



**REPORT C7074
AUGUST 2016**

GEOENVIRONMENTAL APPRAISAL

**for land at
FORMER SIEMENS FACTORY, HEBBURN, GATESHEAD**

**prepared for
MILLER HOMES (NORTH EAST) LTD**





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EXECUTIVE SUMMARY

Introduction:	<p>Sirius Geotechnical and Environmental Ltd was commissioned by Miller Homes (North East) Ltd to undertake a geoenvironmental appraisal of land at the Former Siemens Factory, off South Drive in Hebburn, Gateshead, Tyne and Wear.</p> <p>It is understood that consideration is being given to redevelopment of the site for a residential with gardens end use.</p>
Site Details:	<p>The site is located between South Drive and Victoria Road West in Hebburn, Gateshead, Tyne and Wear, approximately 5km to the east of Newcastle upon Tyne city centre. The site covers a total area of 10ha.</p> <p>The majority of the site currently comprises concrete hardstanding, with soft landscaped mounded areas in the east, south and southeast.</p>
Site History:	<p>The site was agricultural land since the earliest available historical plans, dated from the 1850s, with only ponds and small buildings present. It was developed from the 1950s onwards, with an Electrical Appliance Works, which included railway sidings, tanks, a travelling crane and a reservoir.</p>
Fieldwork:	<p>Excavation of 52 No. trial pits (TPs 101 to 152) to a maximum depth of 4.5m bgl.</p> <p>Drilling of five window sample holes (WS 101 to 105) to a maximum depth of 4m bgl, each completed with a combined gas/groundwater monitoring well.</p> <p>Drilling of two cable percussion boreholes (BHs 101 and 102) to a maximum depth of 13.5m bgl.</p> <p>Drilling of eight rotary boreholes (RO 101, 101A, 102, 103, 103A, 104, 105 and 106) to a maximum depth of 36m bgl.</p> <p>Programme of ground gas monitoring was undertaken following completion of fieldwork.</p>
Laboratory Testing:	<p>Samples of soil were submitted for analysis of a range of metal, other inorganic and organic components. Selected soil samples were also tested for the presence of asbestos fibres, PCBs and hydrocarbons.</p> <p>Groundwater samples were also collected from monitoring wells and scheduled for analytical testing.</p> <p>Geotechnical testing was scheduled on selected soil samples.</p> <p>All testing was undertaken at MCERTS and UKAS accredited laboratories.</p>

<p>Proven ground conditions:</p>	<p>The site surface comprises concrete hardstanding typically, 0.2 to 0.3m thick, across the site centre and toward the north and north east, with rough grass over topsoil in the south, east and south east. Mounds of soils up to circa 7 m in height are present along much of the eastern boundary and in the south-east corner.</p> <p>Made Ground has been encountered across the majority of the formerly developed areas of the site, typically around 0.4m thick but locally up to >3.9m bgl where it has been used to infill subsurface structures and former ponds. Numerous relic subsurface structures have been encountered including concrete slabs and foundations.</p> <p>The mounds in the east and south east were largely comprised of made ground of reworked clay with some brick, pottery and concrete fragments.</p> <p>Underlying the made ground or topsoil was firm and stiff, locally very stiff Pelaw Clay.</p> <p>Rotary holes drilled across the site proved rockhead at depths of between 10 and 21m bgl. Intact coal seams were encountered in holes drilled into bedrock.</p>
<p>Identified Contamination:</p>	<p>Asbestos fibres have been identified within two samples of topsoil and 11 samples of made ground.</p> <p>In addition, concentrations of heavy metals and PAHs have been recorded sporadically throughout nine further samples of topsoil and made ground. Based on the conceptual model for the site, the presence of asbestos fibres, elevated heavy metals and PAHs may be reasonably anticipated throughout most, if not all, of the made ground and a significant proportion of the topsoil across the site.</p> <p>Localised ‘hotspots’ of diesel range hydrocarbon contamination has also been identified within the made ground, and at one location, in natural soils.</p>
<p>Ground Stability:</p>	<p>The Bottom Hebburn Fell coal seam has been encountered across the central and southern part of the site up to 1.7 m thick (including coal bands), and within influencing depth beneath rockhead. No evidence of working has been identified either within the rotary boreholes or in the local area, significant thicknesses of drift across the majority of the site also make historic working via drifts, adits or bell pits unlikely.</p> <p>However, there is considered to be a low risk of surface instability resulting from possible unrecorded working of the Bottom Hebburn Fell and further proof drilling of plots across the central part of the site is recommended.</p>

<p>Foundations and Floor Slabs:</p>	<p>Conventional strip, deep strip or trench fill foundations are considered possible where made ground is typically <2.5m thick, bearing onto natural soils of suitable bearing capacity.</p> <p>A significant number of buried subsurface structures have been encountered.</p> <p>Alternative foundation solutions such as piling or vibro replacement stone columns will be required where deeper made ground is present, removal of structures/invasive plants disturbs the ground to >2.5m, or where the influence of trees dictates. Given that contamination is present in the soils beneath the site, alternative foundations through a placed clean capping layer could potentially reduce the amount of excavation of contaminated arisings required, and lower the risk to groundworkers and adjacent users.</p> <p>It is considered that suspended floor slabs will be required across the site.</p>
<p>Sulphate Class:</p>	<p>DS-2 and AC-2 for any concrete in contact with made ground. DS-1 and AC-1 for concrete only in contact with natural clay soils.</p>
<p>Remediation Options:</p>	<p>The investigation has identified potential pollutant linkages to end users and construction workers from asbestos fibres and elevated concentrations of heavy metals, diesel range hydrocarbons and PAHs in topsoil and made ground.</p> <p>Further analysis of topsoil is recommended, but a significant proportion should be assumed unsuitable for reuse in near surface garden and landscaped areas.</p> <p>The retaining of the contaminated made ground on site is possible beneath a 1000mm clean cap and geotextile marker layer to protect end users, subject to regulatory approval. A remedial strategy and site materials management plan will be required.</p> <p>Hydrocarbon hotspots will require excavation and either on-site treatment or removal off-site.</p>
<p>Gas Protection:</p>	<p>Gas monitoring is currently ongoing, but based on the initial results CS2 measures should be assumed across the site.</p>

The executive summary given above is an overview of the key findings and conclusions of the report. There may be other information contained within the body of the report which puts into context the findings of the executive summary. No reliance should be placed on the executive summary in isolation.

1. INTRODUCTION

Sirius Geotechnical and Environmental Ltd (Sirius) was commissioned by Miller Homes (North East) Ltd (Miller Homes) to undertake a geoenvironmental appraisal of land at the Former Siemens Factory, off South Drive in Hebburn, Gateshead, Tyne and Wear (the “site”). It is understood that the site is to be developed for a residential with gardens end use and with areas of soft landscaping.

A proposed development layout, showing 337 units, has been produced for the site by Pod (Drawing No. 544-MIL-100 rev. G), a copy of which is presented in Appendix A to this report.

The objectives of this appraisal were to:

- Establish the historical development of the site and surrounding area from a review of available plans;
- Establish the environmental setting of the site;
- Investigate near surface soil and groundwater conditions;
- Determine the potential risks posed by any ground contamination and provide recommendations on remedial measures to manage such risks;
- Assess the risks associated with hazardous ground gas;
- Evaluate whether past mining or other extractive industries could have an influence on the site, including the presence of recorded mineshafts;
- Provide advice relating to geotechnical issues associated with the site; and,
- Provide outline foundation recommendations.

As part of this investigation, information from the following sources has been reviewed: Landmark Information Group (LIG) Envirocheck report, the Coal Authority (CA), and the British Geological Survey (BGS).

Fieldwork was undertaken by Sirius from 20th June to 1st July 2016, and comprised the mechanical excavation of 52 trial pits (TPs 101 to 152), the drilling of five window sample holes (WS 101 to 105), the drilling of two cable percussion boreholes (BHs 101 and 102), and the drilling of eight rotary openhole boreholes (RO 101, 101A, 102, 103, 103A, 104, 105 and 106). On completion of the

fieldwork, a programme of ground gas monitoring was subsequently commenced, and is still ongoing at the time of writing.

This report presents the factual information available during this appraisal, interpretation of data obtained from site works, and recommendations relevant to the defined objectives.

It has been assumed in the production of this report that the site is to be developed for a low rise residential with gardens end use. In addition, it is assumed that ground levels will not change significantly from those described in this report. If this is not the case, then amendments to the recommendations made in this report may be required.

Where the report refers to the potential presence of invasive plants (such as Japanese Knotweed) or asbestos-containing materials, such observations are for information only and should be verified by a suitably qualified expert.

The comments and opinions presented in this report are based on the findings of the desk study, ground conditions encountered during intrusive investigation works performed by Sirius, and the results of tests carried out within one or more laboratories. There may be other conditions prevailing on the site which have not been revealed by this investigation and which have not been taken into account by this report. Responsibility cannot be accepted for any conditions not revealed by this investigation. Any diagram or opinion on the possible configuration of strata, contamination or other spatially variable features between or beyond investigation positions is conjectural and given for guidance only. Confirmation of ground conditions between exploratory holes should be undertaken if deemed necessary.

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2. SITE DETAILS AND DESCRIPTION

Table 2.1 Current Site Overview

<p>Location:</p>	<p>The site is located between South Drive and Victoria Road West in Hebburn, Gateshead, Tyne and Wear. The site lies approximately 5km to the east of Newcastle upon Tyne city centre.</p> <p>A site location plan is included as Drawing No. C7074/01 within Appendix A to this report.</p>
<p>National Grid Reference:</p>	<p>430400, 563500 (approximate site centre).</p>
<p>Topography and Features:</p>	<p>The majority of the site is occupied by concrete hardstanding, with soft areas in the east, south and southeast areas of the site. All buildings and above-ground structures have been cleared, although a number of stockpiles of processed demolition rubble are present. Infilled subsurface structures, drainage culverts and markings indicate where structures were historically present.</p> <p>Railway and crane tracks remain in the northeast and southeast of the site.</p> <p>A short asphalt road crosses the centre of the site in an east-west direction.</p> <p>Two large densely vegetated mounds are present in the southeast of the site (to approximately 51m AOD).</p> <p>A grassed bund is present adjacent to the northern boundary of the site, approximately 0.9m in height.</p> <p>A shallow open excavation is present adjacent to the northern boundary of the site near to Parkside (believed to relate to the remediation of a former stand of Japanese Knotweed).</p> <p>Dark oil staining was noted on the concrete hardstanding in the northwest and central southern areas of the site.</p> <p>Suspected fragments of asbestos containing materials (ACMs) were noted in some of the stockpiles of processed demolition rubble.</p>

	<p>Several existing manholes are present across the site, indicating the presence of services.</p> <p>A number of lengths of stripped cable are present on the site surface.</p> <p>Site levels (not including the stockpiles and raised mounded areas) fall gradually from south to north (from approximately 45 to 42 mAOD).</p> <p>The site is bordered by mature trees and hedgerows to the northeast, east, west and south.</p>
Approximate Site Area:	10ha.
Adjacent Land Uses:	<p>The neighbouring land uses comprise the following:</p> <ul style="list-style-type: none"> • South Drive and Parkside, and residential dwellings and sports ground to the north; • Victoria Road West (A185) to the east, beyond which are residential dwellings; • Railway line (Tyne and Wear Metro) to the west, beyond which is public open space; and, • Victoria Industrial estate to the south.
Current Land Use:	Vacant relic industrial land.
Invasive Plant Species:	<p>Stands of suspected Japanese Knotweed were noted in two areas of the site:</p> <ul style="list-style-type: none"> • Within a relic drainage culvert in the northwest area; and, • Within an area of placed processed demolition rubble in the northeast of the site. <p>The presence of Japanese Knotweed and other invasive plant species should be confirmed and treated by a qualified expert.</p>

The main site features are shown on Drawing No. C7074/02 presented in Appendix A to this report.

