	-		23	48	20	28	100	CI Intermediate Plasticity
				-							
				-							
				-							
				-							
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Symbols: NP : Non Plastic # : Liquid Limit and Plastic Limit Wet Sieved

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION
BS 5930:1999+A2:2010



Operators	Checked	30/03/2019	Paul Evans (Quality/Technical Manager)
Ieuan Williams	Approved	30/03/2019	Emma Sharp (Office Manager)

UKAS TESTING
2788

GSTL	Saturation Moisture Content of Chalk BS 1377 : Part 2 : 1990 Section 3.3	
Contract Number	43335	
Site Name	Land at Stakers Farm, Yapton	

Hole Reference	Sample Number	Sample Type	Depth (m)			Moisture Content	Bulk Density	Dry Density	Saturated Moisture Content	Remarks
TP6			3.20	-		22	1.80	1.48	31	
TP7			3.20	-		21	1.94	1.60	25	
TP9			3.50	-		20	1.91	1.59	26	
TP10			3.20	-		22	2.02	1.67	23	
WS1			4.00	-		17	1.92	1.65	24	
WS4			5.00	-		19	1.97	1.66	23	
WS5			6.00	-		22	1.91	1.57	27	
WS7			5.00	-		14	1.82	1.60	26	
				-						
				-						
				-						
				-						
				-						
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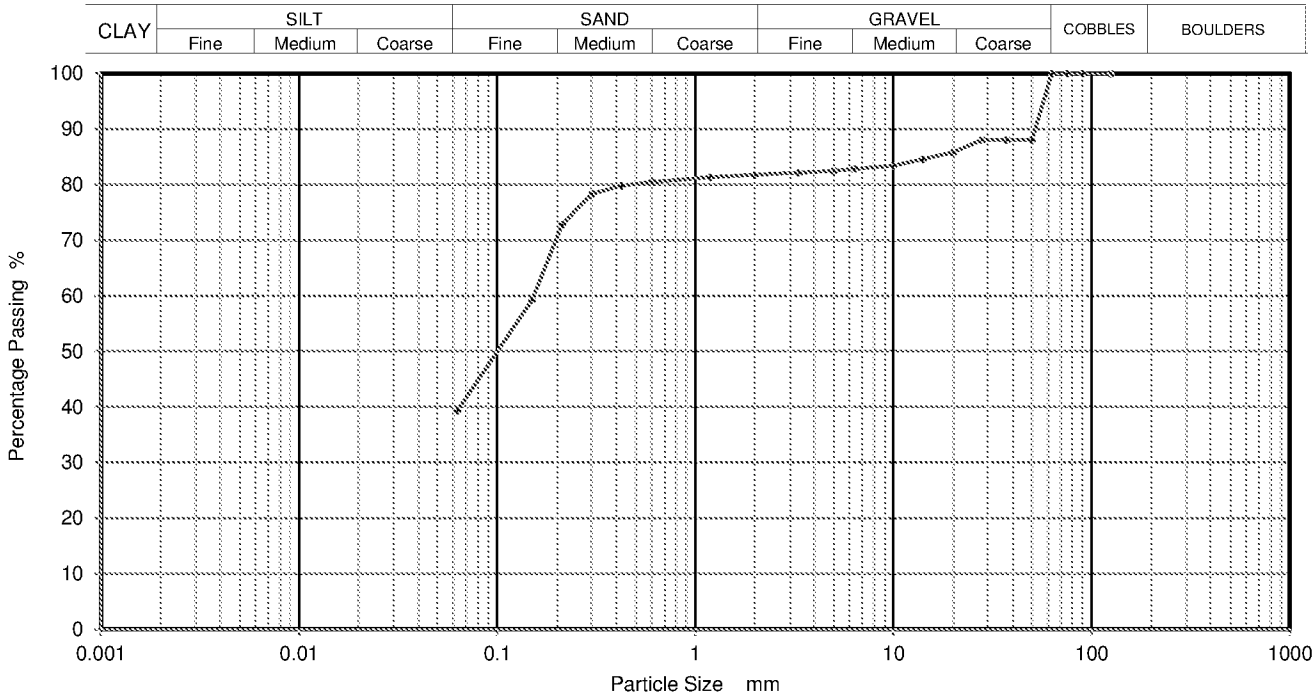
Key	Reported As	Clause
Moisture Content	%	3.2
Bulk Density	Mg/m^3	7.2
Dry Density	Mg/m^3	7.2
SMC	%	3.3.6

Operators	Checked	29/03/2019	Ben Sharp
RO/MH	Approved	30/03/2019	Paul Evans

[redacted]

KAS TESTING 2788

GSTL	PARTICLE SIZE DISTRIBUTION BS 1377 Part 2:1990 Wet Sieve, Clause 9.2	Contract Number	43335
		Borehole/Pit No.	TP8
Site Name	Land at Stakers Farm, Yapton	Sample No.	
Soil Description	Brown fine to coarse gravelly silty/clayey fine to coarse SAND	Depth Top	2.00
		Depth Base	
		Sample Type	0



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	88		
37.5	88		
28	88		
20	86		
14	85		
10	83		
6.3	83		
5	82		
3.35	82		
2	82		
1.18	81		
0.6	80		
0.425	80		
0.3	78		
0.212	73		
0.15	59		
0.063	39		

Sample Proportions	% dry mass
Cobbles	0
Gravel	18
Sand	43
Silt and Clay	39

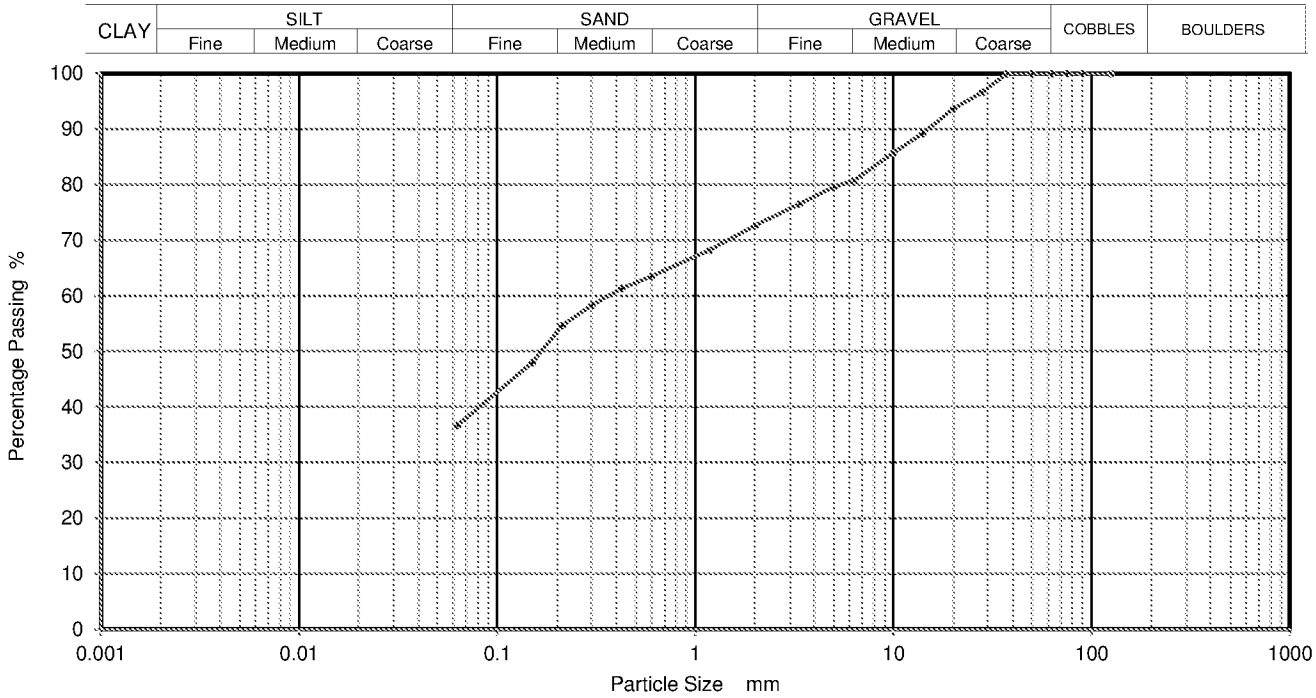
Remarks

Preparation and testing in accordance with BS1377 unless noted below

Operators	Checked	29/03/2019	Ben Sharp	[redacted]
RO/MH	Approved	30/03/2019	Paul Evans	

UKAS TESTING 2788

GSTL	PARTICLE SIZE DISTRIBUTION BS 1377 Part 2:1990 Wet Sieve, Clause 9.2	Contract Number	43335
		Borehole/Pit No.	TP9
Site Name	Land at Stakers Farm, Yapton	Sample No.	
Soil Description	Brown fine to coarse gravelly silty/clayey fine to coarse SAND	Depth Top	3.00
		Depth Base	
		Sample Type	0



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	97		
20	94		
14	89		
10	86		
6.3	81		
5	80		
3.35	77		
2	73		
1.18	68		
0.6	64		
0.425	61		
0.3	58		
0.212	55		
0.15	48		
0.063	37		

Sample Proportions	% dry mass
Cobbles	0
Gravel	27
Sand	36
Silt and Clay	37

Remarks

Preparation and testing in accordance with BS1377 unless noted below

Operators	Checked	29/03/2019	Ben Sharp	[redacted]
RO/MH	Approved	30/03/2019	Paul Evans	[redacted]

[redacted]

KAS
7788

GSTL	Certificate of Chemical Analysis BS1377 Part 3 1990	Contract Number	43335
		Client Reference	A112666
Client	WYG	Date Received	
Site Name	Land At Stakers Farm, Yapton	Date Started	22/03/2019
		Date Completed	30/03/2019
		No. of Samples	2

Hole Number	Sample Number	Sample Type	Depth (m)			Acid Soluble Sulphate	Aqueous Extract Sulphate	Water Soluble Chloride	PH Value	Organic Matter Content	Acid Soluble Chloride	Loss On Ignition
TP4			1.50	-			0.03		7.29			
WS10			1.20	-			0.03		7.77			
				-								
				-								
				-								
				-								
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Key	Reported As	Clause
Acid Soluble Sulphate	% SO_3	Clause 5.2 & 5.5
Aqueous Extract Sulphate	g/l SO_3	Clause 5.3 & 5.5
Water Soluble Chloride	%	Clause 7.2
PH Value	@ 25°	Clause 9.5
Organic	%	Clause 3
Acid Soluble Chloride	%	Clause 7.3
LOI	%	Clause 4

Remarks

NCP = No Chloride Present

Test Operator	Checked and Authorised by		Ben Sharp	[redacted]
Darren Bourne	Date	30/03/2019		

Laboratory Report

UKAS TESTING
2788

GSTL
GEO Site & Testing Services Ltd

Contract Number: 43720

Client Ref:
Client PO:

Report Date: **11-04-2019**

Client **WYG Group**
Arndale Court
Headingly
Leeds
LS6 2UJ

Contract Title: **Land at Stakers Farm, Yapton**
For the attention of: **Caroline Anderson**

Date Received: **04-04-2019**
Date Commenced: **04-04-2019**
Date Completed: **11-04-2019**

Test Description	Qty
Moisture Content BS 1377:1990 - Part 2 : 3.2 - * UKAS	2
4 Point Liquid & Plastic Limit BS 1377:1990 - Part 2 : 4.3 & 5.3 - * UKAS	2
PSD Wet Sieve method BS 1377:1990 - Part 2 : 9.2 - * UKAS	1
Water Soluble Sulphate 2:1 extract BS 1377:1990 - Part 3 : 5.3 - @ Non Accredited Test	2
pH value of soil BS 1377:1990 - Part 3 : 9.5 - @ Non Accredited Test	2
Disposal of samples for job	1

Notes: **Observations and Interpretations are outside the UKAS Accreditation**
*** - denotes test included in laboratory scope of accreditation**
- denotes test carried out by approved contractor
@ - denotes non accredited tests

This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved Signatories:
Ben Sharp (Contracts Manager) - Emma Sharp (Office Manager) - Paul Evans (Quality/Technical Manager)
Richard John (Advanced Testing Manager) - Sean Penn (Administrative/Accounts Assistant) - Wayne Honey (Administrative/Quality Assistant)

GEO Site & Testing Services Ltd
[redacted]

GSTL	LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX (BS 1377 : Part 2 : 1990 Method 5) DESCRIPTIONS	
Contract Number	43720	
Site Name	Land at Stakers Farm, Yapton	

Sample/Hole Reference	Sample Number	Sample Type	Depth (m)			Descriptions
WS07			2.00	-		Brown silty CLAY
WS201			1.00	-		Brown fine to medium gravelly silty CLAY
				-		
				-		
				-		
				-		
				-		
				-		
				-		
				-		
				-		
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				-		
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				-		

Operators	Checked	11/04/2019	Paul Evans (Quality/Technical Manager)
Darren Bourne	Approved	11/04/2019	Emma Sharp (Office Manager)

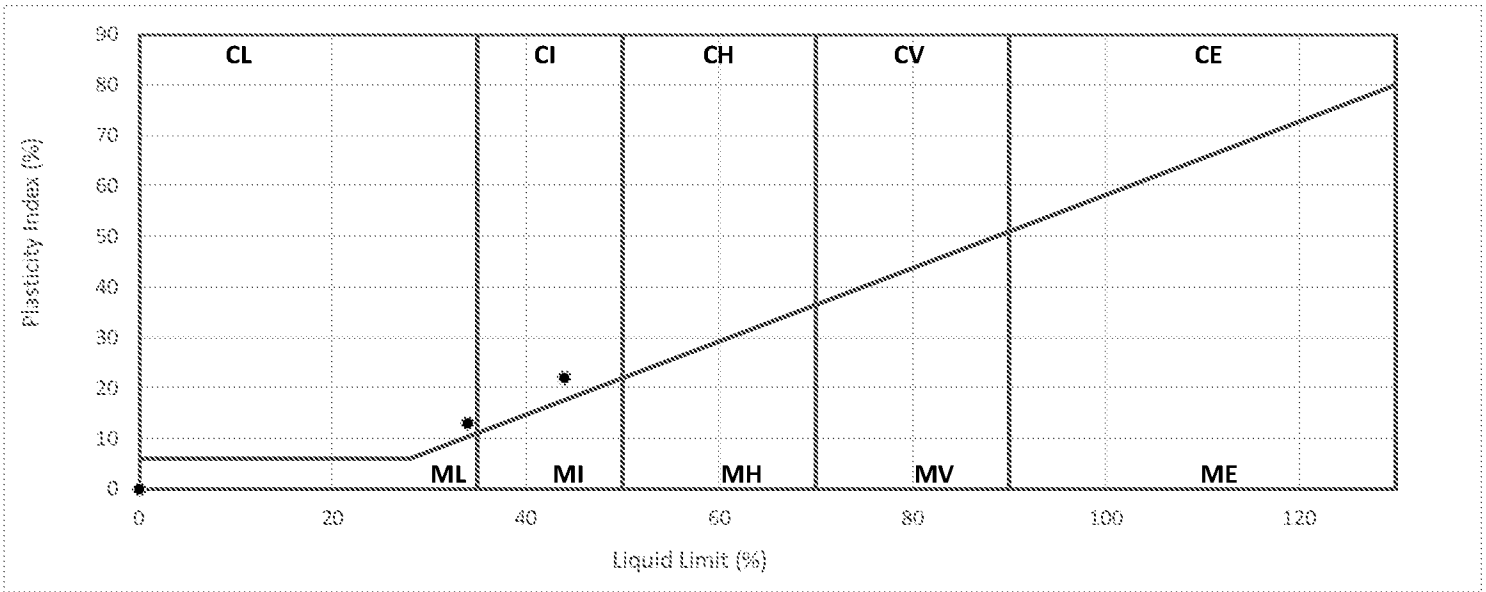
UKAS TESTING
2788

GSTL	LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX (BS 1377 : Part 2 : 1990 Method 5)	
Contract Number	43720	
Site Name	Land at Stakers Farm, Yapton	

Sample/Hole Reference	Sample Number	Sample Type	Depth (m)			Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity index %	Passing 0.425mm %	Remarks
WS07			2.00	-		18	44	22	22	100	CI Intermediate Plasticity
WS201			1.00	-		24	34	21	13	75	CL Low Plasticity
				-							
				-							
				-							
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Symbols: NP : Non Plastic # : Liquid Limit and Plastic Limit Wet Sieved

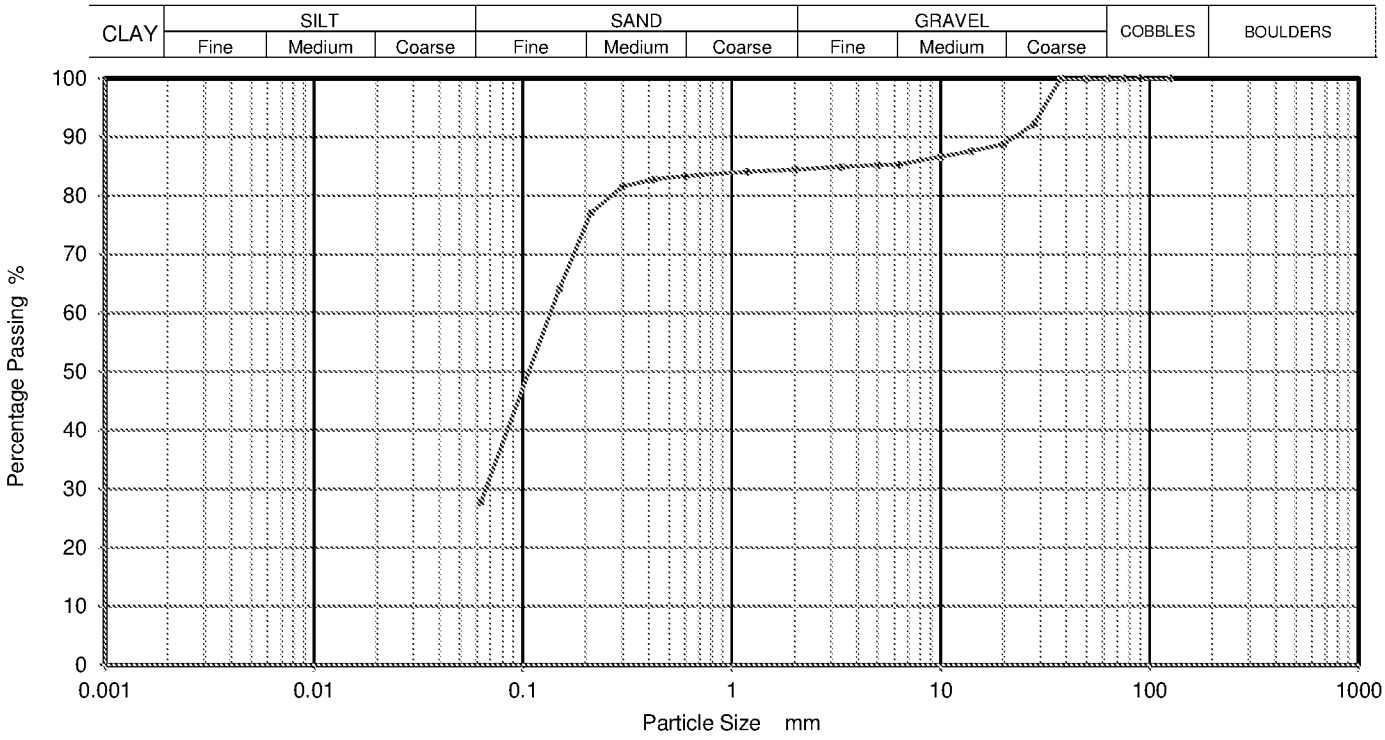
PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION
BS 5930:1999+A2:2010



Operators	Checked	11/04/2019	Paul Evans (Quality/Technical Manager)
Darren Bourne	Approved	11/04/2019	Emma Sharp (Office Manager)

UKAS TESTING 2788

GSTL	PARTICLE SIZE DISTRIBUTION BS 1377 Part 2:1990 Wet Sieve, Clause 9.2	Contract Number	43720
		Borehole/Pit No.	TP1
Site Name	**Land at Stakers Farm, Yapton**	Sample No.	
Soil Description	Brown fine to coarse gravelly silty clayey fine to coarse SAND	Depth Top	3.10
		Depth Base	
		Sample Type	0



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	92		
20	89		
14	88		
10	87		
6.3	85		
5	85		
3.35	85		
2	84		
1.18	84		
0.6	83		
0.425	83		
0.3	82		
0.212	77		
0.15	64		
0.063	28		

Sample Proportions	% dry mass
Cobbles	0
Gravel	16
Sand	56
Silt and Clay	28

Remarks

Preparation and testing in accordance with BS1377 unless noted below

Operators	Checked	10/04/2019	Ben Sharp	
RO/MH	Approved	11/04/2019	Paul Evans	

UKAS TESTING 2788

[redacted]

GSTL	Certificate of Chemical Analysis BS1377 Part 3 1990	Contract Number	43720
		Client Reference	
Client	WYG	**Date Received**	
Site Name	Land At Stakers Farm, Yapton	**Date Started**	04/04/2019
		Date Completed	11/04/2019
		No. of Samples	2

Hole Number	Sample Number	Sample Type	Depth (m)			Acid Soluble Sulphate	Aqueous Extract Sulphate	Water Soluble Chloride	PH Value	Organic Matter Content	Acid Soluble Chloride	Loss On Ignition
WS01			1.00	-			0.03		7.16			
WS07			2.00	-			0.03		7.43			
				-								
				-								
				-								
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Key	Reported As	Clause
Acid Soluble Sulphate	% SO_3	Clause 5.2 & 5.5
Aqueous Extract Sulphate	g/l SO_3	Clause 5.3 & 5.5
Water Soluble Chloride	%	Clause 7.2
PH Value	@ 25°	Clause 9.5
Organic	%	Clause 3
Acid Soluble Chloride	%	Clause 7.3
LOI	%	Clause 4

Remarks

NCP = No Chloride Present

Test Operator	Checked and Authorised by		Ben Sharp	[redacted]
Darren Bourne	Date	11/04/2019		

ARUN DISTRICT COUNCIL Y/72/20/RES

Appendix F – Environmental Laboratory Testing Results

Unit 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside

[redacted]

WYG Geo-Environment
5th Floor
Longcross Court
47 Newport Road
Cardiff
CF24 0AD

Attention: Katy Woodhouse

CERTIFICATE OF ANALYSIS

Date of report Generation:	23 March 2019
Customer:	H_WYG_CDF
Sample Delivery Group (SDG):	190313-14
Your Reference:	A112666
Location:	Land at Stakers Farm
Report No:	498064

This report has been revised and directly supersedes 497902 in its entirety.

We received 46 samples on Wednesday March 13, 2019 and 16 of these samples were scheduled for analysis which was completed on Saturday March 23, 2019. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.
The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:

[redacted]

Sonia McWhan

Operations Manager

CERTIFICATE OF ANALYSIS

SDG:	190313-14	**Client Reference:**	A112666	**Report Number:**	498064
Location:	Land at Stakers Farm	**Order Number:**	C19/247	**Superseded Report:**	497902

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref	AGS Ref	Depth (m)	Sampled Date
19532849	TP01	ES1	0.50 - 0.50	08/03/2019
19532853	TP01	ES2	1.00 - 1.00	08/03/2019
19532859	TP01	ES2	2.00 - 2.00	08/03/2019
19532829	TP02	ES1	0.40 - 0.40	08/03/2019
19532833	TP02	ES2	1.50 - 1.50	08/03/2019
19532841	TP03	ES1	0.40 - 0.40	08/03/2019
19532845	TP03	ES2	1.20 - 1.20	08/03/2019
19532866	TP04	ES1	0.50 - 0.50	08/03/2019
19532875	TP04	ES2	1.50 - 1.50	08/03/2019
19532889	TP06	ES1	0.50 - 0.50	07/03/2019
19532900	TP06	ES2	1.20 - 1.20	07/03/2019
19532907	TP06	ES3	2.80 - 2.80	07/03/2019
19532663	TP07	ES1	0.50 - 0.50	07/03/2019
19532707	TP07	ES2	1.00 - 1.00	07/03/2019
19532819	TP08	ES1	0.50 - 0.50	08/03/2019
19532825	TP08	ES2	1.50 - 1.50	08/03/2019
19532795	TP09	ES1	0.50 - 0.50	08/03/2019
19532802	TP09	ES2	1.00 - 1.00	08/03/2019
19532811	TP09	ES3	1.70 - 1.70	08/03/2019
19532764	TP10	ES1	0.50 - 0.50	07/03/2019
19532837	TP10	ES2	1.00 - 1.00	07/03/2019
19532881	TP10	ES3	1.60 - 1.60	07/03/2019
19532723	WS01	ES1	0.30 - 0.30	08/03/2019
19532727	WS01	ES2	1.00	08/03/2019
19532731	WS01	ES3	1.50	08/03/2019
19532735	WS02	ES1	0.30 - 0.30	08/03/2019
19532739	WS02	ES2	1.00 - 1.00	08/03/2019
19532743	WS04	ES1	0.30 - 0.30	08/03/2019
19532755	WS04	ES2	1.00 - 1.00	08/03/2019
19532770	WS04	ES3	1.50 - 1.50	08/03/2019
19532778	WS05	ES1	0.20 - 0.20	08/03/2019
19532787	WS05	ES2	1.00 - 1.00	08/03/2019
19532914	WS06	ES1	0.40 - 0.40	07/03/2019
19532667	WS06	ES2	1.00 - 1.00	07/03/2019
19532715	WS07	ES2	0.00 - 0.00	08/03/2019
19532719	WS07	ES3	0.00 - 0.00	08/03/2019
19532711	WS07	ES1	0.30 - 0.30	08/03/2019
19532671	WS08	ES1	0.30 - 0.30	07/03/2019
19532675	WS08	ES2	1.00 - 1.00	07/03/2019
19532679	WS08	ES3	1.50 - 1.50	07/03/2019
19532683	WS09	ES1	0.30 - 0.30	07/03/2019
19532687	WS09	ES2	1.00 - 1.00	07/03/2019
19532691	WS09	ES3	1.50 - 1.50	07/03/2019
19532695	WS10	ES1	0.30 - 0.30	07/03/2019
19532699	WS10	ES2	0.80 - 0.80	07/03/2019
19532703	WS10	ES3	2.00 - 2.00	07/03/2019

Maximum Sample/Coolbox Temperature (°C) : **6.8**

ISO5667-3 Water quality - Sampling - Part3 -
During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of (5±3)°C for a period of up to 24hrs.

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG:	190313-14	**Client Reference:**	A112666	**Report Number:**	498064
Location:	Land at Stakers Farm	**Order Number:**	C19/247	**Superseded Report:**	497902

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	19532833			19532866			19532900			19532663			19532819			19532795			19532764
			Customer Sample Reference	TP02			TP04			TP06			TP07			TP08			TP09			TP10
			AGS Reference	ES2			ES1			ES2			ES1			ES1			ES1			ES1
			Depth (m)	1.50 - 1.50			0.50 - 0.50			1.20 - 1.20			0.50 - 0.50			0.50 - 0.50			0.50 - 0.50			0.50 - 0.50
			Container	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB
			Sample Type	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Acid herbicides*	All	NDPs: 0 Tests: 3												X								
Alkalinity Filtered as CaCO3	All	NDPs: 0 Tests: 3																	X			
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 3																	X			
Anions by Kone (soil)	All	NDPs: 0 Tests: 8					X													X		
Anions by Kone (w)	All	NDPs: 0 Tests: 3																	X			
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 16	X			X			X			X			X			X				X
Boron Water Soluble	All	NDPs: 0 Tests: 16		X			X			X			X			X			X			
CEN Readings	All	NDPs: 0 Tests: 3																	X			
Chromium III	All	NDPs: 0 Tests: 16		X			X			X			X			X			X			
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 16		X			X			X			X			X			X			
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 3																	X			
EPH (DRO) (C10-C40) Aqueous (W)	All	NDPs: 0 Tests: 3																	X			
EPH by FID	All	NDPs: 0 Tests: 8		X						X			X			X						
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 8					X													X		
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 8					X													X		

19532671	WS08	ES1	0.30 - 0.30	1kg TUB	S						X									
19532711	WS07	ES1	0.30 - 0.30	60g VOC (ALE215)	S															
				250g Amber Jar (ALE210)	S				X			X		X	X				X	X
				1kg TUB	S						X									
19532914	WS06	ES1	0.40 - 0.40	60g VOC (ALE215)	S															
				250g Amber Jar (ALE210)	S	X			X			X		X	X				X	X
				1kg TUB	S		X	X		X	X		X			X	X			
19532778	WS05	ES1	0.20 - 0.20	60g VOC (ALE215)	S															
				250g Amber Jar (ALE210)	S							X		X	X			X		
				1kg TUB	S						X									
19532743	WS04	ES1	0.30 - 0.30	60g VOC (ALE215)	S															
				250g Amber Jar (ALE210)	S				X			X		X	X				X	X
				1kg TUB	S						X									
19532735	WS02	ES1	0.30 - 0.30	60g VOC (ALE215)	S															
				250g Amber Jar (ALE210)	S	X			X			X		X	X				X	X
				1kg TUB	S		X	X		X	X		X			X	X			
19532723	WS01	ES1	0.30 - 0.30	60g VOC (ALE215)	S															
				250g Amber Jar (ALE210)	S							X		X	X			X		
				1kg TUB	S						X									
19532764	TP10	ES1	0.50 - 0.50	60g VOC (ALE215)	S															
				250g Amber Jar (ALE210)	S							X		X	X			X		

Validated

CERTIFICATE OF ANALYSIS

SDG:	190313-14	**Client Reference:**	A112666	**Report Number:**	498064
Location:	Land at Stakers Farm	**Order Number:**	C19/247	**Superseded Report:**	497902

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)				19532833			19532866			19532900			19532663			19532819			19532795			19532764				
Customer Sample Reference				TP02			TP04			TP06			TP07			TP08			TP09			TP10				
AGS Reference				ES2			ES1			ES2			ES1			ES1			ES1			ES1				
Depth (m)				1.50 - 1.50			0.50 - 0.50			1.20 - 1.20			0.50 - 0.50			0.50 - 0.50			0.50 - 0.50			0.50 - 0.50				
Container				1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB					
Sample Type				S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S			
GRO by GC-FID (S)	All	NDPs: 0 Tests: 16				X			X			X			X			X			X						
GRO by GC-FID (W)	All	NDPs: 0 Tests: 3																	X								
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 16		X			X			X			X			X				X							
Mercury Dissolved	All	NDPs: 0 Tests: 3																	X								
Metals in solid samples by OES	All	NDPs: 0 Tests: 16		X			X			X			X			X				X							
OC, OP Pesticides and Triazine Herb	All	NDPs: 0 Tests: 3											X														
PAH by GCMS	All	NDPs: 0 Tests: 16		X			X			X			X			X				X							
PAH in waters by GC-MS (diss.filt)	All	NDPs: 0 Tests: 3																	X								
pH	All	NDPs: 0 Tests: 16		X			X			X			X			X				X							
pH Value of Filtered Water	All	NDPs: 0 Tests: 3																	X								
Phenols by HPLC (S)	All	NDPs: 0 Tests: 16		X			X			X			X			X				X							
Phenols by HPLC (W)	All	NDPs: 0 Tests: 3																	X								
Sample description	All	NDPs: 0 Tests: 16		X			X			X			X			X				X							
Total EPH (aq)	All	NDPs: 0 Tests: 3																	X								
Total Organic Carbon	All	NDPs: 0 Tests: 16		X			X			X			X			X				X							

19532671	WS08	ES1	0.30 - 0.30	1kg TUB	S																														
19532711	WS07	ES1	0.30 - 0.30	60g VOC (ALE215)	S		X																												
				250g Amber Jar (ALE210)	S						X				X				X				X				X				X				X
				1kg TUB	S																														
19532914	WS06	ES1	0.40 - 0.40	60g VOC (ALE215)	S		X																												
				250g Amber Jar (ALE210)	S						X				X		X		X				X				X				X				X
				1kg TUB	S				X				X								X				X				X				X		
19532778	WS05	ES1	0.20 - 0.20	60g VOC (ALE215)	S		X																												
				250g Amber Jar (ALE210)	S						X				X				X				X				X				X				X
				1kg TUB	S																														
19532743	WS04	ES1	0.30 - 0.30	60g VOC (ALE215)	S		X																												
				250g Amber Jar (ALE210)	S						X				X				X				X				X				X				X
				1kg TUB	S																														
19532735	WS02	ES1	0.30 - 0.30	60g VOC (ALE215)	S		X																												
				250g Amber Jar (ALE210)	S						X				X		X		X				X				X				X				X
				1kg TUB	S				X				X								X				X				X				X		
19532723	WS01	ES1	0.30 - 0.30	60g VOC (ALE215)	S		X																												
				250g Amber Jar (ALE210)	S						X				X				X				X				X				X				X
				1kg TUB	S																														
19532764	TP10	ES1	0.50 - 0.50	60g VOC (ALE215)	S		X																												
				250g Amber Jar (ALE210)	S						X				X				X				X				X				X				X

Validated

CERTIFICATE OF ANALYSIS

SDG:	190313-14	**Client Reference:**	A112666	**Report Number:**	498064
Location:	Land at Stakers Farm	**Order Number:**	C19/247	**Superseded Report:**	497902

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
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			Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
			19532833	TP02	ES2	1.50 - 1.50	1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			19532866	TP04	ES1	0.50 - 0.50	1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			19532900	TP06	ES2	1.20 - 1.20	1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			19532663	TP07	ES1	0.50 - 0.50	1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			19532819	TP08	ES1	0.50 - 0.50	1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			19532795	TP09	ES1	0.50 - 0.50	1kg TUB	S
							250g Amber Jar (ALE210)	S
							60g VOC (ALE215)	S
			19532764	TP10	ES1	0.50 - 0.50	1kg TUB	S
TPH CWG GC (S)	All	NDPs: 0 Tests: 8						
							250g Amber Jar (ALE210)	
VOC MS (S)	All	NDPs: 0 Tests: 16						
							60g VOC (ALE215)	

19532671	WS08	ES1	0.30 - 0.30	1kg TUB	S				
19532711	WS07	ES1	0.30 - 0.30	60g VOC (ALE215)	S			X	
				250g Amber Jar (ALE210) 1kg TUB	S	X			
19532914	WS06	ES1	0.40 - 0.40	60g VOC (ALE215)	S			X	
				250g Amber Jar (ALE210) 1kg TUB	S	X			
19532778	WS05	ES1	0.20 - 0.20	60g VOC (ALE215)	S			X	
				250g Amber Jar (ALE210) 1kg TUB	S				
19532743	WS04	ES1	0.30 - 0.30	60g VOC (ALE215)	S			X	
				250g Amber Jar (ALE210) 1kg TUB	S	X			
19532735	WS02	ES1	0.30 - 0.30	60g VOC (ALE215)	S			X	
				250g Amber Jar (ALE210) 1kg TUB	S	X			
19532723	WS01	ES1	0.30 - 0.30	60g VOC (ALE215)	S			X	
				250g Amber Jar (ALE210) 1kg TUB	S				
19532764	TP10	ES1	0.50 - 0.50	60g VOC (ALE215)	S			X	
				250g Amber Jar (ALE210)	S				

CERTIFICATE OF ANALYSIS

SDG:	190313-14	**Client Reference:**	A112666	**Report Number:**	498064
Location:	Land at Stakers Farm	**Order Number:**	C19/247	**Superseded Report:**	497902

Results Legend

X Test

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Sample Types -
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			Lab Sample No(s)							
			19532671			19532683			19532695	
			Customer Sample Reference							
			WS08			WS09			WS10	
			AGS Reference							
			ES1			ES1			ES1	
			Depth (m)							
			0.30 - 0.30			0.30 - 0.30			0.30 - 0.30	
			Container							
			250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)
			Sample Type							
			S	S	S	S	S	S	S	S
Anions by Kone (soil)	All	NDPs: 0 Tests: 8	X			X				
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 16			X			X		
Boron Water Soluble	All	NDPs: 0 Tests: 16	X			X			X	
Chromium III	All	NDPs: 0 Tests: 16	X			X			X	
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 16	X			X			X	
EPH by FID	All	NDPs: 0 Tests: 8							X	
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 8	X			X				
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 8	X			X				
GRO by GC-FID (S)	All	NDPs: 0 Tests: 16		X			X			X
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 16	X			X			X	
Metals in solid samples by OES	All	NDPs: 0 Tests: 16	X			X			X	
PAH by GCMS	All	NDPs: 0 Tests: 16	X			X			X	
pH	All	NDPs: 0 Tests: 16	X			X			X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 16	X			X			X	
Sample description	All	NDPs: 0 Tests: 16	X			X			X	

Validated

CERTIFICATE OF ANALYSIS

SDG:	190313-14	**Client Reference:**	A112666	**Report Number:**	498064
Location:	Land at Stakers Farm	**Order Number:**	C19/247	**Superseded Report:**	497902

Results Legend

X **Test**

N **No Determination Possible**

Sample Types -
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UNL - Unspecified Liquid
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Lab Sample No(s)			19532671			19532683			19532695	
Customer Sample Reference			WS08			WS09			WS10	
AGS Reference			ES1			ES1			ES1	
Depth (m)			0.30 - 0.30			0.30 - 0.30			0.30 - 0.30	
Container			250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type			S	S	S	S	S	S	S	S
Total Organic Carbon	All	NDPs: 0 Tests: 16	X			X			X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 8	X			X				
VOC MS (S)	All	NDPs: 0 Tests: 16		X			X			X

CERTIFICATE OF ANALYSIS

SDG:	190313-14	**Client Reference:**	A112666	**Report Number:**	498064
Location:	Land at Stakers Farm	**Order Number:**	C19/247	**Superseded Report:**	497902

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
19532833	TP02	1.50 - 1.50	Dark Brown	Loamy Sand	Stones	Vegetation
19532866	TP04	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
19532900	TP06	1.20 - 1.20	Dark Brown	Silty Clay Loam	Stones	None
19532663	TP07	0.50 - 0.50	Dark Brown	Loamy Sand	Vegetation	Stones
19532819	TP08	0.50 - 0.50	Dark Brown	Loamy Sand	Vegetation	Stones
19532795	TP09	0.50 - 0.50	Dark Brown	Loamy Sand	Stones	Vegetation
19532764	TP10	0.50 - 0.50	Dark Brown	Silty Clay Loam	Stones	Vegetation
19532723	WS01	0.30 - 0.30	Light Brown	Sandy Loam	Vegetation	Stones
19532735	WS02	0.30 - 0.30	Dark Brown	Loamy Sand	Vegetation	Stones
19532743	WS04	0.30 - 0.30	Dark Brown	Sandy Loam	Vegetation	Stones
19532778	WS05	0.20 - 0.20	Dark Brown	Sandy Loam	Vegetation	None
19532914	WS06	0.40 - 0.40	Dark Brown	Silt Loam	Stones	Vegetation
19532711	WS07	0.30 - 0.30	Dark Brown	Silty Clay Loam	Vegetation	None
19532671	WS08	0.30 - 0.30	Dark Brown	Sandy Silt Loam	None	Vegetation
19532683	WS09	0.30 - 0.30	Dark Brown	Silt Loam	Vegetation	None
19532695	WS10	0.30 - 0.30	Grey	Loamy Sand	Vegetation	Stones

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

ARUN DISTRICT COUNCIL X/72/20/RES
12:04:42 23/03/2019

CERTIFICATE OF ANALYSIS

SDG:	190313-14	**Client Reference:**	A112666	**Report Number:**	498064
Location:	Land at Stakers Farm	**Order Number:**	C19/247	**Superseded Report:**	497902

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP02	TP04	TP06	TP07	TP08	TP09
			Depth (m)	1.50 - 1.50	0.50 - 0.50	1.20 - 1.20	0.50 - 0.50	0.50 - 0.50	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	08/03/2019	08/03/2019	07/03/2019	07/03/2019	08/03/2019	08/03/2019
			Sample Time						
			Date Received	13/03/2019	13/03/2019	13/03/2019	13/03/2019	13/03/2019	13/03/2019
			SDG Ref	190313-14	190313-14	190313-14	190313-14	190313-14	190313-14
			Lab Sample No.(s)	19532833	19532866	19532900	19532863	19532819	19532795
			AGS Reference	ES2	ES1	ES2	ES1	ES1	ES1
Moisture Content Ratio (% of as received sample)	%	PM024		15	16	15	18	17	17
2,4,5-Trichlorophenol (2,4,5-T)*	<0.01 mg/kg	SUB					<0.01		
2,4,5-TP (Fenoprop)*	<0.01 mg/kg	SUB					<0.01		
2,4-D*	<0.01 mg/kg	SUB					<0.01		
2,4-DB*	<0.01 mg/kg	SUB					<0.01		
2,4-Dichloroprop (2,4 DP)*	<0.01 mg/kg	SUB					<0.01		
4-Chlorophenoxyacetic acid (4-CPA)*	<0.01 mg/kg	SUB					<0.01		
Acifluorfen*	<0.01 mg/kg	SUB					<0.01		
Bentazone*	<0.01 mg/kg	SUB					<0.01		
Bromoxynil*	<0.01 mg/kg	SUB					<0.01		
Dicamba*	<0.01 mg/kg	SUB					<0.01		
Diclofop*	<0.01 mg/kg	SUB					<0.01		
Dinoseb*	<0.01 mg/kg	SUB					<0.01		
DNOC*	<0.01 mg/kg	SUB					<0.01		
Fluroxypyr*	<0.01 mg/kg	SUB					<0.01		
Ioxynil*	<0.01 mg/kg	SUB					<0.01		
2-methyl-4-Chlorophenoxyacetic acid (MCPA)*	<0.01 mg/kg	SUB					<0.01		
4-(4-Chloro-o-tolyloxy) butyric acid (MCPB)*	<0.01 mg/kg	SUB					<0.01		
Mecoprop (MCPP)*	<0.01 mg/kg	SUB					<0.01		
Propoxycarbazone-sodium*	<0.01 mg/kg	SUB					<0.01		
Triclopyr*	<0.01 mg/kg	SUB					<0.01		
Triclosan*	<0.01 mg/kg	SUB					<0.01		
EPH Surrogate % recovery**	%	TM061		80.6		85.1	82.6	82.8	
EPH Range >C10 - C40	<35 mg/kg	TM061		<35 M		<35 M	<35 M	<35 M	
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 @ M	<0.01 M	<0.01 M	<0.01 M
Fraction Organic Carbon (FOC)	<0.002	TM132		<0.002 #	0.00291 #	<0.002 #	0.00352 #	0.00376 #	0.00234 #
pH	1 pH Units	TM133		6.12 M	6.85 M	7.57 M	7.05 M	7.07 M	7.28 M
Chromium, Hexavalent	<0.6 mg/kg	TM151		<0.6 #	<0.6 #	<0.6 #	<0.6 #	<0.6 #	<0.6 #
Cyanide, Easily liberatable (low level)	<0.5 mg/kg	TM153		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium, Trivalent	<0.9 mg/kg	TM181		43.7	19.4	21	26.6	20.1	30.8
Arsenic	<0.6 mg/kg	TM181		9.78 M	8.15 M	8.45 M	13.1 M	9.73 M	10.8 M
Beryllium	<0.01 mg/kg	TM181		0.819 M	0.547 M	0.705 M	0.713 M	0.59 M	1.02 M
Cadmium	<0.02 mg/kg	TM181		0.31 M	0.244 M	0.236 M	0.285 M	0.252 M	0.174 M

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Results Legend	
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aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP02	TP04	TP05	TP07	TP08	TP09
			Depth (m)	1.50 - 1.50	0.50 - 0.50	1.20 - 1.20	0.50 - 0.50	0.50 - 0.50	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	08/03/2019	08/03/2019	07/03/2019	07/03/2019	08/03/2019	08/03/2019
			Sample Time						
			Date Received	13/03/2019	13/03/2019	13/03/2019	13/03/2019	13/03/2019	13/03/2019
			SDG Ref	190313-14	190313-14	190313-14	190313-14	190313-14	190313-14
			Lab Sample No.(s)	19532833	19532866	19532900	19532863	19532819	19532795
			AGS Reference	ES2	ES1	ES2	ES1	ES1	ES1
Chromium	<0.9 mg/kg	TM181		43.7 M	19.4 M	21 M	26.6 M	20.1 M	30.8 M
Copper	<1.4 mg/kg	TM181		12.7 M	10.4 M	10.1 M	16.2 M	12.8 M	16 M
Lead	<0.7 mg/kg	TM181		14.5 M	15.1 M	12.6 M	16.7 M	15.8 M	16.7 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		25.5 M	16.4 M	20.2 M	24.4 M	17.9 M	31 M
Selenium	<1 mg/kg	TM181		1.09 #	1.04 #	<1 #	<1 #	<1 #	1.07 #
Vanadium	<0.2 mg/kg	TM181		75.1 #	33.6 #	39 #	46.7 #	36.1 #	54.5 #
Zinc	<1.9 mg/kg	TM181		55.9 M	53.6 M	43.7 M	60 M	51.9 M	64.5 M
Boron, water soluble	<1 mg/kg	TM222		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243			0.0101 M				0.0164 M

CERTIFICATE OF ANALYSIS

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tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP10	WS01	WS02	WS04	WS05	WS05
			Depth (m)	0.50 - 0.50	0.30 - 0.30	0.30 - 0.30	0.30 - 0.30	0.20 - 0.20	0.40 - 0.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	07/03/2019	08/03/2019	08/03/2019	08/03/2019	08/03/2019	07/03/2019
			Sample Time						
			Date Received	13/03/2019	13/03/2019	13/03/2019	13/03/2019	13/03/2019	13/03/2019
			SDG Ref	190313-14	190313-14	190313-14	190313-14	190313-14	190313-14
			Lab Sample No.(s)	19532764	19532723	19532735	19532743	19532778	19532914
			AGS Reference	ES1	ES1	ES1	ES1	ES1	ES1
Moisture Content Ratio (% of as received sample)	%	PM024		17	19	21	20	21	16
2,4,5-Trichlorophenol (2,4,5-T)*	<0.01 mg/kg	SUB				<0.01			<0.01
2,4,5-TP (Fenoprop)*	<0.01 mg/kg	SUB				<0.01			<0.01
2,4-D*	<0.01 mg/kg	SUB				<0.01			<0.01
2,4-DB*	<0.01 mg/kg	SUB				<0.01			<0.01
2,4-Dichloroprop (2,4 DP)*	<0.01 mg/kg	SUB				<0.01			<0.01
4-Chlorophenoxyacetic acid (4-CPA)*	<0.01 mg/kg	SUB				<0.01			<0.01
Acifluorfen*	<0.01 mg/kg	SUB				<0.01			<0.01
Bentazone*	<0.01 mg/kg	SUB				<0.01			<0.01
Bromoxynil*	<0.01 mg/kg	SUB				<0.01			<0.01
Dicamba*	<0.01 mg/kg	SUB				<0.01			<0.01
Diclofop*	<0.01 mg/kg	SUB				<0.01			<0.01
Dinoseb*	<0.01 mg/kg	SUB				<0.01			<0.01
DNOC*	<0.01 mg/kg	SUB				<0.01			<0.01
Fluroxypyr*	<0.01 mg/kg	SUB				<0.01			<0.01
Ioxynil*	<0.01 mg/kg	SUB				<0.01			<0.01
2-methyl-4-Chlorophenoxyacetic acid (MCPA)*	<0.01 mg/kg	SUB				<0.01			<0.01
4-(4-Chloro-o-tolyloxy) butyric acid (MCPB)*	<0.01 mg/kg	SUB				<0.01			<0.01
Mecoprop (MCPP)*	<0.01 mg/kg	SUB				<0.01			<0.01
Propoxycarbazone-sodium*	<0.01 mg/kg	SUB				<0.01			<0.01
Triclopyr*	<0.01 mg/kg	SUB				<0.01			<0.01
Triclosan*	<0.01 mg/kg	SUB				<0.01			<0.01
EPH Surrogate % recovery**	%	TM061		78.8	77.9			74.2	
EPH Range >C10 - C40	<35 mg/kg	TM061		<35 M	<35 M			<35 M	
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Fraction Organic Carbon (FOC)	<0.002	TM132		0.00617 #	0.0109 #	0.0124 #	0.00791 #	0.0148 #	0.0045 #
pH	1 pH Units	TM133		6.98 M	5.33 M	5.53 M	6.08 M	4.69 M	6.38 M
Chromium, Hexavalent	<0.6 mg/kg	TM151		<0.6 #	<0.6 #	<0.6 #	<0.6 #	<0.6 #	<0.6 #
Cyanide, Easily liberatable (low level)	<0.5 mg/kg	TM153		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium, Trivalent	<0.9 mg/kg	TM181		25	16.9	15.5	18.3	17.8	20.6
Arsenic	<0.6 mg/kg	TM181		7.88 M	7.67 M	7.82 M	8.4 M	8.2 M	9.75 M
Beryllium	<0.01 mg/kg	TM181		0.391 M	0.476 M	0.463 M	0.555 M	0.497 M	0.624 M
Cadmium	<0.02 mg/kg	TM181		0.328 M	0.293 M	0.315 M	0.25 M	0.275 M	0.252 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	190313-14	**Client Reference:**	A112666	**Report Number:**	498064
Location:	Land at Stakers Farm	**Order Number:**	C19/247	**Superseded Report:**	497902