3. ENVIRONMENTAL SETTING

3.1. Introduction

Published environmental, geological and historical data relating to the site has been reviewed. A summary of relevant information is provided below. A copy of the LIP Envirocheck report is enclosed in Appendix B. A copy of the CA mining report is enclosed in Appendix C.

3.2. Historical Development

A summary of the site history from historical Ordnance Survey maps dated between 1857 and 2016 is presented below. It is not the intention of this report to describe in detail all of the changes that have occurred on or adjacent to the site, only those pertinent to the proposed development.

The earliest historical plans show the site to be open fields, with Whinny Lane crossing the site from northwest to southeast. The 1898/9 plan shows two ponds in the east of the site, a pond in the southeast, a small rectangular building in the east, and two small buildings in the south (one of which is labelled on the 1957 plan as Whinny Cottage). Rises (issuing of groundwater) are indicated on the 1921 plan near to the small rectangular building in the east.

The first industrial development is shown on the 1951 plan in the northern area of the site, expanding during the 1960s and 1970s to include railway sidings and a works in the southwest, and tanks, a travelling crane, and a reservoir in the north. The site is labelled on the 1957 plan as an Electrical Appliance Works, and on later plans as a Works. The 1973 plan show the railways sidings to have been removed. The site remains largely unchanged up until the 2016 edition map when the site is shown to have been cleared of all features.

The historical plans show the surrounding area to be initially open fields, with the railway line constructed along the western boundary by 1898. Hebburn was expanding southwards towards the site in the mid-20th century, with a works and sports ground developed to the north, and residential dwellings to the east (Hartleyburn Estate). By the 1980s the works to the north had been cleared and later redeveloped with residential dwellings, and the industrial estate developed to the south.

3.3. Published Geological Information

A summary of the available published geological information is presented in Table 3.1.

Table 3.1 Geological Summary

Sources of Information:	<p>BGS 1:10,000 scale geological plan (Sheet NZ 36 SW).</p> <p>BGS Sheet Memoir 20 (England and Wales), Geology of the district around Newcastle upon Tyne, Gateshead and Consett (dated 1988).</p> <p>Coal Mining Authority Reports (ref. 510012016960014, dated 8th July 2016).</p>
Made Ground:	<p>No made ground is shown beneath the site.</p> <p>Two spoil heaps are shown in the southeast area of the site.</p>
Drift Geology:	<p>The site is shown to be underlain by superficial glacial deposits noted as Upper (or Pelaw) Clay, described as a red-brown silty clay with some stones.</p>
Solid Geology:	<p>The site is shown to overlie Carboniferous Middle Coal Measures strata, comprising interbedded sequences of mudstone, siltstone, sandstone and coal.</p> <p>The Top Hebburn Fell (THF) coal seam is conjectured to subcrop northwest to southeast across the centre of the site, dipping to the southeast. This seam is recorded to be thin.</p> <p>The Bottom Hebburn Fell (BHF) coal seam, recorded on BGS mapping to be circa 6m below the THF, is conjectured to subcrop west to east across the northern area of the site, dipping to the southeast. This seam is recorded to be between 1.07 and 1.63m thickness, and present in two or three leaves.</p> <p>There is no indication on the BGS mapping of the dip angle of the coal seams beneath the site, but based on the position of the subcrop and recorded separation distance it is likely to be around 3 degrees.</p>
Faults:	<p>A fault is shown trending northwest to southeast outside the site to the southwest and downthrown to the southwest.</p>

A Coal Authority report obtained by Sirius discloses the following information:

“The property is in a surface area that could be affected by underground mining in 4 seams of coal at 210m to 400m depth, and last worked in 1947. Any movement in the ground due to coal mining activity should have stopped. In addition, the property is in an area where the CA believe that there is coal at or close to the surface. This coal may have been worked at some time in the past. The potential presence of coal workings at or close to the surface should be considered prior to any site works or future development activity.”

“The property is not within a surface area that could be affected by present underground mining.”

“The property is not in an area where the CA has plans to grant a licence to remove coal using underground methods.”

“The property is not in an area likely to be affected from any planned future underground coal mining. However, reserves of coal exist in the local area which could be worked at some time in the future.”

Furthermore, the CA states *“there are no known mine entries within, or within 20 metres of, the boundary of the property.”*

3.4. Hydrology and Hydrogeology

Table 3.2 Surface Water Features

	Presence/Location	Comments
EA GQA Classified Watercourses (within 500m)	None recorded	
Unclassified Watercourses (within 250m)	None known	
Licensed Surface Water Abstractions (within 1000m)	None recorded	
Surface Water Features (Canals, Pond, Lakes, etc.) (within 250m)	46m to the southwest.	Culverted watercourse Backfilled ponds are suspected to be present on the site from historical mapping.

Flood Risk Status	The site does not lie within an indicative flood plain	
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Table 3.3 Groundwater Occurrence and Abstractions

	Presence/Location	Comments
Licensed Abstractions (within 1000m)	None recorded	
Private Wells (within 1000m)	None recorded	
Source Protection Zones (within 500m)	None recorded	
Known Springs (within 500m)	None recorded	

Table 3.4 Groundwater Vulnerability Status

	Environment Agency Classification
Bedrock Aquifer Designations	Middle Coal Measures is classified as a Secondary 'A' Aquifer
Superficial Aquifer Designations	Pelaw Clay is classified as Unproductive Strata
Groundwater Vulnerability	Recorded as soils of high leaching potential

3.5.Landfilling and Waste Management

Table 3.5 Waste Management Activities

	Presence/Location	Comments
Local Authority Landfills (within 1500m)	Three: closest is Pelaw Quarry, 552m south of the site	

<p>Other Recorded Landfills (within 1500m)</p>	<p>Nine historical landfills: closest refers to Hebburn Quayside, 127m northwest of the site</p>	<p>Hebburn Quayside listed to accept industrial and household waste.</p>
<p>Other Active Licensed Waste Management Facilities (within 500m)</p>	<p>None recorded</p>	
<p>Evidence of Landfilling On or Within 250m of the Site</p>	<p>Spoil heaps listed on BGS sheet Backfilled ponds are suspected to be present on the site</p>	
<p>Walkover Evidence of Fly-Tipping on the Site</p>	<p>None</p>	
<p>Ground Gas Risk Assessment Required</p>	<p>Yes</p>	<p>Suspected backfilled ponds and Coal Measures strata beneath the site both have the potential to produce hazardous ground gas.</p>

3.6. Radon Risk

To determine whether the site is at risk from radon gas, the BRE Report 211: “Radon: Guidance on the protective measures for new dwellings”, dated 2007, has been previously referenced. This document shows the site to be in an area in which **no radon protective measures are required**.

3.7. Other

An inactive contemporary trade directory entry for the site itself lists Trench (UK) Ltd to be a manufacturer of transformers.

An entry for Registered Radioactive Substances is recorded within the site under the name Nei Reyrolle Ltd, permit reference IPB/3/3/011 dated 7th May 1985, associated with the keeping and use

of mobile radioactive sources. Given it relates to mobile sources and the date of the permit, it is not considered to be significant.

No other potentially contaminative activities or environmental constraints are present within 250m of the site, with the exception of a former petrol filling station 220m to the south. No Control of Major Accident Hazards (COMAH) facilities are present within 1km of the site.

4. PRELIMINARY CONCEPTUAL SITE MODEL

As part of the Preliminary Geoenvironmental Appraisal, Sirius developed a combined preliminary conceptual site model and conceptual exposure model (PCSM) for the proposed future end use (residential with gardens). This summarises the understanding of surface and sub-surface features, potential contaminant sources, transport pathways and receptors in order to assess potential pollutant linkages.

A qualitative risk assessment has also been made of the likelihood of any complete pollutant linkage and its potential significance.

The preliminary conceptual model for the site is presented in schematic form as Drawing No. C7074/03 in Appendix A to this report.

In summary, the preliminary CSM has identified the following potential pollutant linkages which could present an unacceptable risk to the proposed end-use, denoted as low to moderate or higher likelihood of pollutant linkages on the CSM:

- Direct and indirect ingestion, inhalation and dermal contact with polychlorinated biphenyls (PCBs), petroleum hydrocarbons, oil and solvents, metals, acids and alkalis, and asbestos from historical electrical manufacturing works on the site;
- Direct and indirect ingestion of asbestos fibres present within processed demolition rubble both reused and stockpiled on the site;
- Leaching of above contaminants to controlled waters (Secondary 'A' Aquifers); and,
- Generation of hazardous ground gases (from former ponds and underlying Coal Measures strata) and accumulation of such gases in enclosed spaces resulting in potential asphyxiation/explosive risks.

5. FIELDWORK

5.1. Scope of Investigation

The information contained in this report is limited to areas of land accessible during the investigation as indicated on Drawing No. C7074/02 presented within Appendix A to this report.

Sirius scoped the intrusive ground investigation using guidance presented in BS 10175:2011+A1 2013, BS 8485:2007, the CLR series of documents (Defra and Environment Agency, 2002a-2002e) and BS EN 1997:2004 and 2007.

The investigation took place from 20th June to 1st July 2016 and comprised the following:

- Excavation of 52 mechanically excavated trial pits (TPs 101 to 152) using a CAT 320DL tracked excavator with a 600mm toothed bucket to a maximum depth of 4.5m below ground level (bgl);
- Drilling of five window sample holes (WS 101 to 105) to a maximum depth of 4.0m bgl, all of which were completed with a combined gas/groundwater monitoring well;
- Drilling of two cable percussion boreholes (BHs 101 and 102) to a maximum depth of 13.5m bgl; and,
- Drilling of eight rotary openhole boreholes (RO 101 to 106 including RO 101A and RO 103A) to a maximum depth of 36m bgl, of which four. were completed with a gas monitoring well.

On completion of the fieldwork, a programme of ground gas monitoring was commenced, which is ongoing at the time of writing this report.

Fieldwork was carried out under the full time supervision of a geoenvironmental engineer.

The rotary drilling was initially undertaken using an air flush technique. However, due to the thickness and nature of the overlying natural superficial clay deposits leading to a loss of flush in RO 101, RO101A, 102 and 103, the methodology was changed to an air mist technique for RO 103A, 104, 105 and 106.

5.2. Strata Description

Detailed descriptions of strata and groundwater observations made during investigation works, together with details of samples recovered and in situ testing, are presented on the engineer's exploratory hole records in Appendix D.

Standard strata descriptions are compliant with BS EN ISO 14688:2002 and 2004 and BS EN ISO 14689:2003. The depths of strata on the record sheets are recorded from current ground levels at each location, unless indicated otherwise.

5.3. Exploratory Hole Locations

Within the limitations of safe access, the exploratory hole locations were specified to provide a broad coverage of the site, with more detailed targeted investigations in those areas of particular interest determined from site observations and historical site features, as listed in Table 5.1. General investigation locations were positioned to provide an approximate 40m grid spacing across the site.

Window sample holes were drilled across the site to gain geotechnical information and allow for the installation of gas monitoring wells.

Cable percussion boreholes were drilled to investigate the two large densely vegetated mounds present in the southeast of the site, specifically the nature of their composition and determine the underlying natural ground conditions.

Rotary boreholes were specifically located to investigate potential shallow unrecorded workings within the Top Hebburn Fell and Bottom Hebburn Fell coal seams. Given the depth to bedrock and difficulties maintaining air flush through the thick superficial deposits only four rotary boreholes were drilled into bedrock.

Table 5.1 Exploratory Hole Rationale

Exploratory Hole Reference	Target
TPs 101, 102, 103, 105, 117, 118, 119, 135, 136, 137, 141, 142, 143, 144, 145, 146, 147 and 149	General site coverage
TPs 108, 109, 110, 111 and 113	Topsoil in southern area
TPs 104, 106, 139, 148	Areas of oil staining on hardstanding
TP 107, 114, 115, 138	Areas of historical ponds
TPs 112, 116, 129, 140	Two large densely vegetated mounds in the southeast
TPs 120, 121, 122, 123 and 124	Stockpile of processed demolition rubble in southwest
TPs 125 and 126	Stockpile of processed demolition rubble
TPs 127 and 128	Stockpile of processed demolition rubble in eastern area
TPs 130, 131 and 132	Stockpile of processed demolition rubble in northern area
TPs 133 and 134	Grassed bund on northern boundary
TP 137	Concrete service duct
TPs 150, 151 and 152	Infilled subsurface structures
WS 101 to 105	General site coverage
BHs 101 and 102	Two large densely vegetated mounds in the southeast
RO 101, 102, 103, 103A, 104, 105 and 106	Potential shallow unrecorded workings within Top Hebburn Fell and Bottom Hebburn Fell coal seams

Procedures and principals recommended in CLR4, BS 10175+A1 2013 and BS EN 1997-2:2007 were followed when determining exploratory hole locations.

Exploratory hole locations are shown on Drawing No. C7074/04 presented in Appendix A of this report.

5.4. Geotechnical Testing

Geotechnical laboratory testing was carried out on selected samples in accordance with techniques outlined in BS 1377:1990 “Methods of Test for Soils for Civil Engineering Purposes” at the laboratory of Professional Soils Laboratory (PSL), a UKAS accredited laboratory.

Geotechnical and geochemical test results are included within Appendix E of this report.

5.5. Chemical Testing

Selected samples of the topsoil, made ground, processed demolition rubble and natural soils were tested for a range of potential contaminants under subcontract with Derwentside Environmental Testing Services (DETS), a UKAS and MCERTS accredited laboratory.

Selected soil samples were subjected to testing for a suite of common analytes including metal, metalloid, organic and inorganics, including asbestos where appropriate. Where visual or olfactory evidence of potential contamination was noted, additional testing was scheduled for hydrocarbons and PCBs.

The results of soil analysis, as received from the laboratory, are presented in Appendix E of this report.

Groundwater samples were also collected during the second round of monitoring on 27th July 2016 from the wells installed within the window sample holes, and tested at DETS for a range of potential contaminants.

Samples of suspected asbestos-containing bituminous and paper materials were sent to Franks Portlock Consulting Ltd for testing for asbestos fibres only.

6. GROUND CONDITIONS AND MATERIAL PROPERTIES

6.1. Strata Profile

A summary of the strata profile is provided in Table 6.1.

Table 6.1 Strata Profile

Strata	Depth Range (Thickness Range)	Description and Comments
Topsoil	Ground Level to 0.4m (0.3 to 0.4m)	<p>Topsoil was present in the eastern, southern and southeastern areas of the site, and was generally noted to be a dark brown organic silty clay.</p> <p>Reworked topsoil was also noted to overlie made ground in some areas of the site.</p>
Made Ground	Ground Level to >3.9m (0.2 to >3.9m)	<p>Made ground was encountered across the majority of the site, as follows:</p> <ul style="list-style-type: none"> • In area of suspected historical buildings where processed demolition rubble had been used to infill subsurface structures, to >3.9m bgl. Stockpiles of processed demolition rubble were also present across the site. Beneath existing concrete hardstanding (typically to a maximum thickness of 0.4m bgl, but locally to >0.9m bgl), granular made ground was recorded comprising a dark grey-brown sandy gravel of brick and concrete. Numerous relic subsurface structures including slabs and foundations were encountered. • Granular made ground in areas of former ponds, comprising a brown sandy gravel of brick and concrete, locally slightly ashy. In TP 107 a horizon of burnt shale was recorded.

Strata	Depth Range (Thickness Range)	Description and Comments
Reworked Clay Soils forming Mounds	Ground Level to 8.4m (6.35 to 8.4m)	Two large densely vegetated mounds are present in the southeast of the site. Two boreholes drilled proved locally an upper layer of a firm to stiff dark brown and grey gravelly slightly sandy clay with brick and concrete, overlying a stiff dark brown slightly gravelly clay with isolated brick or pottery fragments.
Pelaw Clay	0.1 to >5.5m (>0.7 to >6.4m)	<p>The Pelaw Clay was encountered across the site, immediately below topsoil and made ground.</p> <p>The Pelaw Clay typically comprised a firm and stiff, locally very stiff, slightly gravelly slightly sandy clay; gravel comprised fine to medium angular to subrounded to rounded mixed lithologies including shale, mudstone, siltstone, coal and sandstone.</p>
Middle Coal Measures	10.0 to 21.5m (N/A)	<p>The rotary boreholes proved bedrock strata to comprise bands of sandstone and mudstone.</p> <p>An intact coal seam, conjectured to be the Top Hebburn Fell seam, was encountered in RO 105 at 22.7 to 23.0m bgl, and in RO 106 as two thin leaves at 16.5 to 16.7 and 18.3 to 18.4mbgl.</p> <p>A second intact coal seam, conjectured to be the Bottom Hebburn Fell was encountered in RO 103A as two leaves at 23.0 to 23.1 and 24.2 to 25.3m bgl, in RO 104 at 29.0 to 29.7 with banded coal/mudstone beneath to 30.7m bgl, and in RO 105 as two leaves at 30.5 to 30.9 and 31.2 to 32.0m bgl.</p> <p>No loss of flush, broken/soft ground or voids indicative of possible workings, were recorded in the four rotary boreholes drilled into bedrock.</p>

6.2. Material Properties

Topsoil

Owing to the relatively thin veneer of topsoil across the site, and as topsoil is not considered suitable as a founding material, no geotechnical classification or strength testing was undertaken within that stratum.

Water soluble sulphate concentrations of between 19 and 130mg/l, together with pH values of between 6.3 and 7.7, have been recorded within the topsoil and reworked topsoil.

Made Ground

The made ground encountered during the investigation was not considered suitable as a founding stratum, and therefore no geotechnical classification testing was undertaken on this material.

Water soluble sulphate concentrations of between <10 and 1500mg/l, together with pH values of between 8.0 and 12.5, have been recorded within the made ground deposits.

Reworked Clay Soils Forming Mounds

The reworked clay soils used to form the large densely vegetated mounds in the southeast of the site were subject to testing to determine geotechnical parameters for their potential re-use.

Moisture contents measured on eight samples of the reworked clay soils ranged between 19% and 32%. The same eight samples were subject to compaction testing with a 2.5kg rammer and reported optimum moisture contents of between 16% and 24% at maximum dry densities of between 1.51Mg/m³ and 1.75Mg/m³.

CBR testing on five remoulded samples of the reworked clay soils reported values to be between 0.7% and 4.2%.

Natural Superficial Clay (Pelaw Clay)

Soil classification tests were carried out on fourteen samples of the Pelaw Clay deposits. Classification tests show the natural moisture content to range between 18% and 25%, liquid limits range between 40% and 50%, and plastic limits range between 20% and 24%. Modified plasticity indices ranged between 20% and 25%.

Values calculated for consistency index generally ranged between 0.96 and 1.17, which are indicative of generally stiff and very stiff, intermediate plasticity clay.

Calculation of the modified plasticity index, in accordance with NHBC Standards Chapter 4.2, indicates that the clay has a typically medium volume change potential.

In situ hand shear vane values within the Pelaw Clay at depths between 0.8 and 1.8m bgl ranged between 53kPa and >130kPa. These values are typically indicative of medium and high strength soils.

SPTs undertaken within the Pelaw Clay recorded N values between 9 and 45 (mean value of N = 24). Based on a mean modified plasticity index of 23% for the natural cohesive deposits, a conservative correlation factor of approximately 5 can be derived. Using Stroud’s correlation the SPT N values indicate undrained shear strengths of between 45kN/m² and 224kN/m² within the natural superficial clay deposits, indicating medium to very high strength deposits.

Water soluble sulphate concentrations of between 24 and 240 mg/l, together with pH values of between 7.3 and 9.7, have been recorded within the natural superficial clay deposits.

Bedrock

Rockhead was encountered at depths of between 10.0 and 21.5m bgl. As the drilling technique did not enable sampling, no laboratory geotechnical testing was undertaken on this strata.

Intact coal seams were encountered in the four holes drilled into bedrock at depths of between 16.5 and 32.0m bgl, and recorded to be between 0.1 and 1.1m in thickness, as summarised in Table 6.2.

Table 6.2 Summary of Coal Seams Encountered

Exploratory Hole	Depth Encountered (m bgl)		
RO 103A	23 to 23.1	24.2 to 25.3 ^(BHF)	-
RO 104	29.0 to 29.7 ^(BHF)	29.7 to 30.7 ^{*(BHF)}	-
RO 105	22.7 to 23.0 ^(THF)	30.5 to 30.9 ^(BHF)	31.2 to 32.0 ^(BHF)
RO 106	16.5 to 16.7	18.3 to 18.4	22.5 to 22.6

Notes: * coal-banded mudstone
 BHF – Inferred to be Bottom Hebburn Fell coal seam
 THF – Inferred to be Top Hebburn Fell coal seam



No loss of flush, broken/soft ground or voids, indicative of possible workings, were recorded in any of the four holes drilled into bedrock.

6.3. Groundwater

Groundwater strikes were encountered in a number of the exploratory holes excavated/drilled during the ground investigation, as summarised in Table 6.3.