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP10	WS01	WS02	WS04	WS05	WS06
			Depth (m)	0.50 - 0.50	0.30 - 0.30	0.30 - 0.30	0.30 - 0.30	0.20 - 0.20	0.40 - 0.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	07/03/2019	08/03/2019	08/03/2019	08/03/2019	08/03/2019	07/03/2019
			Sample Time						
			Date Received	13/03/2019	13/03/2019	13/03/2019	13/03/2019	13/03/2019	13/03/2019
			SDG Ref	190313-14	190313-14	190313-14	190313-14	190313-14	190313-14
			Lab Sample No.(s)	19532764	19532723	19532735	19532743	19532778	19532914
			AGS Reference	ES1	ES1	ES1	ES1	ES1	ES1
Chromium	<0.9 mg/kg	TM181		25 M	16.9 M	15.5 M	18.3 M	17.8 M	20.6 M
Copper	<1.4 mg/kg	TM181		13.6 M	13.2 M	47 M	15.4 M	13.4 M	12.4 M
Lead	<0.7 mg/kg	TM181		31.3 M	33.5 M	138 M	28.9 M	41.7 M	15.9 M
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181		13.1 M	14.4 M	22.5 M	16.2 M	14.4 M	19 M
Selenium	<1 mg/kg	TM181		<1 #	<1 #	<1 #	<1 #	1.18 #	<1 #
Vanadium	<0.2 mg/kg	TM181		42.5 #	28.9 #	27.7 #	31.9 #	30.8 #	35.9 #
Zinc	<1.9 mg/kg	TM181		50.9 M	52 M	73.2 M	52.3 M	60.5 M	47.3 M
Boron, water soluble	<1 mg/kg	TM222		<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243				0.0097 M	0.0102 M		0.0126 M

CERTIFICATE OF ANALYSIS

SDG:	190313-14	**Client Reference:**	A112666	**Report Number:**	498064
Location:	Land at Stakers Farm	**Order Number:**	C19/247	**Superseded Report:**	497902

Result Codes	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	WS07	WS08	WS09	WS10		
			Depth (m)	0.30 - 0.30	0.30 - 0.30	0.30 - 0.30	0.30 - 0.30		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	08/03/2019	07/03/2019	07/03/2019	07/03/2019		
			Sample Time						
			Date Received	13/03/2019	13/03/2019	13/03/2019	13/03/2019		
			SDG Ref	190313-14	190313-14	190313-14	190313-14		
			Lab Sample No.(s)	19532711	19532671	19532683	19532695		
			AGS Reference	ES1	ES1	ES1	ES1		
Moisture Content Ratio (% of as received sample)	%	PM024		19	25	19	22		
EPH Surrogate % recovery**	%	TM061					79.8		
EPH Range >C10 - C40	<35 mg/kg	TM061					<35 M		
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M	<0.01 M	<0.01 M	<0.01 M		
Fraction Organic Carbon (FOC)	<0.002	TM132		0.00338 #	0.0133 #	0.00254 #	0.0141 #		
pH	1 pH Units	TM133		6.56 M	6.04 M	6.6 M	6.37 M		
Chromium, Hexavalent	<0.6 mg/kg	TM151		<0.6 #	<0.6 #	<0.6 #	<0.6 #		
Cyanide, Easily liberatable (low level)	<0.5 mg/kg	TM153		<0.5	<0.5	<0.5	<0.5		
Chromium, Trivalent	<0.9 mg/kg	TM181		17.8	17.3	17	17.8		
Arsenic	<0.6 mg/kg	TM181		7.79 M	9.12 M	9.19 M	9.48 M		
Beryllium	<0.01 mg/kg	TM181		0.471 M	0.48 M	0.477 M	0.449 M		
Cadmium	<0.02 mg/kg	TM181		0.288 M	0.343 M	0.353 M	0.401 M		
Chromium	<0.9 mg/kg	TM181		17.8 M	17.3 M	17 M	17.8 M		
Copper	<1.4 mg/kg	TM181		12.5 M	14.1 M	13.7 M	15.1 M		
Lead	<0.7 mg/kg	TM181		20.6 M	28.5 M	26.3 M	20.1 M		
Mercury	<0.14 mg/kg	TM181		<0.14 M	<0.14 M	<0.14 M	<0.14 M		
Nickel	<0.2 mg/kg	TM181		15.3 M	15.2 M	15.1 M	15.9 M		
Selenium	<1 mg/kg	TM181		1.15 #	<1 #	<1 #	<1 #		
Vanadium	<0.2 mg/kg	TM181		29.9 #	30.2 #	28.7 #	31.3 #		
Zinc	<1.9 mg/kg	TM181		48.7 M	57.5 M	52.3 M	59.2 M		
Boron, water soluble	<1 mg/kg	TM222		<1 M	<1 M	<1 M	<1 M		
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243		0.0099 M	0.0261 M	0.0263 M			

Validated

CERTIFICATE OF ANALYSIS

SDG:	190313-14	**Client Reference:**	A112666	**Report Number:**	498064
Location:	Land at Stakers Farm	**Order Number:**	C19/247	**Superseded Report:**	497902

GRO by GC-FID (S)

Results Legend		Customer Sample Ref.	TP02	TP06	TP07	TP08	TP10	WS01
#	ISO17025 accredited.							
M	mCERTS accredited.							
aq	Aqueous / settled sample.							
diss.filt	Dissolved / filtered sample.	Depth (m)	1.50 - 1.50	1.20 - 1.20	0.50 - 0.50	0.50 - 0.50	0.50 - 0.50	0.30 - 0.30
tot.unfilt	Total / unfiltered sample.	Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
*	Subcontracted - refer to subcontractor report for accreditation status.	Date Sampled	08/03/2019	07/03/2019	07/03/2019	08/03/2019	07/03/2019	08/03/2019
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Sample Time						
		Date Received	13/03/2019	13/03/2019	13/03/2019	13/03/2019	13/03/2019	13/03/2019
		SDG Ref	190313-14	190313-14	190313-14	190313-14	190313-14	190313-14
(F)	Trigger breach confirmed	Lab Sample No.(s)	19532833	19532900	19532663	19532819	19532764	19532723
1-3+$@	Sample deviation (see appendix)	AGS Reference	ES2	ES2	ES1	ES1	ES1	ES1
Component	**LOD/Units**	**Method**						
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M

Validated

CERTIFICATE OF ANALYSIS

SDG:	190313-14	**Client Reference:**	A112666	**Report Number:**	498064
Location:	Land at Stakers Farm	**Order Number:**	C19/247	**Superseded Report:**	497902

GRO by GC-FID (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	WS05	WS10				
			Depth (m)	0.20 - 0.20	0.30 - 0.30				
			Sample Type	Soil/Solid (S)	Soil/Solid (S)				
			Date Sampled	08/03/2019	07/03/2019				
			Sample Time						
			Date Received	13/03/2019	13/03/2019				
			SDG Ref	190313-14	190313-14				
			Lab Sample No.(s)	19532778	19532695				
			AGS Reference	ES1	ES1				
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.1 M	<0.1 M				

CERTIFICATE OF ANALYSIS

SDG:	190313-14	**Client Reference:**	A112666	**Report Number:**	498064
Location:	Land at Stakers Farm	**Order Number:**	C19/247	**Superseded Report:**	497902

OC, OP Pesticides and Triazine Herb

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+$@	Sample deviation (see appendix)

Customer Sample Ref.	TP07	WS02	WS06			
Depth (m)	0.50 - 0.50	0.30 - 0.30	0.40 - 0.40			
Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)			
Date Sampled	07/03/2019	08/03/2019	07/03/2019			
Sample Time						
Date Received	13/03/2019	13/03/2019	13/03/2019			
SDG Ref	190313-14	190313-14	190313-14			
Lab Sample No.(s)	19532663	19532735	19532914			
AGS Reference	ES1	ES1	ES1			

Component	LOD/Units	Method						
Dichlorvos	<0.05 mg/kg	TM073	<0.05	<0.05	<0.05			
Mevinphos	<0.05 mg/kg	TM073	<0.05	<0.05	<0.05			
alpha-Hexachlorocyclohexane (HCH)	<0.05 mg/kg	TM073	<0.05	<0.05	<0.05			
Diazinon	<0.05 mg/kg	TM073	<0.05	<0.05	<0.05			
gamma-Hexachlorocyclohexane (HCH / Lindane)	<0.05 mg/kg	TM073	<0.05	<0.05	<0.05			
Heptachlor	<0.05 mg/kg	TM073	<0.05	<0.05	<0.05			
Aldrin	<0.05 mg/kg	TM073	<0.05	<0.05	<0.05			
beta-Hexachlorocyclohexane (HCH)	<0.05 mg/kg	TM073	<0.05	<0.05	<0.05			
Methyl parathion	<0.05 mg/kg	TM073	<0.05	<0.05	<0.05			
delta-Hexachlorocyclohexane (HCH)	<0.05 mg/kg	TM073	<0.05	<0.05	<0.05			
Malathion	<0.05 mg/kg	TM073	<0.05	<0.05	<0.05			
Fenitrothion	<0.05 mg/kg	TM073	<0.05	<0.05	<0.05			
Heptachlor epoxide	<0.05 mg/kg	TM073	<0.05	<0.05	<0.05			
Parathion	<0.05 mg/kg	TM073	<0.05	<0.05	<0.05			
Endosulphan I	<0.05 mg/kg	TM073	<0.05	<0.05	<0.05			
p,p-DDE	<0.05 mg/kg	TM073	<0.05	<0.05	<0.05			
Dieldrin	<0.05 mg/kg	TM073	<0.05	<0.05	<0.05			
o,p'-DDD (TDE)	<0.05 mg/kg	TM073	<0.05	<0.05	<0.05			
Endrin	<0.05 mg/kg	TM073	<0.05	<0.05	<0.05			
p,p-TDE (DDD)	<0.05 mg/kg	TM073	<0.05	<0.05	<0.05			
Ethion	<0.05 mg/kg	TM073	<0.05	<0.05	<0.05			
Endosulphan II	<0.05 mg/kg	TM073	<0.05	<0.05	<0.05			
p,p-DDT	<0.05 mg/kg	TM073	<0.05	<0.05	<0.05			
o,p-Methoxychlor	<0.05 mg/kg	TM073	<0.05	<0.05	<0.05			
p,p-Methoxychlor	<0.05 mg/kg	TM073	<0.05	<0.05	<0.05			
Endosulphan sulphate	<0.05 mg/kg	TM073	<0.05	<0.05	<0.05			
Azinphos-methyl	<0.05 mg/kg	TM073	<0.05	<0.05	<0.05			

Validated

CERTIFICATE OF ANALYSIS

SDG:	190313-14	**Client Reference:**	A112666	**Report Number:**	498064
Location:	Land at Stakers Farm	**Order Number:**	C19/247	**Superseded Report:**	497902

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP02	TP04	TP06	TP07	TP08	TP09
			Depth (m)	1.50 - 1.50	0.50 - 0.50	1.20 - 1.20	0.50 - 0.50	0.50 - 0.50	0.50 - 0.50
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	08/03/2019	08/03/2019	07/03/2019	07/03/2019	08/03/2019	08/03/2019
			Sample Time						
			Date Received	13/03/2019	13/03/2019	13/03/2019	13/03/2019	13/03/2019	13/03/2019
			SDG Ref	190313-14	190313-14	190313-14	190313-14	190313-14	190313-14
			Lab Sample No.(s)	19532833	19532866	19532900	19532863	19532819	19532795
			AGS Reference	ES2	ES1	ES2	ES1	ES1	ES1
Naphthalene-d8 % recovery**	%	TM218		90.4	90.6	93.8	91.4	92.8	88.5
Acenaphthene-d10 % recovery**	%	TM218		86.5	90.8	90	89	90.2	93.5
Phenanthrene-d10 % recovery**	%	TM218		83.8	99.3	87.9	87.1	89.7	103
Chrysene-d12 % recovery**	%	TM218		80	97.8	85.1	81.8	92.5	99.9
Perylene-d12 % recovery**	%	TM218		76.3	90.8	87.7	83.4	93.9	98.3
Naphthalene	<0.009 mg/kg	TM218		<0.009 M	<0.009 M	<0.009 M	<0.009 M	<0.009 M	<0.009 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	<0.008 M	<0.008 M	<0.008 M	<0.008 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Anthracene	<0.016 mg/kg	TM218		<0.016 M	<0.016 M	<0.016 M	<0.016 M	<0.016 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		<0.017 M	<0.017 M	<0.017 M	<0.017 M	<0.017 M	<0.017 M
Pyrene	<0.015 mg/kg	TM218		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Benz(a)anthracene	<0.014 mg/kg	TM218		<0.014 M	<0.014 M	<0.014 M	<0.014 M	<0.014 M	<0.014 M
Chrysene	<0.01 mg/kg	TM218		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		<0.014 M	<0.014 M	<0.014 M	<0.014 M	<0.014 M	<0.014 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		<0.018 M	<0.018 M	<0.018 M	<0.018 M	<0.018 M	<0.018 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	<0.023 M	<0.023 M	<0.023 M	<0.023 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		<0.024 M	<0.024 M	<0.024 M	<0.024 M	<0.024 M	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		<0.118	<0.118	<0.118	<0.118	<0.118	<0.118

CERTIFICATE OF ANALYSIS

SDG:	190313-14	**Client Reference:**	A112666	**Report Number:**	498064
Location:	Land at Stakers Farm	**Order Number:**	C19/247	**Superseded Report:**	497902

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP10	WS01	WS02	WS04	WS05	WS06
			Depth (m)	0.50 - 0.50	0.30 - 0.30	0.30 - 0.30	0.30 - 0.30	0.20 - 0.20	0.40 - 0.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	07/03/2019	08/03/2019	08/03/2019	08/03/2019	08/03/2019	07/03/2019
			Sample Time						
			Date Received	13/03/2019	13/03/2019	13/03/2019	13/03/2019	13/03/2019	13/03/2019
			SDG Ref	190313-14	190313-14	190313-14	190313-14	190313-14	190313-14
			Lab Sample No.(s)	19532764	19532723	19532735	19532743	19532778	19532914
			AGS Reference	ES1	ES1	ES1	ES1	ES1	ES1
Naphthalene-d8 % recovery**	%	TM218		91.9	92	90.3	90.9	90.4	90.3
Acenaphthene-d10 % recovery**	%	TM218		89	88.2	91.7	92	88.1	91.5
Phenanthrene-d10 % recovery**	%	TM218		86.5	87.5	101	100	85.3	101
Chrysene-d12 % recovery**	%	TM218		85.8	83.8	99.8	99.5	83	101
Perylene-d12 % recovery**	%	TM218		86.2	82.9	93.5	93.1	79.3	95.6
Naphthalene	<0.009 mg/kg	TM218		<0.009 M	<0.009 M	<0.009 M	<0.009 M	<0.009 M	<0.009 M
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	<0.008 M	0.023 M	<0.008 M	<0.008 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218		<0.01 M	<0.01 M	0.0312 M	<0.01 M	<0.01 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218		<0.015 M	<0.015 M	0.52 M	<0.015 M	0.0421 M	<0.015 M
Anthracene	<0.016 mg/kg	TM218		<0.016 M	<0.016 M	0.0913 M	<0.016 M	<0.016 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218		0.05 M	0.0443 M	0.67 M	0.0615 M	0.109 M	0.0269 M
Pyrene	<0.015 mg/kg	TM218		0.0456 M	0.0389 M	0.588 M	0.0555 M	0.0994 M	0.0233 M
Benz(a)anthracene	<0.014 mg/kg	TM218		0.0279 M	0.0231 M	0.312 M	0.0306 M	0.0538 M	<0.014 M
Chrysene	<0.01 mg/kg	TM218		0.0297 M	0.0236 M	0.28 M	0.0323 M	0.0598 M	<0.01 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.0326 M	0.0286 M	0.423 M	0.0522 M	0.065 M	<0.015 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		<0.014 M	<0.014 M	0.161 M	<0.014 M	0.0318 M	<0.014 M
Benzo(a)pyrene	<0.015 mg/kg	TM218		0.031 M	0.026 M	0.274 M	0.0332 M	0.0603 M	<0.015 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		<0.018 M	<0.018 M	0.176 M	0.0249 M	0.0356 M	<0.018 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	<0.023 M	<0.023 M	<0.023 M	<0.023 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		<0.024 M	<0.024 M	0.16 M	<0.024 M	0.0457 M	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		0.217	0.185	3.71	0.29	0.602	<0.118

CERTIFICATE OF ANALYSIS

SDG:	190313-14	**Client Reference:**	A112666	**Report Number:**	498064
Location:	Land at Stakers Farm	**Order Number:**	C19/247	**Superseded Report:**	497902

PAH by GCMS

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	WS07	WS08	WS09	WS10		
			Depth (m)	0.30 - 0.30	0.30 - 0.30	0.30 - 0.30	0.30 - 0.30		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	08/03/2019	07/03/2019	07/03/2019	07/03/2019		
			Sample Time						
			Date Received	13/03/2019	13/03/2019	13/03/2019	13/03/2019		
			SDG Ref	190313-14	190313-14	190313-14	190313-14		
			Lab Sample No.(s)	19532711	19532671	19532683	19532695		
			AGS Reference	ES1	ES1	ES1	ES1		
Naphthalene-d8 % recovery**	%	TM218		87.5	93.4	90	87.5		
Acenaphthene-d10 % recovery**	%	TM218		91	94.7	89.7	85		
Phenanthrene-d10 % recovery**	%	TM218		98.2	105	99.6	82.5		
Chrysene-d12 % recovery**	%	TM218		94.8	103	100	75.1		
Perylene-d12 % recovery**	%	TM218		90.3	97.5	92.6	75.1		
Naphthalene	<0.009 mg/kg	TM218		<0.009 M	<0.009 M	<0.009 M	<0.009 M		
Acenaphthylene	<0.012 mg/kg	TM218		<0.012 M	<0.012 M	<0.012 M	<0.012 M		
Acenaphthene	<0.008 mg/kg	TM218		<0.008 M	<0.008 M	<0.008 M	<0.008 M		
Fluorene	<0.01 mg/kg	TM218		<0.01 M	<0.01 M	<0.01 M	<0.01 M		
Phenanthrene	<0.015 mg/kg	TM218		<0.015 M	<0.015 M	<0.015 M	<0.015 M		
Anthracene	<0.016 mg/kg	TM218		<0.016 M	<0.016 M	<0.016 M	<0.016 M		
Fluoranthene	<0.017 mg/kg	TM218		<0.017 M	0.125 M	<0.017 M	<0.017 M		
Pyrene	<0.015 mg/kg	TM218		<0.015 M	0.111 M	<0.015 M	<0.015 M		
Benz(a)anthracene	<0.014 mg/kg	TM218		<0.014 M	0.0626 M	<0.014 M	<0.014 M		
Chrysene	<0.01 mg/kg	TM218		0.0129 M	0.0714 M	<0.01 M	<0.01 M		
Benzo(b)fluoranthene	<0.015 mg/kg	TM218		0.0273 M	0.131 M	<0.015 M	<0.015 M		
Benzo(k)fluoranthene	<0.014 mg/kg	TM218		<0.014 M	0.0402 M	<0.014 M	<0.014 M		
Benzo(a)pyrene	<0.015 mg/kg	TM218		<0.015 M	0.0791 M	<0.015 M	<0.015 M		
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218		<0.018 M	0.0662 M	<0.018 M	<0.018 M		
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218		<0.023 M	<0.023 M	<0.023 M	<0.023 M		
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218		<0.024 M	0.0649 M	<0.024 M	<0.024 M		
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218		<0.118	0.752	<0.118	<0.118		

CERTIFICATE OF ANALYSIS

SDG:	190313-14	**Client Reference:**	A112666	**Report Number:**	498064
Location:	Land at Stakers Farm	**Order Number:**	C19/247	**Superseded Report:**	497902

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP04	TP09	WS02	WS04	WS06	WS07
			Depth (m)	0.50 - 0.50	0.50 - 0.50	0.30 - 0.30	0.30 - 0.30	0.40 - 0.40	0.30 - 0.30
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	08/03/2019	08/03/2019	08/03/2019	08/03/2019	07/03/2019	08/03/2019
			Sample Time						
			Date Received	13/03/2019	13/03/2019	13/03/2019	13/03/2019	13/03/2019	13/03/2019
			SDG Ref	190313-14	190313-14	190313-14	190313-14	190313-14	190313-14
			Lab Sample No.(s)	19532866	19532795	19532735	19532743	19532914	19532711
			AGS Reference	ES1	ES1	ES1	ES1	ES1	ES1
GRO Surrogate % recovery**	%	TM089		101	124	91.5	97.2	113	114
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aliphatics >C16-C21	<0.1 mg/kg	TM173		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aliphatics >C21-C35	<0.1 mg/kg	TM173		<0.1	<0.1	<0.1	<0.1	<0.1	0.454
Aliphatics >C35-C44	<0.1 mg/kg	TM173		<0.1	<0.1	<0.1	<0.1	0.838	<0.1
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		<0.1	<0.1	<0.1	<0.1	0.838	0.454
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		<0.1	0.341	0.971	<0.1	0.248	<0.1
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		<0.1	2.94	5.62	3.22	6.02	2.16
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		2.4	5.85	0.639	2.21	11.1	0.641
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		2.51	3.27	<0.1	1.19	6.1	0.296
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		2.4	9.13	7.23	5.43	17.4	2.81
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		2.4	9.13	7.23	5.43	18.2	3.26

CERTIFICATE OF ANALYSIS

SDG:	190313-14	**Client Reference:**	A112666	**Report Number:**	498064
Location:	Land at Stakers Farm	**Order Number:**	C19/247	**Superseded Report:**	497902

TPH CWG (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	WS08	WS09				
			Depth (m)	0.30 - 0.30	0.30 - 0.30				
			Sample Type	Soil/Solid (S)	Soil/Solid (S)				
			Date Sampled	07/03/2019	07/03/2019				
			Sample Time						
			Date Received	13/03/2019	13/03/2019				
			SDG Ref	190313-14	190313-14				
			Lab Sample No.(s)	19532671	19532683				
			AGS Reference	ES1	ES1				
GRO Surrogate % recovery**	%	TM089		94.6	96.4				
GRO TOT (Moisture Corrected)	<0.1 mg/kg	TM089		<0.1 M	<0.1 M				
Aliphatics >C5-C6	<0.01 mg/kg	TM089		<0.01	<0.01				
Aliphatics >C6-C8	<0.01 mg/kg	TM089		<0.01	<0.01				
Aliphatics >C8-C10	<0.01 mg/kg	TM089		<0.01	<0.01				
Aliphatics >C10-C12	<0.01 mg/kg	TM089		<0.01	<0.01				
Aliphatics >C12-C16	<0.1 mg/kg	TM173		<0.1	1.12				
Aliphatics >C16-C21	<0.1 mg/kg	TM173		0.285	0.838				
Aliphatics >C21-C35	<0.1 mg/kg	TM173		2.98	1.79				
Aliphatics >C35-C44	<0.1 mg/kg	TM173		0.219	0.444				
Total Aliphatics >C12-C44	<0.1 mg/kg	TM173		3.48	4.18				
Aromatics >EC5-EC7	<0.01 mg/kg	TM089		<0.01	<0.01				
Aromatics >EC7-EC8	<0.01 mg/kg	TM089		<0.01	<0.01				
Aromatics >EC8-EC10	<0.01 mg/kg	TM089		<0.01	<0.01				
Aromatics >EC10-EC12	<0.01 mg/kg	TM089		<0.01	<0.01				
Aromatics >EC12-EC16	<0.1 mg/kg	TM173		<0.1	<0.1				
Aromatics >EC16-EC21	<0.1 mg/kg	TM173		0.481	<0.1				
Aromatics >EC21-EC35	<0.1 mg/kg	TM173		11.4	0.918				
Aromatics >EC35-EC44	<0.1 mg/kg	TM173		6.15	0.121				
Aromatics >EC40-EC44	<0.1 mg/kg	TM173		2.61	<0.1				
Total Aromatics >EC12-EC44	<0.1 mg/kg	TM173		18	1.04				
Total Aliphatics & Aromatics >C5-C44	<0.1 mg/kg	TM173		21.5	5.22				

Validated

CERTIFICATE OF ANALYSIS

SDG:	190313-14	**Client Reference:**	A112666	**Report Number:**	498064
Location:	Land at Stakers Farm	**Order Number:**	C19/247	**Superseded Report:**	497902

VOC MS (S)

Results Legend		Customer Sample Ref.	TP02	TP04	TP06	TP07	TP08	TP09
#	ISO17025 accredited.							
M	mCERTS accredited.							
aq	Aqueous / settled sample.							
diss.filt	Dissolved / filtered sample.	Depth (m)	1.50 - 1.50	0.50 - 0.50	1.20 - 1.20	0.50 - 0.50	0.50 - 0.50	0.50 - 0.50
tot.unfilt	Total / unfiltered sample.	Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
*	Subcontracted - refer to subcontractor report for accreditation status.	Date Sampled	08/03/2019	08/03/2019	07/03/2019	07/03/2019	08/03/2019	08/03/2019
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Sample Time						
		Date Received	13/03/2019	13/03/2019	13/03/2019	13/03/2019	13/03/2019	13/03/2019
		SDG Ref	190313-14	190313-14	190313-14	190313-14	190313-14	190313-14
(F)	Trigger breach confirmed	Lab Sample No.(s)	19532833	19532866	19532900	19532863	19532819	19532795
1-3+$@	Sample deviation (see appendix)	AGS Reference	ES2	ES1	ES2	ES1	ES1	ES1

Component	LOD/Units	Method						
Dibromofluoromethane**	%	TM116	116	112	124	110	118	107
Toluene-d8**	%	TM116	102	102	101	103	102	94.7
4-Bromofluorobenzene**	%	TM116	85.5	83.6	98.5	89.7	82.9	90.6
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Benzene	<0.009 mg/kg	TM116	<0.009 M	<0.009 M	<0.009 M	<0.009 M	<0.009 M	<0.009 M
Toluene	<0.007 mg/kg	TM116	<0.007 M	<0.007 M	<0.007 M	<0.007 M	<0.007 M	<0.007 M
Ethylbenzene	<0.004 mg/kg	TM116	<0.004 M	<0.004 M	<0.004 M	<0.004 M	<0.004 M	<0.004 M
p/m-Xylene	<0.01 mg/kg	TM116	<0.01 #	<0.01 #	<0.01 #	<0.01 #	<0.01 #	<0.01 #
o-Xylene	<0.01 mg/kg	TM116	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M

CERTIFICATE OF ANALYSIS

SDG:	190313-14	**Client Reference:**	A112666	**Report Number:**	498064
Location:	Land at Stakers Farm	**Order Number:**	C19/247	**Superseded Report:**	497902

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	TP10	WS01	WS02	WS04	WS05	WS06
			Depth (m)	0.50 - 0.50	0.30 - 0.30	0.30 - 0.30	0.30 - 0.30	0.20 - 0.20	0.40 - 0.40
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
			Date Sampled	07/03/2019	08/03/2019	08/03/2019	08/03/2019	08/03/2019	07/03/2019
			Sample Time						
			Date Received	13/03/2019	13/03/2019	13/03/2019	13/03/2019	13/03/2019	13/03/2019
			SDG Ref	190313-14	190313-14	190313-14	190313-14	190313-14	190313-14
			Lab Sample No.(s)	19532764	19532723	19532735	19532743	19532778	19532914
			AGS Reference	ES1	ES1	ES1	ES1	ES1	ES1
Dibromofluoromethane**	%	TM116		111	113	119	110	121	159
Toluene-d8**	%	TM116		103	100	95	102	93.5	94.9
4-Bromofluorobenzene**	%	TM116		88.4	77.5	70.2	91.1	73.4	105
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Benzene	<0.009 mg/kg	TM116		<0.009 M	<0.009 M	<0.009 M	<0.009 M	<0.009 M	<0.009 M
Toluene	<0.007 mg/kg	TM116		<0.007 M	<0.007 M	<0.007 M	<0.007 M	<0.007 M	<0.007 M
Ethylbenzene	<0.004 mg/kg	TM116		<0.004 M	<0.004 M	<0.004 M	<0.004 M	<0.004 M	<0.004 M
p/m-Xylene	<0.01 mg/kg	TM116		<0.01 #	<0.01 #	<0.01 #	<0.01 #	<0.01 #	<0.01 #
o-Xylene	<0.01 mg/kg	TM116		<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M

CERTIFICATE OF ANALYSIS

SDG:	190313-14	**Client Reference:**	A112666	**Report Number:**	498064
Location:	Land at Stakers Farm	**Order Number:**	C19/247	**Superseded Report:**	497902

VOC MS (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	WS07	WS08	WS09	WS10		
			Depth (m)	0.30 - 0.30	0.30 - 0.30	0.30 - 0.30	0.30 - 0.30		
			Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
			Date Sampled	08/03/2019	07/03/2019	07/03/2019	07/03/2019		
			Sample Time						
			Date Received	13/03/2019	13/03/2019	13/03/2019	13/03/2019		
			SDG Ref	190313-14	190313-14	190313-14	190313-14		
			Lab Sample No.(s)	19532711	19532671	19532683	19532695		
			AGS Reference	ES1	ES1	ES1	ES1		
Dibromofluoromethane**	%	TM116		110	112	111	99.1		
Toluene-d8**	%	TM116		101	102	102	98.9		
4-Bromofluorobenzene**	%	TM116		79.9	89.2	91.9	88.5		
Methyl Tertiary Butyl Ether	<0.01 mg/kg	TM116		<0.01 M	<0.1 M	<0.1 M	<0.01 M		
Benzene	<0.009 mg/kg	TM116		<0.009 M	<0.09 M	<0.09 M	<0.009 M		
Toluene	<0.007 mg/kg	TM116		<0.007 M	<0.07 M	<0.07 M	<0.007 M		
Ethylbenzene	<0.004 mg/kg	TM116		<0.004 M	<0.04 M	<0.04 M	<0.004 M		
p/m-Xylene	<0.01 mg/kg	TM116		<0.01 #	<0.1 #	<0.1 #	<0.01 #		
o-Xylene	<0.01 mg/kg	TM116		<0.01 M	<0.1 M	<0.1 M	<0.01 M		

CERTIFICATE OF ANALYSIS

SDG:	190313-14	**Client Reference:**	A112666	**Report Number:**	498064
Location:	Land at Stakers Farm	**Order Number:**	C19/247	**Superseded Report:**	497902

Extractable Petroleum Hydrocarbons (EPH) By GC-FID

EPH (DRO) (C10-C40)

Sample No	Customer Sample Ref.	Depth	Matrix (mg/kg)	EPH	Interpretation
19534689	TP07 ES1	0.50 - 0.50	SOLID	<35.0	No interpretation possible
19535071	WS10 ES1	0.30 - 0.30	SOLID	<35.0	No interpretation possible
19537327	WS01 ES1	0.30 - 0.30	SOLID	<35.0	No interpretation possible
19533935	TP10 ES1	0.50 - 0.50	SOLID	<35.0	No interpretation possible
19537335	WS05 ES1	0.20 - 0.20	SOLID	<35.0	No interpretation possible
19536152	TP08 ES1	0.50 - 0.50	SOLID	<35.0	No interpretation possible
19536215	TP02 ES2	1.50 - 1.50	SOLID	<35.0	No interpretation possible
19534009	TP06 ES2	1.20 - 1.20	SOLID	<35.0	No interpretation possible

Extractable Petroleum Hydrocarbons (formally Diesel Range Organics) :- Any compound extractable in n-hexane within the carbon range C10-C40, includes Aliphatic (Min Oil), Aromatic (PAHs) and naturally occurring compounds.

CERTIFICATE OF ANALYSIS

SDG:	190313-14	**Client Reference:**	A112666	**Report Number:**	498064
Location:	Land at Stakers Farm	**Order Number:**	C19/247	**Superseded Report:**	497902

Asbestos Identification - Solid Samples

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
*	Subcontracted test.
(F)	Trigger breach confirmed
1-5&♦§@	Sample deviation (see appendix)

Cust. Sample Ref.	Depth (m)	Sample Type	Date Sampled	Date Received	SDG	Original Sample	Method Number	Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
TP02ES2	1.50 - 1.50	SOLID	08/03/2019 00:00:00	13/03/2019 06:04:00	190313-14	19532833	TM048	18/03/2019	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
TP04ES1	0.50 - 0.50	SOLID	08/03/2019 00:00:00	13/03/2019 06:04:00	190313-14	19532866	TM048	20/03/2019	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
TP06ES2	1.20 - 1.20	SOLID	07/03/2019 00:00:00	13/03/2019 06:04:00	190313-14	19532900	TM048	20/03/19	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
TP07ES1	0.50 - 0.50	SOLID	07/03/2019 00:00:00	13/03/2019 06:04:00	190313-14	19532663	TM048	20/03/19	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
TP08ES1	0.50 - 0.50	SOLID	08/03/2019 00:00:00	13/03/2019 06:04:00	190313-14	19532819	TM048	19/03/19	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
TP09ES1	0.50 - 0.50	SOLID	08/03/2019 00:00:00	13/03/2019 06:04:00	190313-14	19532795	TM048	20/03/2019	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
TP10ES1	0.50 - 0.50	SOLID	07/03/2019 00:00:00	13/03/2019 06:04:00	190313-14	19532764	TM048	19/03/2019	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
WS01ES1	0.30 - 0.30	SOLID	08/03/2019 00:00:00	13/03/2019 06:04:00	190313-14	19532723	TM048	19/03/19	Christian Hallam	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG:	190313-14	**Client Reference:**	A112666	**Report Number:**	498064
Location:	Land at Stakers Farm	**Order Number:**	C19/247	**Superseded Report:**	497902

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	WS02ES1 0.30 - 0.30 SOLID 08/03/2019 00:00:00 13/03/2019 06:04:00 190313-14 19532735 TM048	20/03/2019	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	WS04ES1 0.30 - 0.30 SOLID 08/03/2019 00:00:00 13/03/2019 06:04:00 190313-14 19532743 TM048	20/03/19	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	WS05ES1 0.20 - 0.20 SOLID 08/03/2019 00:00:00 13/03/2019 06:04:00 190313-14 19532778 TM048	19/03/2019	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	WS06ES1 0.40 - 0.40 SOLID 07/03/2019 00:00:00 13/03/2019 06:04:00 190313-14 19532914 TM048	19/03/2019	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	WS07ES1 0.30 - 0.30 SOLID 08/03/2019 00:00:00 13/03/2019 06:04:00 190313-14 19532711 TM048	20/03/19	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	WS08ES1 0.30 - 0.30 SOLID 07/03/2019 00:00:00 13/03/2019 06:04:00 190313-14 19532671 TM048	19/03/2019	Barbara Urbanek-Walsh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	WS09ES1 0.30 - 0.30 SOLID 07/03/2019 00:00:00 13/03/2019 06:04:00 190313-14 19532683 TM048	19/03/2019	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	WS10ES1 0.30 - 0.30 SOLID 07/03/2019 00:00:00 13/03/2019 06:04:00 190313-14 19532695 TM048	19/03/2019	Paul Poynton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

SDG:	190313-14	**Client Reference:**	A112666	**Report Number:**	498064
Location:	Land at Stakers Farm	**Order Number:**	C19/247	**Superseded Report:**	497902

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Land at Stakers Farm
Mass Sample taken (kg)	0.114	**Natural Moisture Content (%)**	26.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	79
Particle Size <4mm	>95%		

Case	
SDG	190313-14
Lab Sample Number(s)	19532735
Sampled Date	08-Mar-2019
Customer Sample Ref.	WS02 ES1
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Sulphate (soluble)	<2	<2	<20	<20	-	-	-
Mercury Dissolved (CVAF)	0.0000157	<0.00001	0.000157	<0.0001	-	-	-
Antimony	<0.001	<0.001	<0.01	<0.01	-	-	-
EPH (DRO) (C10-C40)	<0.1	<0.1	<1	<1	-	-	-
Naphthalene (diss.filt)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total EPH (C6-C40)	<0.1	<0.1	<1	<1	-	-	-
Acenaphthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Arsenic	0.000518	<0.0005	0.00518	<0.005	-	-	-
Total Ammonium as NH4	<0.3	<0.3	<3	<3	-	-	-
Acenaphthylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Barium	0.00159	<0.0002	0.0159	<0.002	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Fluoranthene (diss.filt)	0.0000106	<0.000005	0.000106	<0.00005	-	-	-
Anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Boron	0.0115	<0.01	0.115	<0.1	-	-	-
Phenanthrene (diss.filt)	0.0000127	<0.000005	0.000127	<0.00005	-	-	-
Total Alkalinity Filtered as CaCO3	4.5	<2	45	<20	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene (diss.filt)	0.00000818	<0.000005	0.0000818	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Copper	0.0327	<0.0003	0.327	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	0.000981	<0.0002	0.00981	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS (diss.filt)	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
Nickel	0.00726	<0.0004	0.0726	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.0146	<0.001	0.146	<0.01	-	-	-

Leach Test Information

Date Prepared	14-Mar-2019
pH (pH Units)	8.26
Conductivity (µS/cm)	11.00
Temperature (°C)	17.60
Volume Leachant (Litres)	0.876

Mcerts Certification does not apply to leachates

23/03/2019 12:05:23

ARUN DISTRICT COUNCIL X/72/20/RES
12:04:42 23/03/2019

Validated

CERTIFICATE OF ANALYSIS

SDG:	190313-14	**Client Reference:**	A112666	**Report Number:**	498064
Location:	Land at Stakers Farm	**Order Number:**	C19/247	**Superseded Report:**	497902

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Land at Stakers Farm
Mass Sample taken (kg)	0.114	**Natural Moisture Content (%)**	26.6
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	79
Particle Size <4mm	>95%		

Case	
SDG	190313-14
Lab Sample Number(s)	19532735
Sampled Date	08-Mar-2019
Customer Sample Ref.	WS02 ES1
Depth (m)	0.30 - 0.30

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
GRO TOT (C5-C10)	<0.01	<0.01	<0.1	<0.1	-	-	-
EPH (C6-C10)	<0.1	<0.1	<1	<1	-	-	-

Leach Test Information

Date Prepared	14-Mar-2019
pH (pH Units)	8.26
Conductivity (µS/cm)	11.00
Temperature (°C)	17.60
Volume Leachant (Litres)	0.876

Mcerts Certification does not apply to leachates

23/03/2019 12:05:23

Validated

CERTIFICATE OF ANALYSIS

SDG:	190313-14	**Client Reference:**	A112666	**Report Number:**	498064
Location:	Land at Stakers Farm	**Order Number:**	C19/247	**Superseded Report:**	497902

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Land at Stakers Farm
Mass Sample taken (kg)	0.108	**Natural Moisture Content (%)**	20.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	83
Particle Size <4mm	>95%		

Case	
SDG	190313-14
Lab Sample Number(s)	19532795
Sampled Date	08-Mar-2019
Customer Sample Ref.	TP09 ES1
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Concⁿ in 10:1 eluate (mg/l)		**A_2** 10:1 concⁿ leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Sulphate (soluble)	<2	<2	<20	<20	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Antimony	<0.001	<0.001	<0.01	<0.01	-	-	-
EPH (DRO) (C10-C40)	<0.1	<0.1	<1	<1	-	-	-
Naphthalene (diss.filt)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total EPH (C6-C40)	<0.1	<0.1	<1	<1	-	-	-
Acenaphthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Arsenic	0.00065	<0.0005	0.0065	<0.005	-	-	-
Total Ammonium as NH4	<0.3	<0.3	<3	<3	-	-	-
Acenaphthylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Barium	0.0182	<0.0002	0.182	<0.002	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Fluoranthene (diss.filt)	0.0000192	<0.000005	0.000192	<0.00005	-	-	-
Anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Boron	0.075	<0.01	0.75	<0.1	-	-	-
Phenanthrene (diss.filt)	0.0000258	<0.000005	0.000258	<0.00005	-	-	-
Total Alkalinity Filtered as CaCO3	4.5	<2	45	<20	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	0.00000601	<0.000005	0.0000601	<0.00005	-	-	-
Chrysene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene (diss.filt)	0.0000136	<0.000005	0.000136	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Copper	<0.0003	<0.0003	<0.003	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	0.000272	<0.0002	0.00272	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS (diss.filt)	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
Nickel	<0.0004	<0.0004	<0.004	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.00573	<0.001	0.0573	<0.01	-	-	-

Leach Test Information

Date Prepared	14-Mar-2019
pH (pH Units)	8.88
Conductivity (µS/cm)	18.30
Temperature (°C)	16.80
Volume Leachant (Litres)	0.882

Mcerts Certification does not apply to leachates

23/03/2019 12:05:23

ARUN DISTRICT COUNCIL X/72/20/RES
12:04:42 23/03/2019

Validated

CERTIFICATE OF ANALYSIS

SDG:	190313-14	**Client Reference:**	A112666	**Report Number:**	498064
Location:	Land at Stakers Farm	**Order Number:**	C19/247	**Superseded Report:**	497902

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Land at Stakers Farm
Mass Sample taken (kg)	0.108	**Natural Moisture Content (%)**	20.5
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	83
Particle Size <4mm	>95%		

Case	
SDG	190313-14
Lab Sample Number(s)	19532795
Sampled Date	08-Mar-2019
Customer Sample Ref.	TP09 ES1
Depth (m)	0.50 - 0.50

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
GRO TOT (C5-C10)	<0.01	<0.01	<0.1	<0.1	-	-	-
EPH (C6-C10)	<0.1	<0.1	<1	<1	-	-	-

Leach Test Information

Date Prepared	14-Mar-2019
pH (pH Units)	8.88
Conductivity (µS/cm)	18.30
Temperature (°C)	16.80
Volume Leachant (Litres)	0.882

Mcerts Certification does not apply to leachates

23/03/2019 12:05:23

ARUN DISTRICT COUNCIL X/72/20/RES
12:04:42 23/03/2019

Validated

CERTIFICATE OF ANALYSIS

SDG:	190313-14	**Client Reference:**	A112666	**Report Number:**	498064
Location:	Land at Stakers Farm	**Order Number:**	C19/247	**Superseded Report:**	497902

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Land at Stakers Farm
Mass Sample taken (kg)	0.107	**Natural Moisture Content (%)**	19
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	84
Particle Size <4mm	>95%		

Case	
SDG	190313-14
Lab Sample Number(s)	19532914
Sampled Date	07-Mar-2019
Customer Sample Ref.	WS06 ES1
Depth (m)	0.40 - 0.40

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
Sulphate (soluble)	<2	<2	<20	<20	-	-	-
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Antimony	<0.001	<0.001	<0.01	<0.01	-	-	-
EPH (DRO) (C10-C40)	<0.1	<0.1	<1	<1	-	-	-
Naphthalene (diss.filt)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total EPH (C6-C40)	<0.1	<0.1	<1	<1	-	-	-
Acenaphthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Arsenic	0.00102	<0.0005	0.0102	<0.005	-	-	-
Total Ammonium as NH4	<0.3	<0.3	<3	<3	-	-	-
Acenaphthylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Barium	0.041	<0.0002	0.41	<0.002	-	-	-
Phenol by HPLC (W)	<0.002	<0.002	<0.02	<0.02	-	-	-
Fluoranthene (diss.filt)	0.0000166	<0.000005	0.000166	<0.00005	-	-	-
Anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Boron	0.119	<0.01	1.19	<0.1	-	-	-
Phenanthrene (diss.filt)	0.0000191	<0.000005	0.000191	<0.00005	-	-	-
Total Alkalinity Filtered as CaCO3	7.5	<2	75	<20	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Fluorene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Pyrene (diss.filt)	0.0000125	<0.000005	0.000125	<0.00005	-	-	-
Benzo(a)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Benzo(b)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(a)pyrene (diss.filt)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Copper	0.000872	<0.0003	0.00872	<0.003	-	-	-
Dibenzo(a,h)anthracene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Lead	0.000787	<0.0002	0.00787	<0.002	-	-	-
Benzo(g,h,i)perylene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS (diss.filt)	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-
Nickel	0.000829	<0.0004	0.00829	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.0112	<0.001	0.112	<0.01	-	-	-

Leach Test Information

Date Prepared	14-Mar-2019
pH (pH Units)	8.75
Conductivity (µS/cm)	20.50
Temperature (°C)	10.70
Volume Leachant (Litres)	0.883

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190313-14	**Client Reference:**	A112666	**Report Number:**	498064
Location:	Land at Stakers Farm	**Order Number:**	C19/247	**Superseded Report:**	497902

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		**Site Location**	Land at Stakers Farm
Mass Sample taken (kg)	0.107	**Natural Moisture Content (%)**	19
Mass of dry sample (kg)	0.090	**Dry Matter Content (%)**	84
Particle Size <4mm	>95%		

Case	
SDG	190313-14
Lab Sample Number(s)	19532914
Sampled Date	07-Mar-2019
Customer Sample Ref.	WS06 ES1
Depth (m)	0.40 - 0.40

Eluate Analysis	**C_2** Conc^n in 10:1 eluate (mg/l)		**A_2** 10:1 conc^n leached (mg/kg)				
	Result	**Limit of Detection**	**Result**	**Limit of Detection**			
TPH CWG (W)							
MTBE GC-FID	<0.003	<0.003	<0.03	<0.03	-	-	-
Benzene by GC	<0.007	<0.007	<0.07	<0.07	-	-	-
Toluene by GC	<0.004	<0.004	<0.04	<0.04	-	-	-
Ethylbenzene by GC	<0.005	<0.005	<0.05	<0.05	-	-	-
m & p Xylene by GC	<0.008	<0.008	<0.08	<0.08	-	-	-
o Xylene by GC	<0.003	<0.003	<0.03	<0.03	-	-	-
Sum of BTEX by GC	<0.028	<0.028	<0.28	<0.28	-	-	-
GRO TOT (C5-C10)	<0.01	<0.01	<0.1	<0.1	-	-	-
EPH (C6-C10)	<0.1	<0.1	<1	<1	-	-	-