Table 6.3 Summary of Groundwater Encountered

Exploratory Hole	Depth Encountered (m bgl)	Description	Stratum
TP 102	0.5	Slight seepage	Interface of granular made ground and clay horizons
TP 106	0.6	Slight seepage	Interface of granular made ground and clay horizons
TP 139	0.4	Slight seepage	Granular made ground
WS 101	1.3	Groundwater strike	Slightly sandy gravelly clay
WS 104	2.0	Groundwater strike	Slightly silty sandy clay
WS 104	3.3	Groundwater strike	Slightly silty slightly gravelly laminated clay

6.4. Visual or Olfactory Evidence of Contamination

A summary of the visual and olfactory evidence of hydrocarbon or similar contamination observed during the fieldwork is presented in Table 6.4.

Table 6.4 Summary of Visual and Olfactory Evidence of Contamination

Exploratory Hole	Depth Encountered (m bgl)	Description	Stratum
TP 105	0.2 to 0.8	Faint aromatic odour	Granular made ground
TP 106	0.2 to 0.6	Faint hydrocarbon odour	Granular made ground
TP 118	0.9	Hydrocarbon odour and staining	Granular made ground

Exploratory Hole	Depth Encountered (m bgl)	Description	Stratum
TP 137	0.7 to 1.1	Hydrocarbon staining and odour	Cohesive made ground
TP 139	0.3 to 0.7	Faint hydrocarbon odour and minor staining	Granular made ground
WS 101	1.8 to 1.9	Hydrocarbon staining	Slightly sandy slightly gravelly clay

7. RESULTS OF CHEMICAL TESTING

7.1. Assessment Methodology

The laboratory test data for the relevant soil strata were reviewed for completeness and consistency. Those determinands that represent potential contaminants of concern were subject to further evaluation.

Where the results of laboratory testing permit, for each soil type and averaging area statistical testing was undertaken for the Planning Scenario by the methods described in CL:AIRE & CIEH “Guidance on Comparing Soil Contamination Data with a Critical Concentration”, May 2008. This statistical testing was undertaken to determine whether there was sufficient evidence that the true mean concentration of each determinand was less than the relevant critical concentration for that component.

Based upon the results of the analytical testing, the use of benzo(a)pyrene as a surrogate marker and statistical analysis of PAH results is considered inappropriate as a significant proportion of reported concentrations were less than the laboratory’s limit of detection (<0.1mg/kg), and therefore all sixteen PAH compounds have been assessed individually.

Data Below the Analytical Limit of Detection

The proportion of data below the analytical limit of detection (“non-detects”) was reviewed for each determinand. The dataset for each site zone (where applicable) was considered separately.

Non-detect data were given a concentration of half of the relevant limit of detection (LoD) for calculation purposes. In cases where a contaminant dataset for a zone consisted of more than 10-15% of non-detect data, then professional judgement was applied in selecting and applying statistical tests and in interpreting the data.

Assessment of Outliers and Data Distribution

Assessment of data distribution and the identification of statistical outliers was performed iteratively, applying appropriate data distribution and outlier tests for the complete and outlier-censored datasets.

The presence of outliers was determined using Dixon’s test working with untransformed values for normally distributed data and natural log-transformed values for non-normally distributed data.

The data were tested for normality by at least two of the following methods:

- Probability histogram.
- Probability (q-q) plots.
- Shapiro-Wilk normality test.

Outliers were considered to form part of the overall site dataset *except* when there was clear evidence and justification for their exclusion.

Calculation of 95% Upper Confidence Limit of the Sample Mean

Based upon the normality and outlier tests, the 95% Upper Confidence Limit (US95) of each contaminant of concern was calculated by:

- One-sample t-test for datasets that are normally distributed or close to normal distribution.
- One-sided Chebyshev test for datasets that are significantly non-normal.

The calculated US95s are presented below and compared to the applicable Generic Assessment Criteria.

7.2. Soil Analysis

Results of chemical analysis, as received from the testing laboratory, are presented in full in Appendix E. Measured values were compared to GAC values derived for a “residential with gardens” end use. Source data for all GACs are provided in Appendix F.

Topsoil (including Reworked Topsoil)

The chemical analysis results from thirteen samples of topsoil tested, and the appropriate screening criteria used, are summarised in Table 7.1.

Table 7.1 Summary of Total Soil Concentrations in Topsoil (including Reworked Topsoil)

Determinand	No. of Samples Tested	Range of Results (mg/kg unless specified)	US95	GAC (2.5% SOM)	No. of Samples >GAC	Location of Exceedances
Inorganic Arsenic	13	15 – 41	29.39	37	2	TP 109, 0-0.3m TP 110, 0-0.3m
Cadmium	13	0.3 – 0.9		11	0	
Chromium (III)	13	20 – 34		910	0	
Lead	13	100 – 360	239.6	200	3	TP 109, 0-0.3m TP 110, 0-0.3m TP 114, 0.0-0.25m
Inorganic Mercury	13	0.08 – 0.68		40	0	
Selenium	13	<0.5 – 0.5		250	0	
Copper	13	66 – 150		200	0	
Nickel	13	21 – 38		180	0	
Zinc	13	110 – 250		450	0	
pH	13	6.3 – 8.0		<5	0	
Total Sulphate	13	600 – 1100		2400	0	
Water Sol. Sulphate	13	0.019 – 0.13		0.5 g/l	0	
Acenaphthene	13	<0.1 – 0.3		490	0	
Anthracene	13	<0.1 – 2.3		5300	0	
Acenaphthylene	13	<0.1 – 0.2		400	0	
Benzo(a)anthracene	13	<0.1 – 3.0		11	0	
Benzo(b)fluoranthene	13	<0.1 – 2.1		3.3	0	
Benzo(k)fluoranthene	13	<0.1 – 1.7		93	0	
Benzo(g,h,i)perylene	13	<0.1 – 1.5		340	0	
Benzo(a)pyrene	13	<0.1 – 2.4		2.7	0	
Chrysene	13	<0.1 – 2.6		22	0	
Dibenzo(a,h)anthracene	13	<0.1 – 0.4		0.28	1	TP 115, 0-0.25m
Fluoranthene	13	<0.1 – 7.0		560	0	
Fluorene	13	<0.1 – 0.7		390	0	
Indeno(1,2,3-cd)pyrene	13	<0.1 – 1.6		36	0	
Naphthalene	13	<0.1		2.3	0	
Pyrene	13	<0.1 – 5.2		1200	0	
Phenanthrene	13	<0.1 – 4.4		220	0	
Phenol	13	<0.3 – 3.2		190	0	

Determinand	No. of Samples Tested	Range of Results (mg/kg unless specified)	US95	GAC (2.5% SOM)	No. of Samples >GAC	Location of Exceedances
TOC	13	2.7 – 9.9 w/w%		3 w/w%	12	TP 108, 0-0.4m TP 109, 0-0.3m TP 110, 0-0.3m TP 111, 0-0.3m TP 112, 0-0.2m TP 113, 0-0.3m TP 114, 0.0-0.25m TP 115, 0-0.25m TP 129, 0.1m TP 140, 0-0.3m TP 142, 0-0.15m TP 144, 0-0.15m
Asbestos	12	NAD -Present		Fibres present	2	TP 116, 0-0.3m TP 114, 0.0-0.25m

Notes: Table based on a Residential with Gardens end use
GAC - generic assessment criterion

Metals and Metalloids

Three samples were found to have concentrations of metal or metalloid determinands elevated above the relevant GAC, namely TP 109 at 0 to 0.3m and TP 110, 0 to 0.3m (arsenic and lead), and TP114 at 0.0 to 0.25m (lead) from the southernmost end of the site.

Further statistical analysis of all arsenic and lead concentrations detected within the topsoil suggests that these sample results are within a normal distribution with no outliers. This further analysis has confirmed a US95 for arsenic and lead within the topsoil, of 29.36mg/kg and 239.6mg/kg, respectively. The US95 for arsenic is less than the GAC, but the US95 for lead exceeds the GAC.

Consequently, the presence of lead in the topsoil is considered to present a potential risk to human health.

Other Inorganic Analytes

No concentrations of inorganic determinands exceeded the relevant GAC.

Organics

Twelve of the samples of topsoil tested returned concentrations of TOC above the respective GAC. TOC is a measure of organic carbon within the material and is therefore not a determinand which directly poses a risk to human health. These results are used to determine the classification of material for removal from site to a licensed disposal facility. The TOC is also used to derive the

relevant SOM for the soils, necessary to derive an appropriate GAC for other parameters sensitive to organic matters.

One sample of reworked topsoil (from TP 115, 0 to 0.25m), excavated in the area of a historical pond, returned an elevated concentration of PAHs (specifically dibenzo(a,h)anthracene at 0.4mg/kg) exceeding the relevant GAC.

Asbestos

Twelve samples of topsoil were tested for the presence of asbestos fibres, of which two have proved to be positive (TP114 0 to 0.25 and TP 116, 0 to 0.3m), described as “*chrysotile present as small clump and fibre bundles*” within reworked topsoil on top of the mounds. Quantification of these positive identification proved fibres to be present at 0.006 and 0.008%, respectively.

Made Ground

The chemical analysis results from sixteen samples of made ground tested, (excluding reworked topsoil, processed demolition rubble and reworked clay forming the mounds), and the appropriate screening criteria used, are summarised in Table 7.2.

Table 7.2 Summary of Total Soil Concentrations in Made Ground

Determinand	No. of Samples Tested	Range of Results (mg/kg unless specified)	US95	GAC (2.5% SOM)	No. of Samples >GAC	Exceedances
Inorganic Arsenic	16	3.7 – 51	16.05	37	1	TP 143, 0.4-0.7m (outlier)
Cadmium	16	0.1 – 1.7		11	0	
Chromium (III)	16	11 – 130		910	0	
Lead	16	17 – 330	135	200	2	TP 119, 0.2-0.5m (outlier) TP 143, 0.4-0.7m (outlier)
Inorganic Mercury	16	<0.05 – 0.39		40	0	
Selenium	16	<0.5 – 0.6		250	0	
Copper	16	14 – 350	101.2	200	1	TP 118, 0.9-1.3m (outlier)
Nickel	16	8.1 – 30		180	0	
Zinc	16	53 – 480	244.3	450	1	TP 138, 0.4m (outlier)
pH	16	8.0 – 12.5		<5	0	
Total Sulphate	16	300 – 9100		2400	11	TP 101, 0.5-1.0m TP 103, 3.0m TP 105, 0.2-0.8m TP 106, 0.2-0.6m TP 119, 0.2-0.5m TP 138, 0.4m TP 139, 0.5m TP 141, 0.4m TP 143, 0.4-0.7m TP 145, 0.25-0.6m TP 147, 0.4-0.6m
Water Sol. Sulphate	16	<0.01 – 1.5		0.5 g/l	4	TP 103, 3.0m TP 106, 0.2-0.6m TP 119, 0.2-0.5m TP 143, 0.4-0.7m
Acenaphthene	16	<0.1 – 1.2		490	0	
Anthracene	16	<0.1 – 5.7		5300	0	
Acenaphthylene	16	<0.1 – 2.0		400	0	
Benzo(a)anthracene	16	<0.1 – 17		11	1	TP 101, 0.5-1.0m
Benzo(b)fluoranthene	16	<0.1 – 11		3.3	1	TP 101, 0.5-1.0m
Benzo(k)fluoranthene	16	<0.1 – 6.4		93	0	
Benzo(g,h,i)perylene	16	<0.1 – 6.1		340	0	
Benzo(a)pyrene	16	<0.1 – 11		2.7	1	TP 101, 0.5-1.0m
Chrysene	16	<0.1 – 17		22	0	
Dibenzo(a,h)anthracene	16	<0.1 – 1.9		0.28	1	TP 101, 0.5-1.0m
Fluoranthene	16	<0.1 – 36		560	0	

Determinand	No. of Samples Tested	Range of Results (mg/kg unless specified)	US95	GAC (2.5% SOM)	No. of Samples >GAC	Exceedances
Fluorene	16	<0.1 – 2.1		390	0	
Indeno(1,2,3-cd)pyrene	16	<0.1 – 7.6		36	0	
Naphthalene	16	<0.1 – 0.5		2.3	0	
Pyrene	16	<0.1 – 25		1200	0	
Phenanthrene	16	<0.1 – 17		220	0	
Aliphatic C5-C6	7	<0.01		41	0	
Aliphatic C6-C8	7	<0.01 – 0.79		110	0	
Aliphatic C8-C10	7	<0.01 – 5.6		31	0	
Aliphatic C10-C12	7	<1.5 – 130		150	0	
Aliphatic C12-C16	7	<1.2 – 620		1200	0	
Aliphatic C16-C35	7	70 – 4200		70,000	0	
Aromatic C5-C7	7	<0.01		110	0	
Aromatic C7-C8	7	<0.01 – 0.14		240	0	
Aromatic C8-C10	7	<0.01 – 12		48	0	
Aromatic C10-C12	7	<0.9 – 110		150	0	
Aromatic C12-C16	7	3.9 - 480		320	1	TP 137, 0.9m
Aromatic C16-C21	7	27 – 1200		540	3	TP 105, 0.2-0.8m TP 137, 0.9m TP 139, 0.5m
Aromatic C21-C35	7	25 – 950		1500	0	
Phenol	16	<0.3 – 1.0		190	0	
TOC	16	0.4 – 4.8 w/w%		3 w/w%	1	TP 106, 0.2-0.6m
Asbestos	14	NAD - Present		Fibres present	4	TP 101 0.5-1.0m TP104A 0-0.5m TP 115, 0.25-1.0m TP150 0-0.5m

Notes: Table based on a Residential with Gardens end use
GAC - generic assessment criterion

Metals and Metalloids

Concentrations of metal or metalloid determinands exceeded the relevant GAC in four samples of made ground tested. These being TP118 at 0.9 to 1.3m (copper), TP119 0.2 to 0.5m (lead), TP138 0.4m (zinc) and TP143 0.4 to 0.7m (arsenic, lead).

Further statistical analysis of all concentrations of heavy metals which exceed the GAC within the made ground suggests that these elevated samples comprise statistical outliers i.e. 'hotspot' within the dataset, although all calculated US95 values fall below the GAC with or without the outliers.

Notwithstanding this analysis, it is not considered possible, based on visual assessment or geographical location, to physically identify and therefore readily separate the made ground containing the 'hotspots', and the presence of other similar, unidentified elevated 'hotspots' within the made ground cannot be discounted.

Consequently, the presence of sporadic elevated concentrations of heavy metals within the made ground are considered to present a significant potential risk to human health.

Other Inorganic Analytes

Elevated concentrations of total sulphate exceeded the GAC in eleven of the seventeen samples of made ground tested. Water soluble sulphate was elevated in four samples tested.

Organics

One of the samples of made ground tested returned concentrations of TOC above the respective GAC. TOC is a measure of organic carbon within the material and is therefore not a determinant which directly poses a risk to human health. These results are used to determine the classification of material for removal from site to a licensed disposal facility. The TOC is also used to derive the relevant SOM for the soils, necessary to derive an appropriate GAC for other parameters sensitive to organic matters.

One sample of made ground (from TP 101, 0.5 to 1.0m) returned elevated concentrations of PAHs (specifically benzo(a)anthracene, benzo(b)fluoranthene, benzo(a)pyrene and dibenzo(a,h)anthracene) exceeding the relevant GAC.

Elevated concentrations of hydrocarbons were reported in three samples of made ground (in TP 105, 0.2 to 0.8m, TP 137, 0.9m and TP 139, 0.5m) where visual or olfactory evidence of hydrocarbon contamination had been noted.

PCBs

Four samples of made ground were tested for PCBs (Euro 7 congeners), with reported individual concentrations ranging between <0.01 and 0.38mg/kg (PCB 138 – TP105 0.2 to 0.8m) and total PCBs up to 1.1m

The detected PCB concentrations have been assessed following the approach outlined in Environment Agency Science Report SC050021 / Dioxins SGV. Using the exposure factor and toxicity equivalence factor for PCB 118 as representative of the PCBs detected and based on a residential land use scenario, a hazard index of 0.4 is calculated for the maximum concentration of

total PCBs (1.1mg/kg) detected in TP105 between 0.2 and 0.8m. A hazard index of less than 1.0 indicates that potential exposure falls below the tolerable daily soil intake and no unacceptable risk to future end users is present. Notwithstanding the low level of risk identified, given the presence of other contaminants, these soils will be subject to a physical capping layer which will prevent future end users being exposed to the material. Table 6 of the EA Science Report confirms that the vapour exposure pathway is insignificant for these compounds.

Asbestos

Fourteen samples of made ground were subject to asbestos testing. The results of the testing proved asbestos fibres to be present in four of the samples tested, typically described as small fibre bundles of chrysotile and occasionally of amosite. Quantification testing undertaken on two of these samples proved fibres to be present at 0.001% (TP 101, 0.5 to 1.0m) and 0.057 % (TP 104A, 0.0 to 1.0m).

Processed Demolition Rubble

Fourteen samples of processed demolition rubble, either reused to infill relic structures, or stockpiled, were sampled and scheduled for asbestos testing only.

The results of the testing proved asbestos fibres to be present in seven of the samples tested, typically described as small bundles of chrysotile, amosite and crocidolite. Quantification testing undertaken on four of these samples identified no asbestos quantities above the laboratory's detection limit.

Four samples of suspected asbestos-containing bituminous and paper materials observed within the stockpiles of processed demolition rubble were sent to Franks Portlock Consulting Ltd for testing for asbestos fibres. The results of the testing proved no asbestos to be detected.

Reworked Clay Soils Forming Mounds

The chemical analysis results from five samples of reworked clay forming the mounds in the southeast corner of the site, and the appropriate screening criteria used, are summarised in Table 7.3.

Table 7.3 Summary of Total Soil Concentrations in Reworked Clay Soils Forming Mounds

Determinand	No. of Samples Tested	Range of Results (mg/kg unless specified)	GAC (1% SOM)	No. of Samples >GAC	Exceedances
Inorganic Arsenic	5	7.2 – 13	37	0	
Cadmium	5	0.1 – 0.2	11	0	
Chromium (III)	5	25 – 31	910	0	
Lead	5	28 – 78	200	0	
Inorganic Mercury	5	<0.05 – 0.08	40	0	
Selenium	5	<0.5	250	0	
Copper	5	28 – 72	200	0	
Nickel	5	29 – 38	180	0	
Zinc	5	60 – 110	450	0	
pH	5	8.0 – 9.5	<5	0	
Total Sulphate	5	400 – 600	2400	0	
Water Sol. Sulphate	5	0.022 – 0.17	0.5 g/l	0	
Acenaphthene	5	<0.1	200	0	
Anthracene	5	<0.1	2300	0	
Acenaphthylene	5	<0.1	170	0	
Benzo(a)anthracene	5	<0.1	7.5	0	
Benzo(b)fluoranthene	5	<0.1	2.6	0	
Benzo(k)fluoranthene	5	<0.1	77	0	
Benzo(g,h,i)perylene	5	<0.1	320	0	
Benzo(a)pyrene	5	<0.1	2.2	0	
Chrysene	5	<0.1	15	0	
Dibenzo(a,h)anthracene	5	<0.1	0.24	0	
Fluoranthene	5	<0.1 – 0.9	280	0	
Fluorene	5	<0.1	170	0	
Indeno(1,2,3-cd)pyrene	5	<0.1	27	0	
Naphthalene	5	<0.1	1.0	0	
Pyrene	5	<0.1 – 0.7	620	0	
Phenanthrene	5	<0.1	95	0	
Phenol	5	<0.3 – 0.6	110	0	
TOC	5	1.1 – 1.7 w/w%	3 w/w%	0	
Asbestos	3	NAD	Fibres present	0	

Notes: Table based on a Residential with Gardens end use
 GAC - generic assessment criterion

Metals and Metalloids

No concentrations of metal or metalloid determinands exceeded the relevant GAC in the five samples tested of reworked clay forming the mounds.

Other Inorganic Analytes

No concentrations of inorganic determinands exceeded the relevant GAC in the five samples tested of reworked clay forming the mounds.

Organics

No concentrations of organic determinands exceeded the relevant GAC in the five samples tested of reworked clay forming the mounds.

Asbestos

Three samples of reworked clay forming the mounds were tested for the presence of asbestos fibres, none of which proved to contain fibres.

Natural Superficial Clay (Pelaw Clay)

The chemical analysis results from five samples of natural superficial clay deposits tested, and the appropriate screening criteria used, are summarised in Table 7.4.