Leach Test Information

Date Prepared	14-Mar-2019
pH (pH Units)	8.75
Conductivity (µS/cm)	20.50
Temperature (°C)	10.70
Volume Leachant (Litres)	0.883

Mcerts Certification does not apply to leachates

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CERTIFICATE OF ANALYSIS

SDG:	190313-14	**Client Reference:**	A112666	**Report Number:**	498064
Location:	Land at Stakers Farm	**Order Number:**	C19/247	**Superseded Report:**	497902

Table of Results - Appendix

Method No	Reference	Description
PM001		Preparation of Samples for Metals Analysis
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
SUB		Subcontracted Test
TM043	Method 2320B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part109 1984	Determination of alkalinity in aqueous samples
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM073	MEWAM BOOK 60 1980,95 1985, HMSO / Modified: US EPA Method 8081A & 8141A	Determination of organochlorine and organophosphorous pesticides by GCMS
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM172	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	EPH in Waters
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM222	In-House Method	Determination of Hot Water Soluble Boron in Soils (10:1 Water:soil) by IRIS Emission Spectrometer
TM243		Mixed Anions In Soils By Kone
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter
TM259	by HPLC	Determination of Phenols in Waters and Leachates by HPLC

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

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CERTIFICATE OF ANALYSIS

SDG:	190313-14	**Client Reference:**	A112666	**Report Number:**	498064
Location:	Land at Stakers Farm	**Order Number:**	C19/247	**Superseded Report:**	497902

Test Completion Dates

Lab Sample No(s)	19532833	19532866	19532900	19532663	19532819	19532795	19532764	19532723	19532735	19532743
Customer Sample Ref.	TP02	TP04	TP06	TP07	TP08	TP09	TP10	WS01	WS02	WS04
AGS Ref.	ES2	ES1	ES2	ES1	ES1	ES1	ES1	ES1	ES1	ES1
Depth	1.50 - 1.50	0.50 - 0.50	1.20 - 1.20	0.50 - 0.50	0.50 - 0.50	0.50 - 0.50	0.50 - 0.50	0.30 - 0.30	0.30 - 0.30	0.30 - 0.30
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Acid herbicides*				22-Mar-2019					22-Mar-2019	
Alkalinity Filtered as CaCO3						20-Mar-2019			20-Mar-2019	
Ammoniacal Nitrogen						19-Mar-2019			19-Mar-2019	
Anions by Kone (soil)		15-Mar-2019				15-Mar-2019			15-Mar-2019	15-Mar-2019
Anions by Kone (w)						16-Mar-2019			16-Mar-2019	
Asbestos ID in Solid Samples	18-Mar-2019	20-Mar-2019	20-Mar-2019	20-Mar-2019	19-Mar-2019	20-Mar-2019	19-Mar-2019	19-Mar-2019	20-Mar-2019	20-Mar-2019
Boron Water Soluble	19-Mar-2019	18-Mar-2019	18-Mar-2019	18-Mar-2019	18-Mar-2019	18-Mar-2019	18-Mar-2019	18-Mar-2019	18-Mar-2019	18-Mar-2019
CEN 10:1 Leachate (1 Stage)						14-Mar-2019			14-Mar-2019	
CEN Readings						15-Mar-2019			15-Mar-2019	
Chromium III	19-Mar-2019	19-Mar-2019	19-Mar-2019	19-Mar-2019	19-Mar-2019	19-Mar-2019	19-Mar-2019	19-Mar-2019	19-Mar-2019	19-Mar-2019
Cyanide Comp/Free/Total/Thiocyanate	20-Mar-2019	20-Mar-2019	21-Mar-2019	20-Mar-2019	20-Mar-2019	20-Mar-2019	21-Mar-2019	20-Mar-2019	21-Mar-2019	20-Mar-2019
Dissolved Metals by ICP-MS						19-Mar-2019			19-Mar-2019	
EPH (DRO) (C10-C40) Aqueous (W)						20-Mar-2019			20-Mar-2019	
EPH by FID	18-Mar-2019		18-Mar-2019	18-Mar-2019	18-Mar-2019		18-Mar-2019	18-Mar-2019		
EPH CWG (Aliphatic) GC (S)		20-Mar-2019				20-Mar-2019			20-Mar-2019	20-Mar-2019
EPH CWG (Aromatic) GC (S)		20-Mar-2019				20-Mar-2019			20-Mar-2019	20-Mar-2019
GRO by GC-FID (S)	15-Mar-2019	15-Mar-2019	15-Mar-2019	15-Mar-2019	15-Mar-2019	16-Mar-2019	15-Mar-2019	16-Mar-2019	15-Mar-2019	15-Mar-2019
GRO by GC-FID (W)						16-Mar-2019			16-Mar-2019	
Hexavalent Chromium (s)	19-Mar-2019	19-Mar-2019	19-Mar-2019	19-Mar-2019	19-Mar-2019	19-Mar-2019	19-Mar-2019	19-Mar-2019	19-Mar-2019	19-Mar-2019
Mercury Dissolved						18-Mar-2019			18-Mar-2019	
Metals in solid samples by OES	15-Mar-2019	18-Mar-2019	18-Mar-2019	18-Mar-2019	18-Mar-2019	18-Mar-2019	18-Mar-2019	18-Mar-2019	18-Mar-2019	18-Mar-2019
OC, OP Pesticides and Triazine Herb				20-Mar-2019					20-Mar-2019	
PAH by GCMS	20-Mar-2019	18-Mar-2019	20-Mar-2019	20-Mar-2019	20-Mar-2019	18-Mar-2019	20-Mar-2019	20-Mar-2019	18-Mar-2019	18-Mar-2019
PAH in waters by GC-MS (diss.filt)						20-Mar-2019			20-Mar-2019	
pH	14-Mar-2019	14-Mar-2019	14-Mar-2019	14-Mar-2019	14-Mar-2019	14-Mar-2019	14-Mar-2019	14-Mar-2019	14-Mar-2019	14-Mar-2019
pH Value of Filtered Water						17-Mar-2019			17-Mar-2019	
Phenols by HPLC (S)	20-Mar-2019	20-Mar-2019	23-Mar-2019	20-Mar-2019	22-Mar-2019	20-Mar-2019	21-Mar-2019	21-Mar-2019	21-Mar-2019	20-Mar-2019
Phenols by HPLC (W)						20-Mar-2019			20-Mar-2019	
Sample description	13-Mar-2019	13-Mar-2019	13-Mar-2019	13-Mar-2019	13-Mar-2019	13-Mar-2019	13-Mar-2019	13-Mar-2019	13-Mar-2019	13-Mar-2019
Total EPH (aq)						20-Mar-2019			20-Mar-2019	
Total Organic Carbon	15-Mar-2019	19-Mar-2019	19-Mar-2019	20-Mar-2019	19-Mar-2019	20-Mar-2019	19-Mar-2019	19-Mar-2019	19-Mar-2019	19-Mar-2019
TPH CWG GC (S)		20-Mar-2019				20-Mar-2019			20-Mar-2019	20-Mar-2019
VOC MS (S)	20-Mar-2019	20-Mar-2019	19-Mar-2019	20-Mar-2019	20-Mar-2019	19-Mar-2019	20-Mar-2019	20-Mar-2019	20-Mar-2019	20-Mar-2019

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CERTIFICATE OF ANALYSIS

SDG:	190313-14	**Client Reference:**	A112666	**Report Number:**	498064
Location:	Land at Stakers Farm	**Order Number:**	C19/247	**Superseded Report:**	497902

Lab Sample No(s)	19532778	19532914	19532711	19532671	19532683	19532695
Customer Sample Ref.	WS05	WS06	WS07	WS08	WS09	WS10
AGS Ref.	ES1	ES1	ES1	ES1	ES1	ES1
Depth	0.20 - 0.20	0.40 - 0.40	0.30 - 0.30	0.30 - 0.30	0.30 - 0.30	0.30 - 0.30
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Acid herbicides*		22-Mar-2019				
Alkalinity Filtered as CaCO3		20-Mar-2019				
Ammoniacal Nitrogen		19-Mar-2019				
Anions by Kone (soil)		15-Mar-2019	15-Mar-2019	15-Mar-2019	18-Mar-2019	
Anions by Kone (w)		16-Mar-2019				
Asbestos ID in Solid Samples	19-Mar-2019	19-Mar-2019	20-Mar-2019	19-Mar-2019	19-Mar-2019	19-Mar-2019
Boron Water Soluble	18-Mar-2019	18-Mar-2019	18-Mar-2019	18-Mar-2019	19-Mar-2019	18-Mar-2019
CEN 10:1 Leachate (1 Stage)		14-Mar-2019				
CEN Readings		15-Mar-2019				
Chromium III	19-Mar-2019	19-Mar-2019	19-Mar-2019	19-Mar-2019	19-Mar-2019	19-Mar-2019
Cyanide Comp/Free/Total/Thiocyanate	21-Mar-2019	20-Mar-2019	21-Mar-2019	21-Mar-2019	21-Mar-2019	21-Mar-2019
Dissolved Metals by ICP-MS		19-Mar-2019				
EPH (DRO) (C10-C40) Aqueous (W)		20-Mar-2019				
EPH by FID	18-Mar-2019					18-Mar-2019
EPH CWG (Aliphatic) GC (S)		20-Mar-2019	19-Mar-2019	20-Mar-2019	19-Mar-2019	
EPH CWG (Aromatic) GC (S)		20-Mar-2019	19-Mar-2019	20-Mar-2019	19-Mar-2019	
GRO by GC-FID (S)	15-Mar-2019	16-Mar-2019	16-Mar-2019	15-Mar-2019	15-Mar-2019	15-Mar-2019
GRO by GC-FID (W)		16-Mar-2019				
Hexavalent Chromium (s)	19-Mar-2019	19-Mar-2019	19-Mar-2019	19-Mar-2019	19-Mar-2019	19-Mar-2019
Mercury Dissolved		18-Mar-2019				
Metals in solid samples by OES	18-Mar-2019	18-Mar-2019	18-Mar-2019	18-Mar-2019	15-Mar-2019	20-Mar-2019
OC, OP Pesticides and Triazine Herb		20-Mar-2019				
PAH by GCMS	20-Mar-2019	18-Mar-2019	18-Mar-2019	18-Mar-2019	18-Mar-2019	20-Mar-2019
PAH in waters by GC-MS (diss.filt)		20-Mar-2019				
pH	14-Mar-2019	14-Mar-2019	14-Mar-2019	17-Mar-2019	17-Mar-2019	17-Mar-2019
pH Value of Filtered Water		17-Mar-2019				
Phenols by HPLC (S)	23-Mar-2019	20-Mar-2019	20-Mar-2019	21-Mar-2019	21-Mar-2019	21-Mar-2019
Phenols by HPLC (W)		20-Mar-2019				
Sample description	13-Mar-2019	13-Mar-2019	13-Mar-2019	13-Mar-2019	13-Mar-2019	13-Mar-2019
Total EPH (aq)		20-Mar-2019				
Total Organic Carbon	19-Mar-2019	19-Mar-2019	19-Mar-2019	15-Mar-2019	19-Mar-2019	19-Mar-2019
TPH CWG GC (S)		20-Mar-2019	19-Mar-2019	20-Mar-2019	19-Mar-2019	
VOC MS (S)	20-Mar-2019	19-Mar-2019	20-Mar-2019	20-Mar-2019	20-Mar-2019	20-Mar-2019

ASSOCIATED AQC DATA

Alkalinity Filtered as CaCO3

Component	Method Code	QC 1955
Total Alkalinity Filtered as CaCO3	TM043	**110.0** 100.35 : 114.15

Ammoniacal Nitrogen

Component	Method Code	QC 1988	QC 1903
Ammoniacal Nitrogen as N	TM099	**102.0** 93.14 : 108.60	**102.0** 93.14 : 108.60

Anions by Kone (Soil)

Component	Method Code	QC 1953	QC 1956	QC 1957
Chloride (soluble)	TM243	78.01 : 122.19	78.01 : 122.19	78.01 : 122.19
Water Soluble Sulphate as SO4 2:1 Extract	TM243	75.60 : 131.10	75.60 : 131.10	75.60 : 131.10

Anions by Kone (w)

Component	Method Code	QC 1904
Chloride	TM184	**105.0** 92.93 : 115.43
Phosphate (Ortho as PO4)	TM184	96.40 : 108.40
Sulphate (soluble)	TM184	**100.0** 90.53 : 113.03
TON as NO3	TM184	96.26 : 111.21

Boron Water Soluble

Component	Method Code	QC 1956	QC 1975	QC 1973
Water Soluble Boron	TM222	**92.5** 86.05 : 109.75	**92.5** 86.05 : 109.75	**95.0** 86.05 : 109.75

Cyanide Comp/Free/Total/Thiocyanate

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CERTIFICATE OF ANALYSIS

SDG:	190313-14	**Client Reference:**	A112666	**Report Number:**	498064
Location:	Land at Stakers Farm	**Order Number:**	C19/247	**Superseded Report:**	497902

Cyanide Comp/Free/Total/Thiocyanate

Component	Method Code	QC 1996	QC 1906	QC 1918
Free Cyanide	TM153	**96.3** 87.60 : 108.63	**97.8** 87.60 : 108.63	**96.5** 87.60 : 108.63
Thiocyanate	TM153	**94.01** 92.90 : 108.39	**97.01** 92.90 : 108.39	**97.6** 92.90 : 108.39
Total Cyanide	TM153	**102.14** 87.00 : 103.00	**105.71** 87.00 : 103.00	**105.0** 87.00 : 103.00

Dissolved Metals by ICP-MS

Component	Method Code	QC 1975	QC 1988
Aluminium	TM152	**103.67** 94.19 : 114.31	**103.33** 94.19 : 114.31
Antimony	TM152	**108.17** 79.80 : 122.00	**107.67** 79.80 : 122.00
Arsenic	TM152	**104.0** 90.42 : 111.32	**104.0** 90.42 : 111.32
Barium	TM152	**107.5** 90.79 : 113.16	**107.33** 90.79 : 113.16
Beryllium	TM152	**98.17** 93.25 : 120.04	**99.33** 93.25 : 120.04
Bismuth	TM152	**104.33** 94.65 : 117.05	**105.33** 94.65 : 117.05
Borate	TM152	**103.7** 88.00 : 112.00	**103.09** 88.00 : 112.00
Boron	TM152	**104.0** 86.68 : 117.67	**103.33** 86.68 : 117.67
Cadmium	TM152	**106.0** 94.60 : 112.40	**105.17** 94.60 : 112.40
Calcium	TM152	**107.33** 83.40 : 121.11	**108.0** 83.40 : 121.11
Chromium	TM152	**101.5** 93.28 : 110.91	**101.67** 93.28 : 110.91
Cobalt	TM152	**102.0** 84.39 : 114.26	**102.17** 84.39 : 114.26
Copper	TM152	**103.33** 88.86 : 118.72	**102.83** 88.86 : 118.72
Iron	TM152	**103.33** 92.00 : 113.00	**102.67** 92.00 : 113.00
Lead	TM152	**103.83** 89.25 : 115.12	**104.67** 89.25 : 115.12
Lithium	TM152	**96.33** 89.26 : 119.04	**98.0** 89.26 : 119.04
Magnesium	TM152	**108.67** 86.35 : 113.36	**108.0** 86.35 : 113.36
Manganese	TM152	**102.5** 94.24 : 112.74	**102.83** 94.24 : 112.74
Molybdenum	TM152	**100.5** 87.00 : 108.89	**101.0** 87.00 : 108.89
Nickel	TM152	**103.0** 92.11 : 110.56	**102.5** 92.11 : 110.56
Phosphorus	TM152	**105.67** 90.52 : 115.47	**104.67** 90.52 : 115.47
Potassium	TM152	**107.33** 98.63 : 110.48	**107.33** 98.63 : 110.48

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Dissolved Metals by ICP-MS

		QC 1975	QC 1988
Selenium	TM152	**106.0** 88.44 : 113.86	**105.17** 88.44 : 113.86
Silver	TM152	**105.33** 94.40 : 114.74	**105.33** 94.40 : 114.74
Sodium	TM152	**108.0** 97.63 : 110.31	**107.33** 97.63 : 110.31
Strontium	TM152	**105.0** 90.72 : 114.82	**105.67** 90.72 : 114.82
Tellurium	TM152	**105.67** 90.72 : 112.62	**105.17** 90.72 : 112.62
Thallium	TM152	**106.5** 86.08 : 122.48	**106.0** 86.08 : 122.48
Tin	TM152	**104.67** 91.00 : 109.00	**104.5** 91.00 : 109.00
Titanium	TM152	**95.5** 91.87 : 102.47	**97.0** 91.87 : 102.47
Tungsten	TM152	**99.0** 78.12 : 132.82	**100.17** 78.12 : 132.82
Uranium	TM152	**103.0** 90.58 : 113.28	**103.0** 90.58 : 113.28
Vanadium	TM152	**101.17** 88.43 : 114.30	**103.0** 88.43 : 114.30
Zinc	TM152	**106.0** 86.52 : 115.27	**106.0** 86.52 : 115.27

EPH (DRO) (C10-C40) Aqueous (W)

Component	Method Code	QC 1984
EPH (DRO) (C10-C40)	TM172	**106.8** 65.52 : 121.02

EPH by FID

Component	Method Code	QC 1901
EPH (DRO) (C10-C40)	TM061	74.12 : 96.29

EPH CWG (Aliphatic) GC (S)

Component	Method Code	QC 1987	QC 1962	QC 1999	QC 1909	QC 1903	QC 1901
Total Aliphatics >C12-C35	TM173	**86.67** 66.17 : 105.28	**90.0** 70.71 : 106.26	**88.13** 70.61 : 106.16	**95.0** 70.71 : 106.26	**94.17** 66.17 : 105.28	**83.33** 70.76 : 104.69

EPH CWG (Aromatic) GC (S)

CERTIFICATE OF ANALYSIS

SDG:	190313-14	**Client Reference:**	A112666	**Report Number:**	498064
Location:	Land at Stakers Farm	**Order Number:**	C19/247	**Superseded Report:**	497902

EPH CWG (Aromatic) GC (S)

Component	Method Code	QC 1987	QC 1962	QC 1999	QC 1909	QC 1903	QC 1901
Total Aromatics >EC12-EC35	TM173	**93.33** 65.78 : 102.90	**85.33** 65.82 : 105.00	**90.0** 67.75 : 104.04	**89.33** 65.82 : 105.00	**94.67** 65.78 : 102.90	**77.33** 68.16 : 102.29

GRO by GC-FID (S)

Component	Method Code	QC 1909	QC 1911
QC	TM089	**99.94** 74.55 : 125.46	**87.79** 72.28 : 114.54

GRO by GC-FID (W)

Component	Method Code	QC 1988
Benzene by GC	TM245	**92.5** 84.10 : 116.73
Ethylbenzene by GC	TM245	**95.5** 84.11 : 114.89
m & p Xylene by GC	TM245	**94.75** 83.73 : 116.33
MTBE GC-FID	TM245	**90.5** 84.42 : 117.50
o Xylene by GC	TM245	**97.0** 84.33 : 114.72
QC	TM245	**102.95** 60.71 : 137.65
Toluene by GC	TM245	**94.0** 84.73 : 116.85

Hexavalent Chromium (s)

Component	Method Code	QC 1971	QC 1905	QC 1911
Hexavalent Chromium	TM151	**98.0** 90.20 : 107.00	**98.0** 90.20 : 107.00	**98.0** 90.20 : 107.00

Mercury Dissolved

Component	Method Code	QC 1927
Mercury Dissolved (CVAF)	TM183	**114.0** 76.80 : 117.12

Metals in solid samples by OES

Validated

CERTIFICATE OF ANALYSIS

SDG:	190313-14	**Client Reference:**	A112666	**Report Number:**	498064
Location:	Land at Stakers Farm	**Order Number:**	C19/247	**Superseded Report:**	497902

Metals in solid samples by OES

Component	Method Code	QC 1929	QC 1954	QC 1984	QC 1919	QC 1970	QC 1995
Aluminium	TM181	**100.88** 77.84 : 119.01	**114.16** 77.84 : 119.01	**108.85** 77.84 : 119.01	**97.35** 77.84 : 119.01	**92.92** 77.84 : 119.01	**99.12** 77.84 : 119.01
Antimony	TM181	**99.19** 84.28 : 107.67	**95.93** 84.28 : 107.67	**102.03** 84.28 : 107.67	**100.81** 84.28 : 107.67	**101.63** 84.28 : 107.67	**102.03** 84.28 : 107.67
Arsenic	TM181	**102.33** 87.05 : 109.36	**106.98** 87.05 : 109.36	**99.71** 87.05 : 109.36	**100.87** 87.05 : 109.36	**104.36** 87.05 : 109.36	**103.78** 87.05 : 109.36
Barium	TM181	**96.33** 82.49 : 109.34	**103.67** 82.49 : 109.34	**100.92** 82.49 : 109.34	**94.5** 82.49 : 109.34	**98.17** 82.49 : 109.34	**98.17** 82.49 : 109.34
Beryllium	TM181	**100.75** 85.44 : 109.61	**104.85** 85.44 : 109.61	**99.25** 85.44 : 109.61	**98.51** 85.44 : 109.61	**101.87** 85.44 : 109.61	**98.13** 85.44 : 109.61
Boron	TM181	**92.55** 73.51 : 104.66	**102.58** 73.51 : 104.66	**97.13** 73.51 : 104.66	**89.4** 73.51 : 104.66	**91.12** 73.51 : 104.66	**90.54** 73.51 : 104.66
Cadmium	TM181	**93.0** 81.46 : 106.43	**100.41** 81.46 : 106.43	**96.3** 81.46 : 106.43	**94.24** 81.46 : 106.43	**96.71** 81.46 : 106.43	**91.77** 81.46 : 106.43
Chromium	TM181	**96.75** 79.78 : 102.80	**101.01** 79.78 : 102.80	**97.77** 79.78 : 102.80	**95.13** 79.78 : 102.80	**95.13** 79.78 : 102.80	**95.74** 79.78 : 102.80
Cobalt	TM181	**93.08** 80.74 : 99.26	**96.54** 80.74 : 99.26	**90.57** 80.74 : 99.26	**91.19** 80.74 : 99.26	**93.4** 80.74 : 99.26	**93.08** 80.74 : 99.26
Copper	TM181	**96.83** 82.40 : 105.45	**100.18** 82.40 : 105.45	**96.65** 82.40 : 105.45	**95.07** 82.40 : 105.45	**95.95** 82.40 : 105.45	**95.95** 82.40 : 105.45
Iron	TM181	**100.0** 82.95 : 110.58	**107.94** 82.95 : 110.58	**102.38** 82.95 : 110.58	**97.62** 82.95 : 110.58	**94.44** 82.95 : 110.58	**98.41** 82.95 : 110.58
Lead	TM181	**93.92** 78.24 : 104.05	**97.07** 78.24 : 104.05	**91.22** 78.24 : 104.05	**95.95** 78.24 : 104.05	**94.14** 78.24 : 104.05	**107.21** 78.24 : 104.05
Manganese	TM181	**110.28** 94.29 : 119.51	**115.28** 94.29 : 119.51	**109.17** 94.29 : 119.51	**107.78** 94.29 : 119.51	**110.0** 94.29 : 119.51	**110.28** 94.29 : 119.51
Mercury	TM181	**98.55** 83.74 : 105.34	**102.42** 83.74 : 105.34	**96.38** 83.74 : 105.34	**97.83** 83.74 : 105.34	**100.48** 83.74 : 105.34	**100.24** 83.74 : 105.34
Molybdenum	TM181	**99.18** 87.11 : 106.87	**102.06** 87.11 : 106.87	**99.59** 87.11 : 106.87	**99.18** 87.11 : 106.87	**99.18** 87.11 : 106.87	**98.35** 87.11 : 106.87
Nickel	TM181	**94.87** 81.92 : 102.18	**99.27** 81.92 : 102.18	**94.62** 81.92 : 102.18	**93.64** 81.92 : 102.18	**92.91** 81.92 : 102.18	**91.93** 81.92 : 102.18
Phosphorus	TM181	**110.91** 94.56 : 124.28	**113.94** 94.56 : 124.28	**106.67** 94.56 : 124.28	**105.86** 94.56 : 124.28	**111.72** 94.56 : 124.28	**118.18** 94.56 : 124.28
Selenium	TM181	**102.75** 86.28 : 110.48	**106.67** 86.28 : 110.48	**101.96** 86.28 : 110.48	**101.96** 86.28 : 110.48	**100.0** 86.28 : 110.48	**98.43** 86.28 : 110.48
Strontium	TM181	**95.32** 79.13 : 102.79	**101.34** 79.13 : 102.79	**96.88** 79.13 : 102.79	**93.32** 79.13 : 102.79	**93.1** 79.13 : 102.79	**93.99** 79.13 : 102.79
Thallium	TM181	**65.04** 82.94 : 111.86	**69.47** 82.94 : 111.86	**65.49** 82.94 : 111.86	**101.33** 82.94 : 111.86	**100.0** 82.94 : 111.86	**100.44** 82.94 : 111.86
Tin	TM181	**102.66** 90.25 : 108.86	**105.32** 90.25 : 108.86	**100.76** 90.25 : 108.86	**101.52** 90.25 : 108.86	**100.0** 90.25 : 108.86	**98.86** 90.25 : 108.86
Titanium	TM181	**84.73** 66.23 : 102.06	**88.55** 66.23 : 102.06	**80.15** 66.23 : 102.06	**75.57** 66.23 : 102.06	**86.26** 66.23 : 102.06	**81.68** 66.23 : 102.06
Vanadium	TM181	**98.9** 86.37 : 107.94	**106.23** 86.37 : 107.94	**103.3** 86.37 : 107.94	**97.8** 86.37 : 107.94	**99.27** 86.37 : 107.94	**99.27** 86.37 : 107.94
Zinc	TM181	**101.23** 84.68 : 113.99	**106.16** 84.68 : 113.99	**103.29** 84.68 : 113.99	**101.64** 84.68 : 113.99	**100.21** 84.68 : 113.99	**100.0** 84.68 : 113.99

CERTIFICATE OF ANALYSIS

SDG:	190313-14	**Client Reference:**	A112666	**Report Number:**	498064
Location:	Land at Stakers Farm	**Order Number:**	C19/247	**Superseded Report:**	497902

Metals in solid samples by OES

Component	Method Code	QC 1999
Aluminium	TM181	**107.08** 77.84 : 119.01
Antimony	TM181	**100.0** 84.28 : 107.67
Arsenic	TM181	**101.45** 87.05 : 109.36
Barium	TM181	**101.83** 82.49 : 109.34
Beryllium	TM181	**102.24** 85.44 : 109.61
Boron	TM181	**92.55** 73.51 : 104.66
Cadmium	TM181	**99.59** 81.46 : 106.43
Chromium	TM181	**96.35** 79.78 : 102.80
Cobalt	TM181	**91.19** 80.74 : 99.26
Copper	TM181	**101.76** 82.40 : 105.45
Iron	TM181	**98.41** 82.95 : 110.58
Lead	TM181	**90.32** 78.24 : 104.05
Manganese	TM181	**125.83** 94.29 : 119.51
Mercury	TM181	**96.62** 83.74 : 105.34
Molybdenum	TM181	**97.12** 87.11 : 106.87
Nickel	TM181	**91.69** 81.92 : 102.18
Phosphorus	TM181	**107.88** 94.56 : 124.28
Selenium	TM181	**98.04** 86.28 : 110.48
Strontium	TM181	**94.88** 79.13 : 102.79
Thallium	TM181	**64.6** 82.94 : 111.86
Tin	TM181	**98.86** 90.25 : 108.86
Titanium	TM181	**83.21** 66.23 : 102.06
Vanadium	TM181	**102.56** 86.37 : 107.94
Zinc	TM181	**97.95** 84.68 : 113.99

QC: OP Pesticides and Triazine Herb

CERTIFICATE OF ANALYSIS

SDG:	190313-14	**Client Reference:**	A112666	**Report Number:**	498064
Location:	Land at Stakers Farm	**Order Number:**	C19/247	**Superseded Report:**	497902

OC, OP Pesticides and Triazine Herb

Component	Method Code	QC 1998
Atrazine (Raw)	TM073	**84.49** 78.55 : 119.92
Azinphos methyl (Raw)	TM073	**72.44** 58.68 : 154.71
cis-Chlordane (Raw)	TM073	**82.19** 71.90 : 129.99
Diazinon (Raw)	TM073	**81.63** 70.00 : 130.00
Dichlorvos (Raw)	TM073	**89.89** 70.00 : 130.00
Dieldrin (Raw)	TM073	**83.41** 70.00 : 130.00
gamma-HCH (Lindane) (Raw)	TM073	**80.82** 71.48 : 129.99
Heptachlor (Raw)	TM073	**83.08** 66.39 : 134.63
Hexachlorobenzene (Raw)	TM073	**86.55** 47.15 : 124.32
Malathion (Raw)	TM073	**81.85** 70.00 : 130.00
p,p-DDT (Raw)	TM073	**84.48** 70.00 : 130.00
Parathion (Raw)	TM073	**81.3** 64.13 : 127.88

PAH by GCMS

Component	Method Code	QC 1940	QC 1945
Acenaphthene	TM218	**90.0** 80.97 : 105.99	**84.0** 80.97 : 105.99
Acenaphthylene	TM218	**88.0** 80.24 : 105.29	**83.0** 80.24 : 105.29
Anthracene	TM218	**103.5** 79.32 : 108.94	**81.5** 79.32 : 108.94
Benz(a)anthracene	TM218	**110.5** 79.72 : 116.84	**86.0** 79.72 : 116.84
Benzo(a)pyrene	TM218	**100.5** 79.52 : 108.45	**90.0** 79.52 : 108.45
Benzo(b)fluoranthene	TM218	**100.0** 77.35 : 112.97	**87.0** 77.35 : 112.97
Benzo(ghi)perylene	TM218	**102.0** 77.68 : 107.38	**87.5** 77.68 : 107.38
Benzo(k)fluoranthene	TM218	**98.0** 82.61 : 111.93	**97.0** 82.61 : 111.93
Chrysene	TM218	**106.0** 80.28 : 111.42	**84.5** 80.28 : 111.42
Dibenzo(ah)anthracene	TM218	**95.5** 79.17 : 106.41	**85.0** 79.17 : 106.41
Fluoranthene	TM218	**107.0** 79.07 : 112.75	**80.0** 79.07 : 112.75
Fluorene	TM218	**96.0** 80.52 : 110.90	**85.0** 80.52 : 110.90
Indeno(123cd)pyrene	TM218	**88.5** 76.97 : 113.36	**80.0** 76.97 : 113.36

CERTIFICATE OF ANALYSIS

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PAH by GCMS

		QC 1940	QC 1945
Naphthalene	TM218	**89.5** 79.37 : 105.57	**89.5** 79.37 : 105.57
Phenanthrene	TM218	**104.0** 79.34 : 111.91	**83.0** 79.34 : 111.91
Pyrene	TM218	**107.0** 78.80 : 115.76	**79.5** 78.80 : 115.76

PAH in waters by GC-MS (diss.filt)

Component	Method Code	QC 1931
Acenaphthene (diss.filt)	TM178	**100.4** 94.00 : 120.40
Acenaphthylene (diss.filt)	TM178	**94.4** 91.20 : 117.60
Anthracene (diss.filt)	TM178	**99.6** 91.20 : 112.80
Benzo(a)anthracene (diss.filt)	TM178	**92.0** 86.80 : 115.60
Benzo(a)pyrene (diss.filt)	TM178	**96.0** 90.40 : 116.80
Benzo(b)fluoranthene (diss.filt)	TM178	**96.4** 86.40 : 117.60
Benzo(g,h,i)perylene (diss.filt)	TM178	**100.8** 87.60 : 121.20
Benzo(k)fluoranthene (diss.filt)	TM178	**104.0** 91.20 : 124.80
Chrysene (diss.filt)	TM178	**104.4** 95.20 : 124.00
Dibenzo(a,h)anthracene (diss.filt)	TM178	**96.0** 84.80 : 118.40
Fluoranthene (diss.filt)	TM178	**105.2** 91.20 : 120.00
Fluorene (diss.filt)	TM178	**98.8** 93.20 : 119.60
Indeno(1,2,3-cd)pyrene (diss.filt)	TM178	**100.4** 86.80 : 115.60
Naphthalene (diss.filt)	TM178	**104.8** 90.40 : 126.40
Phenanthrene (diss.filt)	TM178	**102.0** 94.40 : 118.40
Pyrene (diss.filt)	TM178	**105.6** 93.60 : 120.00

pH

Component	Method Code	QC 1986	QC 1977
pH	TM133	**99.31** 98.63 : 101.37	**100.11** 97.03 : 101.14

pH Value of Filtered Water

CERTIFICATE OF ANALYSIS

SDG:	190313-14	**Client Reference:**	A112666	**Report Number:**	498064
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pH Value of Filtered Water

Component	Method Code	QC 1990
pH Value of Filtered Water	TM256	**101.08** 99.73 : 102.16

Phenols by HPLC (S)

Component	Method Code	QC 1954	QC 1990	QC 1908	QC 1950
2.3.5 Trimethyl-Phenol by HPLC (S)	TM062 (S)	**106.49** 83.23 : 109.71	**101.95** 83.23 : 109.71	**96.1** 83.23 : 109.71	**104.55** 83.23 : 109.71
2-Isopropyl Phenol by HPLC (S)	TM062 (S)	**93.57** 76.34 : 104.11	**88.89** 76.34 : 104.11	**83.04** 76.34 : 104.11	**89.47** 76.34 : 104.11
Catechol by HPLC (S)	TM062 (S)	**80.0** 22.43 : 157.02	**69.52** 22.43 : 157.02	**60.95** 22.43 : 157.02	**78.1** 22.43 : 157.02
Cresols by HPLC (S)	TM062 (S)	**110.44** 92.94 : 114.26	**106.05** 92.94 : 114.26	**98.75** 92.94 : 114.26	**107.72** 92.94 : 114.26
Napthol by HPLC (S)	TM062 (S)	**129.29** 75.62 : 124.38	**122.14** 75.62 : 124.38	**116.43** 75.62 : 124.38	**128.57** 75.62 : 124.38
Phenol by HPLC (S)	TM062 (S)	**113.91** 79.53 : 120.47	**109.93** 79.53 : 120.47	**102.65** 79.53 : 120.47	**112.58** 79.53 : 120.47
Resorcinol HPLC (S)	TM062 (S)	**101.89** 71.43 : 129.59	**98.11** 71.43 : 129.59	**91.82** 71.43 : 129.59	**99.37** 71.43 : 129.59
Xylenols by HPLC (S)	TM062 (S)	**102.71** 89.90 : 107.23	**98.33** 89.90 : 107.23	**92.19** 89.90 : 107.23	**100.83** 89.90 : 107.23

Phenols by HPLC (W)

Component	Method Code	QC 1908
2.3.5 Trimethyl-Phenol by HPLC (W)	TM259	**102.0** 93.10 : 108.70
2-Isopropyl Phenol by HPLC (W)	TM259	**103.0** 83.72 : 106.28
Cresols by HPLC (W)	TM259	**114.67** 90.02 : 130.15
Napthol by HPLC (W)	TM259	**113.0** 101.61 : 116.04
Phenol by HPLC (W)	TM259	**111.0** 95.00 : 119.00
Xylenols by HPLC (W)	TM259	**103.17** 98.67 : 108.67

Total Organic Carbon

Component	Method Code	QC 1917	QC 1939	QC 1979	QC 1959	QC 1998
Total Organic Carbon	TM132	**94.53** 88.47 : 112.82	**87.89** 88.47 : 112.82	**96.09** 88.47 : 112.82	**90.63** 88.47 : 112.82	**87.5** 69.88 : 102.67

VOC MS (S)

CERTIFICATE OF ANALYSIS

SDG:	190313-14	**Client Reference:**	A112666	**Report Number:**	498064
Location:	Land at Stakers Farm	**Order Number:**	C19/247	**Superseded Report:**	497902

VOC MS (S)

Component	Method Code	QC 1964	QC 1992	QC 1935
1,1,1,2-tetrachloroethane	TM116	**103.0** 79.10 : 119.66	**102.6** 77.56 : 115.55	**101.6** 77.56 : 115.55
1,1,1-Trichloroethane	TM116	**103.6** 87.51 : 115.37	**106.2** 73.73 : 118.05	**110.4** 73.73 : 118.05
1,1,2-Trichloroethane	TM116	**87.8** 75.16 : 112.70	**100.8** 77.12 : 116.04	**100.0** 77.12 : 116.04
1,1-Dichloroethane	TM116	**108.0** 89.44 : 121.71	**114.0** 74.46 : 129.15	**113.8** 74.46 : 129.15
1,2-Dichloroethane	TM116	**111.4** 86.58 : 129.62	**123.2** 87.98 : 127.86	**120.6** 87.98 : 127.86
1,4-Dichlorobenzene	TM116	**110.6** 71.61 : 124.63	**101.8** 72.76 : 126.34	**95.8** 72.76 : 126.34
2-Chlorotoluene	TM116	**95.6** 66.81 : 118.43	**96.6** 72.40 : 116.20	**94.2** 72.40 : 116.20
4-Chlorotoluene	TM116	**93.6** 65.88 : 114.76	**95.4** 66.90 : 112.46	**92.2** 66.90 : 112.46
Benzene	TM116	**100.6** 88.66 : 121.07	**108.0** 91.01 : 117.67	**109.0** 91.01 : 117.67
Carbon Disulphide	TM116	**102.2** 75.11 : 124.81	**109.0** 74.91 : 122.14	**107.4** 74.91 : 122.14
Carbontetrachloride	TM116	**108.2** 82.35 : 126.46	**107.4** 80.31 : 124.50	**108.0** 80.31 : 124.50
Chlorobenzene	TM116	**101.6** 82.88 : 122.42	**101.0** 75.00 : 115.53	**98.6** 75.00 : 115.53
Chloroform	TM116	**113.0** 93.02 : 122.86	**115.4** 87.40 : 122.49	**113.6** 87.40 : 122.49
Chloromethane	TM116	**104.4** 52.88 : 131.36	**128.8** 65.05 : 142.63	**128.0** 65.05 : 142.63
Cis-1,2-Dichloroethene	TM116	**106.4** 78.27 : 128.90	**115.6** 80.67 : 126.72	**113.6** 80.67 : 126.72
Dibromomethane	TM116	**88.4** 71.69 : 119.43	**96.6** 67.80 : 121.75	**95.6** 67.80 : 121.75
Dichloromethane	TM116	**115.2** 89.49 : 128.89	**123.8** 81.11 : 133.25	**123.2** 81.11 : 133.25
Ethylbenzene	TM116	**97.2** 75.93 : 116.76	**92.4** 75.92 : 110.41	**95.2** 75.92 : 110.41
Hexachlorobutadiene	TM116	**72.8** 7.32 : 139.00	**67.2** 12.82 : 152.73	**68.6** 12.82 : 152.73
Isopropylbenzene	TM116	**97.0** 52.15 : 132.52	**88.6** 54.21 : 117.17	**97.6** 54.21 : 117.17
Naphthalene	TM116	**110.0** 80.29 : 135.77	**109.2** 80.86 : 128.81	**102.8** 80.86 : 128.81
o-Xylene	TM116	**89.6** 68.16 : 107.61	**88.4** 82.80 : 107.93	**92.6** 82.80 : 107.93
p/m-Xylene	TM116	**92.2** 73.52 : 108.71	**87.0** 68.32 : 108.91	**90.7** 68.32 : 108.91
Sec-Butylbenzene	TM116	**93.0** 44.71 : 117.87	**74.8** 44.91 : 118.40	**83.8** 44.91 : 118.40
Tetrachloroethene	TM116	**111.2** 81.43 : 126.65	**95.4** 76.95 : 121.02	**97.0** 76.95 : 121.02
Toluene	TM116	**85.8** 85.50 : 114.89	**97.2** 74.24 : 107.42	**98.0** 74.24 : 107.42
Trichloroethene	TM116	**104.2** 79.80 : 112.33	**105.4** 77.61 : 111.54	**105.6** 77.61 : 111.54

CERTIFICATE OF ANALYSIS

SDG:	190313-14	**Client Reference:**	A112666	**Report Number:**	498064
Location:	Land at Stakers Farm	**Order Number:**	C19/247	**Superseded Report:**	497902

VOC MS (S)

		QC 1964	QC 1992	QC 1935
Trichlorofluoromethane	TM116	**104.6** 88.86 : 128.82	**110.2** 71.31 : 128.41	**110.6** 71.31 : 128.41
Vinyl Chloride	TM116	**92.0** 64.90 : 133.10	**104.2** 68.26 : 133.45	**106.4** 68.26 : 133.45

The above information details the reference name of the analytical quality control sample (AQC) that has been run with the samples contained in this report for the different methods of analysis.
The figure detailed is the percentage recovery result for the AQC.
The subscript numbers below are the percentage recovery lower control limit (LCL) and the upper control limit (UCL). The percentage recovery result for the AQC should be between these limits to be statistically in control.

CERTIFICATE OF ANALYSIS

Work Order	: **PR1923814**	Issue Date	: 22-Mar-2019
Customer	: **ALS Life Sciences Ltd**	Laboratory	: ALS Czech Republic, s.r.o.
Contact	: Reporting	Contact	: Client Service
Address	: Unit 7-8 Hawarden Business Park Manor Road, Hawarden CH5 3US Deeside United Kingdom	Address	: Na Harfe 336/9 Prague 9 - Vysocany 190 00 Czech Republic
E-mail	: euhdnsubconresults@ALSGlobal.com	E-mail	: [redacted]
Telephone	: ----	Telephone	
Project	: 190313-14	Page	: 1 of 2
Order number	: ----	Date Samples Received	: 14-Mar-2019
		Quote number	: PR2018ALSAL-GB0004 (CZ-256-18-0022)
Site	: ----	Date of test	: 18-Mar-2019 - 22-Mar-2019
Sampled by	: client	QC Level	: ALS CR Standard Quality Control Schedule

General Comments

This report shall not be reproduced except in full, without prior written approval from the laboratory.
The laboratory declares that the test results relate only to the listed samples.

Responsible for accuracy

Testing Laboratory No. 1163
Accredited by CAI according to
CSN EN ISO/IEC 17025:2005

Signatories		Position
Zdeněk Jirák	[redacted]	Environmental Business Unit Manager

L 1163

Analytical Results

Sub-Matrix: SOIL	Client sample ID	19536004 TP07		19535987 WS02		19535864 WS06	
	Laboratory sample ID	PR1923814-001		PR1923814-002		PR1923814-003	
	Client sampling date / time	07-Mar-2019 00:00		08-Mar-2019 00:00		07-Mar-2019 00:00	
Parameter	Method	LOR	Unit	Result	MU	Result	MU	Result	MU
Physical Parameters									
Dry matter @ 105°C	S-DRY-GRCI	0.10	%	81.3	±5.0%	77.6	±5.0%	83.1	±5.0%
Pesticides									
2,4,5-T	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	---	<0.0100	---	<0.0100	---
2,4,5-TP	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	---	<0.0100	---	<0.0100	---
2,4-D	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	---	<0.0100	---	<0.0100	---
2,4-DB	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	---	<0.0100	---	<0.0100	---
2,4-DP (isomers)	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	---	<0.0100	---	<0.0100	---
4-CPP	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	---	<0.0100	---	<0.0100	---
Bentazone	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	---	<0.0100	---	<0.0100	---
Dinoseb	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	---	<0.0100	---	<0.0100	---
Fluroxypyr	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	---	<0.0100	---	<0.0100	---
MCPA	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	---	<0.0100	---	<0.0100	---
MCPB	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	---	<0.0100	---	<0.0100	---
MCPP (isomers)	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	---	<0.0100	---	<0.0100	---
Acifluorfen	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	---	<0.0100	---	<0.0100	---
Bromoxynil	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	---	<0.0100	---	<0.0100	---
DNOC	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	---	<0.0100	---	<0.0100	---
Dicamba	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	---	<0.0100	---	<0.0100	---
Diclofop	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	---	<0.0100	---	<0.0100	---
Ioxynil	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	---	<0.0100	---	<0.0100	---
Propoxycarbazone-sodium	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	---	<0.0100	---	<0.0100	---
Triclopyr	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	---	<0.0100	---	<0.0100	---
Triclosan	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	---	<0.0100	---	<0.0100	---

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, delivery date in brackets without a time component will be displayed instead. Measurement uncertainty is expressed as expanded measurement uncertainty with coverage factor k = 2, representing 95% confidence level.

Key: LOR = Limit of reporting; MU = Measurement Uncertainty

The end of result part of the certificate of analysis

Brief Method Summaries

Analytical Methods	Method Descriptions
Location of test performance: Na Harfe 338/9 Prague 9 - Vysocany Czech Republic 190 00.	
S-DRY-GRCI	CZ_SOP_D06_01_045 (CSN ISO 11465, CSN EN 12880, CSN EN 14346). CZ_SOP_D06_07_048 (CSN ISO 11465, CSN EN 12880, CSN EN 14346, CSN 46 5735) Determination of dry matter by gravimetry and determination of moisture by calculation from measured values.
S-PESLMSA1	CZ_SOP_D06_03_182.B (CSN EN 15637, US EPA 1694) Determination of acidic herbicides and drug residues by liquid chromatography method with MS/MS detection.

A "*" symbol preceding any method indicates laboratory or subcontractor non-accredited test. In the case when a procedure belonging to an accredited method was used for non-accredited matrix, would apply that the reported results are non-accredited. Please refer to General Comment section on front page for information. If the report contains subcontracted analysis, those are made in a subcontracted laboratory outside the laboratories ALS Czech Republic, s.r.o.
The calculation methods of summation parameters are available on request in the client service.

Appendix General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP - No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals - total metals must be requested separately.