Table 7.4 Summary of Total Soil Concentrations in Natural Superficial Clay Deposits

Determinand	No. of Samples Tested	Range of Results (mg/kg unless specified)	GAC (1% SOM)	No. of Samples >GAC	Exceedances
Inorganic Arsenic	5	6.9 – 9	37	0	
Cadmium	5	<0.1 – 0.2	11	0	
Chromium (III)	5	27 – 36	910	0	
Lead	5	16 – 32	200	0	
Inorganic Mercury	5	<0.05	40	0	
Selenium	5	<0.5	250	0	
Copper	5	21 – 30	200	0	
Nickel	5	32 – 47	180	0	
Zinc	5	51 – 71	450	0	
pH	5	8.0 – 9.7	<5	0	
Total Sulphate	5	200 – 2200	2400	0	
Water Sol. Sulphate	5	0.027 – 0.24	0.5 g/l	0	
Acenaphthene	5	<0.1	200	0	
Anthracene	5	<0.1	2300	0	
Acenaphthylene	5	<0.1	170	0	
Benzo(a)anthracene	5	<0.1	7.5	0	
Benzo(b)fluoranthene	5	<0.1	2.6	0	
Benzo(k)fluoranthene	5	<0.1	77	0	
Benzo(g,h,i)perylene	5	<0.1	320	0	
Benzo(a)pyrene	5	<0.1	2.2	0	
Chrysene	5	<0.1	15	0	
Dibenzo(a,h)anthracene	5	<0.1	0.24	0	
Fluoranthene	5	<0.1	280	0	
Fluorene	5	<0.1	170	0	
Indeno(1,2,3-cd)pyrene	5	<0.1	27	0	
Naphthalene	5	<0.1	1.0	0	
Pyrene	5	<0.1	620	0	
Phenanthrene	5	<0.1	95	0	
Aliphatic C5-C6	5	<0.01	24	0	
Aliphatic C6-C8	5	<0.01	53	0	
Aliphatic C8-C10	5	<0.01 – 0.58	13	0	
Aliphatic C10-C12	5	<1.5 - 120	62	1	TP 137, 1.3m
Aliphatic C12-C16	5	<1.2 - 600	510	1	TP 137, 1.3m
Aliphatic C16-C35	5	<4.9 - 3300	41000	0	
Aromatic C5-C7	5	<0.01	53	0	
Aromatic C7-C8	5	<0.01	100	0	
Aromatic C8-C10	5	<0.01 – 0.36	20	0	

Determinand	No. of Samples Tested	Range of Results (mg/kg unless specified)	GAC (1% SOM)	No. of Samples >GAC	Exceedances
Aromatic C10-C12	5	<0.09 - 100	63	1	TP 137, 1.3m
Aromatic C12-C16	5	<0.5 – 470	140	1	TP 137, 1.3m
Aromatic C16-C21	5	<0.6 – 1200	260	1	TP 137, 1.3m
Aromatic C21-C35	5	<1.4 - 810	1100	0	
Phenol	5	<0.3	110	0	
TOC	5	0.9 – 1.1 w/w%	3 w/w%	0	

Notes: Table based on a Residential with Gardens end use
GAC - generic assessment criterion

Metals and Metalloids

No concentrations of metal or metalloid determinands exceeded the relevant GAC in the five samples of natural superficial deposits tested.

Other Inorganic Analytes

No concentrations of inorganic determinands exceeded the relevant GAC in the five samples of natural superficial deposits tested.

Organics

No concentrations of organic determinands exceeded the relevant GAC in the five samples of natural superficial deposits tested, with the exception of hydrocarbons in one sample from TP 137. This trial pit was excavated adjacent to a concrete service duct in which hydrocarbon staining and associated odour were noted in the overlying made ground.

7.3. Groundwater Analysis

One round of groundwater sampling from the monitoring wells installed in WS 101 to 105 was undertaken on 27th July 2016, with the results evaluated against GAC values appropriate to the conceptual model for the site, with cognisance to the presence of an underlying Secondary 'A' Aquifer and nearby surface water features.

The results of analysis have been compared to UK DWS and EQS Levels. Where two assessment criteria are present, the lowest has been used for the purposes of the tier 1 assessment. For freshwater EQS values that are dependent upon the hardness of the receiving water, assessment

has been undertaken based on the reported mean groundwater analytical hardness of 77.6mg/l CaCO₃.

Further information on the derivation of the GAC values is given in Appendix F. The analytical results are presented in full in Appendix E.

The results of the groundwater analyses and the outcome of screening are summarised in Table 7.5.

Table 7.5 Summary of Groundwater Analysis

Determinand	No. of Samples Tested	No. Samples Above Limit of Detection	Range of Results (µg/l unless specified)	GAC (µg/l unless specified)		No. of Samples >GAC
				EQS	DWS	
Metals						
Arsenic	5	5	0.62 – 1.5	50	10	0
Cadmium	5	3	<0.03 – 0.27	0.25 ⁺	5	1
Chromium	5	4	<0.25 – 11	4.7	50	1
Lead	5	4	<0.09 – 3.4	1.2 (bio)	10	1
Mercury	5	0	<0.01	0.07	1	0
Copper	5	5	1 – 5.9	1 (bio)	2000	4
Nickel	5	5	2.2 – 6.4	4 (bio)	20	2
Zinc	5	5	1.9 – 190	10.9 (bio)	5000	3
Inorganics						
Sulphate	5	5	130 – 760mg/l	400mg/l	250mg/l	3
Ammonia (as N)	5	0	<0.015mg/l	0.6mg/l ⁺	N/A	0
Organics						
Anthracene	5	0	<0.01	0.1	N/A	0
Benzo(a)pyrene	5	0	<0.01	0.00017	0.01	0
Sum of benzo(b)fluoranthene + benzo(k)fluoranthene	5	0	<0.02	N/A	N/A	-
Sum of benzo(ghi)perylene + indeno(1,2,3-cd)pyrene	5	0	<0.02*	N/A	N/A	-
Sum of four PAHs benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(ghi)perylene + indeno(1,2,3-cd)pyrene	5	0	<0.04	N/A	0.1	0
Fluoranthene	5	0	<0.01	0.0063	N/A	0
Naphthalene	5	0	<0.01	2.0	N/A	0
Phenol	5	0	<0.5	7.7	0.5	0

Notes: + EQS is hardness related.
* Laboratory detection limits are higher than EQS value.
^{Bio} EQS is related to the receiving surface water course.
N/A - Not applicable.

Metals and Metalloids

The laboratory testing of the five groundwater samples tested proved elevated dissolved concentrations, as compared to the relevant GAC, of copper in four samples, zinc in three samples, nickel in two samples and cadmium, chromium and lead in one sample. However, whilst the EQS GAC for these metals were slightly exceeded, all were below the DWS GAC. Considering the very low concentrations and the site setting these contaminants are not considered significant and discussed no further.

Other Inorganic Analytes

Three samples of groundwater reported elevated dissolved concentrations of sulphates in excess of the relevant GAC. No elevated concentrations of ammonia were recorded.

Organics

The relevant GAC for the sum of the two PAHs, benzo(g,h,i)perylene and indeno(1,2,3-c,d)pyrene, is lower than the LoD of the laboratory analysis. However, as all concentrations of both determinands are below the limit of detection in all samples, it is assumed that it is unlikely that dissolved concentrations of benzo(g,h,i)perylene and indeno(1,2,3-c,d)pyrene will exceed the GAC.

No elevated concentrations of phenol were recorded.

8. REVISED CONCEPTUAL MODEL AND GENERIC QUANTITATIVE RISK ASSESSMENT OF POLLUTANT LINKAGES

The preliminary combined conceptual site model and conceptual exposure model, as discussed in Section 4, has been revised in light of the ground investigation and the chemical analysis results presented above.

The revised conceptual model has been developed for the proposed future land use (residential with gardens). This summarises the understanding of surface and sub-surface features, the potential contaminant sources, transport pathways and receptors.

The revised conceptual model is presented in schematic form as Drawing No. C7074/05 in Appendix A to this report. In summary, the revised CSM has identified the following residual contaminant linkages that could result in a potentially unacceptable risk (designated as greater than 'low') in the proposed end-use, if unmitigated:

- Inhalation by future site users and construction workers of asbestos fibres released from dispersed fibres within the reworked topsoil, made ground and processed demolition rubble;
- Inhalation, ingestion and dermal contact with metal and PAH contamination within isolated hotspots of reworked topsoil, and made ground, by end users and construction workers; and,
- Migration of hydrocarbons from isolated hotspots of made ground, and where impacted, underlying clay deposits.

The results of this investigation have proven areas of contamination which present a potential risk to end users and construction workers, however, these can be mitigated by the designing of remedial measures into the proposed earthworks.

9. GROUND GAS MONITORING

9.1. General

Ground gas monitoring has been carried out on three occasions to date in August 2016. Based upon the results of this monitoring undertaken to date, a generic quantitative gas risk assessment has been prepared in accordance CIRIA Document C665, 2007, “Assessing Risks posed by Hazardous Ground Gases to Buildings”, and with cognisance to the British Standards BS 8576:2013 and BS 8485:2015.

In preparing this risk assessment, it is understood that the development will comprise low rise residential properties, utilising ground bearing floor slabs. For the purposes of this gas risk assessment, the proposed development is therefore considered to be characterised as a ‘Type A’ building as defined in Table 3 of BS 8485:2015.

9.2. Conceptual Site Model for Gas Risk

Based upon the characterisation of the site, the potential pathways for the migration of potential hazardous ground gas identified by the conceptual site model (CSM) are considered to be:

- i. Localised pockets of made ground on the site. Based upon the results of the investigation, the risk of significant gas generation from the made ground is considered to be low based upon the negligible quantities of biodegradable matter identified;
- ii. Coal Measures strata underlying the site which have the potential to produce hazardous ground gas; and,
- iii. Former ponds present on the site.

9.3. Gas Monitoring Strategy and Design

On the basis of the CSM, a low ‘generation potential of source’ (from localised pockets of made ground, Coal Measures strata, and former ponds) and a high sensitivity end use (residential development) was assumed for the site when determining the duration of monitoring required. A programme of six monitoring visits over a three month period was considered appropriate in accordance with Tables 5.5a and 5.5b of CIRIA report C665.

Nine monitoring wells were installed across the site to achieve a general site coverage, with the response zone installed within the natural superficial clay deposits. The well designs are therefore considered to target the pathways identified in the CSM.

The gas monitoring was undertaken in accordance with the guidance given in CIRIA Report 151 'Interpreting Measurements of Gas in the Ground', CIRIA C655 and BS 8485.

9.4. Monitoring Results

All eleven wells have been monitored on three occasions to date in August 2016. However, based on the CSM, the low risk scenario and design of the gas wells, it is considered that there is sufficient information available to allow preliminary conclusions to be drawn.

The three monitoring visits to date have been undertaken at barometric pressures between 1007 and 1018mbar, and during periods of rising barometric pressure.

Copies of the records from the three gas monitoring visits to date are presented in Appendix G to this report. Table 11.1 summarises the gas monitoring results from the three visits to date.

Table 9.1 Summary of Gas Monitoring

Well	Concentration Ranges (%v/v)			Concentration Ranges (ppm)		Flow Rate Ranges (l/hr)		Range of Groundwater Levels (m bgl)
	Methane (Peak)	Carbon Dioxide (Steady State)	Oxygen (Minimum Detected Range)	Hydrogen Sulphide (Maximum Detected Range)	Carbon Monoxide (Maximum Detected Range)	Peak Flow Rate	Steady State Flow Rate	
WS 101	ND	ND to 0.2	20.3 to 20.7	ND	ND	ND	ND	1.74 to 1.75
WS 102	ND	ND	17.14 to 18.8	ND	ND	63.7 to 74.6	ND to 0.1	0.64 to 0.78
WS 103	ND	0.7 to 2.1	18.8 to 19.9	ND	ND	ND	ND	3.19 to 3.63
WS 104	ND	ND to 1.0	20.1 to 20.6	ND	ND	ND	ND	1.10 to 1.26
WS 105	ND	0.9 to 1.0	19.8 to 20.0	ND	ND	ND	ND	3.52 to 3.95
RO 103A	ND	1.0 to 1.3	9.4 to 20.1	ND	ND	-34.4 to -3.1	ND	2.37 to 2.47
RO 104	ND to 0.2	3.7 to 7.2	2.1 to 5.1	ND	ND	ND	ND	3.87 to 4.07
RO 105	ND	2.7 to 5.5	-0.4 to 9.7	ND	ND	-51.9 to 119.7	ND	4.32 to 4.73
RO 106	ND	1.5 to 2.3	17.5 to 18.7	ND	ND	ND	ND	DRY

Notes: ND - Not Detected

A maximum peak methane concentration of 0.2%v/v was detected within RO104 on the first visit. Concentrations of methane in the wells during the remaining visits were all less than 0.1%v/v.

A maximum steady state concentration of carbon dioxide of 7.2%v/v was detected within RO104 on the third visit. This well was located in the west of the site. Elsewhere, elevated concentrations of



carbon dioxide exceeding 5%v/v were also detected in RO105 (maximum of 5.5.0%v/v). Lower concentrations of carbon dioxide have also been recorded within the remaining holes throughout the monitoring period.

Depleted concentrations of oxygen below 15%v/v were recorded on occasions in RO103A (minimum of 7.2%v/v), RO104 (minimum of 2.1%v/v) and RO105 (minimum of -0.4%v/v).

No detectable concentrations of hydrogen sulphide or carbon monoxide were recorded within any of the monitoring wells, on any monitoring occasion.

A maximum positive steady state gas flow rate of 0.1l/hr was recorded within WS102 on two occasions

9.5. Risk Assessment

On the basis of the above, a Gas Screening Value (GSV) has been derived for methane using a maximum recorded concentration of 0.2% and a maximum recorded steady flow rate of 0.1l/hr. A worst case GSV of 0.0002l/hr has therefore been derived for methane.

A Gas Screening Value (GSV) has been derived for carbon dioxide using a maximum recorded steady state concentration of 7.2%v/v, recorded in RO104 located in the central western part of the site, and a maximum recorded steady state flow rate of 0.1l/hr. A worst case GSV of 0.0072l/hr has therefore been derived for carbon dioxide in this well only.

At this stage, on the basis of both the above GSVs, together with the maximum detected concentrations of methane and carbon dioxide, and the recorded flow rates which are considered to be representative of the ground gas conditions, the site considered to fall within the modified Wilson and Card classification Characteristic Situation 2 (CS2), as defined in Table 8.5 of CIRIA C665 and in Table 2 of BS 8485.

10. CONCLUSIONS AND RECOMMENDATIONS

10.1. General

This geoenvironmental appraisal has been performed for land at the Former Siemens Factory, off South Drive in Hebburn, Gateshead, Tyne and Wear.

It has been assumed in the production of this report that the site is to be developed for a residential with gardens end use. In addition, it has been assumed that ground levels will not change significantly from those described in this report. If this is not the case, then amendments to the interpretation and conclusions in this report may be required.

10.2. Flood Risk

The site is not recorded by the Environment Agency to lie within an indicative flood plain.

10.3. Coal Mining Risk Assessment

Based on published geological mapping and information contained within the CA mining report, it was considered that there was a risk to the site from possible unrecorded workings in the Top Hebburn Fell and Bottom Hebburn Fell coal seams.

Rotary openhole drilling, undertaken as part of this investigation, has proven intact coal seams to be present in all four boreholes drilled into bedrock, as summarised in Table 10.1. No loss of flush, broken/soft ground, or voids indicative of possible workings were recorded in the rotary boreholes drilled. However, solid coal seams of workable thickness were encountered and a summary of the relevant stratigraphic data, is presented in Table 10.1.

Table 10.1 Summary of Competent Rock Cover versus Seam Thickness

Borehole	Depth to Rockhead (m bgl)	Depth to Seam (m bgl)	Thickness of Overlying Competent Rock (m bgl)	Seam Thickness of (m)	Ratio of Competent Rock Cover:Seam Thickness
RO101	14.0*	-	-	-	-
RO102	21.0*	-	-	-	-

Borehole	Depth to Rockhead (m bgl)	Depth to Seam (m bgl)	Thickness of Overlying Competent Rock (m bgl)	Seam Thickness of (m)	Ratio of Competent Rock Cover:Seam Thickness
RO103A	19.5	23.0	3.5	0.1 ^(THIN)	35:1
		24.2	4.7	1.1 ^(BHF)	4.3:1
RO104	20.5	29.0	8.5	1.7 [#] ^(BHF)	5:1
RO105	21.5	22.7	1.2	0.3 ^(THF)	4:1
		30.5	9.0	1.5 [#] ^(BHF)	6:1
RO106	10.0	16.5	6.5	0.2	33:1
		18.3		0.1	85:1
		22.5		0.1	125:1
		24.9 ^(2nd)			

Notes: * No returns in drift, estimated rockhead depth.
 # including banded coal.
 THF conjectured to be the Top Hebburn Fell coal seam.
 BHF conjectured to be the Bottom Hebburn Fell coal seam.

From the findings of the rotary openhole drilling and the published stratigraphic information it is conjectured that the Bottom Hebburn Fell was encountered in RO103A at 1.1m thick just southeast of its subcrop at 4.7m below rockhead and was further encountered in boreholes RO104 and RO105 where it was found up to 1.7m in thickness including mudstone bands. A second coal seam encountered at 22.7m bgl in RO105 at 1.2m below rockhead and 0.3m thick is conjectured to be the Top Hebburn Fell seam. The inferred position and the subcrop beneath drift of the Top and Bottom Hebburn Fell coal seams appear to be largely consistent with the published geology and inferred dip and dip direction.

The Top Hebburn Fell coal seam is considered too thin to have been economically worked. However, the Bottom Hebburn Fell is considered to be of workable thickness.



For typical Coal Measures bedrock (e.g. mudstone), it is generally accepted that there is a risk of surface instability where the thickness of competent bedrock above the worked coal seam is less than 10x the seam thickness. The Bottom Hebburn Fell has been found of workable thickness and with insufficient competent rock cover across the central and southern part of the site, from its inferred subcrop position until the bedrock ramps up to circa 10m bgl in the south and south east.

However, there has been no evidence to date of any working of the Bottom Hebburn Fell beneath the site from the boreholes drilled. Furthermore there are no mine entries on or close to the site, and the majority of the site is underlain by a significant thickness of drift meaning historic early mining through drifts, adits or bell pits is considered unlikely. Therefore, it is considered that the overall risk to the site from unrecorded workings is low. However, the risk cannot be ruled out with certainty at this stage.

It is recommended that proof drilling of plots is undertaken across the central and south-eastern part of the site to investigate the mining risk further. The approximate area requiring proof drilling has been determined from the inferred position of the Bottom Hebburn Fell subcrop, dip of the seam and depth to bedrock, and this is shown on Drawing No. C7074/06 presented in Appendix A.

10.4. Geotechnical

Foundations

It is understood that consideration is being given to the development of the site with low rise residential properties with private gardens. Proposed development loads were not available to Sirius at the time of writing, but are expected to be relatively light. If this is not the case, then the following comments may require amendment.

It should be noted that these foundation recommendations could be subject to change if the aforementioned development proposals are subject to change.

The investigations undertaken to date have identified the site surface to predominantly comprise concrete hardstanding from former structures in the site centre and toward the north and north east, with rough grass over topsoil in the south, east and south east. Mounds of soils, assumed to be predominantly from the site strip prior to development of the site are present along much of the eastern boundary and in the south-east corner.

Made ground of suspected processed demolition rubble has been encountered across the majority of the formerly developed areas of the site, typically around 0.4m thick but locally up to >3.9m bgl

where it has been used to infill subsurface structures. Numerous relic subsurface structures have been encountered including concrete slabs and foundations. Localised granular made ground was encountered within the vicinity of a former pond in the west of the site.

The mounds in the east and south east were largely comprised of made ground of reworked clay with some brick, pottery and concrete fragments.

Underlying the made ground or topsoil was firm and stiff, locally very stiff Pelaw Clay.

Given the current nature of the site, with the presence of significant surface and subsurface structures, backfilled former ponds and mounds up to circa 4.5m in height, significant earthworks are considered necessary before construction could commence. The made ground has also been found to be contaminated with heavy metals, PAHs, hydrocarbons and asbestos.

Foundation options will have to be finalised upon completion of the earthworks and a detailed foundation schedule produced. However, a summary of possible options is provided below.

Conventional Shallow Footings

The topsoil and made ground is considered unsuitable as a bearing stratum using conventional strip foundations due to the potential for excessive total and differential settlements. It is considered that where made ground post earthworks is less than circa 2.5m bgl that conventional strip, deep strip or trench fill foundations would be a suitable foundation solution for the low rise residential properties in some parts of the site, especially towards the southeast once the clay mounds are removed.

Cohesive strata have a characteristic minimum undrained shear strength of circa 60kN/m² at likely foundation depth across the site and increasing with depth.

The clay soils on this site have been found have a low and medium volume change potential in accordance with NHBC Standards Chapter 4.2. In view of this, foundations placed into natural in-situ cohesive soils should be a minimum of 0.9m deep, locally deepened within the zone of influence of existing or proposed trees. A tree survey was not included in the scope of this investigation, but should be carried out prior to the production of a detailed plot-specific foundation schedule, as a significant number of mature trees are present within the site which will affect the moisture content of clays to greater depths. As such, foundations will be required to extend to a moisture stable level.

Based upon Eurocode 7 compliant calculations, a 600mm wide strip foundation bearing onto cohesive soils at a minimum depth of 0.9m bgl could support a line load of up to 90kN per metre run.

Taking into account the depositional history of Pelaw Clay soils, it is considered that the application of such a line load would induce long term consolidation settlement of 25mm or less.

In addition, strip/trench foundations should be taken below a line drawn up at 45° from the base of any existing or proposed services. Foundations should also be taken below the base of any previous existing structures / existing structures, and these are likely to be significant in number and extent. If relic foundations, floor slabs or other hard surfaces are encountered, then such structures should be broken out beneath the footprint of proposed foundations, and foundations should extend to bear onto underlying natural soil of suitable strength. This may well require overdeepening of foundations, locally significantly, which may require alternative foundations to be used.

Alternative Foundations

Where made ground or chasing out of subsurface structures and/or invasive plants exceeds circa 2.5m bgl, or where the influence of trees dictates foundations in excess of 2.5m deep, alternative foundations will be required, such as piling or shallow reinforced spread foundations on vibro replacement (stone columns). For plots affected by trees, piled foundations are considered the most suitable option. The use of alternative foundations is likely to be focused towards the central and northwestern parts of the site which were previously developed, depending upon the amount of disturbance caused during earthworks and removal of surface/subsurface structures.

The use of alternative foundations may have other benefits such as reducing the amount of contaminated arising produced and lowering risks to construction workers and off-site receptors associated with the contaminated made ground, and therefore could be considered across the site.