11. Results relate only to the items tested.

12. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** - Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethyphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

21. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

24. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
5	**Sampled on date not provided**
*	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

Appendix G – Groundwater and Gas Monitoring Results

ARUN DISTRICT COUNCIL Y/72/20/RES

ARUN DISTRICT COUNCIL Y/7220/RES

WYG GEO-ENVIRONMENT

The Pavilion, 1st Floor, Botleigh Grange Office Campus, Hedge End, Southampton,
SO30 2AF

GROUND GAS MONITORING RECORD SHEET

Client:	Dandara	**Job No:**	**A112666**	**Instruments Used:**	**Gas analyser, Dip meter**
Project Name:	Land at Stakers Farm, YAPTON	**Date:**	**20/03/2019**	**Make / Model :**	**GA5000, BGS DipTape**
Weather:	12 Degrees, cloudy	**Monitored By:**	**E. Holcroft**	**Serial Number:**	

Exploratory Hole No.	Peak [1]		Time to reach steady concentration (secs)	Steady [2]						Flow Rate Peak (L/hr)	Time to reach steady flow (secs)	Flow Rate Steady (L/hr)	Atmospheric Pressure (mbar)	Water Depth (m bgl)	Base Depth (m bgl)	Water Level (mAOD)	Remarks
	CH_4 (% vol)	CO_2 (% vol)		CH_4 (% vol)	CO_2 (% vol)	O_2 (% vol)	H_2S [3] (ppm)	CO [3] (ppm)	VOC (ppm)								
WS01	0.2	3.3	45.0	0.2	3.3	16.2	0.0	0.0	NT	0.0		0	1036.00	DRY	2.95	**DRY**	
WS04	0.2	1.2	50.0	0.2	1.2	18.3	0.0	0.0	NT	0.0		0	1036.00	DRY	5.97	**DRY**	
WS05	0.2	0.7	55.0	0.2	0.7	20.1	0.0	3.0	NT	0.0		0	1035.00	3.89	5.71	**2.46**	
WS06	0.2	0.9	55.0	0.2	0.9	19.4	0.0	1.0	NT	0.0		0	1035.00	2.55	2.97	**2.66**	
WS09	0.3	1.1	30.0	0.3	1.1	17.2	0.0	0.0	NT	0.0		0	1035.00	3.79	5.05	**2.75**	
WS10	0.2	0.7	30.0	0.2	0.7	18.5	0.0	0.0	NT	0.0		0	1035.00	DRY	2.90	**DRY**	

Background Atmospheric presure:

	Day -3	Day -2	Day -1	Day 0	Falling, Steady or Rising
Weather Conditions	Cloudy sunny spells shower	Cloudy sunny spells	Cloudy sunny spells	Cloudy sunny spells	
Atmospheric Pressure (millibar)	1006.0	1020.0	1027.0	1034.0	

Atmospheric pressure obtained from: http://www.metoffice.gov.uk/weather/uk/uk_latest_pressure.html

Ambient Gas Levels:

	CH_4 (%)	CO_2 (%)	O_2 (%)	H_2S (%)	CO (%)	VOC ppm	Atmos (mbar)
Before Monitoring	0.2	0.1	21.2	0.0	0.0	NT	1034
After Monitoring	0.2	0.1	21.8	0.0	0.0	NT	1036

1 The peak reading is the maximum recorded level during a monitoring event.
2 The steady reading is the level which remained constant after approximately 1 minute.
3 Recorded values are calculated from the Ambient Gas readings (live zero)

ARUN DISTRICT COUNCIL Y/7220/RES

WYG GEO-ENVIRONMENT

The Pavilion, 1st Floor, Botleigh Grange Office Campus, Hedge End, Southampton, SO30 2AF

GROUND GAS MONITORING RECORD SHEET

Client:	Dandara	**Job No:**	**A112666**	**Instruments Used:**	**Gas analyser, Dip meter**
Project Name:	Land at Stakers Farm, YAPTON	**Date:**	**12/04/2019**	**Make / Model :**	**GA5000, BGS DipTape**
Weather:	8 - 9°C, sunny, slight wind	**Monitored By:**	**E. Holcroft**	**Serial Number:**	

Exploratory Hole No.	Peak [1]		Time to reach steady concentration (secs)	Steady [2]						Flow Rate Peak (L/hr)	Time to reach steady flow (secs)	Flow Rate Steady (L/hr)	Atmospheric Pressure (mbar)	Water Depth (m bgl)	Base Depth (m bgl)	Water Level (mAOD)	Remarks
	CH_4 (% vol)	CO_2 (% vol)		CH_4 (% vol)	CO_2 (% vol)	O_2 (% vol)	H_2S [3] (ppm)	CO [3] (ppm)	VOC (ppm)								
WS01	0.1	3.7	35.0	0.1	3.7	15.6	0.0	0.0	NT	0.0	35.0	0	1030.00	Dry	3.06	**DRY**	
WS04	0.1	2.3	45.0	0.1	2.3	18.4	0.0	0.0	NT	-0.2	45.0	-0.1	1029.00	Dry	3.07	**DRY**	
WS05	0.1	1.9	35.0	0.1	1.9	16.2	0.0	1.0	NT	0.1	35.0	0.1	1029.00	4.25	5.82	**2.10**	
WS06	0.2	2.4	35.0	0.2	2.4	17.9	0.0	2.0	NT	0.0	35.0	0	1030.00	Dry	2.85	**Dry**	
WS09	0.2	2.8	45.0	0.2	2.8	16.0	0.0	0.0	NT	0.0	45.0	-0.1	1027.00	4.16	4.90	**2.38**	
WS10	0.2	2.1	45.0	0.2	2.1	17.1	0.0	0.0	NT	0.0	45	0	1029.00	Dry	3.04	**DRY**	peak CO was 1ppm

Background Atmospheric presure:

	Day -3	Day -2	Day -1	Day 0	Falling, Steady or Rising
Weather Conditions	Showers, sunny spells	Cloudy, sunny spells	Sunny	Cloudy, sunny spells	
Atmospheric Pressure (millibar)	1012.0	1018.0	1026.0	1027.0	

Atmospheric pressure obtained from: http://www.metoffice.gov.uk/weather/uk/uk_latest_pressure.html

Ambient Gas Levels:

	CH_4 (%)	CO_2 (%)	O_2 (%)	H_2S (%)	CO (%)	VOC ppm	Atmos (mbar)
Before Monitoring	0.2	0.1	21.2	0.0	0.0	NT	1027
After Monitoring	0.1	0.1	21.1	0.0	0.0	NT	1030

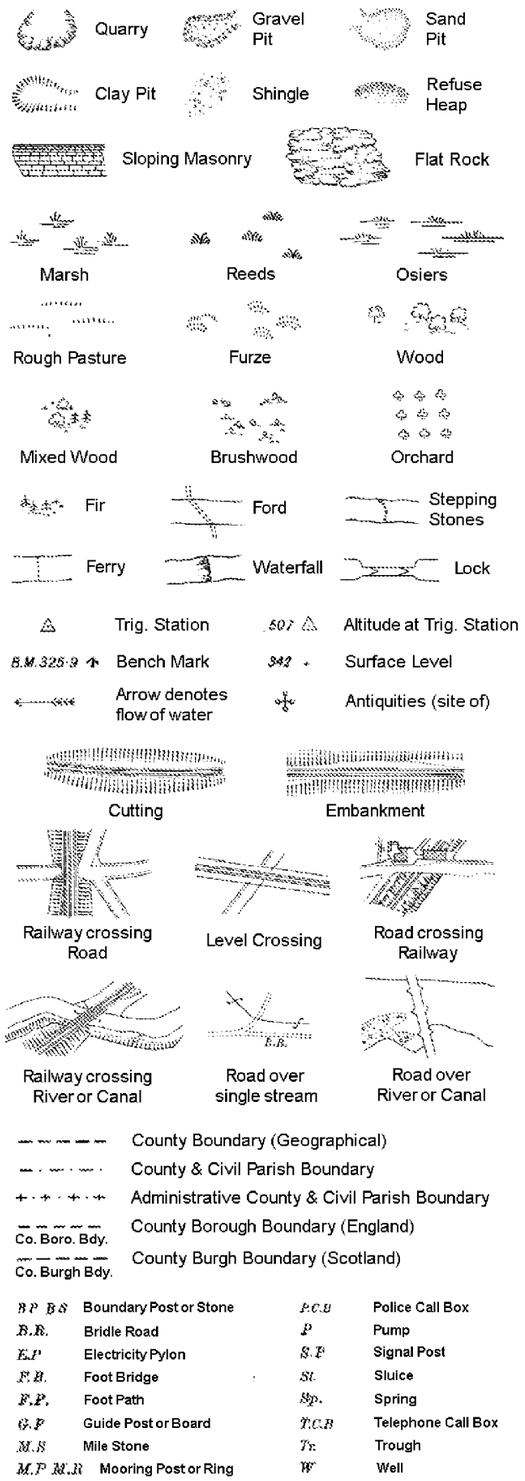
1 The peak reading is the maximum recorded level during a monitoring event.
2 The steady reading is the level which remained constant after approximately 1 minute.
3 Recorded values are calculated from the Ambient Gas readings (live zero)

Appendix H – Envirocheck Report (February 2019)

ARUN DISTRICT COUNCIL Y/72/20/RES

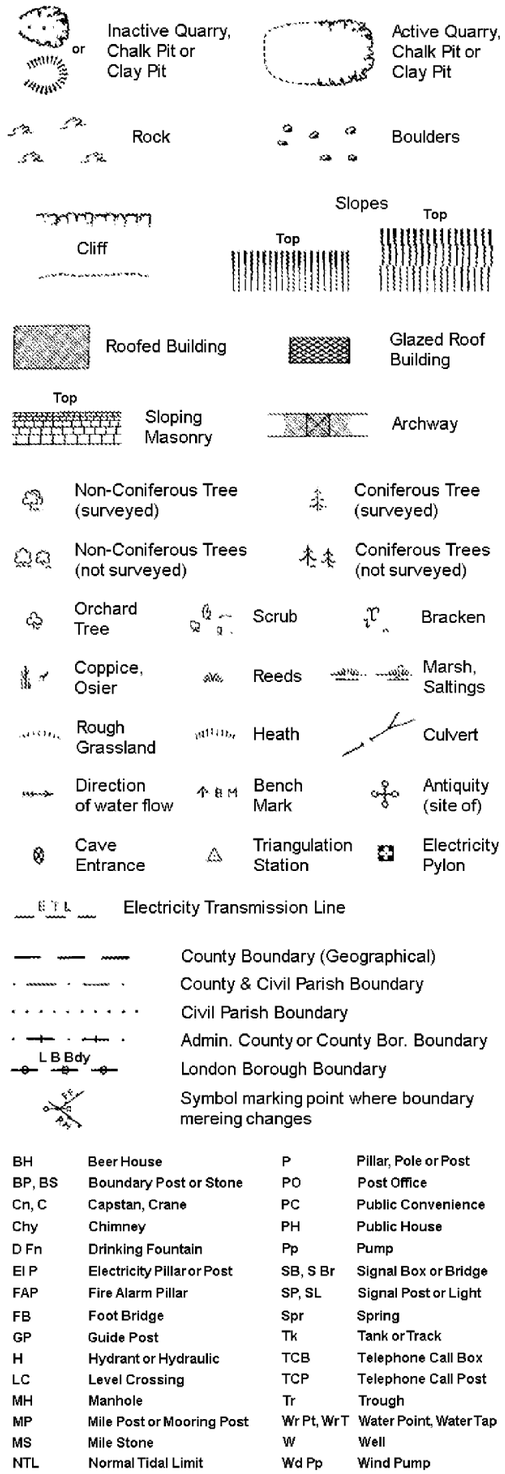
Historical Mapping Legends

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



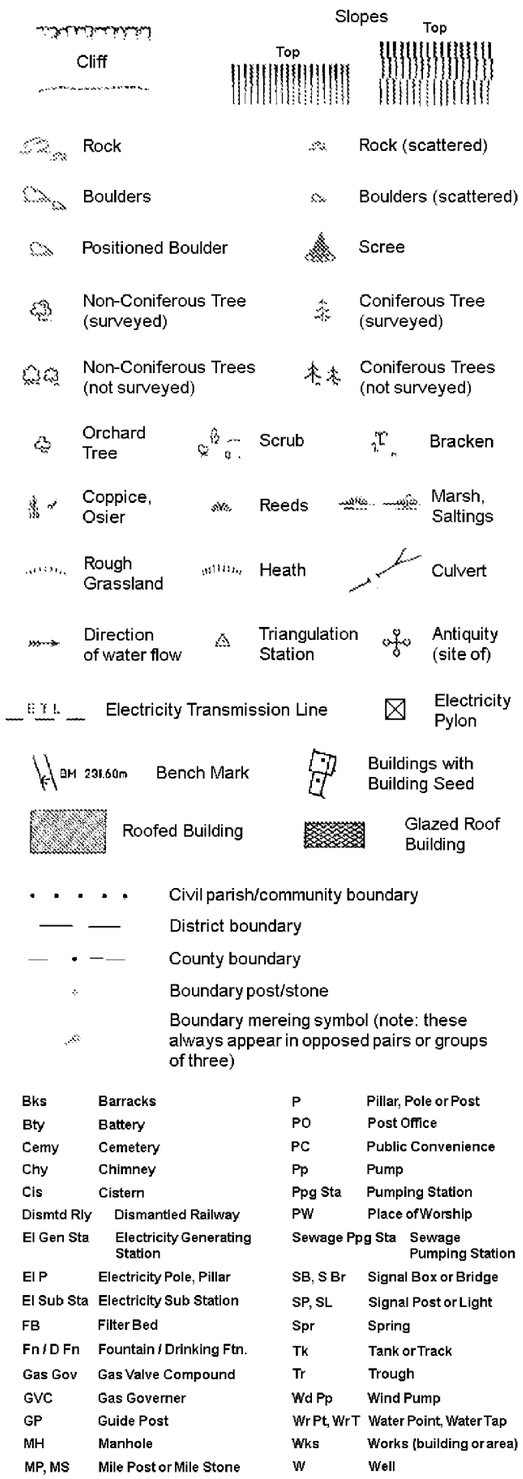
B.P. B.S.	Boundary Post or Stone	P.C.B.	Police Call Box
B.R.	Bridle Road	P.	Pump
E.P.	Electricity Pylon	S.P.	Signal Post
F.B.	Foot Bridge	Sl.	Sluice
F.P.	Foot Path	Sp.	Spring
G.P.	Guide Post or Board	T.C.B.	Telephone Call Box
M.S.	Mile Stone	Tr.	Trough
M.P. M.R.	Mooring Post or Ring	W.	Well

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



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

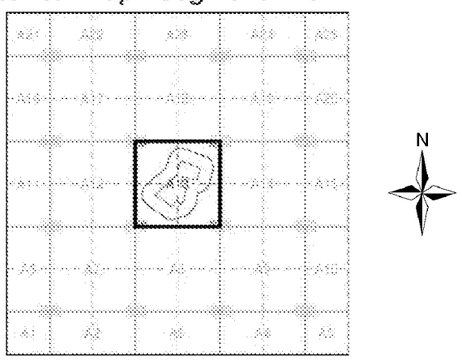


Bks	Barracks	P	Pillar, Pole or Post
Bty	Battery	PO	Post Office
Cemy	Cemetery	PC	Public Convenience
Chy	Chimney	Pp	Pump
Cis	Cistern	Ppg Sta	Pumping Station
Dismtd Rly	Dismantled Railway	PW	Place of Worship
El Gen Sta	Electricity Generating Station	Sewage Ppg Sta	Sewage Pumping Station
El P	Electricity 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

Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Sussex	1:2,500	1876 - 1877	2
Sussex	1:2,500	1897	3
Sussex	1:2,500	1912	4
Sussex	1:2,500	1938 - 1939	5
Ordnance Survey Plan	1:2,500	1974 - 1975	6
Additional SIMs	1:2,500	1978 - 1992	7
Additional SIMs	1:2,500	1982 - 1988	8
Additional SIMs	1:2,500	1987 - 1992	9
Ordnance Survey Plan	1:2,500	1989	10
Additional SIMs	1:2,500	1992	11
Large-Scale National Grid Data	1:2,500	1994	12
Large-Scale National Grid Data	1:2,500	1995	13
Historical Aerial Photography	1:2,500	1999	14

Historical Map - Segment A13



Order Details

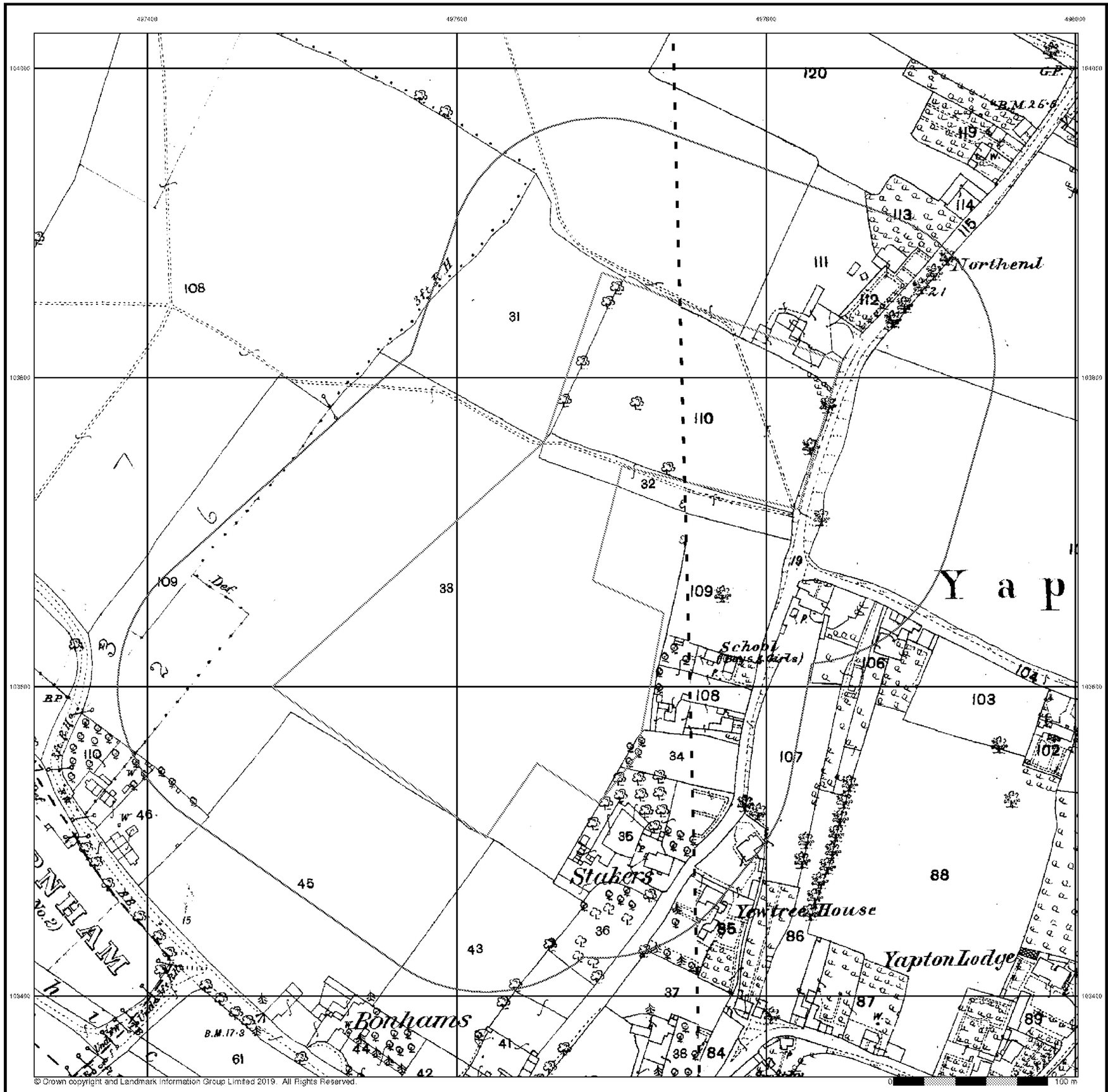
Order Number: 195300019_1_1
Customer Ref: A112666
National Grid Reference: 497670, 103690
Slice: A
Site Area (Ha): 5.34
Search Buffer (m): 100

Site Details

Land at Stakers Farm, North End Road, Yapton, ARUNDEL, BN18 0DU

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

ARUN DISTRICT COUNCIL Y/72/20/RES



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0 100 m

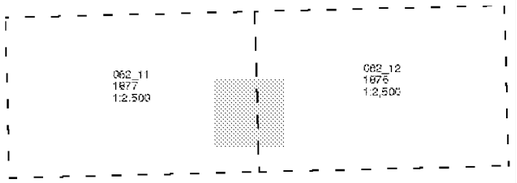
Sussex

Published 1876 - 1877

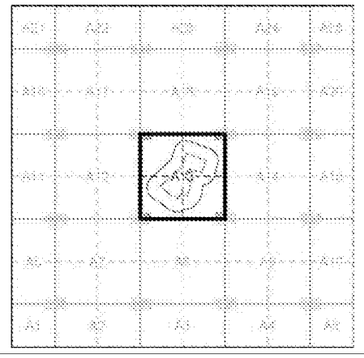
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number:	195300019_1_1
Customer Ref:	A112666
National Grid Reference:	497670, 103690
Slice:	A
Site Area (Ha):	5.34
Search Buffer (m):	100

Site Details

Land at Stakers Farm, North End Road, Yapton, ARUNDEL, BN18 0DU

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0 100 m

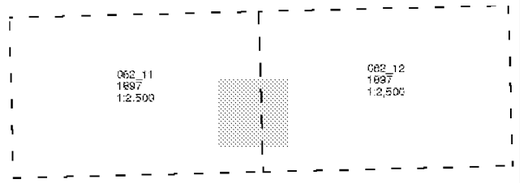
Sussex

Published 1897

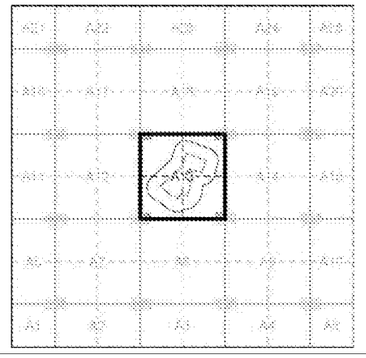
Source map scale - 1:2,500

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Map Name(s) and Date(s)



Historical Map - Segment A13



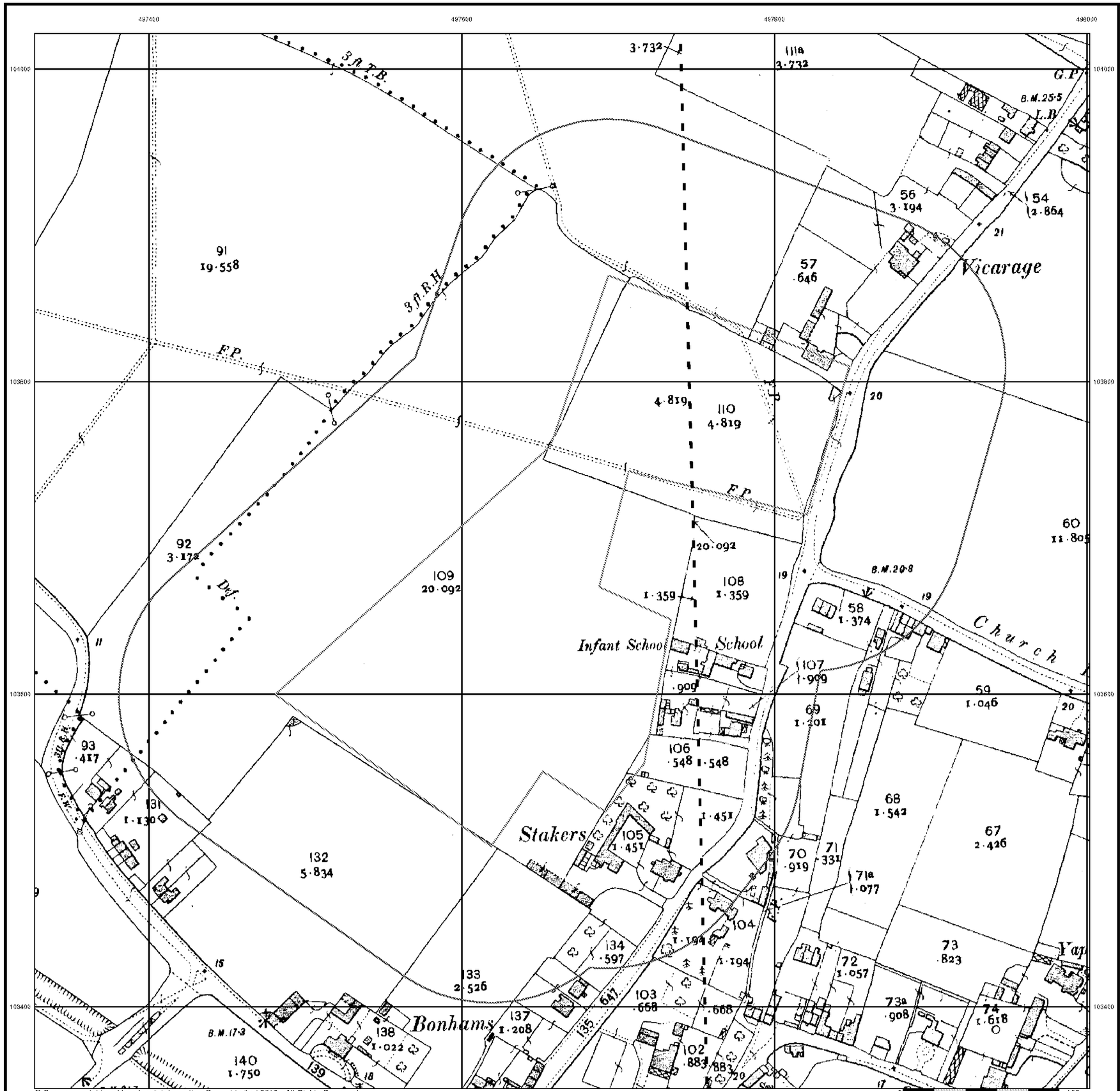
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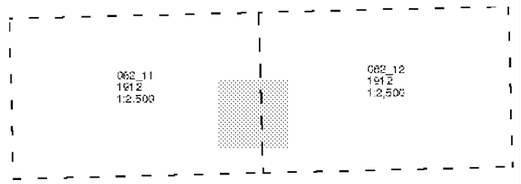
Sussex

Published 1912

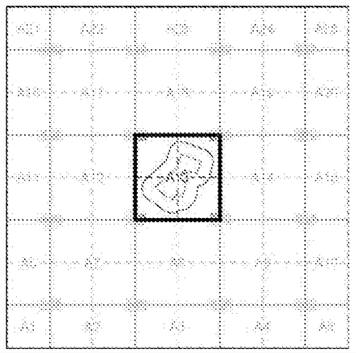
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A13



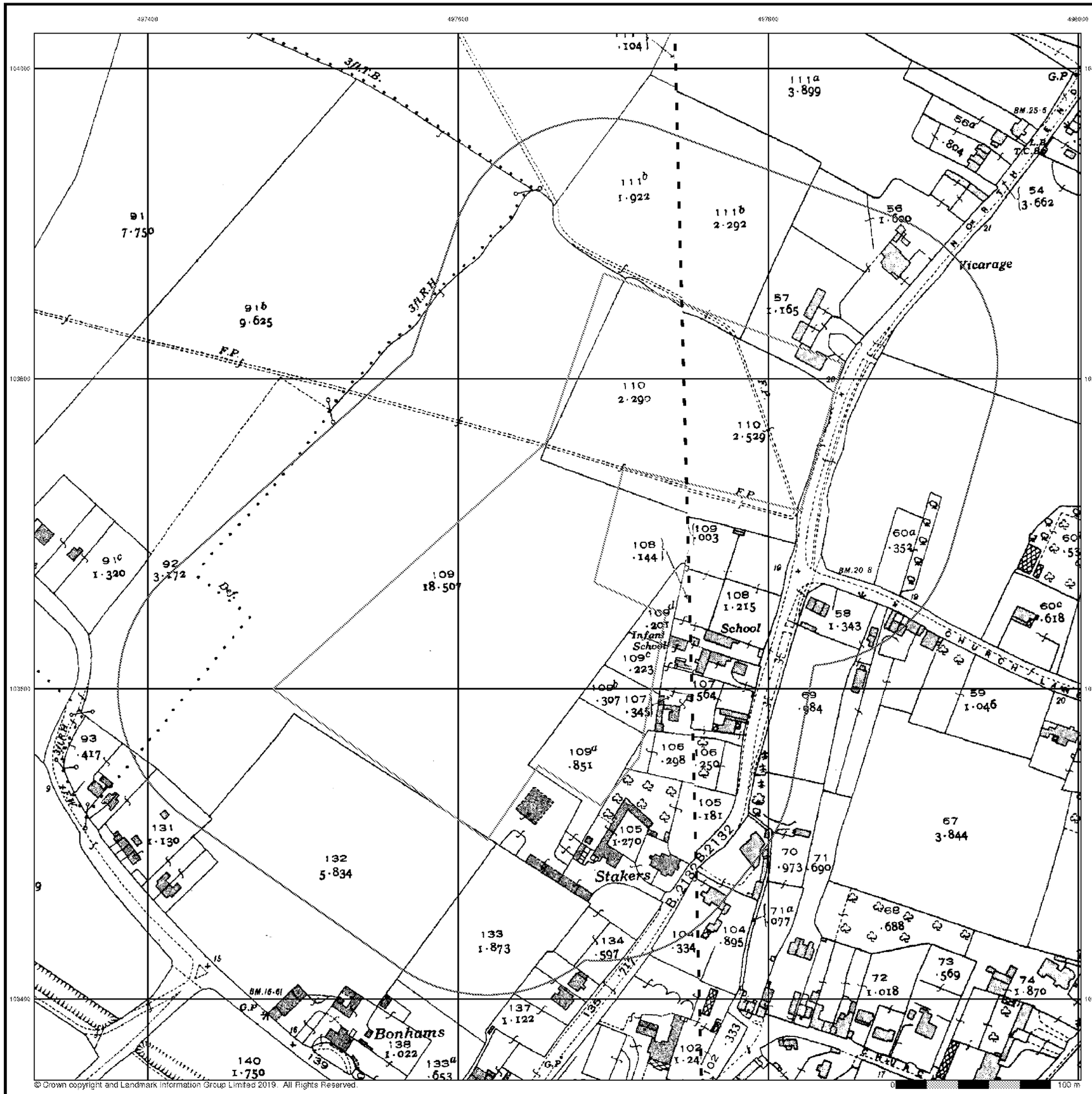
Order Details

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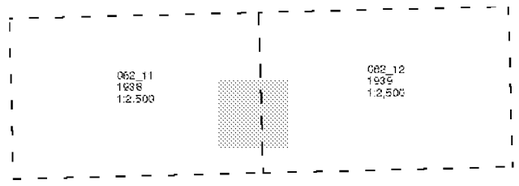
Sussex

Published 1938 - 1939

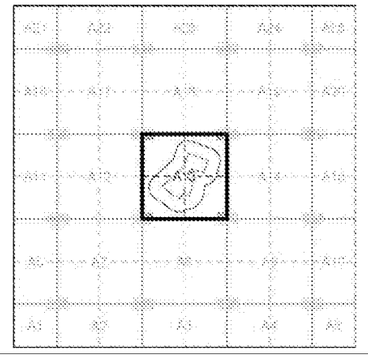
Source map scale - 1:2,500

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Map Name(s) and Date(s)



Historical Map - Segment A13



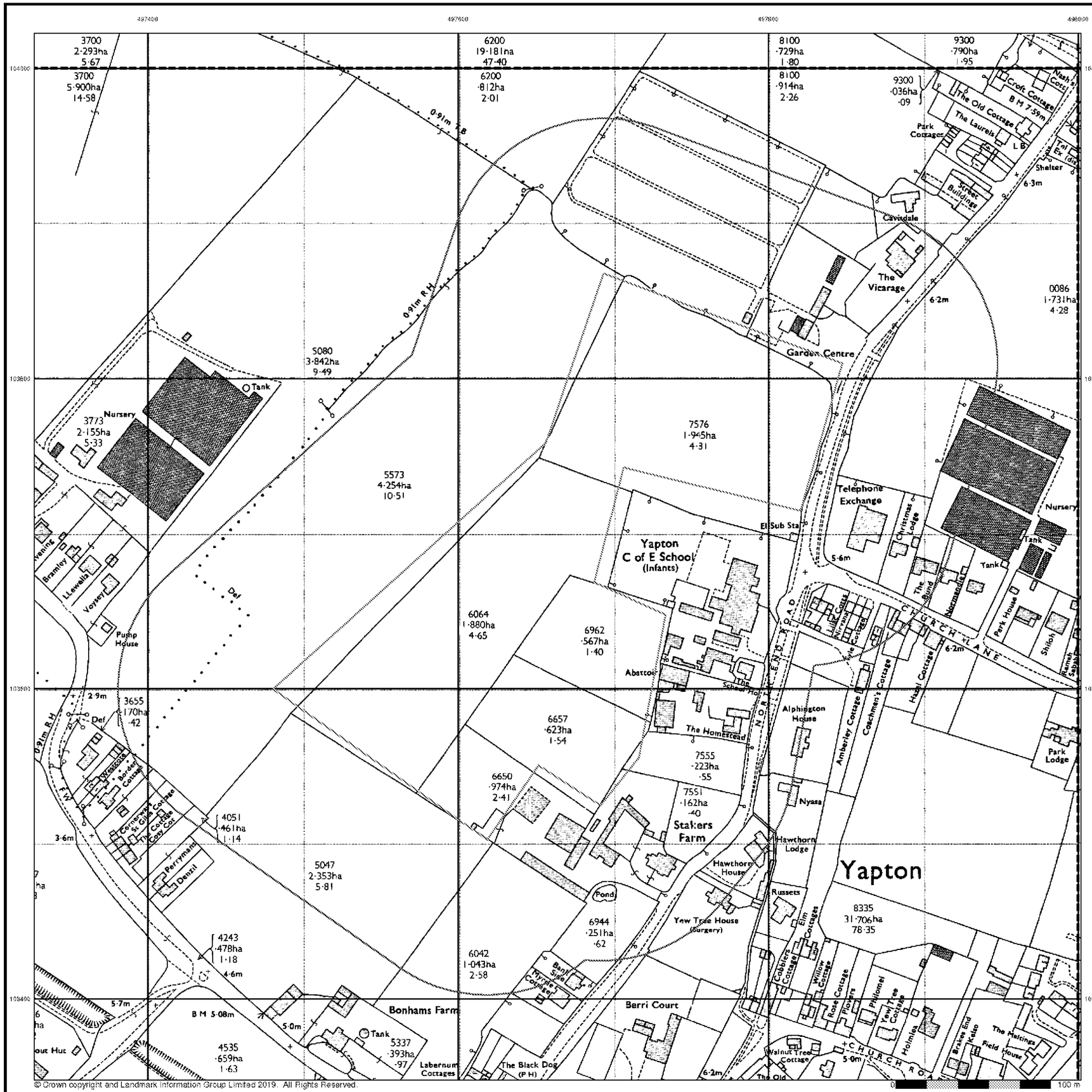
Order Details

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0 100 m

Ordnance Survey Plan

Published 1974 - 1975

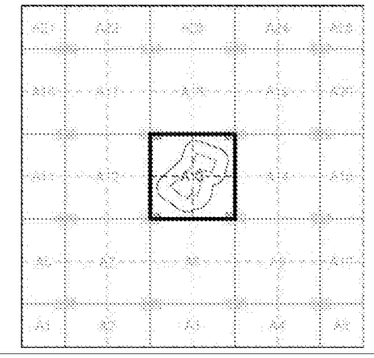
Source map scale - 1:2,500

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)

SU9704 1975 1:2,500	SU9804 1974 1:2,500
SU9703 1975 1:2,500	SU9803 1974 1:2,500

Historical Map - Segment A13



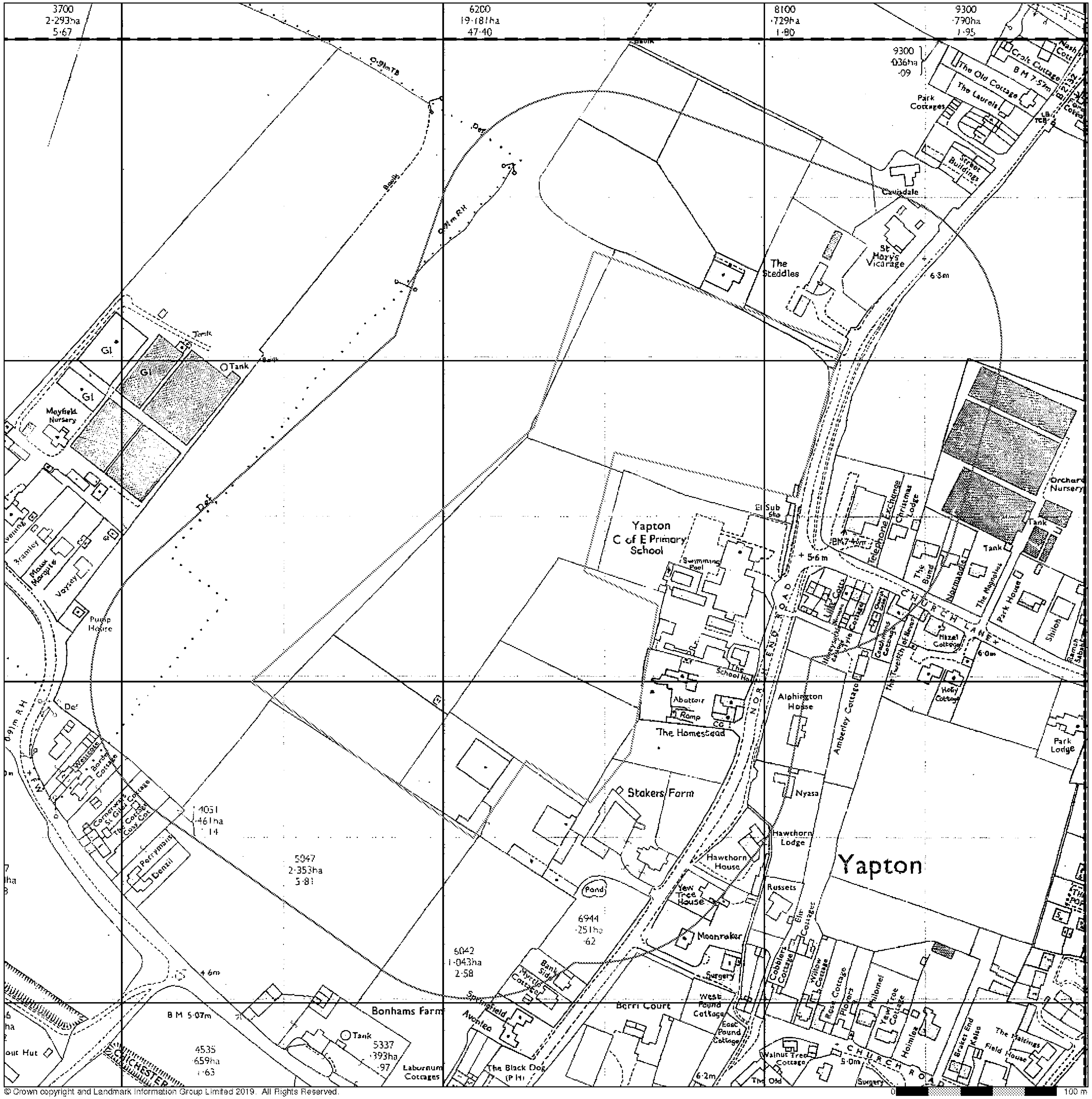
Order Details

Order Number:	195300019_1_1
Customer Ref:	A112666
National Grid Reference:	497670, 103690
Slice:	A
Site Area (Ha):	5.34
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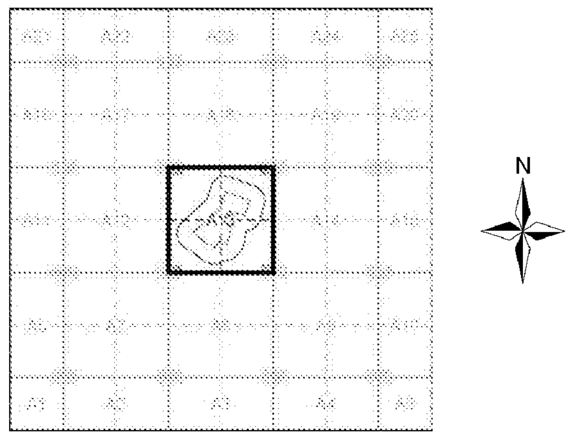
Additional SIMs
Published 1978 - 1992
Source map scale - 1:2,500

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)

SU9704 1984 1:2,500	SU9804 1992 1:2,500
SU9703 1982 1:2,500	SU9803 1978 1:2,500

Historical Map - Segment A13



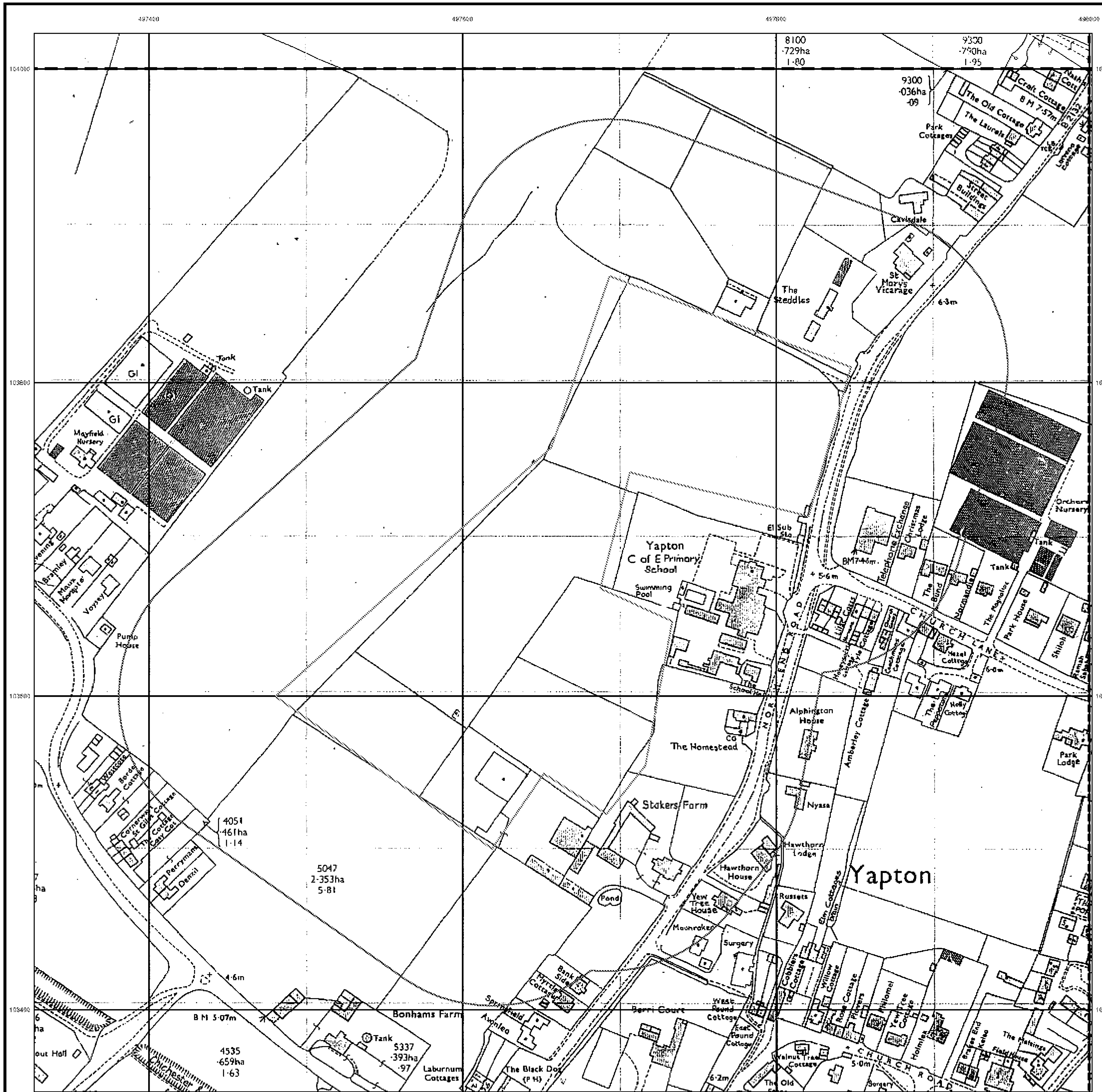
Order Details

Order Number: 195300019_1_1
Customer Ref: A112666
National Grid Reference: 497670, 103690
Slice: A
Site Area (Ha): 5.34
Search Buffer (m): 100

Site Details

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Additional SIMs

Published 1982 - 1988

Source map scale - 1:2,500

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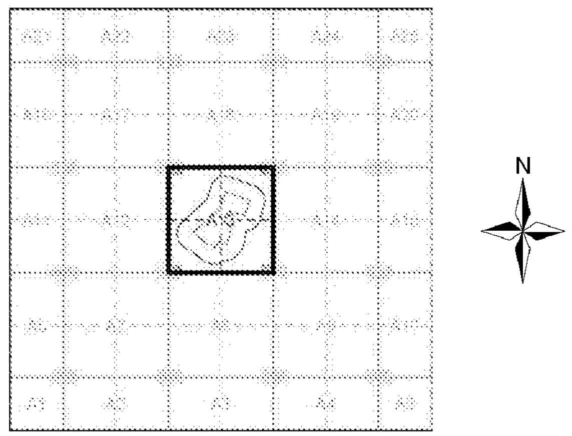
Map Name(s) and Date(s)

SU9704
1987
1:2,500

SU9703
1988
1:2,500

SU9803
1982
1:2,500

Historical Map - Segment A13



Order Details

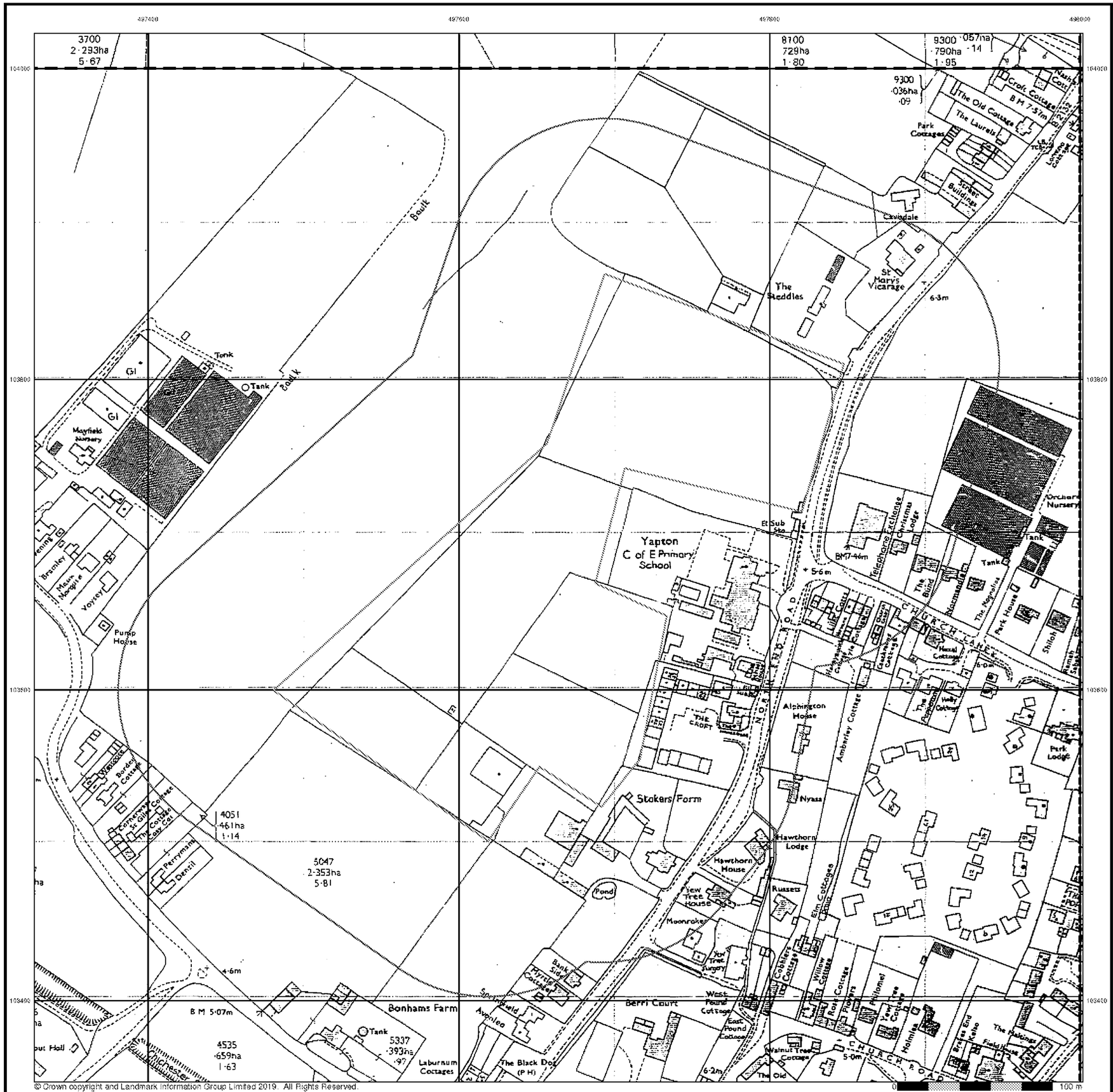
Order Number: 195300019_1_1
Customer Ref: A112666
National Grid Reference: 497670, 103690
Slice: A
Site Area (Ha): 5.34
Search Buffer (m): 100

Site Details

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Additional SIMs

Published 1987 - 1992

Source map scale - 1:2,500

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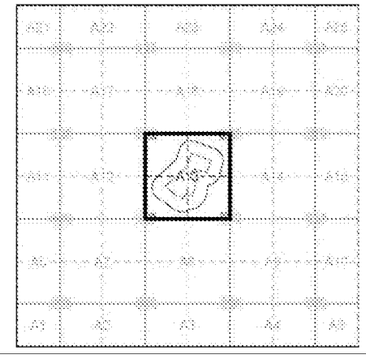
Map Name(s) and Date(s)

SU9704
1992
1:2,500

SU9703
1989
1:2,500

SU9803
1987
1:2,500

Historical Map - Segment A13



N

Order Details

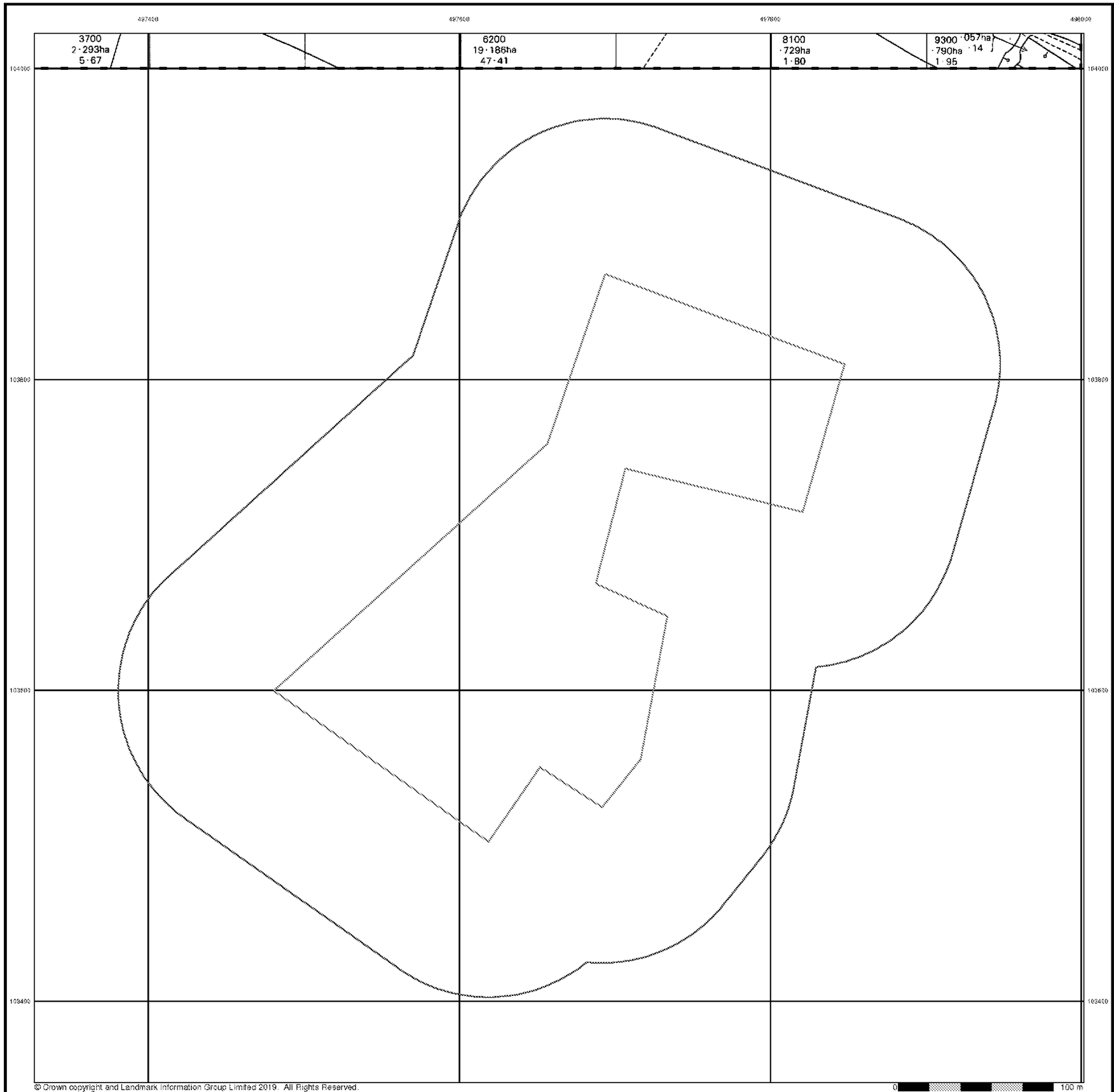
Order Number:	195300019_1_1
Customer Ref:	A112666
National Grid Reference:	497670, 103690
Slice:	A
Site Area (Ha):	5.34
Search Buffer (m):	100

Site Details

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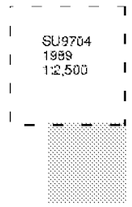
Ordnance Survey Plan

Published 1989

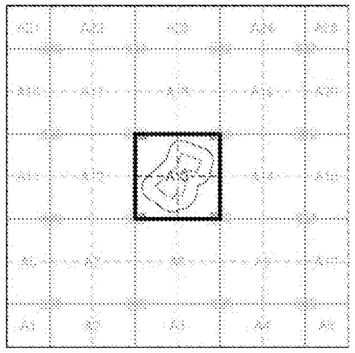
Source map scale - 1:2,500

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Map Name(s) and Date(s)



Historical Map - Segment A13



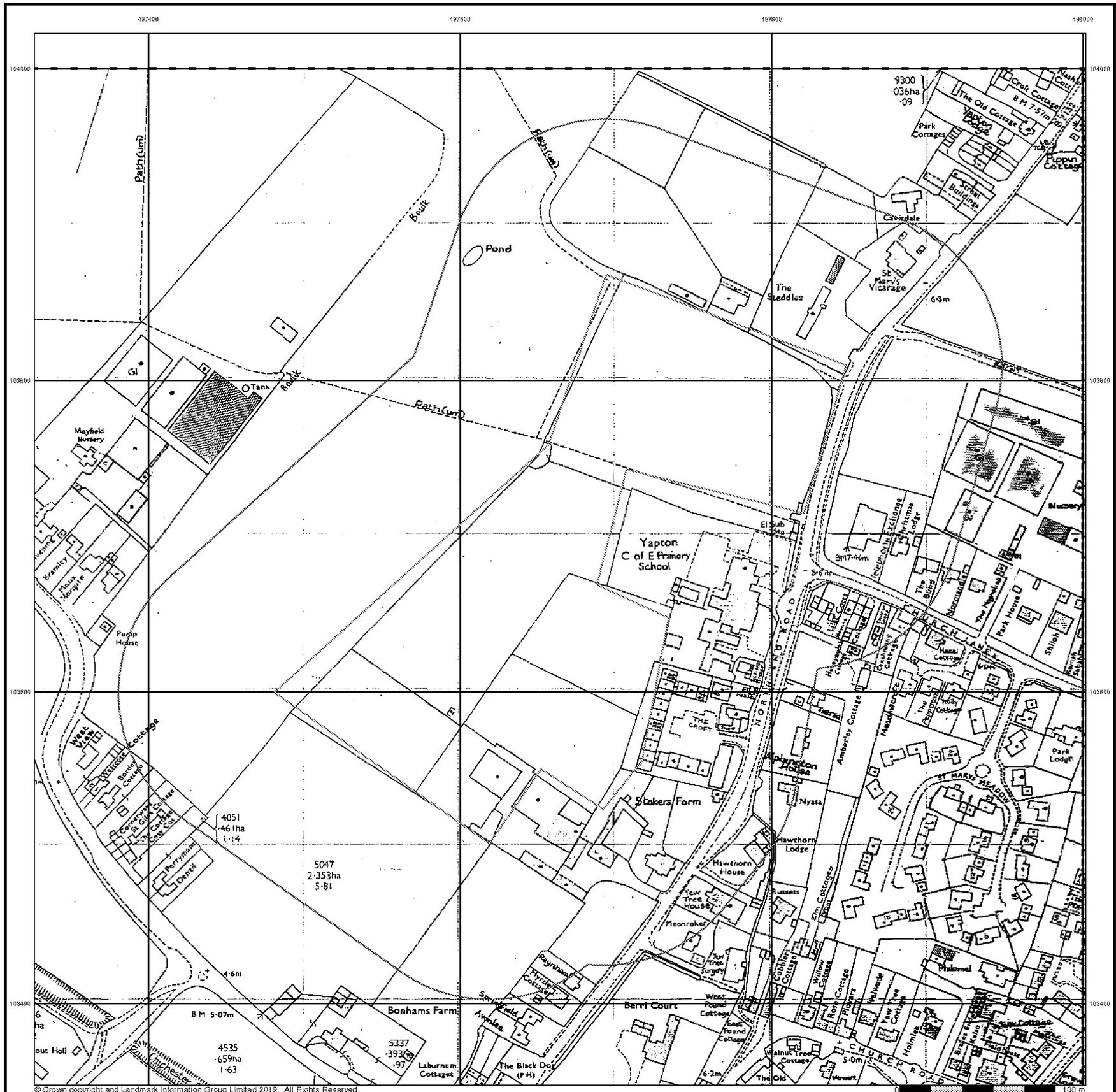
Order Details

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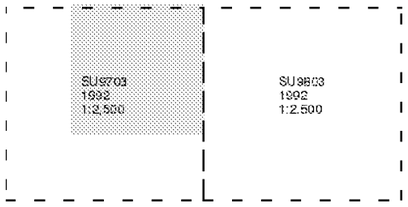
Additional SIMs

Published 1992

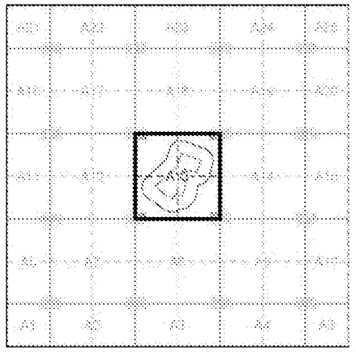
Source map scale - 1:2,500

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Map Name(s) and Date(s)



Historical Map - Segment A13



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Large-Scale National Grid Data

Published 1994

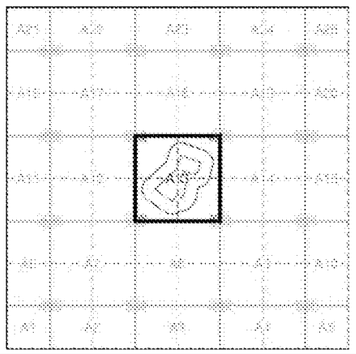
Source map scale - 1:2,500

'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)

SU9704 1994 1:2,500	SU9804 1994 1:2,500
SU9703 1994 1:2,500	SU9803 1994 1:2,500

Historical Map - Segment A13



Order Details

Order Number:	195300019_1_1
Customer Ref:	A112666
National Grid Reference:	497670, 103690
Slice:	A
Site Area (Ha):	5.34
Search Buffer (m):	100

Site Details

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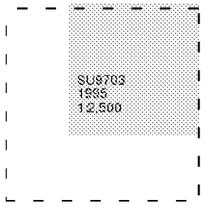
Large-Scale National Grid Data

Published 1995

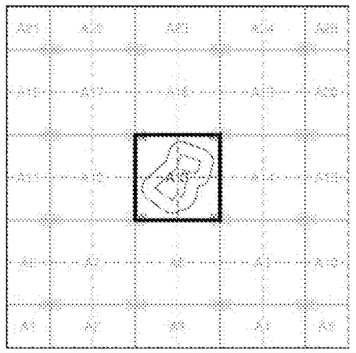
Source map scale - 1:2,500

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Historical Map - Segment A13



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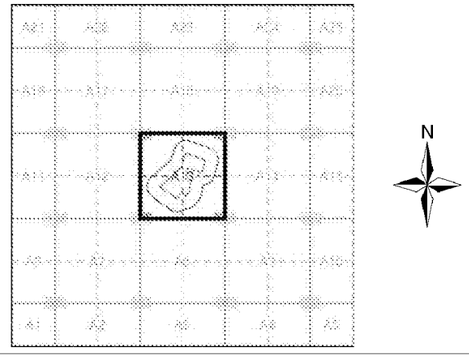


Historical Aerial Photography

Published 1999

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

Historical Aerial Photography - Segment A13



Order Details

Order Number:	195300019_1_1
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Groundwater Vulnerability

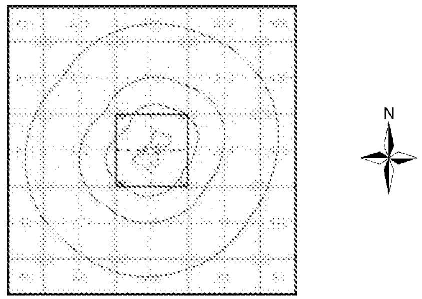
General

- 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

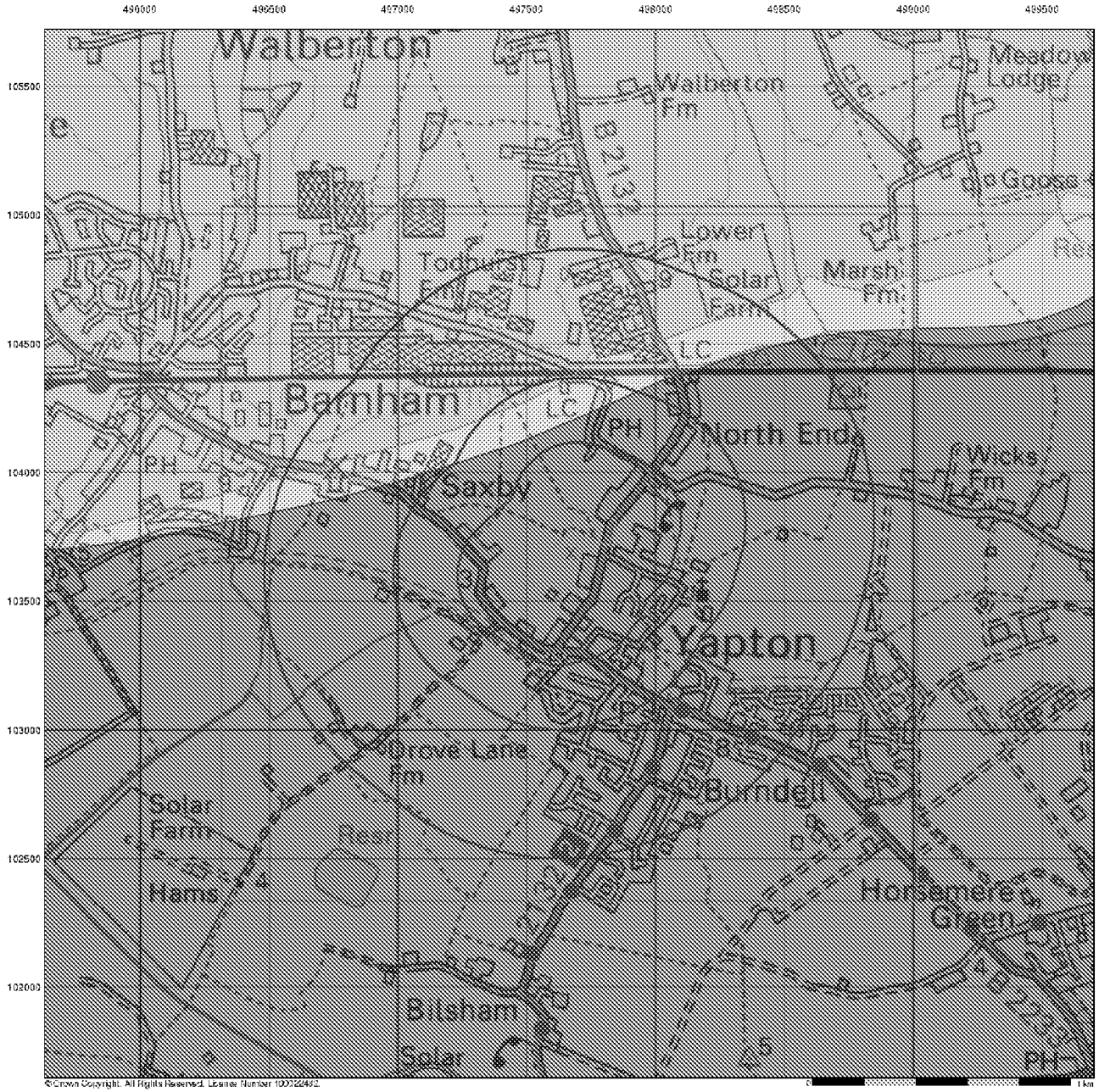


Order Details

Order Number: 195300019_1_1
Customer Ref: A112666
National Grid Reference: 497670, 103690
Slice: A
Site Area (Ha): 5.34
Search Buffer (m): 1000

Site Details

Land at Stakers Farm, North End Road, Yapton, ARUNDEL, BN18 0DU



Bedrock Aquifer Designation

General

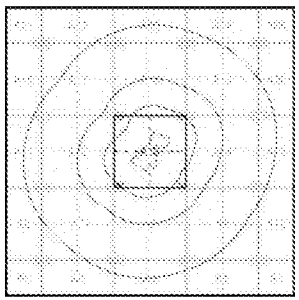
Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

Agency and Hydrological

Geological Classes

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

Site Sensitivity Context Map - Slice A



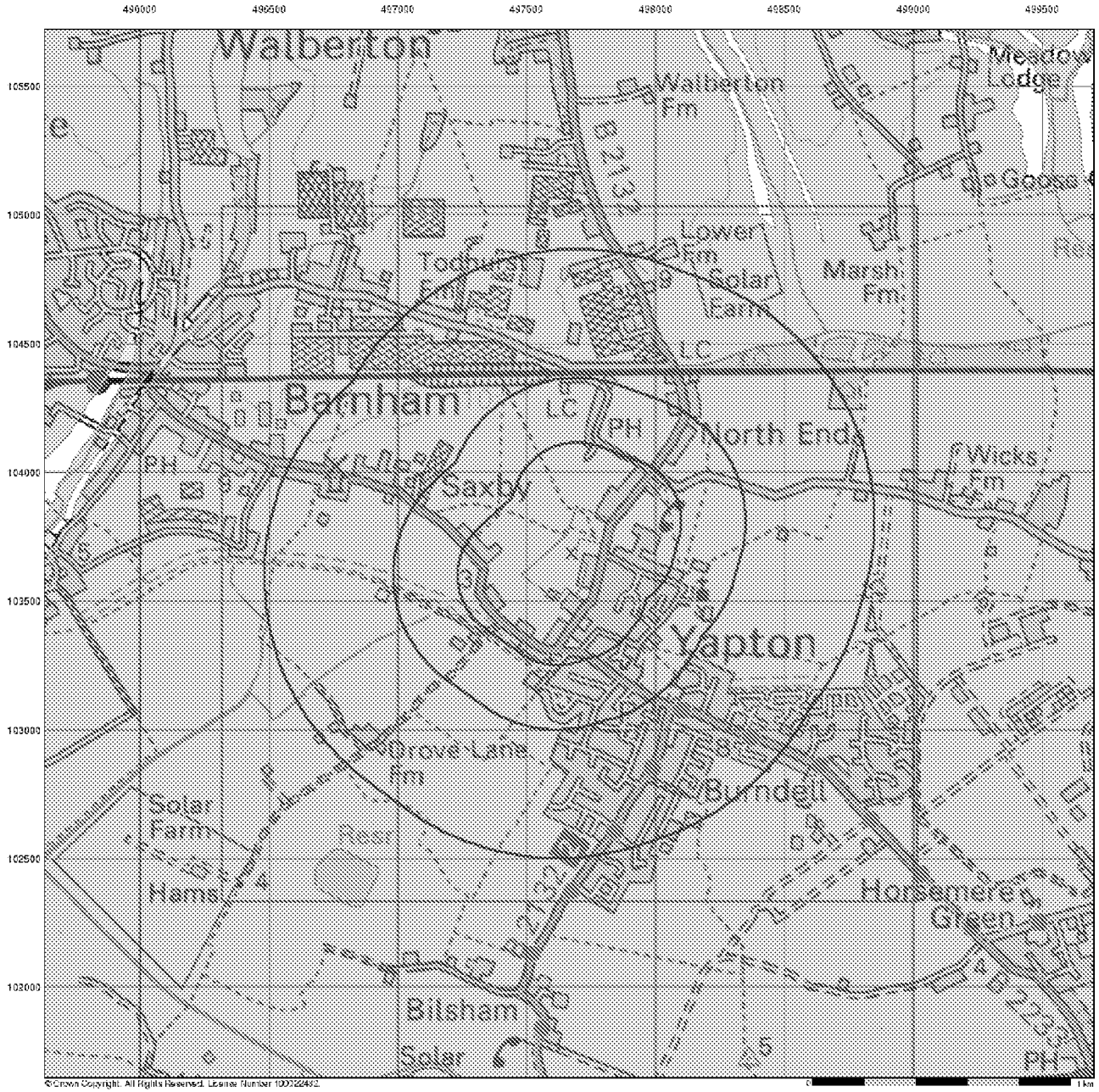
Order Details

Order Number:	195300019_1_1
Customer Ref:	A112666
National Grid Reference:	497670, 103690
Slice:	A
Site Area (Ha):	5.34
Search Buffer (m):	1000

Site Details

Land at Stakers Farm, North End Road, Yapton, ARUNDEL, BN18 0DU

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



Superficial Aquifer Designation

General

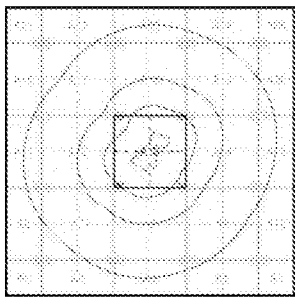
Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

Agency and Hydrological

Geological Classes

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

Site Sensitivity Context Map - Slice A



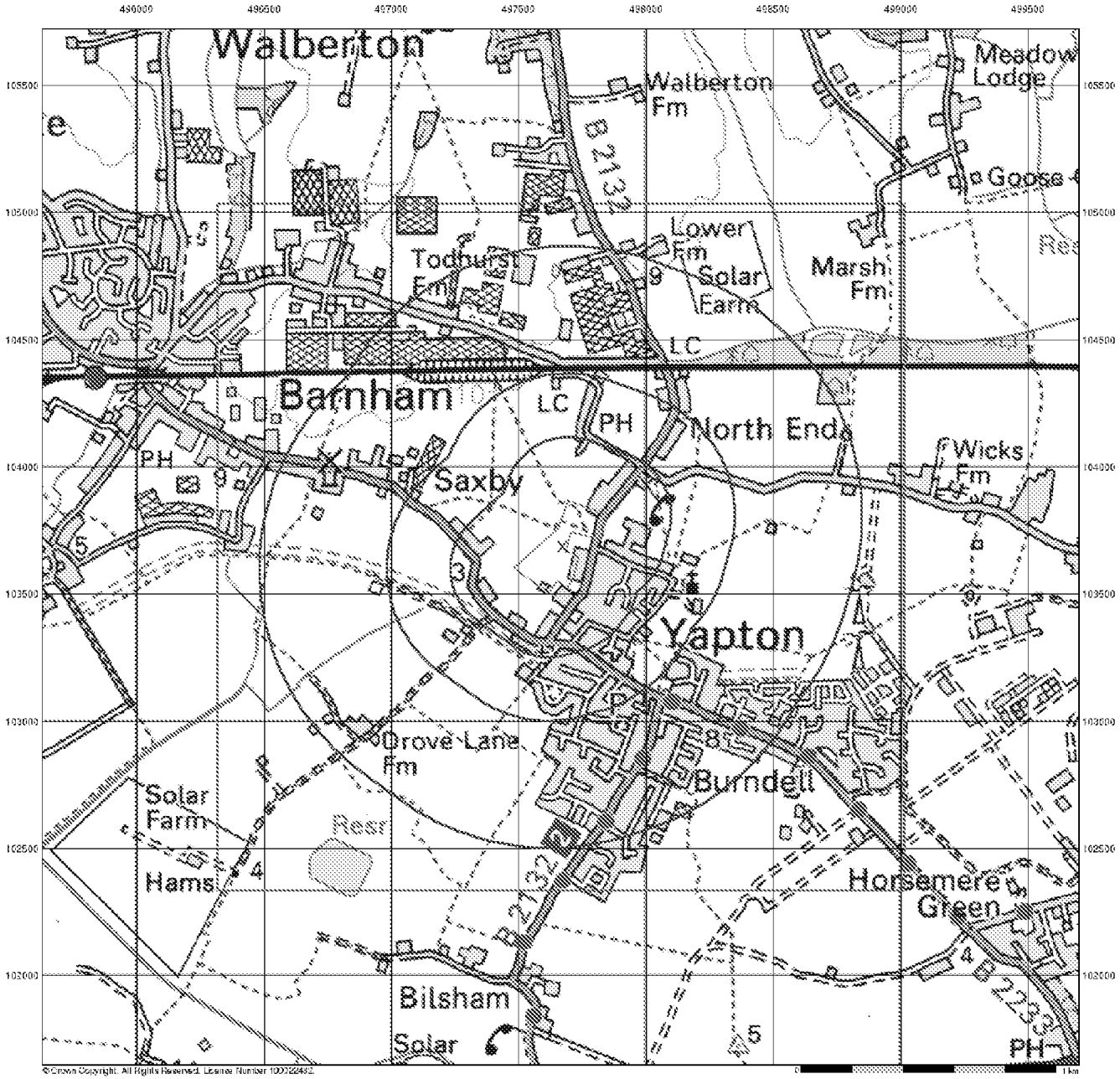
Order Details

Order Number:	195300019_1_1
Customer Ref:	A112666
National Grid Reference:	497670, 103690
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Source Protection Zones

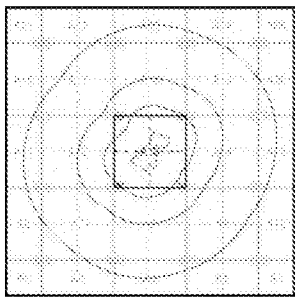
General

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

Agency and Hydrological

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

Site Sensitivity Context Map - Slice A



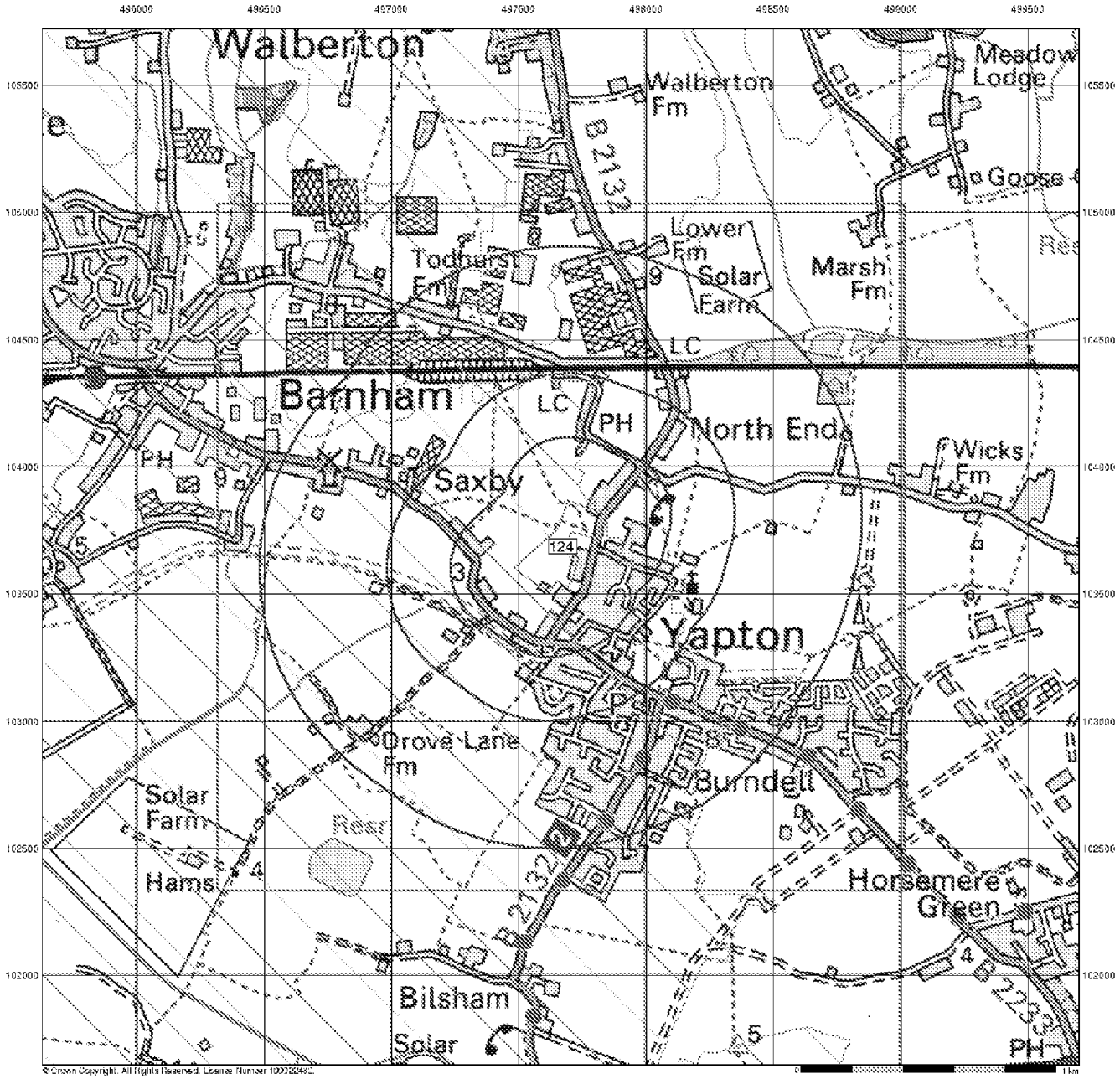
Order Details

Order Number:	195300019_1_1
Customer Ref:	A112666
National Grid Reference:	497670, 103690
Slice:	A
Site Area (Ha):	5.34
Search Buffer (m):	1000

Site Details

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Sensitive Land Uses

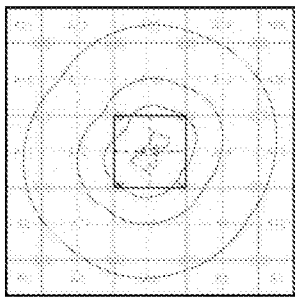
General

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

Sensitive Land Uses

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

Site Sensitivity Context Map - Slice A



Order Details

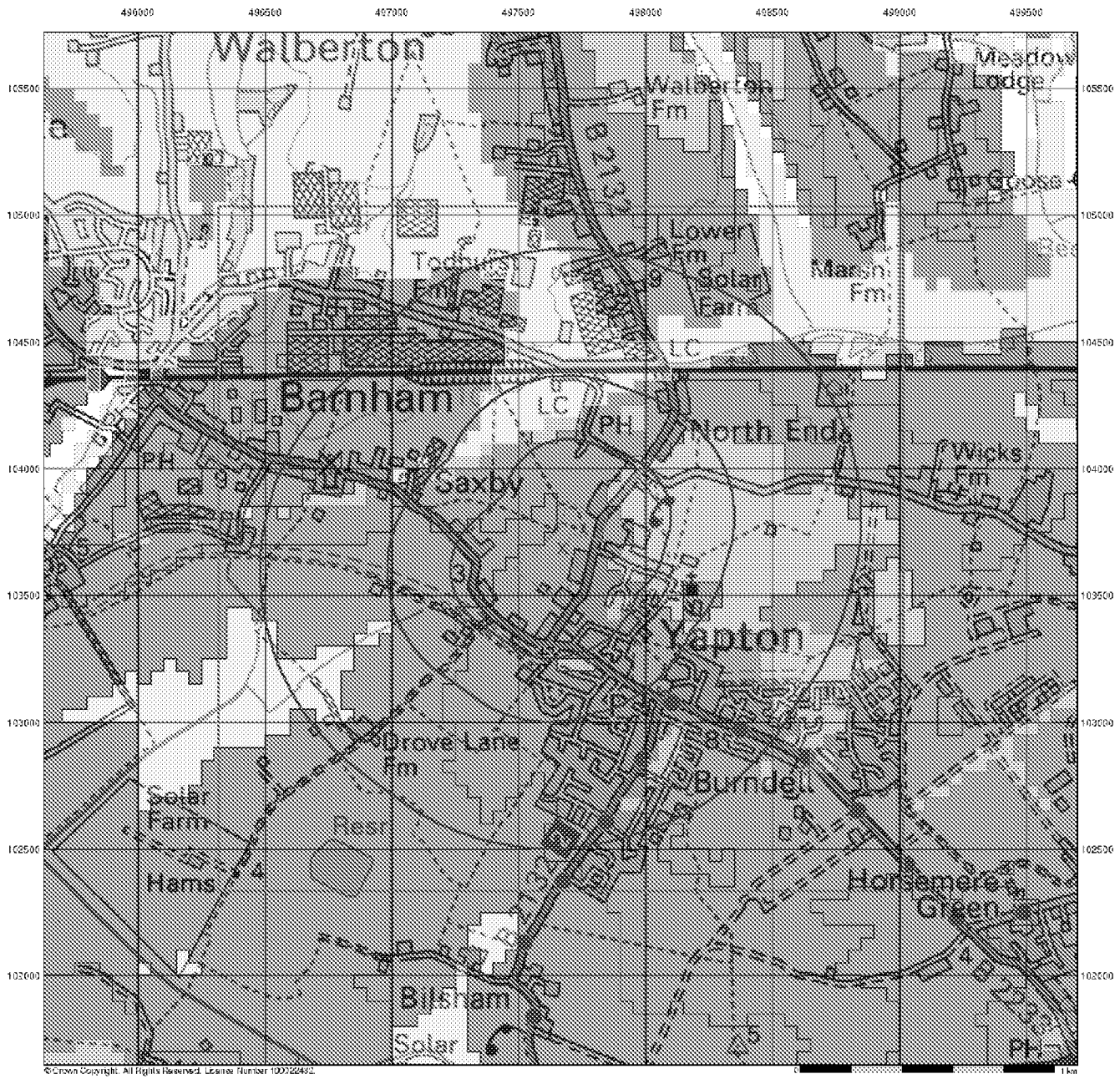
Order Number:	195300019_1_1
Customer Ref:	A112666
National Grid Reference:	497670, 103690
Slice:	A
Site Area (Ha):	5.34
Search Buffer (m):	1000

Site Details

Land at Stakers Farm, North End Road, Yapton, ARUNDEL, BN18 0DU

Landmark Information Group

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BGS Flood GFS Data

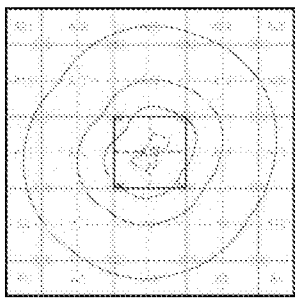
General

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

Agency and Hydrological (Flood)

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

Site Sensitivity Context Map - Slice A



Order Details

Order Number:	195300019_1_1
Customer Ref:	A112666
National Grid Reference:	497670, 103690
Slice:	A
Site Area (Ha):	5.34
Search Buffer (m):	1000

Site Details

Land at Stakers Farm, North End Road, Yapton, ARUNDEL, BN18 0DU

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

Envirocheck® Report:

Datasheet

Order Details:

Order Number:
195300019_1_1

Customer Reference:
A112666

National Grid Reference:
497670, 103690

Slice:
A

Site Area (Ha):
5.34

Search Buffer (m):
1000

Site Details:

Land at Stakers Farm, North End Road
Yapton
ARUNDEL
BN18 0DU

Client Details:

Dr S Roberts
WYG Environment Planning Transport Ltd
Level 5, Longcross Court
47 Newport Road
Cardiff
CF24 0AD

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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 this 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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Report Version v53.0

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Agency & Hydrological					
BGS Groundwater Flooding Susceptibility	pg 1	Yes	Yes	Yes	n/a
Contaminated Land Register Entries and Notices					
Discharge Consents	pg 1			1	6
Prosecutions Relating to Controlled Waters			n/a	n/a	n/a
Enforcement and Prohibition Notices					
Integrated Pollution Controls					
Integrated Pollution Prevention And Control					
Local Authority Integrated Pollution Prevention And Control					
Local Authority Pollution Prevention and Controls					
Local Authority Pollution Prevention and Control Enforcements					
Nearest Surface Water Feature	pg 3		Yes		
Pollution Incidents to Controlled Waters	pg 3				1
Prosecutions Relating to Authorised Processes					
Registered Radioactive Substances					
River Quality					
River Quality Biology Sampling Points					
River Quality Chemistry Sampling Points					
Substantiated Pollution Incident Register					
Water Abstractions	pg 3		1		7 (*18)
Water Industry Act Referrals					
Groundwater Vulnerability	pg 9	Yes	n/a	n/a	n/a
Drift Deposits			n/a	n/a	n/a
Bedrock Aquifer Designations	pg 10	Yes	n/a	n/a	n/a
Superficial Aquifer Designations	pg 10	Yes	n/a	n/a	n/a
Source Protection Zones					
Extreme Flooding from Rivers or Sea without Defences	pg 10		Yes	n/a	n/a
Flooding from Rivers or Sea without Defences	pg 10		Yes	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
OS Water Network Lines	pg 10		1	1	40

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 15		1		1
Integrated Pollution Control Registered Waste Sites					
Licensed Waste Management Facilities (Landfill Boundaries)					
Licensed Waste Management Facilities (Locations)	pg 15				1
Local Authority Landfill Coverage	pg 15	2	n/a	n/a	n/a
Local Authority Recorded Landfill Sites	pg 15				1
Potentially Infilled Land (Non-Water)	pg 15			1	2
Potentially Infilled Land (Water)	pg 16		1		13
Registered Landfill Sites	pg 17				1
Registered Waste Transfer Sites					
Registered Waste Treatment or Disposal Sites	pg 17				1
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					

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Geological					
BGS 1:625,000 Solid Geology	pg 18	Yes	n/a	n/a	n/a
BGS Estimated Soil Chemistry	pg 18	Yes	Yes	Yes	Yes
BGS Recorded Mineral Sites	pg 18			1	2
BGS Urban Soil Chemistry					
BGS Urban Soil Chemistry Averages					
CBSCB Compensation District			n/a	n/a	n/a
Coal Mining Affected Areas			n/a	n/a	n/a
Mining Instability			n/a	n/a	n/a
Man-Made Mining Cavities					
Natural Cavities					
Non Coal Mining Areas of Great Britain				n/a	n/a
Potential for Collapsible Ground Stability Hazards	pg 19	Yes		n/a	n/a
Potential for Compressible Ground Stability Hazards				n/a	n/a
Potential for Ground Dissolution Stability Hazards	pg 19	Yes		n/a	n/a
Potential for Landslide Ground Stability Hazards	pg 19	Yes		n/a	n/a
Potential for Running Sand Ground Stability Hazards	pg 19	Yes		n/a	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards	pg 19	Yes		n/a	n/a
Radon Potential - Radon Affected Areas			n/a	n/a	n/a
Radon Potential - Radon Protection Measures			n/a	n/a	n/a
Industrial Land Use					
Contemporary Trade Directory Entries	pg 20		20	4	25
Fuel Station Entries	pg 24		1		1
Points of Interest - Commercial Services	pg 24		3	3	5
Points of Interest - Education and Health					
Points of Interest - Manufacturing and Production	pg 25				15
Points of Interest - Public Infrastructure	pg 26				1
Points of Interest - Recreational and Environmental	pg 27				3
Gas Pipelines					
Underground Electrical Cables					

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Sensitive Land Use					
Ancient Woodland					
Areas of Adopted Green Belt					
Areas of Unadopted Green Belt					
Areas of Outstanding Natural Beauty					
Environmentally Sensitive Areas					
Forest Parks					
Local Nature Reserves					
Marine Nature Reserves					
National Nature Reserves					
National Parks					
Nitrate Sensitive Areas					
Nitrate Vulnerable Zones	pg 28	1			
Ramsar Sites					
Sites of Special Scientific Interest					
Special Areas of Conservation					
Special Protection Areas					
World Heritage Sites					

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NW (N)	0	1	497650 103750
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NE (S)	0	1	497671 103686
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13SE (E)	39	1	497850 103650
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13SE (SE)	145	1	497850 103500
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A18SW (N)	237	1	497650 104100
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A8NE (S)	255	1	497671 103250
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A18SW (N)	298	1	497500 104100
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A18SE (NE)	337	1	497900 104150
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A18SW (NW)	346	1	497400 104050
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13NW (NW)	369	1	497350 104000
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A14SW (E)	369	1	498150 103550
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A17SE (NW)	445	1	497300 104100
1	**Discharge Consents** Operator: Mitcham Tyre Mart Property Type: DOMESTIC PROPERTY (SINGLE) (INCL FARM HOUSE) Location: Lake Barn, Maypole Lane, Yapton Lake Barn, Maypole Lane, Yapton, West Sussex, Bn18 0dr Authority: Environment Agency, Southern Region Catchment Area: Adur Estuary & Freshwater Tributaries Reference: P11155 Permit Version: 1 Effective Date: 8th July 2003 Issued Date: 8th July 2003 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Land/Soakaway Receiving Water: 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	A18SE (N)	493	2	497700 104360
2	**Discharge Consents** Operator: Mrs A.M.Cooper Property Type: DOMESTIC PROPERTY (SINGLE) (INCL FARM HOUSE) Location: Lake Dell, Maypole Lane, Yapton , Arundel West Sussex Authority: Environment Agency, Southern Region Catchment Area: Not Given Reference: P00609 Permit Version: 1 Effective Date: 11th September 1986 Issued Date: 11th September 1986 Revocation Date: 31st March 1997 Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Land/Soakaway Receiving Water: Into Land **Status:** **Lapsed (under Environment Act 1995, Schedule 23)** Positional Accuracy: Located by supplier to within 100m	A18NE (N)	575	2	497740 104440

ARUN DISTRICT COUNCIL Y/72/20/RES

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
3	**Discharge Consents** Operator: Mr M Tristram & Mr D Tristram Property Type: DOMESTIC PROPERTY (SINGLE) (INCL FARM HOUSE) Location: Binsted Nursery Lake Lane Site Lake Lane, Barnham, ., West Sussex, Po22 0al Authority: Environment Agency, Southern Region Catchment Area: Aldingbourne/Barnham Rife Reference: Npswqd003181 Permit Version: 1 Effective Date: 18th June 2008 Issued Date: 18th June 2008 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Tributary Of Ryebank Rife **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	A18NW (N)	787	2	497344 104572
4	**Discharge Consents** Operator: Mr Richard Hocking Property Type: Mixed Farming Location: Drove Lane Farm, Yapton, Arundel, West Sussex, Bn18 0eb Authority: Environment Agency, Southern Region Catchment Area: Not Supplied Reference: App/So/107su Permit Version: 1 Effective Date: 1st April 1999 Issued Date: 1st April 1999 Revocation Date: Not Supplied Discharge Type: Trade Discharge - Process Water 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	A7SW (SW)	861	2	496940 102930
5	**Discharge Consents** Operator: Enterprising Developments Ltd Property Type: DOMESTIC PROPERTY (MULTIPLE) (INCL FARM HOUSES) Location: New Estate At Belmont Estate, YAPTON Authority: Environment Agency, Southern Region Catchment Area: Not Given Reference: S02741 Permit Version: 1 Effective Date: 1st July 1991 Issued Date: 1st July 1991 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	A9SW (SE)	881	2	498110 102750
6	**Discharge Consents** Operator: James Turner Property Type: Undefined Or Other Location: Star Plants, Lakes Lane, Barnham, West Sussex Authority: Environment Agency, Southern Region Catchment Area: Not Supplied Reference: App/So/120su Permit Version: 1 Effective Date: 1st April 1999 Issued Date: 1st April 1999 Revocation Date: 30th March 2006 Discharge Type: Trade Discharge - Process Water Discharge Environment: Into Land Receiving Water: Into Land **Status:** **Revoked Groundwater Regulations Authorisation** Positional Accuracy: Located by supplier to within 10m	A23SW (N)	900	2	497580 104760

ARUN DISTRICT COUNCIL Y/72/20/RES

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
7	**Discharge Consents** Operator: Ambleside Developments Ltd. Property Type: CONSTRUCTION OF BUILDINGS Location: Residential Development, Off Cherry Lane, Yapton West Sussex Authority: Environment Agency, Southern Region Catchment Area: Not Given Reference: S02208 Permit Version: 1 Effective Date: 21st August 1973 Issued Date: 21st August 1973 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	A9SW (SE)	916	2	498090 102700
	Nearest Surface Water Feature	A13NW (N)	78	-	497609 103872
8	**Pollution Incidents to Controlled Waters** Property Type: Water Company Sewage: Treated Water Distribution System Location: Location Description Not Available Authority: Environment Agency, Southern Region Pollutant: Surcharged Sewage Note: Sewage Flooding Garden;Running Along Road;Entering W/C Incident Date: 7th January 1998 Incident Reference: 2362 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	A18NE (N)	543	2	497800 104400
9	**Water Abstractions** Operator: Mr A Clay Esq Licence Number: 10/41/411007 Permit Version: 100 Location: The Streddles, North End Road, Yapton Authority: Environment Agency, Southern Region Abstraction: Agriculture: Horticultural Watering 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 April Authorised End: 31 March Permit Start Date: 18th July 1979 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A13NE (NE)	17	2	497840 103830
10	**Water Abstractions** Operator: Adviserate T/A Southdown Flowers Licence Number: 412002 Permit Version: Not Supplied Location: Adviserate Limited Authority: Environment Agency, Southern Region Abstraction: Spray Irrigation Abstraction Type: Not Supplied Source: Surface Daily Rate (m3): 68 Yearly Rate (m3): 18181 Details: Todhurst Rife (Trib Arun) Authorised Start: Not Supplied Authorised End: Not Supplied Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A18NE (NE)	607	2	498000 104400

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
11	**Water Abstractions** Operator: Fresh Acres Nurseries Ltd Licence Number: 10/41/412002 Permit Version: 100 Location: Todhurst Rife At Yapton Lane, Walberton Authority: Environment Agency, Southern Region Abstraction: General Agriculture: Spray Irrigation - Direct Abstraction Type: Water may be abstracted from a river or stream reach, or a row of wellpoints Source: Surface Daily Rate (m3): 68 Yearly Rate (m3): 18181.6 Details: See Licence Map Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 29th June 1998 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A18NE (N)	714	2	497730 104580
12	**Water Abstractions** Operator: Star Nurseries Ltd Licence Number: 27/176 Permit Version: 101 Location: Todhurst Rife At Star Nurseries, Barnham Authority: Environment Agency, Southern Region Abstraction: Horticulture and Nurseries: Spray Irrigation - Spray Irrigation Definition Order Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Outlined On Map Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 13th October 2016 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A23SE (N)	833	2	497700 104700
12	**Water Abstractions** Operator: Star Nurseries Ltd Licence Number: 27/176 Permit Version: 100 Location: Todhurst Rife At Star Nurseries, Barnham Authority: Environment Agency, Southern Region Abstraction: Horticulture and Nurseries: Spray Irrigation - Spray Irrigation Definition Order Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Outlined On Map Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 16th June 2009 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A23SE (N)	833	2	497700 104700
13	**Water Abstractions** Operator: Eric Wall Holdings Ltd Licence Number: 10/41/542208 Permit Version: 100 Location: Point B, Lake Lane,Barnham Authority: Environment Agency, Southern Region Abstraction: Horticulture And Nurseries: Spray Irrigation - Direct Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: The Water Abstracted Shall Only Be Used On Land And Buildings On The Occupation Of The Licence Holder At Lake Lane,Barnham Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 10th June 2009 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A17NE (NW)	921	2	497110 104580

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Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
14	**Water Abstractions** Operator: Keith Langmead Ltd Licence Number: 10/41/412007 Permit Version: 101 Location: Wicks Farm, Ford Authority: Environment Agency, Southern Region Abstraction: General Agriculture: Spray Irrigation - Direct 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 June Authorised End: 30 September Permit Start Date: 31st March 2016 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A15NW (E)	950	2	498790 103930
14	**Water Abstractions** Operator: Mr A C Langmead Esq Licence Number: 10/41/412007 Permit Version: 100 Location: Wicks Farm, Ford Authority: Environment Agency, Southern Region Abstraction: General Agriculture: Spray Irrigation - Direct 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 June Authorised End: 30 September Permit Start Date: 30th May 1989 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A15NW (E)	950	2	498790 103930
	Water Abstractions Operator: Mr R Lonsdale Licence Number: 10/41/542008 Permit Version: 101 Location: Point A At Tile Barn Farm,Barnham Authority: Environment Agency, Southern Region Abstraction: General Agriculture: Spray Irrigation - Direct Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Water Abstracted Shall Be Used On Land And Buildings In The Occupation Of The Licence Holder At Tile Barn Farm Authorised Start: 01 April Authorised End: 30 September Permit Start Date: 17th January 2008 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A11NE (W)	1025	2	496460 103690
	Water Abstractions Operator: Mr R Lonsdale Licence Number: 10/41/542008 Permit Version: 100 Location: Point A At Tile Barn Farm,Barnham Authority: Environment Agency, Southern Region Abstraction: General Agriculture: Spray Irrigation - Direct Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Water Abstracted Shall Be Used On Land And Buildings In The Occupation Of The Licence Holder At Tile Barn Farm Authorised Start: 01 April Authorised End: 30 September Permit Start Date: 14th January 1974 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A11NE (W)	1025	2	496460 103690

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Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Walberton Nursery Llp Licence Number: 10/41/412006 Permit Version: 101 Location: Todhurst Barn, Yapton Lane, Walberton Authority: Environment Agency, Southern Region Abstraction: Agriculture: Horticultural Watering 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 April Authorised End: 30 September Permit Start Date: 24th January 2014 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A23SW (N)	1106	2	497610 104970
	Water Abstractions Operator: D Tristram T/A Walberton Nurseries Licence Number: 10/41/412006 Permit Version: 100 Location: Todhurst Barn, Yapton Lane, Walberton Authority: Environment Agency, Southern Region Abstraction: Agriculture: Horticultural Watering 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 April Authorised End: 30 September Permit Start Date: 1st April 2008 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A23SW (N)	1106	2	497610 104970
	Water Abstractions Operator: Eric Wall Holdings Ltd Licence Number: 10/41/542208 Permit Version: 100 Location: Point A, Lake Lane,Barnham Authority: Environment Agency, Southern Region Abstraction: Horticulture And Nurseries: Spray Irrigation - Direct Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): 545 Yearly Rate (m3): 100000 Details: The Water Abstracted Shall Only Be Used On Land And Buildings On The Occupation Of The Licence Holder At Lake Lane,Barnham Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 10th June 2009 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A17NW (NW)	1185	2	496740 104570
	Water Abstractions Operator: Keith Langmead Ltd Licence Number: 27/190 Permit Version: 102 Location: Point A On Binstead Rife, Wicks Farm, Yapton Authority: Environment Agency, Southern Region Abstraction: General Agriculture: Spray Irrigation - Storage Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Shown Outlined In Red On Licence Map Authorised Start: 01 November Authorised End: 31 March Permit Start Date: 4th December 2010 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A20NW (NE)	1191	2	498810 104510

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Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Keith Langmead Ltd Licence Number: 27/190 Permit Version: 101 Location: Point A On Binstead Rife, Wicks Farm, Yapton Authority: Environment Agency, Southern Region Abstraction: General Agriculture: Spray Irrigation - Storage Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Shown Outlined In Black On Licence Map Authorised Start: 01 November Authorised End: 31 March Permit Start Date: 1st April 2001 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A20NW (NE)	1191	2	498810 104510
	Water Abstractions Operator: A.C. Langmead Ltd Licence Number: 27/190 Permit Version: 100 Location: Point A On Binstead Rife, Wicks Farm, Yapton Authority: Environment Agency, Southern Region Abstraction: General Agriculture: Spray Irrigation - Storage Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Shown Outlined In Black On Licence Map Authorised Start: 01 November Authorised End: 31 March Permit Start Date: 16th August 1996 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A20NW (NE)	1191	2	498810 104510
	Water Abstractions Operator: Walberton Nursery Llp Licence Number: 27/194a/R01 Permit Version: 1 Location: Point A At Walberton Nurseries, Walberton Authority: Environment Agency, Southern Region Abstraction: General Agriculture: Spray Irrigation - Direct Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: No Longer Applicable Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 1st April 2016 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A23NW (N)	1314	2	497640 105180
	Water Abstractions Operator: Walberton Nursery Llp Licence Number: 27/194a Permit Version: 2 Location: Point A At Walberton Nurseries, Walberton Authority: Environment Agency, Southern Region Abstraction: General Agriculture: Spray Irrigation - Direct Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: No Longer Applicable Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 17th April 2014 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A23NW (N)	1314	2	497640 105180

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Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: D Tristram T/A Walberton Nurseries Licence Number: 27/194a Permit Version: 1 Location: Point A At Walberton Nurseries, Walberton Authority: Environment Agency, Southern Region Abstraction: General Agriculture: Spray Irrigation - Direct Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: No Longer Applicable Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 16th June 2009 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A23NW (N)	1314	2	497640 105180
	Water Abstractions Operator: D Tristram T/A Walberton Nurseries Licence Number: 27/194 Permit Version: 100 Location: Point A At Walberton Nurseries, Walberton Authority: Environment Agency, Southern Region Abstraction: Horticulture And Nurseries: Spray Irrigation - Direct Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Shown Outlined Black On Attached Map Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 2nd April 1998 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A23NW (N)	1314	2	497640 105180
	Water Abstractions Operator: Mr A Langmead Licence Number: 10/41/412004 Permit Version: 100 Location: Wicks Farm, Yapton 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 April Authorised End: 31 March Permit Start Date: 2nd April 1987 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A15NE (E)	1486	2	499330 103910
	Water Abstractions Operator: Toddington Nurseries Limited Licence Number: 10/41/542209 Permit Version: 102 Location: At Lake Lane,Barnham Authority: Environment Agency, Southern Region Abstraction: Horticulture And Nurseries: Spray Irrigation - Direct Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Water Abstracted Shall Only Be Used On Land And Buildings Marked In Pink On The Plan Accompanying The Licence Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 9th August 2013 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A22NW (NW)	1607	2	496740 105160

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Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Kirin Agribo Toddington Ltd Licence Number: 10/41/542209 Permit Version: 101 Location: At Lake Lane,Barnham Authority: Environment Agency, Southern Region Abstraction: Horticulture And Nurseries: Spray Irrigation - Direct Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Water Abstracted Shall Only Be Used On Land And Buildings Marked In Pink On The Plan Accompanying The Licence Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 10th June 2009 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A22NW (NW)	1607	2	496740 105160
	Water Abstractions Operator: Southern Glasshouse Produce Ltd Licence Number: 10/41/542209 Permit Version: 100 Location: At Lake Lane,Barnham Authority: Environment Agency, Southern Region Abstraction: Horticulture And Nurseries: Spray Irrigation - Direct Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Water Abstracted Shall Only Be Used On Land And Buildings Marked In Pink On The Plan Accompanying The Licence Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 15th June 1992 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A22NW (NW)	1607	2	496740 105160
	Water Abstractions Operator: Tarmac Ltd Licence Number: 27/198 Permit Version: 1 Location: Ford Industrial Estate, Arundel Authority: Environment Agency, Southern Region Abstraction: Construction: Process Water Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Outlined In Black On Attached Map Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 4th January 2001 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(E)	1734	2	499530 103390
	Water Abstractions Operator: Tarmac Heavy Building Materials Ltd Licence Number: 27/196 Permit Version: 1 Location: Ford Industrial Estate, Arundel Authority: Environment Agency, Southern Region Abstraction: Construction: Process Water Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Outlined On Licence Map Authorised Start: 13 March Authorised End: 31 December Permit Start Date: 13th March 2000 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(E)	1734	2	499530 103390
	Groundwater Vulnerability Soil Classification: Soils of Intermediate Leaching Potential (I1) - Soils which can possibly transmit a wide range of pollutants Map Sheet: Sheet 45 West Sussex and Surrey Scale: 1:100,000	A13NE (S)	0	2	497671 103686
	Drift Deposits None				

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Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Bedrock Aquifer Designations Aquifer Designation: Principal Aquifer	A13NE (S)	0	3	497671 103686
	Superficial Aquifer Designations Aquifer Designation: Secondary Aquifer - A	A13NE (S)	0	3	497671 103686
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13SW (W)	81	2	497411 103644
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A12SE (W)	163	2	497322 103563
	Areas Benefiting from Flood Defences None				
	Flood Water Storage Areas None				
	Flood Defences None				
15	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 175.3 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: West Streams Primacy: 1	A12SE (W)	161	4	497327 103555
16	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 946.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: West Streams Primacy: 1	A12SE (SW)	322	4	497186 103473
17	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 345.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Rother and Arun Primacy: 1	A18NE (N)	545	4	497736 104411
18	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 9.6 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Rother and Arun Primacy: 1	A18NE (N)	545	4	497727 104411
19	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 119.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Rother and Arun Primacy: 1	A18NE (N)	545	4	497727 104411
20	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 236.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Not Supplied Primacy: 2	A8SW (S)	581	4	497397 102966

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Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
21	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 379.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Not Supplied Primacy: 2	A8SW (S)	581	4	497397 102966
22	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 85.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: West Streams Primacy: 1	A17SE (NW)	587	4	497159 104109
23	**OS Water Network Lines** Watercourse Form: Reservoir Watercourse Length: 16.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: West Streams Primacy: 1	A17SE (NW)	612	4	497140 104127
24	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 30.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: West Streams Primacy: 1	A17SE (NW)	623	4	497135 104143
25	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 154.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: West Streams Primacy: 1	A17SE (NW)	643	4	497077 104101
26	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 49.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Rother and Arun Primacy: 1	A8SW (S)	644	4	497612 102860
27	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 15.8 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Rother and Arun Primacy: 1	A19NW (NE)	649	4	498081 104414
28	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 77.6 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Rother and Arun Primacy: 1	A18NE (N)	651	4	497734 104517
29	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 334.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Rother and Arun Primacy: 1	A19NW (NE)	658	4	498097 104419

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Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
30	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 117.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Rother and Arun Primacy: 1	A8SW (S)	685	4	497582 102820
31	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 96.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Rother and Arun Primacy: 1	A8SE (S)	699	4	497676 102806
32	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 220.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Rother and Arun Primacy: 1	A18NE (N)	726	4	497719 104593
33	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 70.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Rother and Arun Primacy: 1	A18NW (N)	730	4	497419 104544
34	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 329.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Not Supplied Primacy: 1	A18NW (N)	737	4	497411 104548
35	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 193.1 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Rother and Arun Primacy: 1	A8SW (S)	769	4	497613 102734
36	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 768.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Rother and Arun Primacy: 1	A8SW (S)	784	4	497510 102727
37	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 15.4 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Rother and Arun Primacy: 1	A18NW (N)	787	4	497432 104610
38	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 61.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Rother and Arun Primacy: 1	A9NE (SE)	790	4	498364 103104

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Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
39	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 193.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Rother and Arun Primacy: 1	A18NW (N)	801	4	497435 104625
40	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 136.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: West Streams Primacy: 1	A7SW (SW)	888	4	496897 102929
41	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 1.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Rother and Arun Primacy: 1	A19NE (NE)	890	4	498415 104495
42	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 202.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Rother and Arun Primacy: 1	A19NE (NE)	890	4	498415 104495
43	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 111.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Rother and Arun Primacy: 1	A19NE (NE)	891	4	498415 104496
44	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 11.9 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Rother and Arun Primacy: 1	A23SW (N)	913	4	497630 104778
45	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 54.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Rother and Arun Primacy: 1	A23SW (N)	925	4	497627 104790
46	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 369.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Rother and Arun Primacy: 1	A3NW (S)	940	4	497514 102569
47	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 83.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Rother and Arun Primacy: 1	A20SW (NE)	941	4	498679 104250

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Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
48	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 123.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Rother and Arun Primacy: 1	A9SW (SE)	978	4	498235 102712
49	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 139.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Rother and Arun Primacy: 1	A9SW (SE)	978	4	498235 102712
50	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 7.1 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Rother and Arun Primacy: 1	A23SW (N)	979	4	497619 104844
51	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 19.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Rother and Arun Primacy: 1	A4NW (S)	983	4	498046 102609
52	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 6.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Rother and Arun Primacy: 1	A23SW (N)	986	4	497618 104851
53	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 95.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Rother and Arun Primacy: 1	A19NE (NE)	993	4	498614 104440
54	**OS Water Network Lines** Watercourse Form: Lake Watercourse Length: 86.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Rother and Arun Primacy: 1	A23SW (N)	993	4	497617 104857
55	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 8.8 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: West Streams Primacy: 1	A22SE (N)	996	4	497283 104775
56	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 582.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: West Streams Primacy: 1	A11SE (W)	997	4	496502 103409

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Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
57	**Historical Landfill Sites** Licence Holder: Not Supplied Location: Barnham, Sussex Name: Disused Canal at Barnham Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD20083 First Input Date: 31st December 1970 Last Input Date: 31st December 1970 Specified Waste Type: Deposited Waste included Inert Waste EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: 3800/8225 BGS Ref: Not Supplied Other Ref: WD27/023	A13SW (SW)	233	2	497378 103388
58	**Historical Landfill Sites** Licence Holder: A C Langmead Location: Yapton, Sussex Name: Disused Canal at Yapton Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD20084 First Input Date: 31st December 1980 Last Input Date: 26th March 1981 Specified Waste Type: Deposited Waste included Inert Waste EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: 3800/8018 BGS Ref: Not Supplied Other Ref: WD27/243, WD13/66	A9NW (SE)	721	2	498315 103153
59	**Licensed Waste Management Facilities (Locations)** Licence Number: 100156 Location: Northwood Farm (Hanger No8), Burndell Road, Yapton, West Sussex, BN18 0HR Operator Name: T J Waste & Recycling Limited Operator Location: Not Supplied Authority: Environment Agency - South East Region, Solent & South Downs Area Site Category: Household, Commercial And Industrial Transfer Stations **Licence Status:** **Modified** Issued: 28th January 2008 Last Modified: 27th July 2012 Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m	A9SE (SE)	980	2	498471 102930
	Local Authority Landfill Coverage Name: Arun District Council - Has no landfill data to supply		0	5	497671 103686
	Local Authority Landfill Coverage Name: West Sussex County Council - Has supplied landfill data		0	6	497671 103686
60	**Local Authority Recorded Landfill Sites** Location: Old Canal, East Of Downview Road, Yapton Reference: Y/50/79 Authority: West Sussex County Council, Environment & Development **Last Reported Status:** **Unknown** Types of Waste: Not Supplied Date of Closure: Not Supplied Positional Accuracy: Located by supplier to within 100m Boundary Quality: Not Applicable	A9NE (SE)	771	6	498400 103200
61	**Potentially Infilled Land (Non-Water)** Bearing Ref: SE Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1992	A8NE (SE)	418	-	497926 103179
62	**Potentially Infilled Land (Non-Water)** Bearing Ref: SE Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1992	A9NW (SE)	573	-	498114 103137

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
63	**Potentially Infilled Land (Non-Water)** Bearing Ref: W Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1992	A12NW (W)	859	-	496699 103958
64	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1962	A8NW (S)	171	-	497652 103335
65	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1962	A12NE (NW)	554	-	497073 103975
66	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1962	A18NE (N)	556	-	497730 104422
67	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1962	A12NE (NW)	566	-	497055 103976
68	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1962	A18NE (N)	584	-	497746 104449
69	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1951	A8SW (S)	641	-	497619 102862
70	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1899	A8SE (S)	693	-	497696 102814
71	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1899	A8SW (S)	729	-	497664 102775
72	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1962	A18NE (N)	755	-	497738 104621
73	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1962	A17NE (NW)	782	-	497123 104402
74	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1962	A18NE (N)	788	-	497732 104654
75	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1962	A18NE (N)	820	-	497729 104686
76	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1962	A17NE (NW)	851	-	497029 104398
77	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1962	A9SW (SE)	892	-	498098 102731

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Registered Landfill Sites				
78	Licence Holder: A C Langmead Licence Reference: 5/AP/79 Site Location: Disused Chichester/Arundel Canal, North Of Burndell Road, Yapton, Arundel, West Sussex Licence Easting: 498400 Licence Northing: 103160 Operator Location: Wicks Farm, Yapton, Arundel, West Sussex Authority: Environment Agency - Southern Region, Sussex Area Site Category: Landfill Max Input Rate: Undefined Waste Source Restrictions: No known restriction on source of waste Status: Licence lapsed/cancelled/defunct/not applicable/surrenderedCancelled Dated: 10th December 1979 Preceded By Licence: Not Given Superseded By Licence: Not Given Positional Accuracy: Manually positioned to the address or location Boundary Accuracy: Not Applicable Authorised Waste: Construction And Demolition Wastes Excavated Natural Materials $ Prohibited Waste: Contaminated Rubble Contaminated Soil	A9NE (SE)	790	2	498400 103160
	Registered Waste Treatment or Disposal Sites				
79	Licence Holder: P Hill Jones Licence Reference: WSX/L1/0052/1 Site Location: Jones & Co, Burndell Road, Yapton, Arundel, West Sussex, Bn18 0hp Operator Location: 148 Barnham Road, BOGNOR REGIS, West Sussex, PO22 0EH Authority: Environment Agency - Southern Region, Sussex Area Site Category: Scrapyard Max Input Rate: Very Small (Less than 10,000 tonnes per year) Waste Source Restrictions: No known restriction on source of waste Licence Status: Site exempt from licenceExempt Dated: 31st March 1994 Preceded By Licence: Not Given Superseded By Licence: Not Given Positional Accuracy: Manually positioned to the road within the address or location Boundary Quality: Not Supplied Authorised Waste: Elec/Electronic Compts/Fitt/Fixt/Apps Empty Used Containers > 25 L Lead/Acid Batteries Max.Waste Permitted By Licence Scrap Metal Prohibited Waste: Asbestos Metallic Powders Pcb'S And Analogues Percussive/Explosive/Similar Waste Spec.Waste (Epa'90:S62/1996 Regs)N.O.S Sub'S Control. Radioactive Subs Act'60 Waste N.O.S. Waste React.Violently W/ Water Or Air	A9SW (SE)	804	2	498300 103000

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS 1:625,000 Solid Geology Description: White Chalk Subgroup	A13NE (S)	0	1	497671 103686
	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: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A13NE (S)	0	1	497671 103686
	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: 100 - 200 mg/kg Nickel Concentration: 15 - 30 mg/kg	A13SW (SW)	71	1	497500 103500
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 15 - 25 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A18SW (NW)	315	1	497488 104122
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 15 - 25 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A18NE (N)	539	1	497750 104403
80	**BGS Recorded Mineral Sites** Site Name: Burndell Brick Yard Location: Yapton, Arundel, West Sussex Source: British Geological Survey, National Geoscience Information Service Reference: 157582 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Quaternary Geology: River Terrace Deposits (Undifferentiated) Commodity: Common Clay and Shale Positional Accuracy: Located by supplier to within 10m	A8NE (S)	473	1	497877 103090
81	**BGS Recorded Mineral Sites** Site Name: Burndell Brick Field Location: Yapton, Arundel, West Sussex Source: British Geological Survey, National Geoscience Information Service Reference: 157583 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Quaternary Geology: River Terrace Deposits (Undifferentiated) Commodity: Common Clay and Shale Positional Accuracy: Located by supplier to within 10m	A9NW (SE)	648	1	498190 103111

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Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
82	**BGS Recorded Mineral Sites** Site Name: Barnham Brick Field Location: Barnham, Bognor Regis, West Sussex Source: British Geological Survey, National Geoscience Information Service Reference: 157584 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Quaternary Geology: River Terrace Deposits (Undifferentiated) Commodity: Common Clay and Shale Positional Accuracy: Located by supplier to within 10m	A11NE (W)	938	1	496631 103995
	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				
	Non Coal Mining Areas of Great Britain No Hazard				
	Potential for Collapsible Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13NE (S)	0	1	497671 103686
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (S)	0	1	497671 103686
	Potential for Ground Dissolution Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (S)	0	1	497671 103686
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (S)	0	1	497671 103686
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13NE (S)	0	1	497671 103686
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13NE (S)	0	1	497671 103686
	Radon Potential - Radon Affected Areas Affected Area: The property is in a Lower probability radon area (less than 1% of homes are estimated to be at or above the Action Level). Source: British Geological Survey, National Geoscience Information Service	A13NE (S)	0	1	497671 103686
	Radon Potential - Radon Protection Measures Protection Measure: No radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	A13NE (S)	0	1	497671 103686

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Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
83	**Contemporary Trade Directory Entries** Name: Arun Meat & Livestock Co Ltd Location: The Steddlers, North End Road, Yapton, Arundel, West Sussex, BN18 0DT Classification: Meat - Wholesale **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NE (NE)	25	-	497829 103843
84	**Contemporary Trade Directory Entries** Name: Equipet Location: North End Rd, Yapton, Arundel, West Sussex, BN18 0DU Classification: Pet Foods & Animal Feeds **Status: Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A13SE (E)	51	-	497817 103664
85	**Contemporary Trade Directory Entries** Name: Barnham Car Centre Location: Unit 25, Orchard Business Park, North End Road, Yapton, Arundel, West Sussex, BN18 0GA Classification: Car Dealers - Used **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NE (E)	101	-	497932 103737
85	**Contemporary Trade Directory Entries** Name: Classic Perfections Location: Unit 25, Orchard Business Park, North End Road, Yapton, Arundel, BN18 0GA Classification: Classic Car Specialists **Status: Active** Positional Accuracy: Automatically positioned to the address	A13NE (E)	101	-	497932 103737
85	**Contemporary Trade Directory Entries** Name: C & W Seals Location: Unit 15-16, Orchard Business Park, North End Road, Yapton, Arundel, West Sussex, BN18 0GA Classification: Seal & Joint Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NE (E)	118	-	497961 103778
85	**Contemporary Trade Directory Entries** Name: Arun Ltd Location: Unit 18, Orchard Business Park, North End Road, Yapton, Arundel, West Sussex, BN18 0GA Classification: Waste Disposal Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NE (E)	118	-	497961 103778
85	**Contemporary Trade Directory Entries** Name: V Dubz R Us Location: Unit 10, Orchard Business Park, North End Road, Yapton, Arundel, West Sussex, BN18 0GA Classification: Car Body Repairs **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NE (E)	118	-	497961 103778
85	**Contemporary Trade Directory Entries** Name: B P S Garden Machinery Ltd Location: Unit 16-17, Orchard Business Park, North End Road, Yapton, Arundel, BN18 0GA Classification: Lawnmowers & Garden Machinery - Sales & Service **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NE (E)	121	-	497962 103772
85	**Contemporary Trade Directory Entries** Name: Pptek Location: Unit 22, Orchard Business Park, North End Road, Yapton, Arundel, West Sussex, BN18 0GA Classification: Commercial Cleaning Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NE (E)	131	-	497961 103732
85	**Contemporary Trade Directory Entries** Name: Orchard Classics Location: Unit 21, Orchard Business Park, North End Road, Yapton, Arundel, BN18 0GA Classification: Classic Car Specialists **Status: Active** Positional Accuracy: Automatically positioned to the address	A13NE (E)	134	-	497967 103742

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85	**Contemporary Trade Directory Entries** Name: Mailtec Ltd Location: Unit 15, Orchard Business Park, North End Road, Yapton, Arundel, BN18 0GA Classification: Printers **Status: Active** Positional Accuracy: Automatically positioned to the address	A13NE (E)	135	-	497975 103767
85	**Contemporary Trade Directory Entries** Name: B P S Location: Unit 15, Orchard Business Park, North End Road, Yapton, Arundel, BN18 0GA Classification: Lawnmowers & Garden Machinery - Sales & Service **Status: Active** Positional Accuracy: Automatically positioned to the address	A13NE (E)	135	-	497975 103767
85	**Contemporary Trade Directory Entries** Name: V & C Auto Sales Location: Unit 11,Orchard Business Park,North End Rd, Yapton, Arundel, West Sussex, BN18 0DS Classification: Car Dealers - Used **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NE (E)	141	-	497978 103755
85	**Contemporary Trade Directory Entries** Name: B P S Garden Machinery Ltd Location: Unit 16-17 Orchard Business Park,North End Road, Yapton, Arundel, West Sussex, BN18 0GA Classification: Lawnmowers & Garden Machinery - Sales & Service **Status: Active** Positional Accuracy: Manually positioned within the geographical locality	A13NE (E)	142	-	497974 103738
85	**Contemporary Trade Directory Entries** Name: Revolution Machine Werks Location: Unit 10, Orchard Business Park, North End Road, Yapton, Arundel, BN18 0GA Classification: Engineering Machine Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A13NE (E)	147	-	497986 103760
85	**Contemporary Trade Directory Entries** Name: Littlehampton Scaffolding Location: Orchard Business Park,North End Road, Yapton, Arundel, West Sussex, BN18 0GA Classification: Scaffolding & Work Platforms **Status: Active** Positional Accuracy: Manually positioned within the geographical locality	A13NE (E)	154	-	497990 103748
85	**Contemporary Trade Directory Entries** Name: Express Aftercare Services Location: Unit 5, Orchard Business Park, North End Road, Yapton, Arundel, West Sussex, BN18 0GA Classification: Electrical Goods Sales, Manufacturers & Wholesalers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NE (E)	157	-	497980 103703
85	**Contemporary Trade Directory Entries** Name: E M S Animal Feeds Location: Unit 11, Orchard Business Park, North End Road, Yapton, Arundel, BN18 0GA Classification: Pet Foods & Animal Feeds **Status: Active** Positional Accuracy: Automatically positioned to the address	A13NE (E)	160	-	497999 103757
86	**Contemporary Trade Directory Entries** Name: G S Auto Recovery Location: Main Road, Yapton, Arundel, West Sussex, BN18 0EA Classification: Mechanical Engineers **Status: Inactive** Positional Accuracy: Automatically positioned in the proximity of the address	A8NW (S)	210	-	497581 103297
86	**Contemporary Trade Directory Entries** Name: Reptune Motors Location: Main Road, Yapton, Arundel, West Sussex, BN18 0EA Classification: Garage Services **Status: Inactive** Positional Accuracy: Automatically positioned in the proximity of the address	A8NW (S)	210	-	497581 103297

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Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
87	**Contemporary Trade Directory Entries** Name: Bella Autos Location: Glebelands Farm, Yapton Road, Barnham, PO22 0BJ Classification: Mot Testing Centres **Status: Active** Positional Accuracy: Automatically positioned to the address	A12NE (W)	314	-	497250 103812
88	**Contemporary Trade Directory Entries** Name: Arun Pest Control Service Location: 23, Briar Close, Church Road, Yapton, Arundel, West Sussex, BN18 0ES Classification: Pest & Vermin Control **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8NE (SE)	338	-	497930 103285
89	**Contemporary Trade Directory Entries** Name: Fire Protection Services Location: 31, Briar Close, Church Road, Yapton, Arundel, BN18 0ES Classification: Firefighting Equipment **Status: Active** Positional Accuracy: Automatically positioned to the address	A8NE (SE)	373	-	497925 103234
90	**Contemporary Trade Directory Entries** Name: Sfp Location: 9, Canal Road, Yapton, Arundel, West Sussex, BN18 0HA Classification: Engineering Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8NE (S)	500	-	497801 103037
91	**Contemporary Trade Directory Entries** Name: Barnly Engineering Location: Kings Close, Yapton, Arundel, West Sussex, BN18 0EX Classification: Precision Engineers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8NE (SE)	506	-	497990 103116
92	**Contemporary Trade Directory Entries** Name: Diamond Location: 24, Canal Road, Yapton, Arundel, West Sussex, BN18 0HD Classification: Commercial Cleaning Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8SE (S)	534	-	497746 102985
92	**Contemporary Trade Directory Entries** Name: Diamond Carpet & Upholstery Cleaning Services Location: 24, Canal Road, Yapton, Arundel, West Sussex, BN18 0HD Classification: Carpet, Curtain & Upholstery Cleaners **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8SE (S)	534	-	497746 102985
93	**Contemporary Trade Directory Entries** Name: A J F Hydraulic Services Location: West Bank,North End Rd, Yapton, Arundel, West Sussex, BN18 0DW Classification: Hydraulic Engineers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A19SW (NE)	534	-	498096 104282
93	**Contemporary Trade Directory Entries** Name: Action Eyewear Location: 22, West Bank, North End Road, Yapton, Arundel, West Sussex, BN18 0DW Classification: Cosmetic Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A19SW (NE)	534	-	498096 104282
94	**Contemporary Trade Directory Entries** Name: Obsessive Cleaning Divas Location: 6, Cobham Close, Yapton, Arundel, West Sussex, BN18 0LF Classification: Cleaning Services - Domestic **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8SE (S)	620	-	497718 102892
94	**Contemporary Trade Directory Entries** Name: O C D 2015 Ltd Location: 6, Cobham Close, Yapton, Arundel, West Sussex, BN18 0LF Classification: Commercial Cleaning Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8SE (S)	620	-	497718 102892
95	**Contemporary Trade Directory Entries** Name: P & H Plumbing & Heating Location: 10, Park Road, Yapton, Arundel, West Sussex, BN18 0JE Classification: Boilers - Servicing, Replacements & Repairs **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A9SW (SE)	707	-	498146 102983

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Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
96	**Contemporary Trade Directory Entries** Name: A B Autos Location: Fresh Acres Nurseries, Yapton Lane, Walberton, Arundel, BN18 0AS Classification: Garage Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A18NE (N)	711	-	497918 104542
96	**Contemporary Trade Directory Entries** Name: Morris Green Engineering Ltd Location: Fresh Acres Nurseries, Yapton Lane, Walberton, Arundel, BN18 0AS Classification: Lawnmowers & Garden Machinery - Sales & Service **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A18NE (N)	711	-	497918 104542
97	**Contemporary Trade Directory Entries** Name: C K Mobile Mechanics Location: 40, The Millers, Yapton, Arundel, BN18 0LE Classification: Garage Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A8SE (S)	728	-	497721 102782
98	**Contemporary Trade Directory Entries** Name: Access Scaffolding Location: 3, Ryebank Walk, Burndell Road, Yapton, Arundel, West Sussex, BN18 0FJ Classification: Scaffolding & Work Platforms **Status: Active** Positional Accuracy: Automatically positioned to the address	A9NW (SE)	753	-	498257 103028
99	**Contemporary Trade Directory Entries** Name: Styles In Stone Location: Barnham Windmill, Yapton Road, Barnham, Bognor Regis, West Sussex, PO22 0BD Classification: Fireplaces & Mantelpieces **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A12NW (W)	780	-	496791 103963
100	**Contemporary Trade Directory Entries** Name: Needin Feedin Location: Unit 15, Parsonage Farm, Yapton Road, Barnham, PO22 0BD Classification: Pet Foods & Animal Feeds **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A12NW (W)	808	-	496722 103875
100	**Contemporary Trade Directory Entries** Name: El Molino Location: Unit 7/11, Parsonage Farm, Yapton Road, Barnham, Bognor Regis, West Sussex, PO22 0BD Classification: Pottery Manufacturers & Suppliers **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A12NW (W)	810	-	496730 103904
100	**Contemporary Trade Directory Entries** Name: The Iron Away Shop Location: Parsonage Farm, Yapton Road, Barnham, Bognor Regis, West Sussex, PO22 0BD Classification: Ironing & Home Laundry Services **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A12NW (W)	811	-	496730 103904
100	**Contemporary Trade Directory Entries** Name: T J'S Ironing Location: Unit 32, Parsonage Farm, Yapton Road, Barnham, Bognor Regis, PO22 0BD Classification: Ironing & Home Laundry Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A12NW (W)	836	-	496713 103929
100	**Contemporary Trade Directory Entries** Name: Kay'S Location: Unit 32, Parsonage Farm, Yapton Road, Barnham, Bognor Regis, West Sussex, PO22 0BD Classification: Domestic Appliances - Servicing, Repairs & Parts **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A12NW (W)	838	-	496718 103945
101	**Contemporary Trade Directory Entries** Name: Yapton Metal Co Location: Wayside, Burndell Road, Yapton, Arundel, West Sussex, BN18 0HP Classification: Scrap Metal Merchants **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A9SW (SE)	830	-	498331 102996

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Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
101	**Contemporary Trade Directory Entries** Name: Burndell Location: Wayside, Burndell Road, Yapton, Arundel, West Sussex, BN18 0HP Classification: Salvage Dealers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A9SW (SE)	830	-	498331 102996
102	**Contemporary Trade Directory Entries** Name: Maison Belles Location: 8, Fairholme Drive, Yapton, Arundel, West Sussex, BN18 0JH Classification: Cleaning Services - Domestic **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A9SW (SE)	866	-	498161 102798
102	**Contemporary Trade Directory Entries** Name: K S W Vehicle Inspections Location: 21, Fairholme Drive, Yapton, Arundel, West Sussex, BN18 0JH Classification: Vehicle Inspection Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A9SW (SE)	889	-	498199 102795
103	**Contemporary Trade Directory Entries** Name: Chocolate Show Boat Company Location: Sussex Business Village,Lake La, Barnham, Bognor Regis, West Sussex, PO22 0AL Classification: Confectionery Manufacturers **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A17NE (NW)	886	-	497214 104612
104	**Contemporary Trade Directory Entries** Name: Ayrlect Associates Location: 23, Cherry Avenue, Yapton, Arundel, West Sussex, BN18 0LB Classification: Electrical Engineers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A3NE (S)	928	-	497998 102649
105	**Contemporary Trade Directory Entries** Name: Scott Motors Location: Yapton Lane, Walberton, Arundel, West Sussex, BN18 0AS Classification: Car Dealers - Used **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A23SE (N)	935	-	497720 104802
106	**Fuel Station Entries** Name: Central Garage Location: Main Road , Yapton , Arundel, West Sussex, BN18 0EA Brand: Obsolete Premises Type: Not Applicable **Status: Obsolete** Positional Accuracy: Automatically positioned to the address	A8NW (S)	210	-	497581 103297
107	**Fuel Station Entries** Name: Noble Autos Location: Burndell Road , Yapton , Arundel, West Sussex, BN18 0HP Brand: Proteus Premises Type: Not Applicable **Status: Obsolete** Positional Accuracy: Manually positioned to the road within the address or location	A9NW (SE)	789	-	498299 103022
108	**Points of Interest - Commercial Services** Name: Classic Perfections Location: Unit 25 Orchard Business Park, North End Road, Yapton, Arundel, BN18 0GA Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A13NE (E)	102	7	497932 103736
108	**Points of Interest - Commercial Services** Name: V Dubz R Us Ltd Location: Unit 10 Orchard Business Park, North End Road, Yapton, Arundel, BN18 0GA Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A13NE (E)	118	7	497961 103778
108	**Points of Interest - Commercial Services** Name: Orchard Classics Location: Unit 21 Orchard Business Park, North End Road, Yapton, Arundel, BN18 0GA Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A13NE (E)	134	7	497967 103742

ARUN DISTRICT COUNCIL Y/72/20/RES

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
109	**Points of Interest - Commercial Services** Name: Bella Autos Location: Unit 3 Glebelands Farm, Yapton Road, Barnham, Bognor Regis, PO22 0BJ Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A12NE (W)	314	7	497250 103812
110	**Points of Interest - Commercial Services** Name: Arun Pest Control Service Location: 23 Briar Close, Church Road, Yapton, Arundel, BN18 0ES Category: Contract Services Class Code: Pest and Vermin Control Positional Accuracy: Positioned to address or location	A8NE (SE)	338	7	497930 103285
110	**Points of Interest - Commercial Services** Name: Arun Pest Control Service Location: 23 Briar Close, Church Road, Yapton, Arundel, BN18 0ES Category: Contract Services Class Code: Pest and Vermin Control Positional Accuracy: Positioned to address or location	A8NE (SE)	338	7	497930 103285
111	**Points of Interest - Commercial Services** Name: Noble Autos Location: Georgedale, Burndell Road, Yapton, Arundel, BN18 0HP Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A9NW (SE)	645	7	498145 103066
112	**Points of Interest - Commercial Services** Name: A B Auto's Arundel Ltd Location: Yapton Lane Fresh Acres Nurseries, Walberton, Arundel, BN18 0AS Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A18NE (N)	711	7	497918 104542
112	**Points of Interest - Commercial Services** Name: A B Autos Location: Unit 6 Fresh Acres Nurseries, Yapton Lane, Walberton, Arundel, BN18 0AS Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A18NE (N)	711	7	497918 104542
113	**Points of Interest - Commercial Services** Name: C K Mobile Mechanics Location: 40 The Millers, Yapton, Arundel, BN18 0LE Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A8SE (S)	729	7	497720 102781
114	**Points of Interest - Commercial Services** Name: Yapton Metal Co Location: Wayside, Burndell Road, Yapton, Arundel, BN18 0HP Category: Recycling Services Class Code: Scrap Metal Merchants Positional Accuracy: Positioned to address or location	A9SW (SE)	829	7	498330 102996
115	**Points of Interest - Manufacturing and Production** Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A8NE (SE)	501	7	497974 103112
115	**Points of Interest - Manufacturing and Production** Name: Works Location: BN18 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A8NE (SE)	501	7	497974 103111
116	**Points of Interest - Manufacturing and Production** Name: Tank Location: BN18 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A18NE (N)	756	7	497891 104597
117	**Points of Interest - Manufacturing and Production** Name: Tank Location: PO22 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A17SW (W)	810	7	496793 104026

ARUN DISTRICT COUNCIL Y/72/20/RES

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
118	**Points of Interest - Manufacturing and Production** Name: Drove Lane Farm Location: Drove Lane, Main Road, Yapton, Arundel, BN18 0EB Category: Farming Class Code: Arable Farming Positional Accuracy: Positioned to address or location	A7SW (SW)	857	7	496945 102932
118	**Points of Interest - Manufacturing and Production** Name: Drove Lane Farm Location: Drove Lane Farm Drove Lane, Main Road, Yapton, Arundel, BN18 0EB Category: Farming Class Code: Arable Farming Positional Accuracy: Positioned to address or location	A7SW (SW)	857	7	496944 102932
119	**Points of Interest - Manufacturing and Production** Name: Tank Location: PO22 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A17NE (NW)	923	7	497117 104588
120	**Points of Interest - Manufacturing and Production** Name: Tank Location: BN18 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A23SE (N)	926	7	497718 104793
121	**Points of Interest - Manufacturing and Production** Name: Tank Location: PO22 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A17NE (NW)	937	7	497009 104507
121	**Points of Interest - Manufacturing and Production** Name: Tank Location: PO22 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A17NE (NW)	937	7	497010 104507
121	**Points of Interest - Manufacturing and Production** Name: Tank Location: PO22 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A17NE (NW)	947	7	496997 104508
121	**Points of Interest - Manufacturing and Production** Name: Tank Location: PO22 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A17NE (NW)	949	7	496997 104511
121	**Points of Interest - Manufacturing and Production** Name: Tank Location: PO22 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A17NW (NW)	954	7	496986 104507
121	**Points of Interest - Manufacturing and Production** Name: Tanks Location: PO22 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A17NE (NW)	955	7	496990 104512
121	**Points of Interest - Manufacturing and Production** Name: Tank Location: PO22 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A17NW (NW)	957	7	496986 104511
122	**Points of Interest - Public Infrastructure** Name: Sewage Pumping Station Location: BN18 Category: Infrastructure and Facilities Class Code: Waste Storage, Processing and Disposal Positional Accuracy: Positioned to an adjacent address or location	A19NW (NE)	678	7	498143 104420

ARUN DISTRICT COUNCIL Y/72/20/RES

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
123	**Points of Interest - Recreational and Environmental** Name: Play Area Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A9NW (SE)	503	7	498088 103215
123	**Points of Interest - Recreational and Environmental** Name: Play Area Location: Main Road, BN18 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to address or location	A9NW (SE)	512	7	498052 103161
123	**Points of Interest - Recreational and Environmental** Name: Play Area Location: Downview Way, BN18 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to address or location	A9NW (SE)	547	7	498089 103150

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Nitrate Vulnerable Zones				
124	Name: Aldingbourne Rife Nvz Description: Surface Water Source: Environment Agency, Head Office	A13NE (S)	0	3	497671 103686

Agency & Hydrological	Version	Update Cycle
Contaminated Land Register Entries and Notices		
Arun District Council - Environmental Health Department	July 2013	Annual Rolling Update
Chichester District Council - Environmental Health Department	July 2013	Annual Rolling Update
Discharge Consents		
Environment Agency - Southern Region	January 2019	Quarterly
Enforcement and Prohibition Notices		
Environment Agency - Southern Region	March 2013	Annual Rolling Update
Integrated Pollution Controls		
Environment Agency - Southern Region	October 2008	Variable
Integrated Pollution Prevention And Control		
Environment Agency - South East Region - Solent & South Downs Area	January 2019	Quarterly
Environment Agency - Southern Region	January 2019	Quarterly
Local Authority Integrated Pollution Prevention And Control		
Arun District Council - Environmental Health Department	December 2014	Variable
Chichester District Council - Environmental Health Department	October 2014	Variable
Local Authority Pollution Prevention and Controls		
Arun District Council - Environmental Health Department	December 2014	Annual Rolling Update
Chichester District Council - Environmental Health Department	October 2014	Annual Rolling Update
Local Authority Pollution Prevention and Control Enforcements		
Arun District Council - Environmental Health Department	December 2014	Variable
Chichester District Council - Environmental Health Department	October 2014	Variable
Nearest Surface Water Feature		
Ordnance Survey	September 2017	
Pollution Incidents to Controlled Waters		
Environment Agency - Southern Region	December 1999	Not Applicable
Prosecutions Relating to Authorised Processes		
Environment Agency - Southern Region	March 2013	Annual Rolling Update
Prosecutions Relating to Controlled Waters		
Environment Agency - Southern Region	March 2013	Annual Rolling Update
Registered Radioactive Substances		
Environment Agency - Southern Region	June 2016	
River Quality		
Environment Agency - Head Office	November 2001	Not Applicable
River Quality Biology Sampling Points		
Environment Agency - Head Office	July 2012	Annually
River Quality Chemistry Sampling Points		
Environment Agency - Head Office	July 2012	Annually
Substantiated Pollution Incident Register		
Environment Agency - South East Region - Solent & South Downs Area	January 2019	Quarterly
Environment Agency - Southern Region - Solent and South Downs	January 2019	Quarterly
Environment Agency - Southern Region - Sussex Area	January 2019	Quarterly
Water Abstractions		
Environment Agency - Southern Region	January 2019	Quarterly
Water Industry Act Referrals		
Environment Agency - Southern Region	October 2017	Quarterly
Groundwater Vulnerability		
Environment Agency - Head Office	April 2015	Not Applicable
Drift Deposits		
Environment Agency - Head Office	January 1999	Not Applicable
Bedrock Aquifer Designations		
Environment Agency - Head Office	January 2018	Annually

Agency & Hydrological	Version	Update Cycle
Superficial Aquifer Designations Environment Agency - Head Office	January 2018	Annually
Source Protection Zones Environment Agency - Head Office	January 2019	Quarterly
Extreme Flooding from Rivers or Sea without Defences Environment Agency - Head Office	August 2018	Quarterly
Flooding from Rivers or Sea without Defences Environment Agency - Head Office	August 2018	Quarterly
Areas Benefiting from Flood Defences Environment Agency - Head Office	August 2018	Quarterly
Flood Water Storage Areas Environment Agency - Head Office	August 2018	Quarterly
Flood Defences Environment Agency - Head Office	August 2018	Quarterly
OS Water Network Lines Ordnance Survey	October 2018	Quarterly
Surface Water 1 in 30 year Flood Extent Environment Agency - Head Office	October 2013	Annually
Surface Water 1 in 100 year Flood Extent Environment Agency - Head Office	October 2013	Annually
Surface Water 1 in 1000 year Flood Extent Environment Agency - Head Office	October 2013	Annually
Surface Water Suitability Environment Agency - Head Office	October 2013	Annually
BGS Groundwater Flooding Susceptibility British Geological Survey - National Geoscience Information Service	May 2013	Annually

Waste	Version	Update Cycle
BGS Recorded Landfill Sites		
British Geological Survey - National Geoscience Information Service	June 1996	Not Applicable
Historical Landfill Sites		
Environment Agency - Head Office	July 2018	Quarterly
Integrated Pollution Control Registered Waste Sites		
Environment Agency - Southern Region	October 2008	Not Applicable
Licensed Waste Management Facilities (Landfill Boundaries)		
Environment Agency - South East Region - Solent & South Downs Area	July 2018	Quarterly
Environment Agency - Southern Region - Solent and South Downs	July 2018	Quarterly
Environment Agency - Southern Region - Sussex Area	July 2018	Quarterly
Licensed Waste Management Facilities (Locations)		
Environment Agency - South East Region - Solent & South Downs Area	January 2019	Quarterly
Environment Agency - Southern Region - Solent and South Downs	January 2019	Quarterly
Environment Agency - Southern Region - Sussex Area	January 2019	Quarterly
Local Authority Landfill Coverage		
Arun District Council - Technical Support Unit	May 2000	Not Applicable
Chichester District Council - Environmental Health Department	May 2000	Not Applicable
West Sussex County Council - Environment & Development	May 2000	Not Applicable
Local Authority Recorded Landfill Sites		
Arun District Council - Technical Support Unit	May 2000	Not Applicable
Chichester District Council - Environmental Health Department	May 2000	Not Applicable
West Sussex County Council - Environment & Development	May 2000	Not Applicable
Potentially Infilled Land (Non-Water)		
Landmark Information Group Limited	December 1999	Not Applicable
Potentially Infilled Land (Water)		
Landmark Information Group Limited	December 1999	Not Applicable
Registered Landfill Sites		
Environment Agency - Southern Region - Solent and South Downs	March 2003	Not Applicable
Environment Agency - Southern Region - Sussex Area	March 2003	Not Applicable
Registered Waste Transfer Sites		
Environment Agency - Southern Region - Solent and South Downs	March 2003	Not Applicable
Environment Agency - Southern Region - Sussex Area	March 2003	Not Applicable
Registered Waste Treatment or Disposal Sites		
Environment Agency - Southern Region - Solent and South Downs	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	April 2018	Bi-Annually
Explosive Sites		
Health and Safety Executive	March 2017	Variable
Notification of Installations Handling Hazardous Substances (NIHHS)		
Health and Safety Executive	November 2000	Not Applicable
Planning Hazardous Substance Enforcements		
Arun District Council - Technical Support Unit	February 2016	Variable
Chichester District Council - Planning Department	February 2016	Variable
West Sussex County Council - Environment & Development	October 2006	Annual Rolling Update
Planning Hazardous Substance Consents		
Arun District Council - Technical Support Unit	February 2016	Variable
Chichester District Council - Planning Department	February 2016	Variable
West Sussex County Council - Environment & Development	October 2006	Annual Rolling Update

Geological	Version	Update Cycle
BGS 1:625,000 Solid Geology British Geological Survey - National Geoscience Information Service	January 2009	Not Applicable
BGS Estimated Soil Chemistry British Geological Survey - National Geoscience Information Service	October 2015	Annually
BGS Recorded Mineral Sites British Geological Survey - National Geoscience Information Service	November 2018	Bi-Annually
CBSCB Compensation District Cheshire Brine Subsidence Compensation Board (CBSCB)	August 2011	Not Applicable
Coal Mining Affected Areas The Coal Authority - Property Searches	March 2014	Annual Rolling Update
Mining Instability Ove Arup & Partners	October 2000	Not Applicable
Non Coal Mining Areas of Great Britain British Geological Survey - National Geoscience Information Service	May 2015	Not Applicable
Potential for Collapsible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Compressible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Ground Dissolution Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Landslide Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Running Sand Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Shrinking or Swelling Clay Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	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	January 2019	Quarterly
Fuel Station Entries Catalist Ltd - Experian	November 2018	Quarterly
Gas Pipelines National Grid	July 2014	
Points of Interest - Commercial Services PointX	November 2018	Quarterly
Points of Interest - Education and Health PointX	November 2018	Quarterly
Points of Interest - Manufacturing and Production PointX	November 2018	Quarterly
Points of Interest - Public Infrastructure PointX	November 2018	Quarterly
Points of Interest - Recreational and Environmental PointX	November 2018	Quarterly
Underground Electrical Cables National Grid	December 2015	

Sensitive Land Use	Version	Update Cycle
Ancient Woodland Natural England	August 2018	Bi-Annually
Areas of Outstanding Natural Beauty Natural England	August 2018	Bi-Annually
Environmentally Sensitive Areas Natural England	January 2017	
Forest Parks Forestry Commission	April 1997	Not Applicable
Local Nature Reserves Natural England	August 2018	Bi-Annually
Marine Nature Reserves Natural England	January 2018	Bi-Annually
National Nature Reserves Natural England	August 2018	Bi-Annually
National Parks Natural England	April 2017	Bi-Annually
Nitrate Vulnerable Zones Environment Agency - Head Office Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	December 2017 October 2015	Bi-Annually
Ramsar Sites Natural England	August 2018	Bi-Annually
Sites of Special Scientific Interest Natural England	October 2018	Bi-Annually
Special Areas of Conservation Natural England	August 2018	Bi-Annually
Special Protection Areas Natural England	August 2018	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	

Contact	Name and Address	Contact Details
1	**British Geological Survey - Enquiry Service** British Geological Survey, Environmental Science Centre, Keyworth, Nottingham, Nottinghamshire, NG12 5GG	[redacted]
2	**Environment Agency - National Customer Contact Centre (NCCC)** PO Box 544, Templeborough, Rotherham, S60 1BY	
3	**Environment Agency - Head Office** Rio House, Waterside Drive, Aztec West, Almondsbury, Bristol, Avon, BS32 4UD	
4	**Ordnance Survey** Adanac Drive, Southampton, Hampshire, SO16 0AS	
5	**Arun District Council - Technical Support Unit** Civic Centre, Maltravers Road, Littlehampton, Sussex, BN17 5LF	
6	**West Sussex County Council - Environment & Development** County Hall, Tower hall, Chichester, West Sussex, PO19 1RH	
7	**PointX** 7 Abbey Court, Eagle Way, Sowton, Exeter, Devon, EX2 7HY	
8	**Natural England** County Hall, Spetchley Road, Worcester, WR5 2NP	
-	**Public Health England - Radon Survey, Centre for Radiation, Chemical and Environmental Hazards** Chilton, Didcot, Oxfordshire, OX11 0RQ	
-	**Landmark Information Group Limited** Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	

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

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
Electricity Transmission Line
Sloping Masonry
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

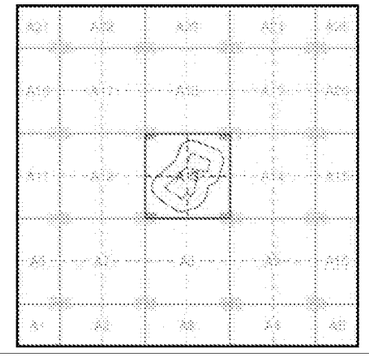
1:10,000 Raster Mapping

Gravel Pit
Refuse tip or slag heap
Rock
Rock (scattered)
Boulders
Boulders (scattered)
Shingle
Mud
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
Mean high water (springs)
Mean low water (springs)
Telephone line (where shown)
Electricity transmission line (with poles)
Bench mark (where shown)
Triangulation station
Point feature (e.g. Guide Post or Mile Stone)
Pylon, flare stack or lighting tower
Site of (antiquity)
Glasshouse
General Building
Important Building

Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Sussex	1:10,560	1880	2
Sussex	1:10,560	1899	3
Sussex	1:10,560	1913 - 1914	4
Sussex	1:10,560	1913 - 1914	5
Sussex	1:10,560	1913 - 1914	6
Sussex	1:10,560	1914	7
Historical Aerial Photography	1:10,560	1947	8
Sussex	1:10,560	1951	9
Ordnance Survey Plan	1:10,000	1961 - 1962	10
Ordnance Survey Plan	1:10,000	1967	11
Ordnance Survey Plan	1:10,000	1979	12
Ordnance Survey Plan	1:10,000	1980	13
Ordnance Survey Plan	1:10,000	1992	14
10K Raster Mapping	1:10,000	2000	15
10K Raster Mapping	1:10,000	2006	16
VectorMap Local	1:10,000	2019	17

Historical Map - Slice A



Order Details

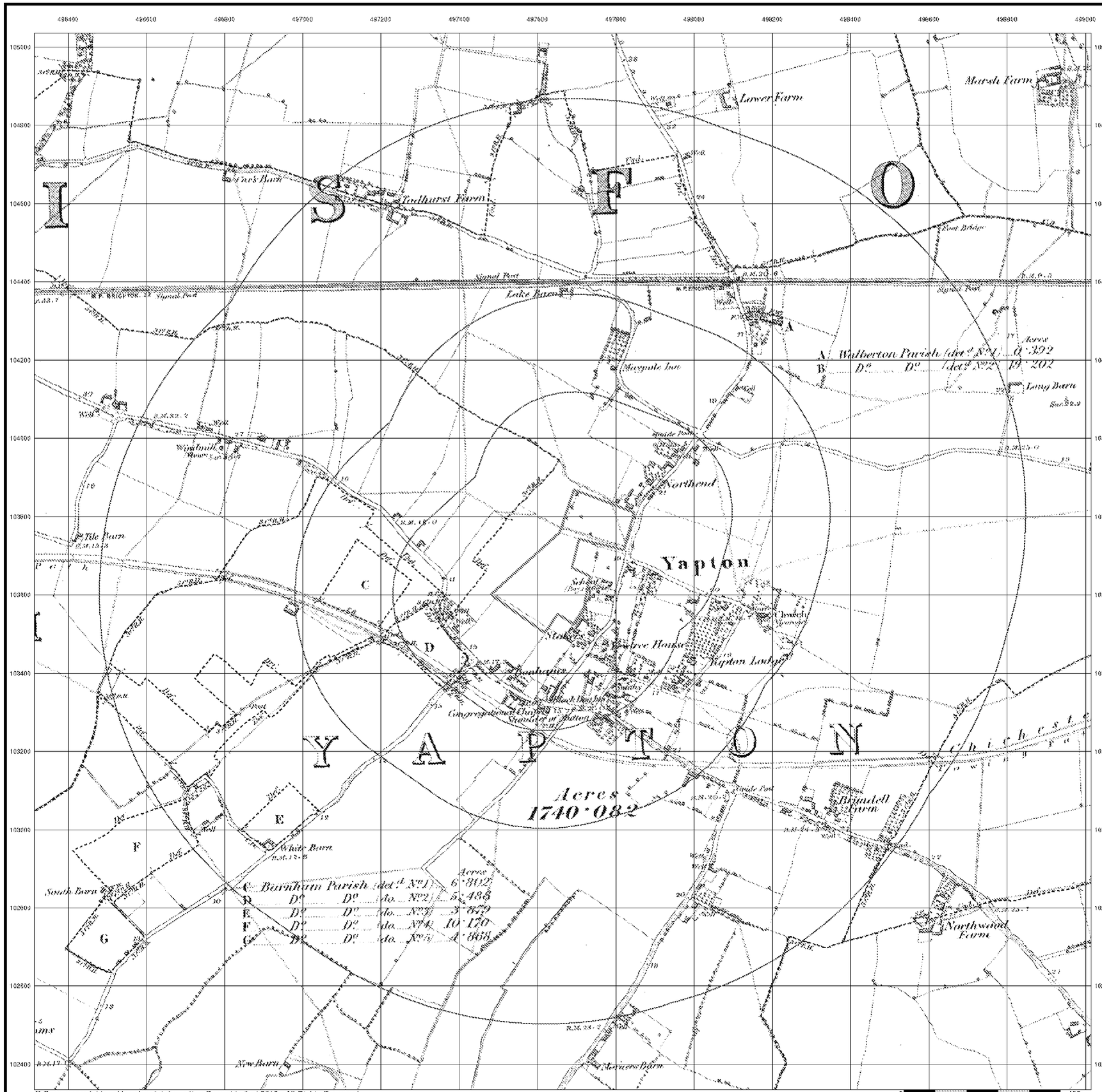
Order Number: 195300019_1_1
Customer Ref: A112666
National Grid Reference: 497670, 103690
Slice: A
Site Area (Ha): 5.34
Search Buffer (m): 1000

Site Details

Land at Stakers Farm, North End Road, Yapton, ARUNDEL, BN18 0DU

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

ARUN DISTRICT COUNCIL Y/72/20/RES



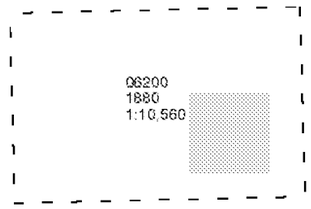
Sussex

Published 1880

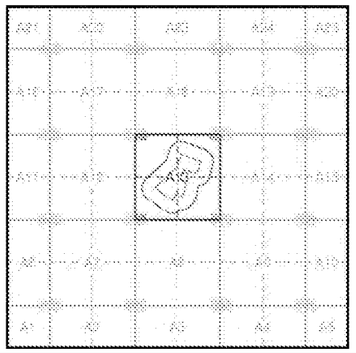
Source map scale - 1:10,560

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

Map Name(s) and Date(s)



Historical Map - Slice A



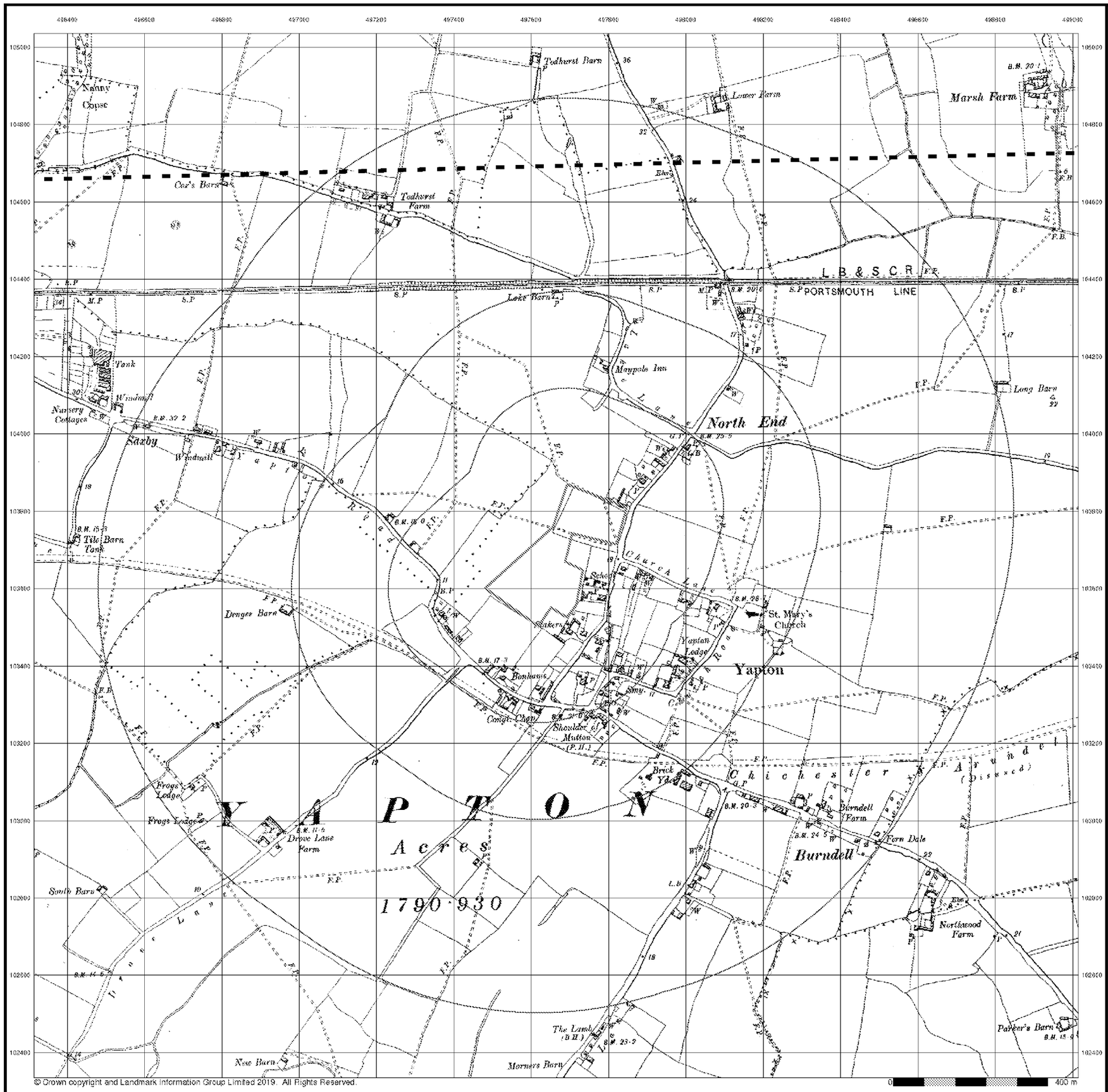
Order Details

Order Number:	195300019_1_1
Customer Ref:	A112666
National Grid Reference:	497670, 103690
Slice:	A
Site Area (Ha):	5.34
Search Buffer (m):	1000

Site Details

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Sussex

Published 1899

Source map scale - 1:10,560

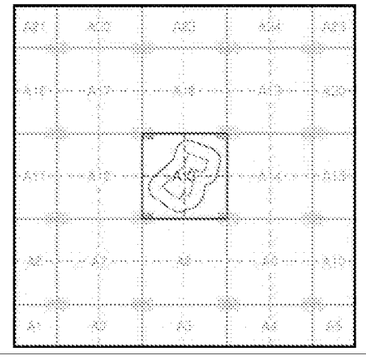
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some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

Map Name(s) and Date(s)

062NE
1899
1:10,560

062SE
1899
1:10,560

Historical Map - Slice A



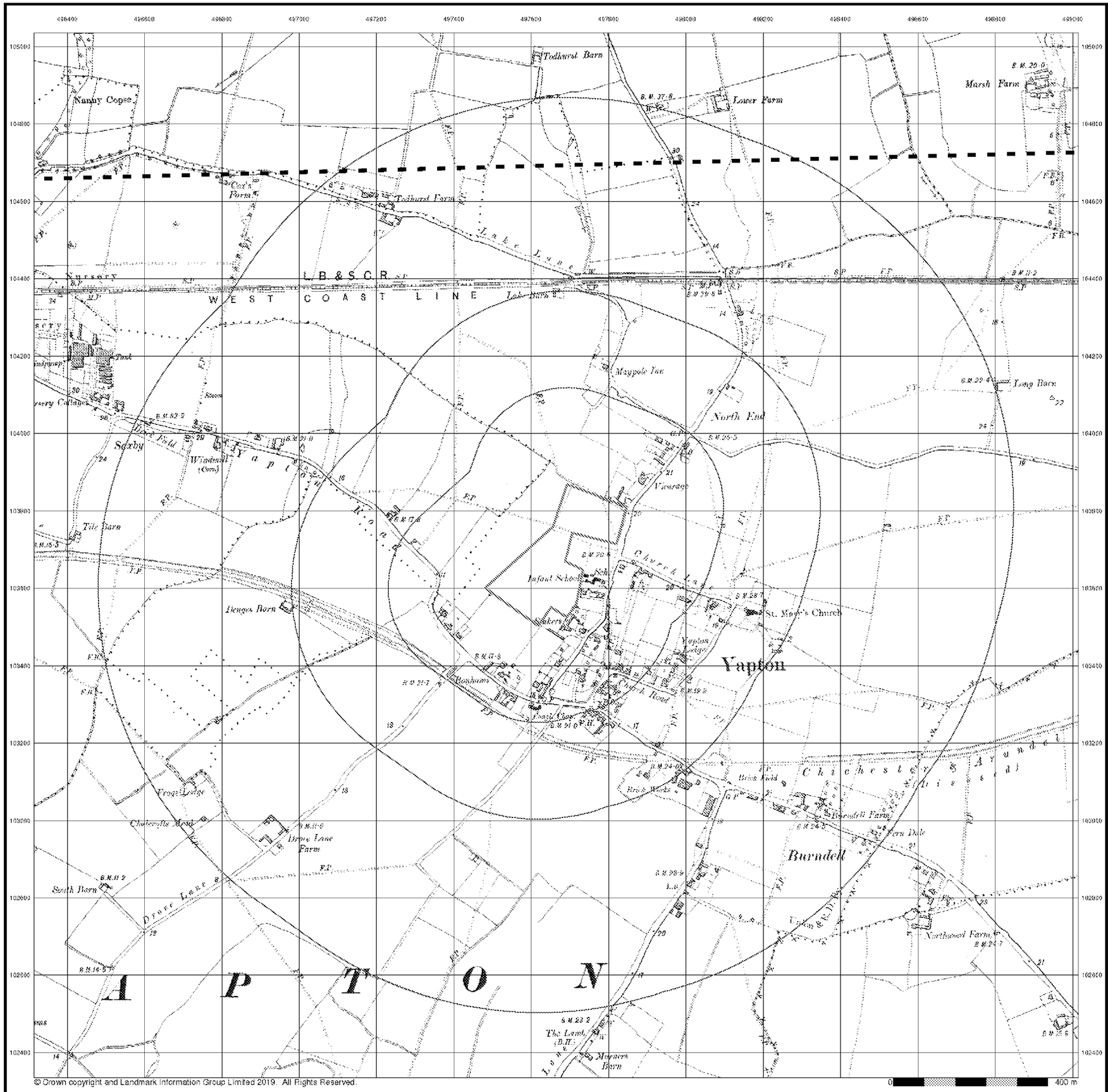
Order Details

Order Number:	195300019_1_1
Customer Ref:	A112666
National Grid Reference:	497670, 103690
Slice:	A
Site Area (Ha):	5.34
Search Buffer (m):	1000

Site Details

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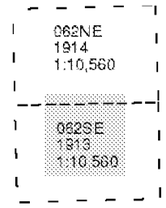
Sussex

Published 1913 - 1914

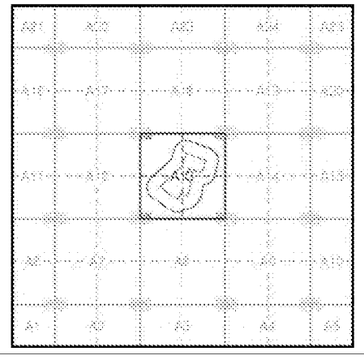
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Map Name(s) and Date(s)



Historical Map - Slice A



N

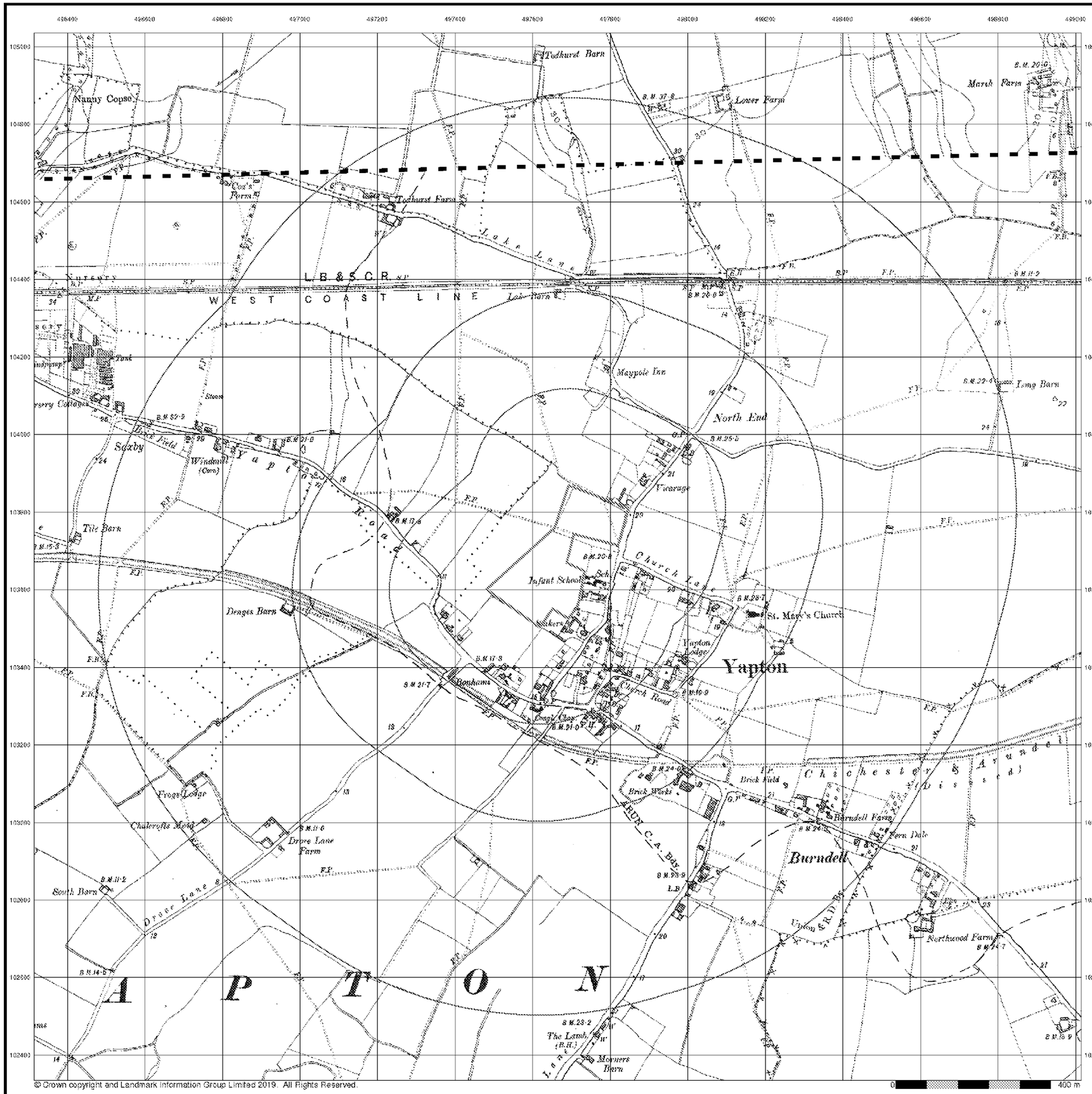
Order Details

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Customer Ref:	A112666
National Grid Reference:	497670, 103690
Slice:	A
Site Area (Ha):	5.34
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Site Details

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Sussex

Published 1913 - 1914

Source map scale - 1:10,560

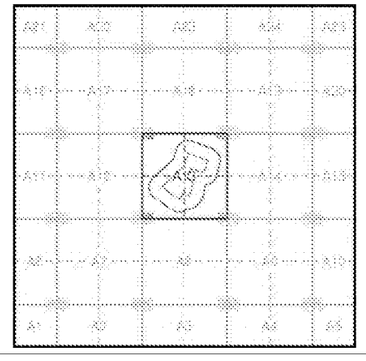
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Map Name(s) and Date(s)

062NE
1914
1:10,560

062SE
1913
1:10,560

Historical Map - Slice A





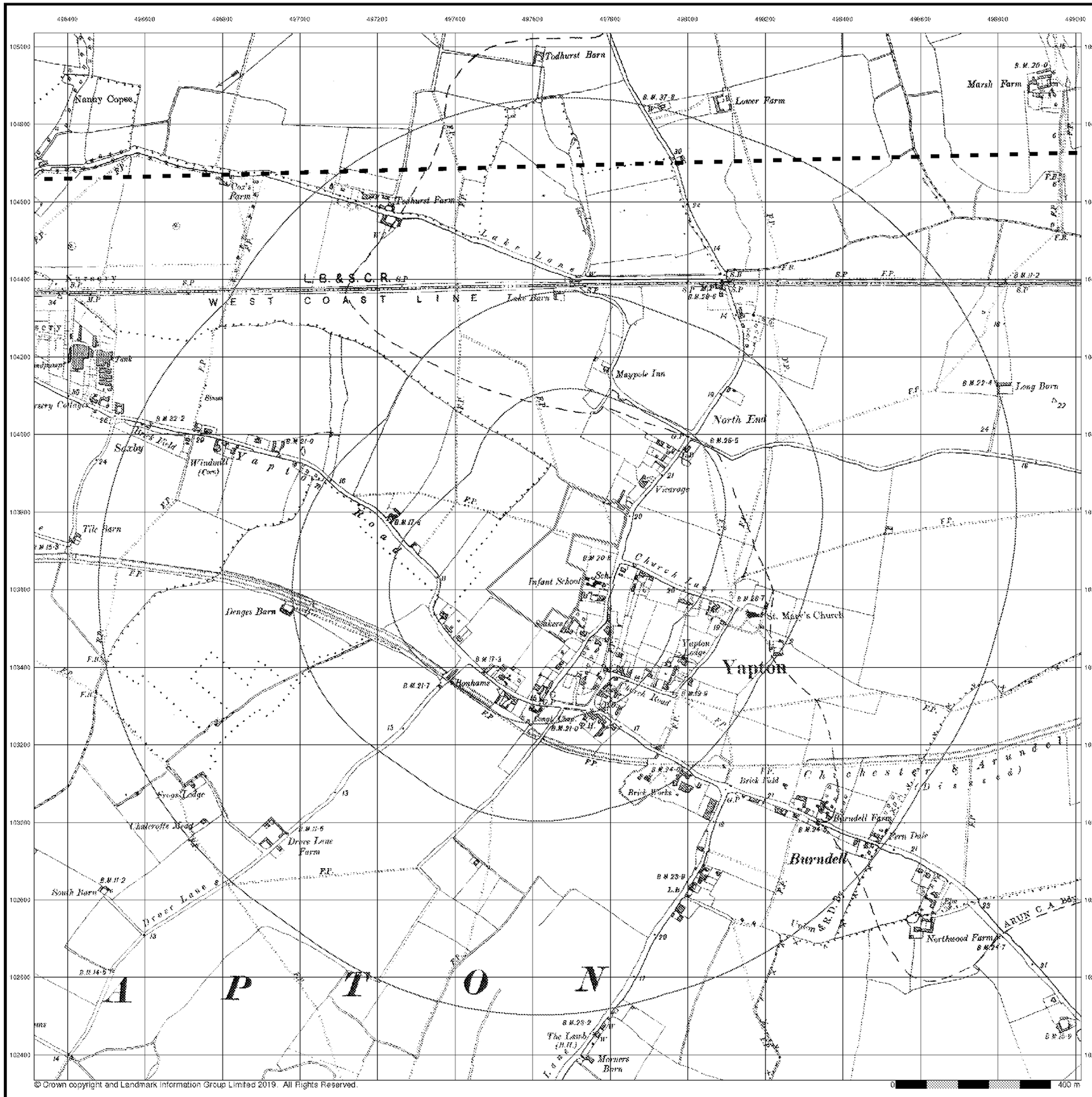
Order Details

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National Grid Reference:	497670, 103690
Slice:	A
Site Area (Ha):	5.34
Search Buffer (m):	1000

Site Details

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Sussex

Published 1913 - 1914

Source map scale - 1:10,560

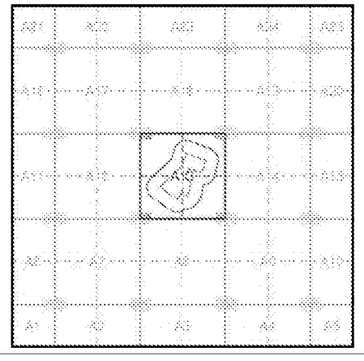
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Map Name(s) and Date(s)

062NE
1914
1:10,560

062SE
1913
1:10,560

Historical Map - Slice A



N

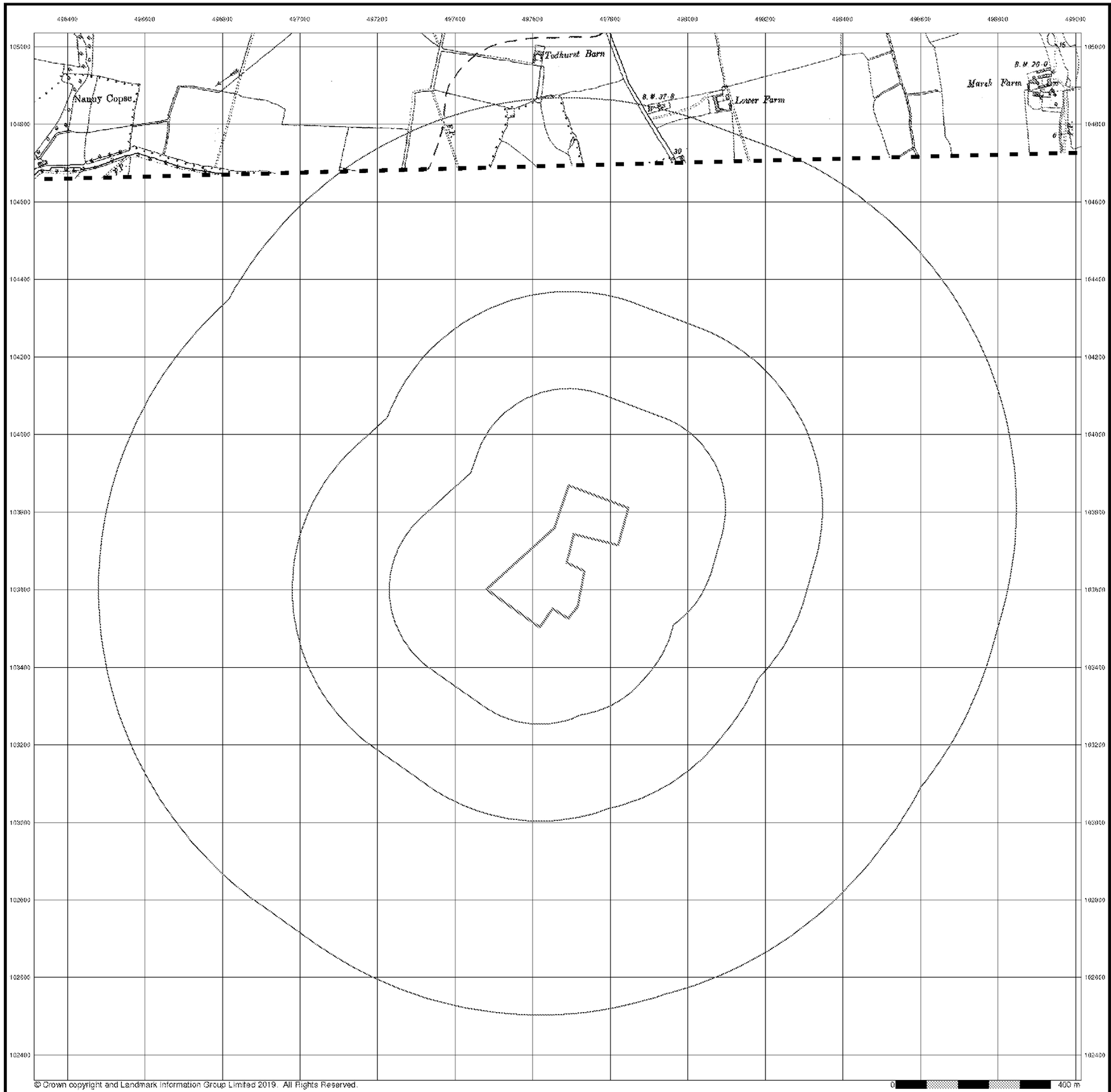
Order Details

Order Number:	195300019_1_1
Customer Ref:	A112666
National Grid Reference:	497670, 103690
Slice:	A
Site Area (Ha):	5.34
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Sussex

Published 1914

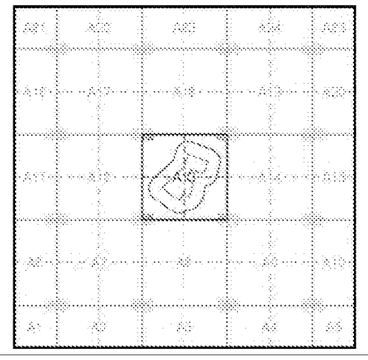
Source map scale - 1:10,560

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)

062NE
1914
1:10,560

Historical Map - Slice A



Order Details

Order Number:	195300019_1_1
Customer Ref:	A112666
National Grid Reference:	497670, 103690
Slice:	A
Site Area (Ha):	5.34
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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.

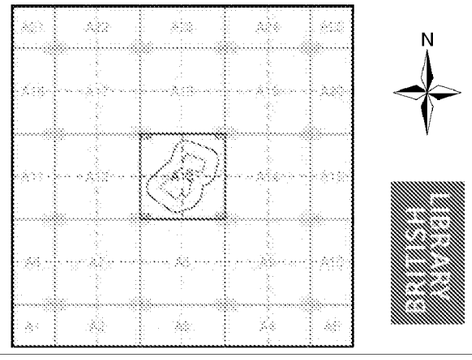
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Map Name(s) and Date(s)

SU90NE
1947
1:10,560

SU90SE
1947
1:10,560

Historical Aerial Photography - Slice A



Order Details

Order Number:	195300019_1_1
Customer Ref:	A112666
National Grid Reference:	497670, 103690
Slice:	A
Site Area (Ha):	5.34
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ARUN DISTRICT COUNCIL Y/72/20/RES



Sussex

Published 1951

Source map scale - 1:10,560

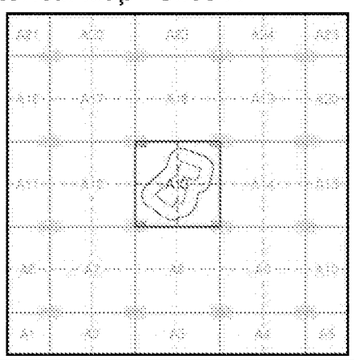
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some 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)

062NE
1951
1:10,560

062SE
1951
1:10,560

Historical Map - Slice A



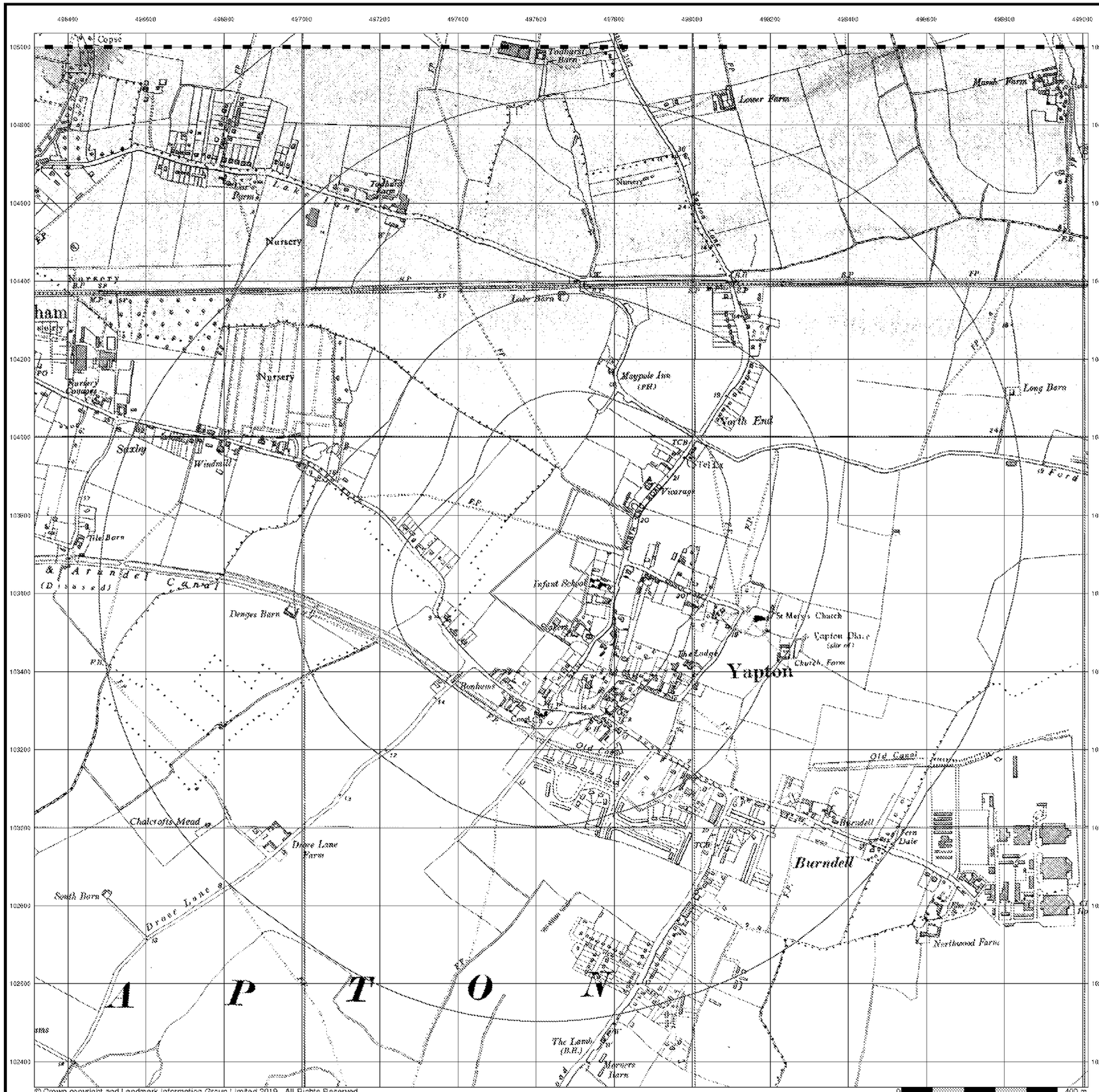
Order Details

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Search Buffer (m):	1000

Site Details

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Ordnance Survey Plan

Published 1961 - 1962

Source map scale - 1:10,000

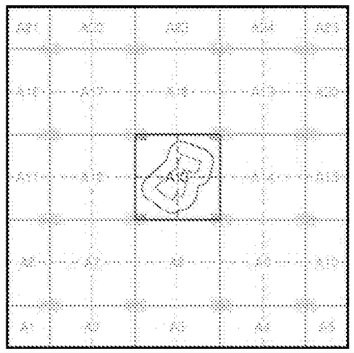
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some 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)

SU90NE
1961
1:10,560

SU90SE
1962
1:10,560

Historical Map - Slice A



N

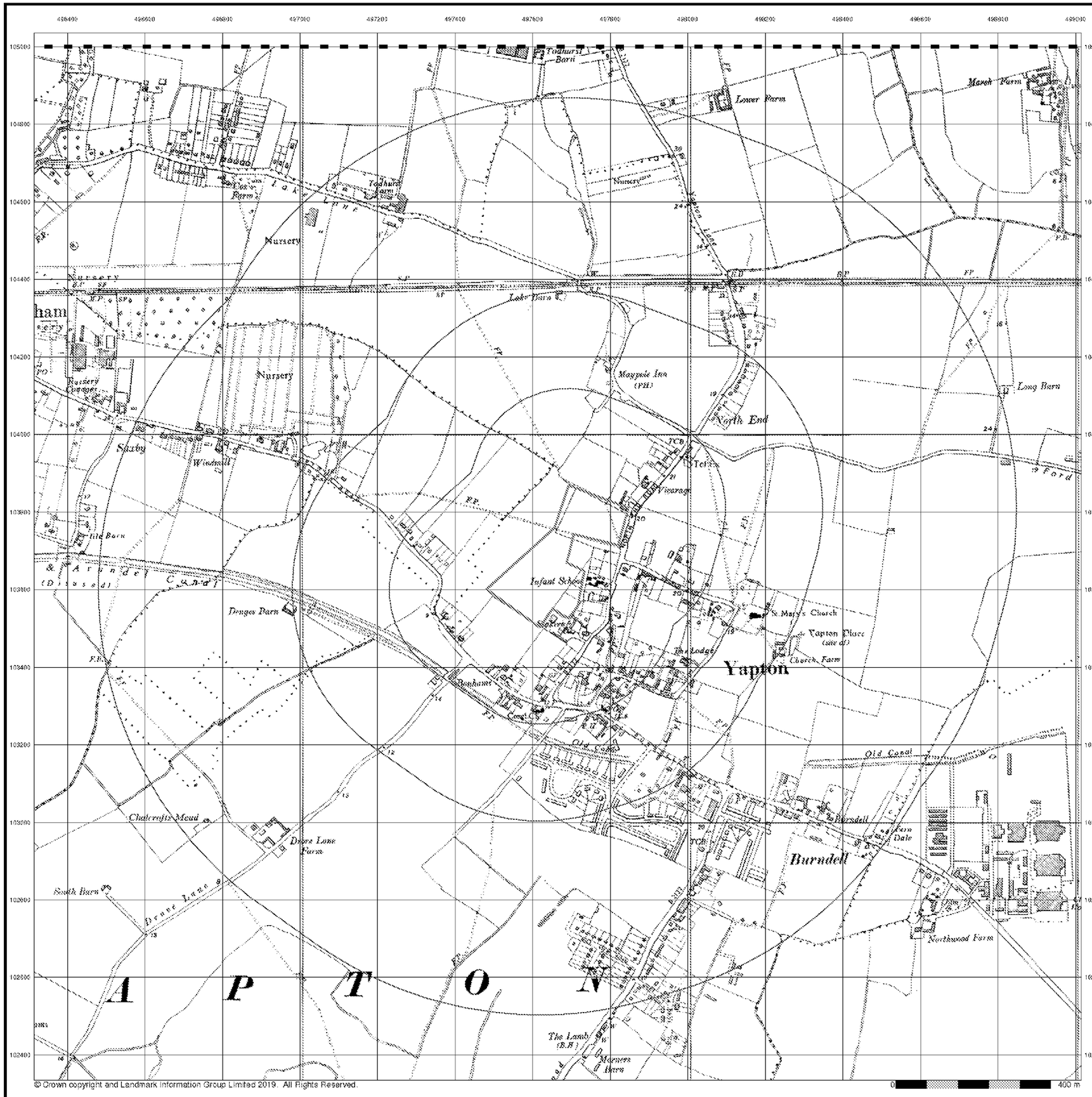
Order Details

Order Number:	195300019_1_1
Customer Ref:	A112666
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Site Area (Ha):	5.34
Search Buffer (m):	1000

Site Details

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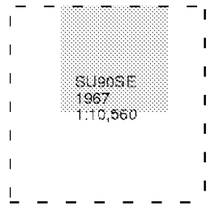
Ordnance Survey Plan

Published 1967

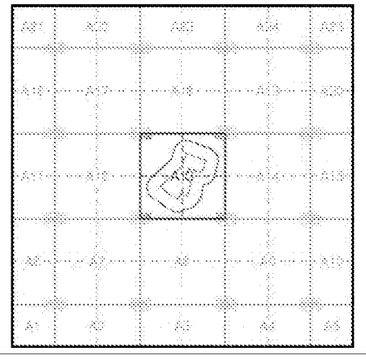
Source map scale - 1:10,000

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

Map Name(s) and Date(s)



Historical Map - Slice A



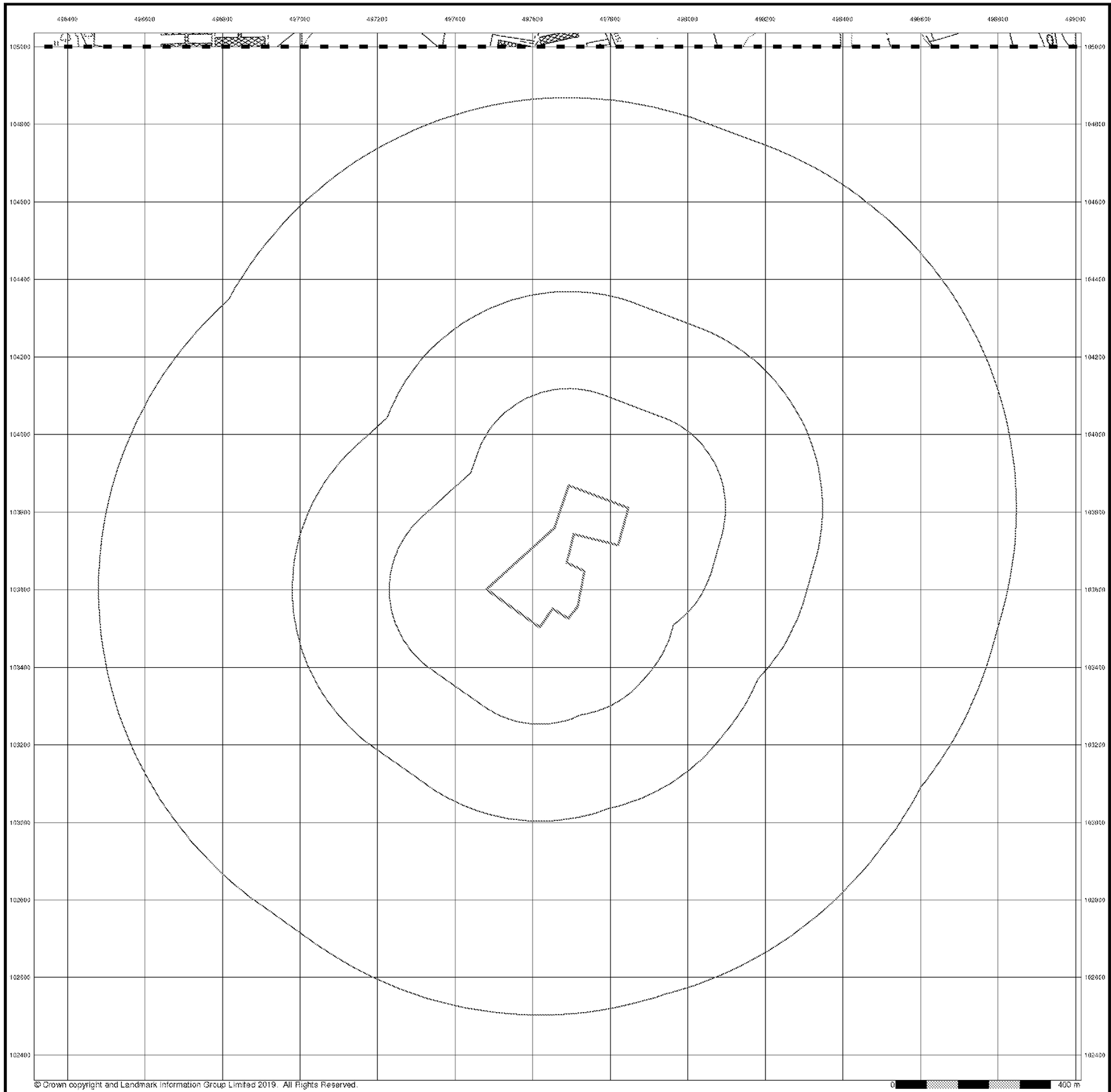
Order Details

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Site Details

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Ordnance Survey Plan

Published 1979

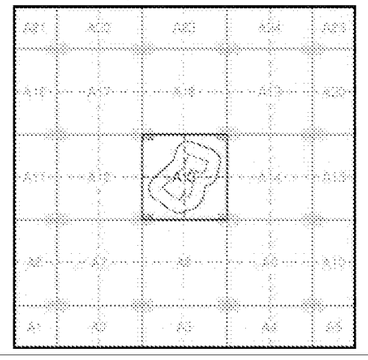
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Map Name(s) and Date(s)

SU90NE
1979
1:10,000

Historical Map - Slice A



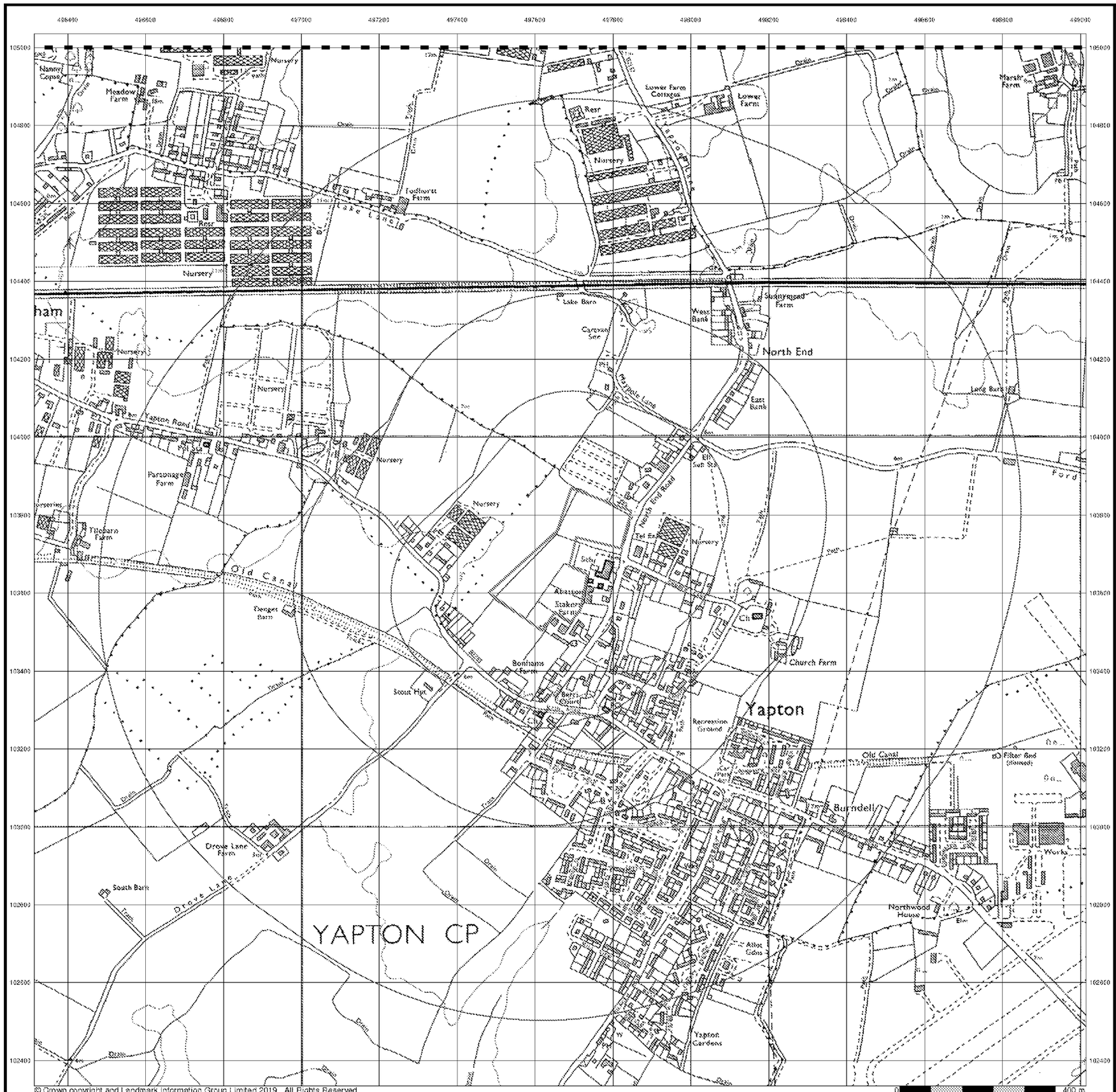
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Site Details

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Ordnance Survey Plan

Published 1980

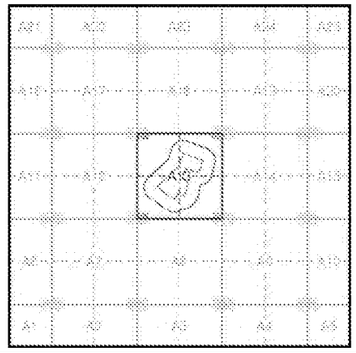
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The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps.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

Map Name(s) and Date(s)

SU80SE
1960
1:10,000

Historical Map - Slice A



Order Details

Order Number:	195300019_1_1
Customer Ref:	A112666
National Grid Reference:	497670, 103690
Slice:	A
Site Area (Ha):	5.34
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Ordnance Survey Plan

Published 1992

Source map scale - 1:10,000

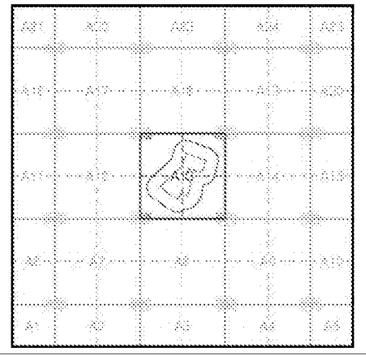
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some 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)

SU90NE
1992
1:10,000

SU90SE
1992
1:10,000

Historical Map - Slice A



N

Order Details

Order Number:	195300019_1_1
Customer Ref:	A112666
National Grid Reference:	497670, 103690
Slice:	A
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Search Buffer (m):	1000

Site Details

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10k Raster Mapping

Published 2000

Source map scale - 1:10,000

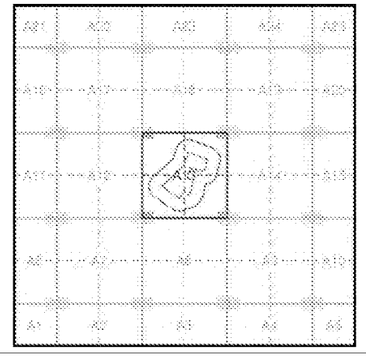
The historical maps shown were produced from the Ordnance Survey`s 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks 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)

SU90NE
2000
1:10,000

SU90SE
2000
1:10,000

Historical Map - Slice A



N

Order Details

Order Number:	195300019_1_1
Customer Ref:	A112666
National Grid Reference:	497670, 103690
Slice:	A
Site Area (Ha):	5.34
Search Buffer (m):	1000

Site Details

Land at Stakers Farm, North End Road, Yapton, ARUNDEL, BN18 0DU

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10k Raster Mapping

Published 2006

Source map scale - 1:10,000

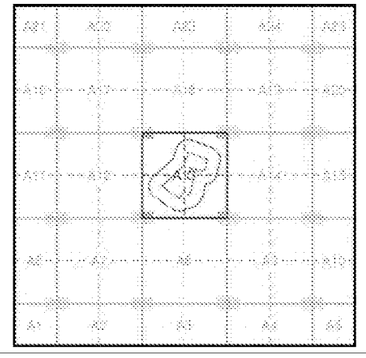
The historical maps shown were produced from the Ordnance Survey`s 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks 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)

SU90NE 2006 1:10,000

SU90SE 2006 1:10,000

Historical Map - Slice A



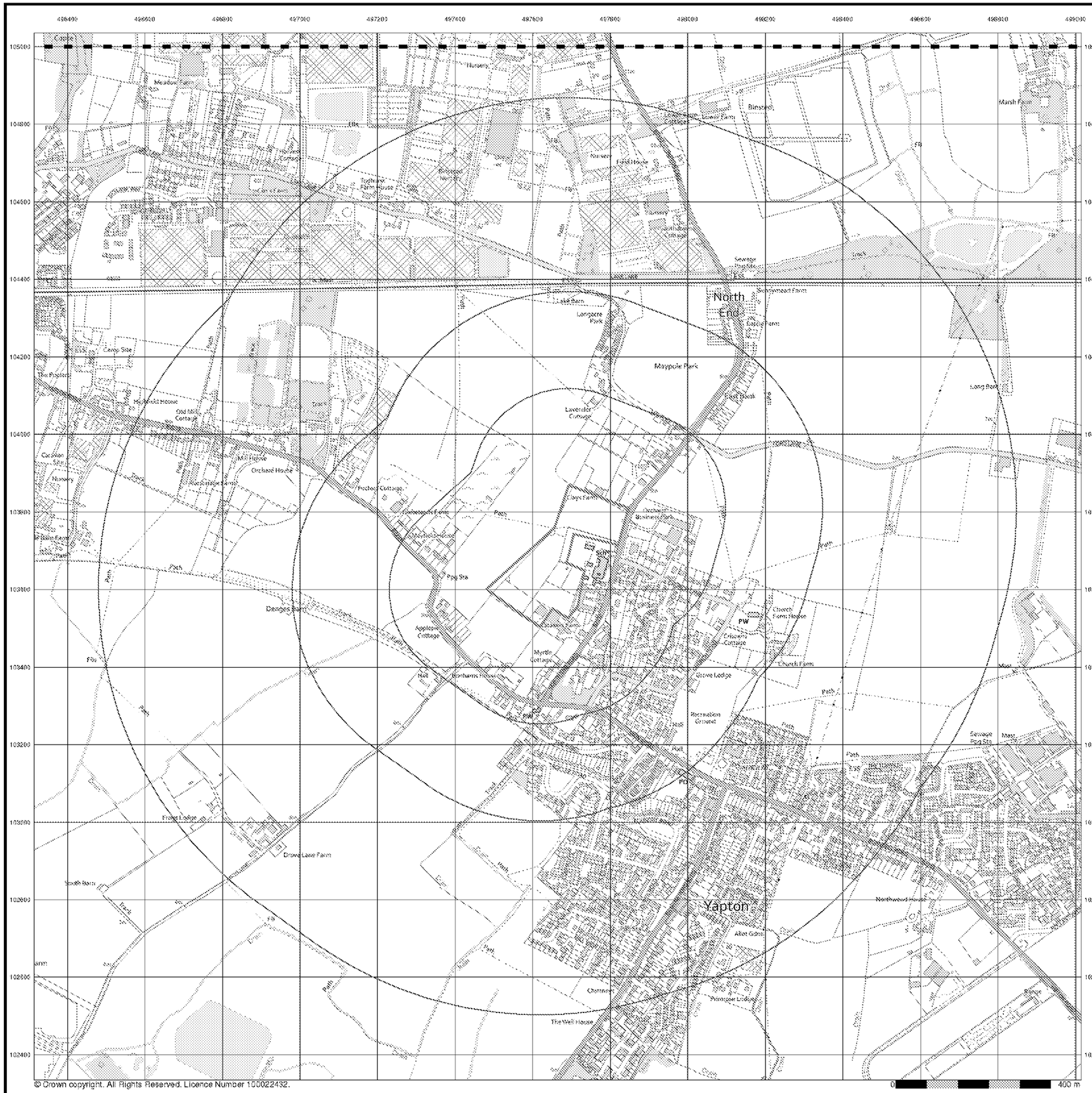
Order Details

Order Number:	195300019_1_1
Customer Ref:	A112666
National Grid Reference:	497670, 103690
Slice:	A
Site Area (Ha):	5.34
Search Buffer (m):	1000

Site Details

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VectorMap Local

Published 2019

Source map scale - 1:10,000

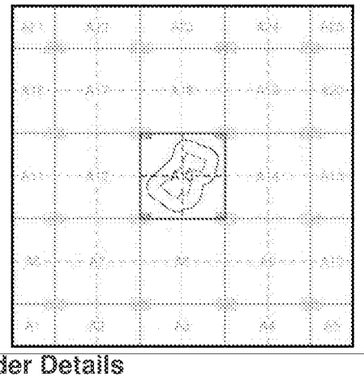
VectorMap Local (Raster) is Ordnance Survey's highest detailed 'backdrop' mapping product. These maps are produced from OS's VectorMap Local, a simple vector dataset at a nominal scale of 1:10,000, covering the whole of Great Britain, that has been designed for creating graphical mapping. OS VectorMap 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)

SU90NE
2019
Variable

SU90SE
2019
Variable

Historical Map - Slice A



N

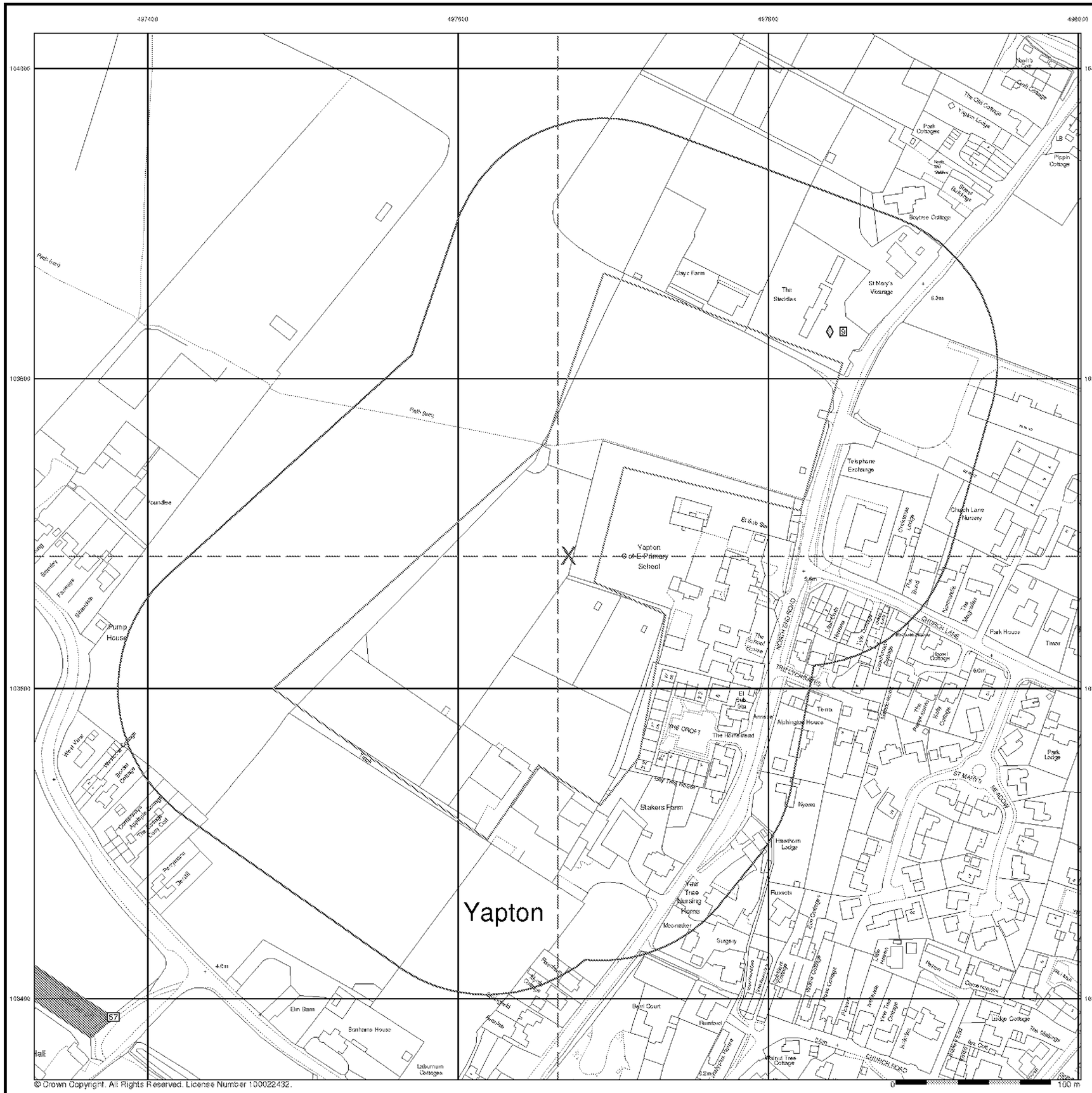
Order Details

Order Number:	195300019_1_1
Customer Ref:	A112666
National Grid Reference:	497670, 103690
Slice:	A
Site Area (Ha):	5.34
Search Buffer (m):	1000

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General

Specified Site
Specified Buffer(s)
Bearing Reference Point
Map ID
Several of Type at Location
Pylon
Overhead Transmission Line

Agency and Hydrological

- Contaminated Land Register Entry or Notice (Location)
- Contaminated Land Register Entry or Notice
- Discharge Consent
- Enforcement or Prohibition Notice
- Integrated Pollution Control
- Integrated Pollution Prevention Control
- Local Authority Integrated Pollution Prevention and Control
- Local Authority Pollution Prevention and Control
- 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

Hazardous Substances

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

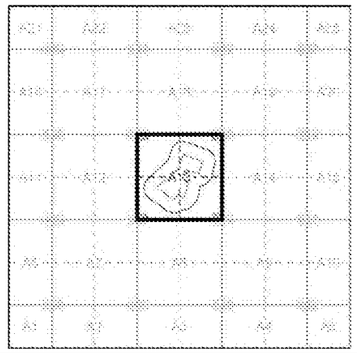
Geological

- BGS Recorded Mineral Site

Waste

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

Site Sensitivity Map - Segment A13



Order Details

Order Number:	195300019_1_1
Customer Ref:	A112666
National Grid Reference:	497670, 103690
Slice:	A
Site Area (Ha):	5.34
Plot Buffer (m):	100

Site Details

Land at Stakers Farm, North End Road, Yapton, ARUNDEL, BN18 0DU

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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

Hazardous Substances

COMAH Site | Explosive Site

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

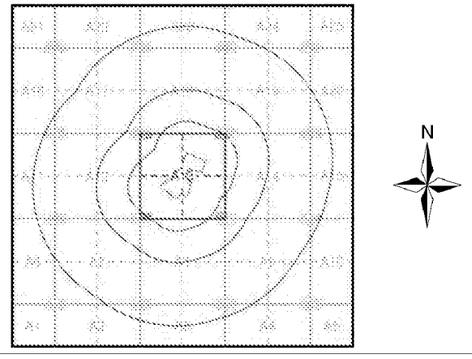
Geological

- BGS Recorded Mineral Site

Waste

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

Site Sensitivity Map - Slice A



N

Order Details

Order Number:	195300019_1_1
Customer Ref:	A112666
National Grid Reference:	497670, 103690
Slice:	A
Site Area (Ha):	5.34
Search Buffer (m):	1000

Site Details

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Industrial Land Use Map

General

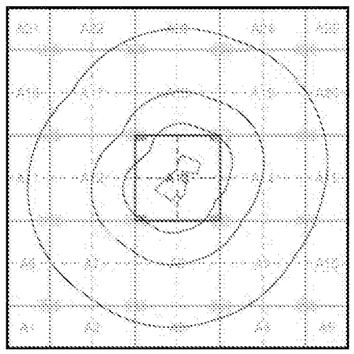
Specified Site | Specified Buffer(s) | Bearing Reference Point

Slice | Map ID

Industrial Land Use

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

Industrial Land Use Map - Slice A



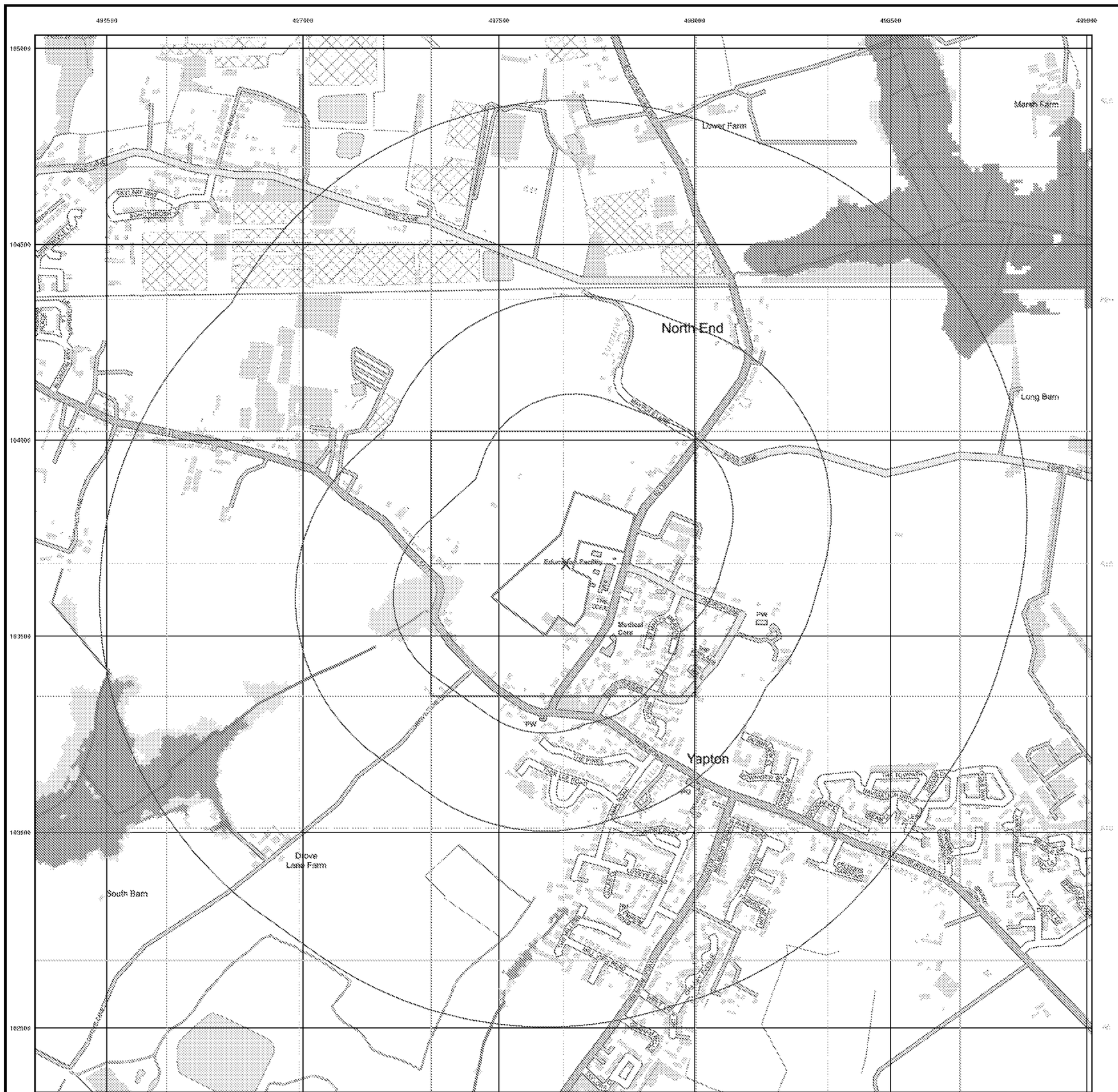
Order Details

Order Number:	195300019_1_1
Customer Ref:	A112666
National Grid Reference:	497670, 103690
Slice:	A
Site Area (Ha):	5.34
Search Buffer (m):	1000

Site Details

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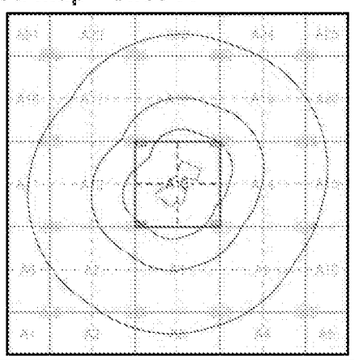
General

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

Agency and Hydrological (Flood)

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

Flood Map - Slice A



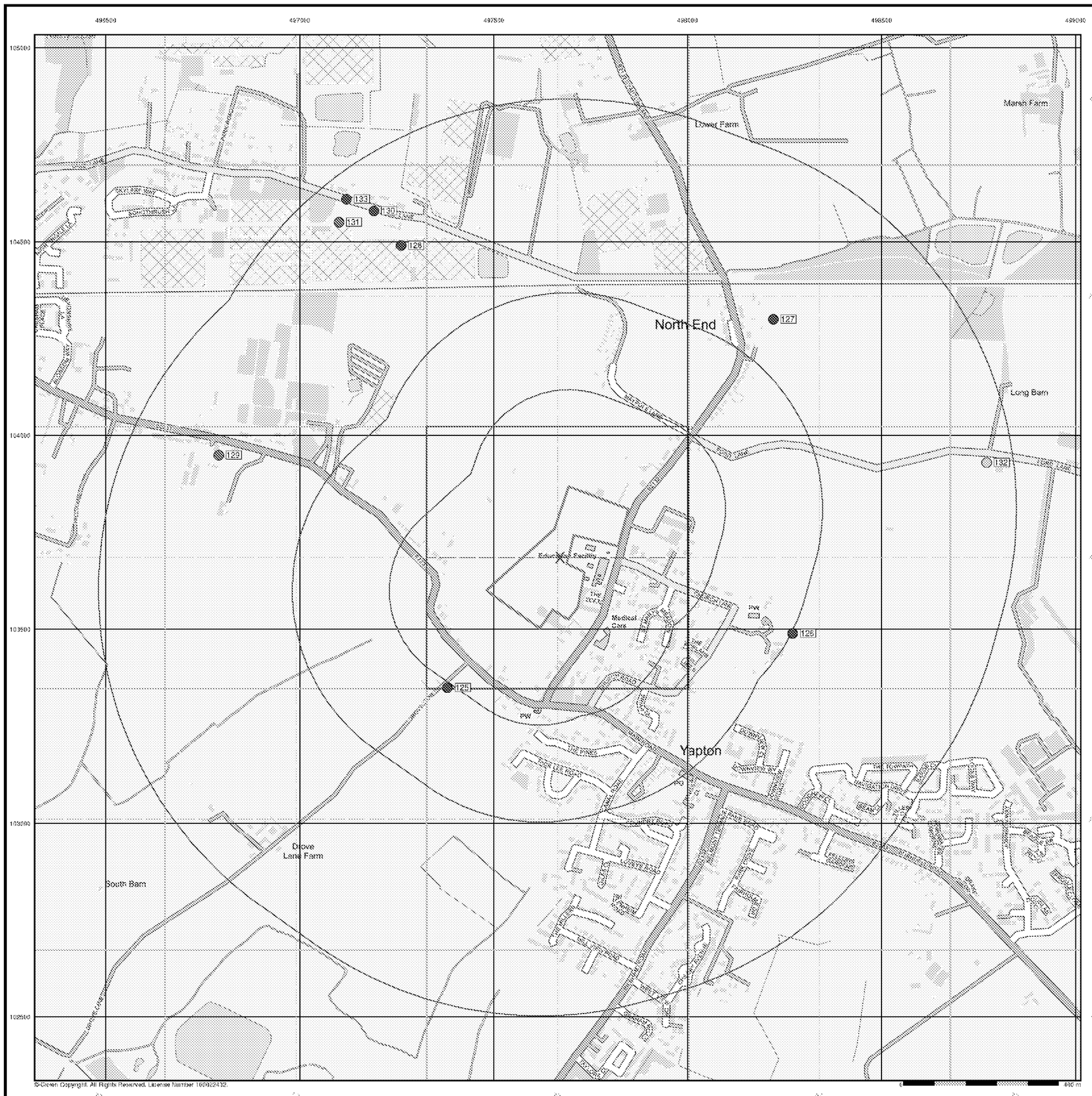
Order Details

Order Number:	195300019_1_1
Customer Ref:	A112666
National Grid Reference:	497670, 103690
Slice:	A
Site Area (Ha):	5.34
Search Buffer (m):	1000

Site Details

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General

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

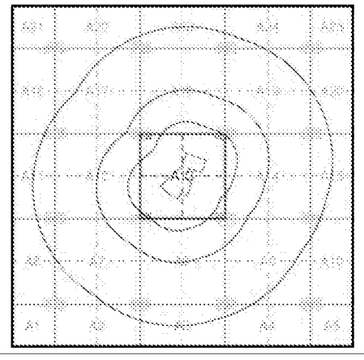
Agency and Hydrological (Boreholes)

- 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



Order Details

Order Number:	195300019_1_1
Customer Ref:	A112666
National Grid Reference:	497670, 103690
Slice:	A
Site Area (Ha):	5.34
Search Buffer (m):	1000

Site Details

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General

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

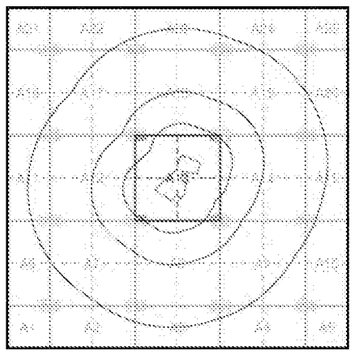
OS Water Network Data

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

Contours (height in meters)

- Standard Contour
- Master Contour
- Spot Height
- MLW Mean Low Water
- MHW Mean High Water

OS Water Network Map - Slice A



Order Details

Order Number:	195300019_1_1
Customer Ref:	A112666
National Grid Reference:	497670, 103690
Slice:	A
Site Area (Ha):	5.34
Search Buffer (m):	1000

Site Details

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General

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

Risk of Flooding from Surface Water

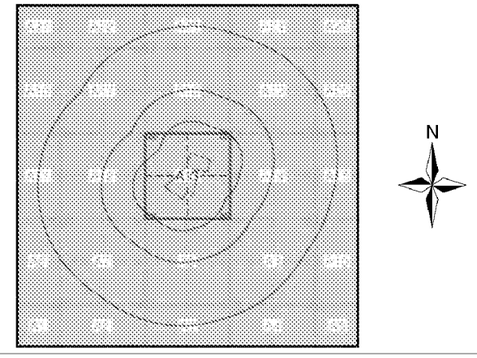
- High - 30 Year Return
- Medium - 100 Year Return
- Low - 1000 Year Return

Suitability

See the suitability map below

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

EA/NRW Suitability Map - Slice A



Order Details

Order Number:	195300019_1_1
Customer Ref:	A112666
National Grid Reference:	497670, 103690
Slice:	A
Site Area (Ha):	5.34
Search Buffer (m):	1000

Site Details

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0 400 m

General

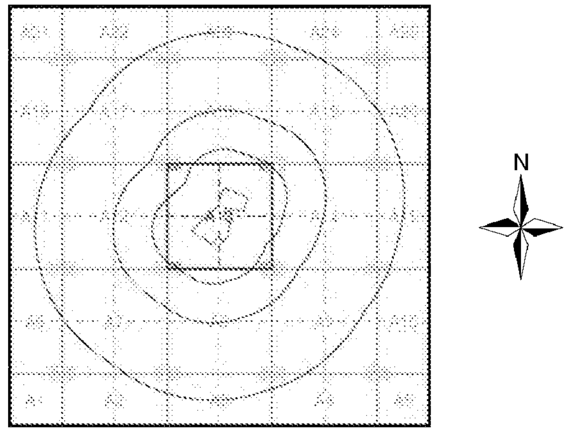
Specified Site Specified Buffer(s) X Bearing Reference Point

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:	195300019_1_1
Customer Ref:	A112666
National Grid Reference:	497670, 103690
Slice:	A
Site Area (Ha):	5.34
Search Buffer (m):	1000

Site Details

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ARUN DISTRICT COUNCIL Y/72/20/RES



General

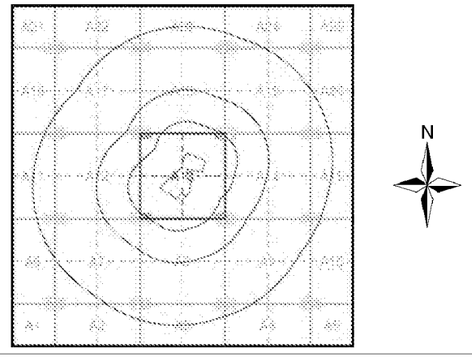
Specified Site | Specified Buffer(s) | Bearing Reference Point

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:	195300019_1_1
Customer Ref:	A112666
National Grid Reference:	497670, 103690
Slice:	A
Site Area (Ha):	5.34
Search Buffer (m):	1000

Site Details

Land at Stakers Farm, North End Road, Yapton, ARUNDEL, BN18 0DU

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General

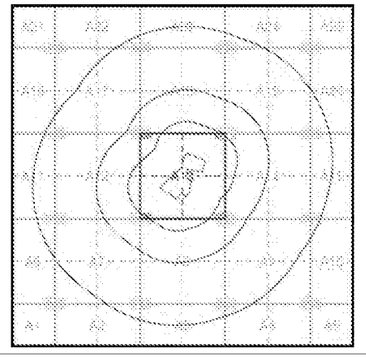
Specified Site | Specified Buffer(s) | Bearing Reference Point

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



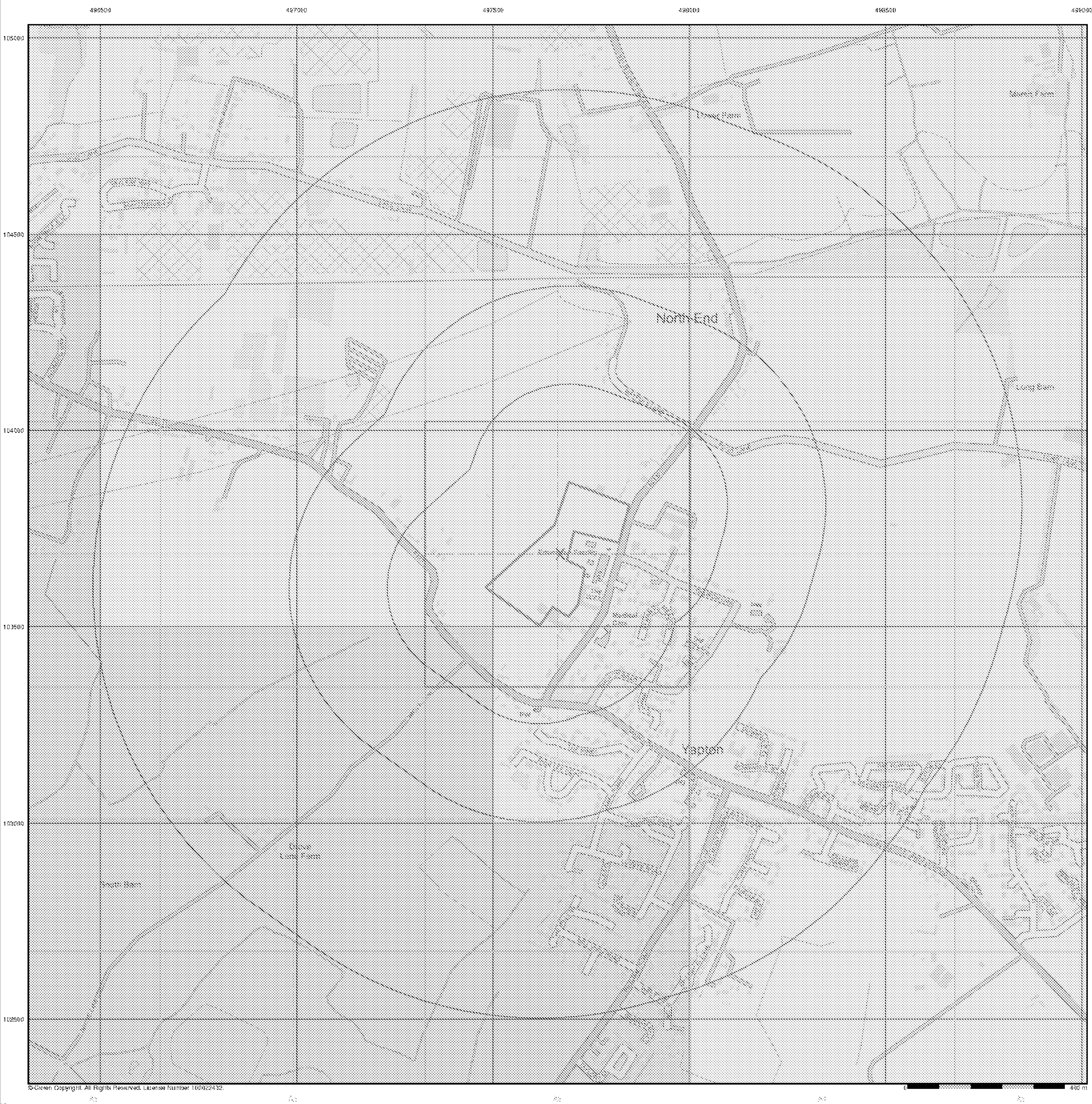
Order Details

Order Details:	195300019_1_1
Customer Ref:	A112666
National Grid Reference:	497670, 103690
Slice:	A
Site Area (Ha):	5.34
Search Buffer (m):	1000

Site Details

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ARUN DISTRICT COUNCIL Y/72/20/RES

General

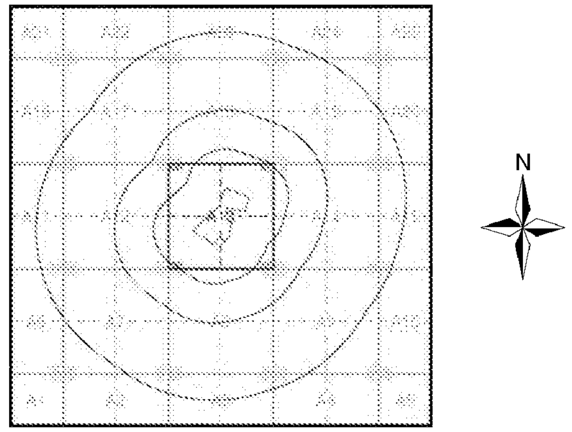
Specified Site — Specified Buffer(s) — X Bearing Reference Point

Estimated Soil Chemistry Lead

Lead Concentrations mg/kg

- <100 mg/kg
- 100 - 200
- 200 - 300
- 300 - 600
- 600 - 1200
- >1200

Estimated Soil Chemistry Lead - Slice A



Order Details

Order Details:	195300019_1_1
Customer Ref:	A112666
National Grid Reference:	497670, 103690
Slice:	A
Site Area (Ha):	5.34
Search Buffer (m):	1000

Site Details

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General

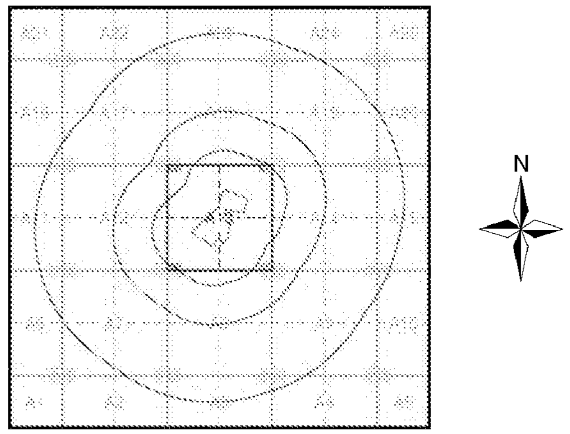
Specified Site   Specified Buffer(s)   Bearing Reference Point

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



Order Details

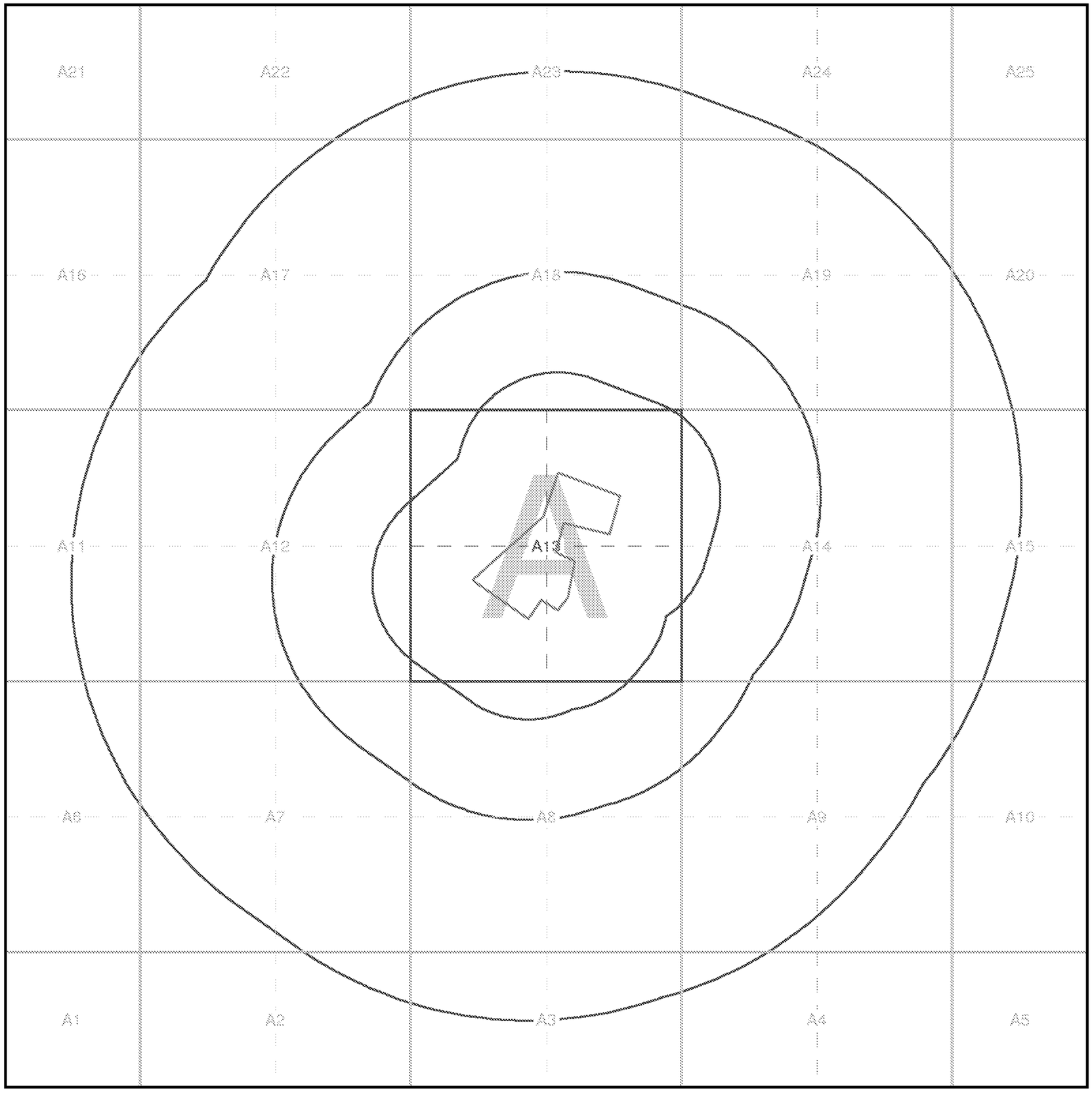
Order Details: 195300019_1_1
Customer Ref: A112666
National Grid Reference: 497670, 103690
Slice: A
Site Area (Ha): 5.34
Search Buffer (m): 1000

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ARUN DISTRICT COUNCIL Y/72/20/RES



Index Map

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

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

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

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

A selection of organisations who provide data within this report:

Envirocheck reports are compiled from 136 different sources of data.

Client Details

Dr S Roberts, WYG Environment Planning Transport Ltd, Level 5, Longcross Court, 47 Newport Road, Cardiff, CF24 0AD

Order Details

Order Number:	195300019_1_1
Customer Ref:	A112666
National Grid Reference:	497670, 103680
Site Area (Ha):	5.34
Search Buffer (m):	1000

Site Details

Land at Stakers Farm, North End Road, Yapton, ARUNDEL, BN18 0DU

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

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Appendix I – CIRIA C552 Qualitative Risk Assessment Matrix

The following tables are derived from CIRIA C552 and have been used to define the risk rating presented in the Qualitative Risk Assessment matrix.

Classification of consequence

Classification	Definition
Severe	Short term (acute) risk to human health likely to result in 'significant harm' as defined by the Environment Protection Act 1990, Part IIA. Short term risk of pollution (note; Water Resources Act contains no scope for considering significant pollution) of sensitive water resource. Catastrophic damage to building/property. A short term risk to a particular ecosystem, or organism forming part of such ecosystem. (Note the definitions of ecological systems within the Draft Circular on Contaminated Land DETR, 2000).
Medium	Chronic damage to human health ('significant harm', as defined In DETR, 2000). Pollution of sensitive water resources (note; Water Resources Act contains no scope for considering significant pollution). A significant change in a particular ecosystem, or an organism forming part of such an ecosystem. (Note the definitions of ecological systems within the Draft Circular on Contaminated Land DETR, 2000).
Mild	Pollution of non-sensitive water resources. Significant damage to crops, buildings, structures and services ('significant harm', as defined In DETR, 2000). Damage to sensitive buildings/structures/services or the environment.
Minor	Harm, although not necessarily significant harm, which may result in a financial loss, or expenditure to resolve. Non-permanent heath effects to human health (easily prevented by means such as personal protective clothing etc). Easily repairable effects of damage to buildings, structures and services.

Classification of probability

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

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Matrix of consequence against probability to gain a risk classification

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

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