The significant number of buried structures could be restrictive to piling and vibro replacement and it is recommended that earthworks includes a full thickness turnover of made ground, or an allowance made for pre-drilling piles. The use of vibro may also be restricted close to existing off-site structures in the northeast and southwest of the site.

The selection and design of a suitable options for alternative foundation, is and will remain the responsible of a suitably qualified piling and/or vibro contractor, who should be contacted for further advice.

It is recommended that a plot specific foundation schedule is prepared, post earthworks to enable detailed design of individual foundations for the exact line loads anticipated within each plot.

Floor Slabs

In accordance with NHBC Standards 2008 (Chapters 4.2, 4.6 and 5.1), suspended ground floor slabs are required in the following situations:

- Made Ground greater than 600mm thick.
- Where soil swelling may occur.
- Where vibratory ground improvement has been carried out.
- Where the ground has insufficient bearing capacity.

Given the requirement for clean cover system, the presence of trees and the likely use of alternative foundations, at this stage suspended floor slabs should be allowed for across the site.

Sulphate Attack

Based on the samples tested, a Design Sulphate Class of DS-2 and an ACEC Class of AC-2 may be adopted for buried concrete structures.

If buried concrete is only in contact with natural clay soils, then a Design Sulphate Class of DS-1 and an ACEC Class of AC-1 may be adopted.

Groundworks, Excavation Stability and Groundwater Dewatering

Excavations into made ground and natural soils should be assumed to be unstable. No man entry into unsupported excavations should be allowed without an appropriate risk assessment. Reference to CIRIA report 97 (2001) should be made to establish suitable means of support or battering of excavation sides.

Based on the results of this investigation, significant inflows of groundwater into excavations were not encountered, although there were some groundwater seepages at depths of <1m bgl and minor flows below 1 m bgl. It is considered that any groundwater encountered within excavations should be adequately controlled by localised pumping from sumps.

It is recommended that an adequate drainage system for surface water be installed by a competent contractor in order to prevent surface water ponding or collecting both during and post construction, as this may lead to deterioration of the founding stratum. In order to reduce the possibility of softening

or swelling of cohesive soils exposed in the base of foundation trenches, it is recommended that the base of such trenches should be suitably blinded with concrete as soon as is reasonably practicable.

Based upon proven ground conditions (made ground and underlying cohesive strata), it is considered that unlikely that soakaway drainage would be suitable at the site.

10.5. Pavements and Highways

Untreated made ground across the site should be assumed to have a CBR value of <2.5% unless proven otherwise via in situ testing. Highways Agency document HD25 Interim Advice Note 73/06 states that where a subgrade has a CBR value lower than 2.5%, it is considered unsuitable support for a pavement foundation since it would tend to deform under construction traffic, and must be improved.

It is recommended that made ground to a depth of at least 1.0m below subgrade level is excavated, sorted and classified in accordance with Series 600 (Earthworks) of the Highways Agency “Specification for Highways Works”. Following the above, any suitable material which can be used as part of highway construction shall be compacted in accordance with the aforementioned earthworks specification.

It is recognised that, in some parts of the site, at present made ground is relatively thin, 0.5m or less. In such areas, depending upon the final levels, it is anticipated that natural cohesive soils may be present at likely formation depth. In such instance, for preliminary design purposes, based on Atterberg Limit determinations obtained for glacial till encountered on this site, Highways Agency document HD25 Interim Advice Note 73/06 Revision 1 (2009) indicates that a CBR value of 2.5% may be used for the natural soils, for construction in “average” conditions assuming a ‘thin’ layered construction (300mm subgrade). The subgrade is however, expected to deteriorate on exposure particularly to rain or groundwater.

Notwithstanding the above, it is recommended that all road design be discussed with the relevant local authority, particularly if highways are to be subject to a Section 38 Agreement.

10.6. Soil and Groundwater Contamination

Risk Evaluation for the Proposed Land Use (residential with gardens)

Human Health Receptors

Bundles and clumps of chrysotile fibres, have been identified within two samples of topsoil and clumps of chrysotile, crocidolite and amosite asbestos fibres have been identified in 11 samples of made ground (both general granular made ground and stockpiled processed material).

In addition, concentrations of heavy metals and PAHs have been recorded sporadically throughout nine further samples of topsoil and made ground. Based on the conceptual model for the site, the presence of asbestos fibres and elevated heavy metals and PAHs may be reasonably anticipated throughout most, if not all, of the made ground and a significant proportion of the topsoil across the site.

Localised ‘hotspots’ of diesel range hydrocarbon contamination has also been identified within the made ground in TP 105, TP 137 and TP 139. In TP 137 the contamination was also encountered in the underlying natural clay.

As a consequence, at this stage, the made ground is not considered suitable to remain at shallow depth within residential gardens or areas of landscaping and remedial action will be required to break the potential pollutant linkages to end users.

Topsoil will require further sampling and analysis to determine how widespread the asbestos, heavy metal and PAH contamination is, but at this stage a significant proportion of topsoil should be assumed to be unsuitable for re-use, and will require disposal off-site.

Consideration will also need to be taken in respect of working practices and the protection of site workers and adjacent land users against dispersion of asbestos fibres during any earthworks.

Controlled Waters Receptors

With consideration to the soils encountered, the low environmental sensitivity of the site and the presence of significant thicknesses of low permeability cohesive deposits underlying the made ground, no significant potential sources, migratory pathways, or nearby receptors have been identified, and there is no perceived active pollutant linkage. The risks to controlled waters are therefore considered to be low.

Ecological Receptors

No potential pollutant linkages to ecological receptors have been identified for the site.

Utilities

It is recommended that the results of the chemical testing and details of the proposed remedial works are provided to the appropriate utility companies to determine the necessity for service protection. Protection of some services especially water supply pipes, should be anticipated.

Construction and Maintenance Workers

Contamination may pose a short-term (acute) or long-term (chronic) risk to workers during construction and maintenance. The potential risks must be specifically assessed as part of the health and safety evaluation for the works to be performed in accordance with prevailing legislation. Site practices must conform to the specific legislative requirements and follow appropriate guidance (e.g., HSE, 1991; CIRIA, 1996).

On the basis of the results obtained, the revised conceptual site model confirms potential moderate to high risks to construction workers from asbestos fibres in the made ground and topsoil at the site.

However, the risks can be readily adequately mitigated by appropriate PPE and hygiene precautions and good working and soil management practices. It is recommended that procedures outlined in the HSE document “Protection of Workers and the General Public during Remediation of Contaminated Land” be followed. There will be a requirement to comply with the COSHH (Control of Substances Hazardous to Health) Regulations and the CDM (Construction Design and Management 2007) Regulations during any works.

The use of clean cover system and marker layer across the site could also be an option to lower the risks construction workers, to form a ‘clean’ dig layer, as well as adopting foundation techniques such as piling or shallow reinforced spread foundations on vibro stone columns to keep the disturbance of the underlying contaminated soils to a minimum.

This report should be forwarded to any organisations undertaking groundworks in order for them to assess the risk to their personnel.

Outline Remediation Requirements

The presence of asbestos fibres, heavy metals and PAH concentrations within the made ground across the site are considered likely to present a significant potential risk to human health both during and following development, and require remedial action to break potential pollutant linkages.

In view of the widespread distribution and thickness of the made ground, it is recognised that excavation and off-site disposal of such soils in their entirety is unlikely to be an economically viable or sustainable solution.

The most effective remedial action is therefore considered to be the construction of a clean cover soil capping and marker layer, within at least areas of gardens and landscaping (although it could be considered across the site), which will break all pollutant linkages between end users and the identified contamination.

Sirius considers that, where made ground remains in situ, a minimum of 1000mm of validated clean cover soils, together with a layer of geotextile separator membrane placed at the base of the capping layer to act as a no dig layer for future residents, would provide a sufficient cover to break pollutant linkages. It is suggested that this comprises a minimum 900mm subsoil and 100mm topsoil horizon at the surface, in accordance with NHBC Standards Chapter 9, although an increased thickness of topsoil, and associated commensurate reduction in subsoil could be considered.

However, the thickness of capping layer soils and the form of any geotextile membrane should be discussed in detail with regulators at the earliest opportunity. There may be some requirement to undertake an additional phase of testing of the made ground to confirm the distribution and concentrations of asbestos present, before a 1000mm thickness would be considered acceptable.

The mounds of reworked clay present in the southeast of the site, are considered suitable for re-use as the clean capping material, subject to suitable materials management and further analysis.

It is noted that in some areas of the site, made ground is only of relatively limited thickness (<0.5m). If reprofiling acts to remove the made ground in its entirety from beneath areas of garden or landscaping, then the requirement for a clean cover soil cap in such areas could be dismissed, providing it is proven that the residual natural soils have not been cross-contaminated e.g. no asbestos fibres remain.

Preparation of, and strict adherence to, a soil management plan will be necessary in order to minimise the potential for cross-contamination of other soils including proposed capping soils. The

risk from future arisings for example from foundation and service trench excavations penetrating into the made ground at its current and/ or relocated position, will also need to be considered in such a plan.

Validation of the thickness and chemical suitability of the cover soils, together with the presence of the geotextile separator, will also be required on completion of the remedial works.

Topsoil has been found to contain asbestos fibres and elevated concentrations of heavy metals and PAHs, and off-site disposal of a significant proportion of topsoil should be anticipated. Further analysis of topsoil should be undertaken to determine if any could be reused on site.

Hotspots of hydrocarbon contamination have also been identified within the made ground and natural clay soils, it is also considered likely that other previously unidentified 'hotspots' of hydrocarbon contamination will be encountered. The most suitable remedial options for hydrocarbon contamination would be excavation followed by either on-site treatment, off-site treatment or disposal off-site. Visual and chemical verification of the removal of hydrocarbon impacted soils will be required.

The above recommendations comprise a general outline of possible or likely works. A remediation strategy report and site material management plan should be produced and agreed with the regulatory authorities prior to commencement of remediation and earthworks.

It is possible that other contamination will be encountered on site during preparatory earthworks. If any areas of noxious, odorous, brightly coloured, liquid, fibrous etc. contamination are identified, further advice should be sought from a suitably qualified consultant.

10.7. Ground Gas/Vapours

Given the presence of isolated pockets of made ground on the site and coal measures at depth beneath the site, there is potential for hazardous ground gases (methane and carbon dioxide) to migrate from the identified sources to this site.

On the basis of the gas monitoring to date and subsequent risk assessment, the site is currently considered to fall within CS2 as defined by BS 8485. Gas protection measures will be required in dwellings, comprising for example, the incorporation of a beam and block or pre-cast concrete subfloor with underfloor venting and gas resistant membrane, or reinforced concrete cast in situ floor slab with underfloor venting.

Monitoring is ongoing at the time of writing and final classification and requirements for protective measure will be reported under separate cover on completion of the monitoring.

According to the BGS, radon protective measures are not required for the site.

10.8. Invasive Plants

Invasive plant species were suspected to be present during the works. However, these observations should be confirmed, and any identified invasive plants treated and removed by an appropriately qualified specialist.

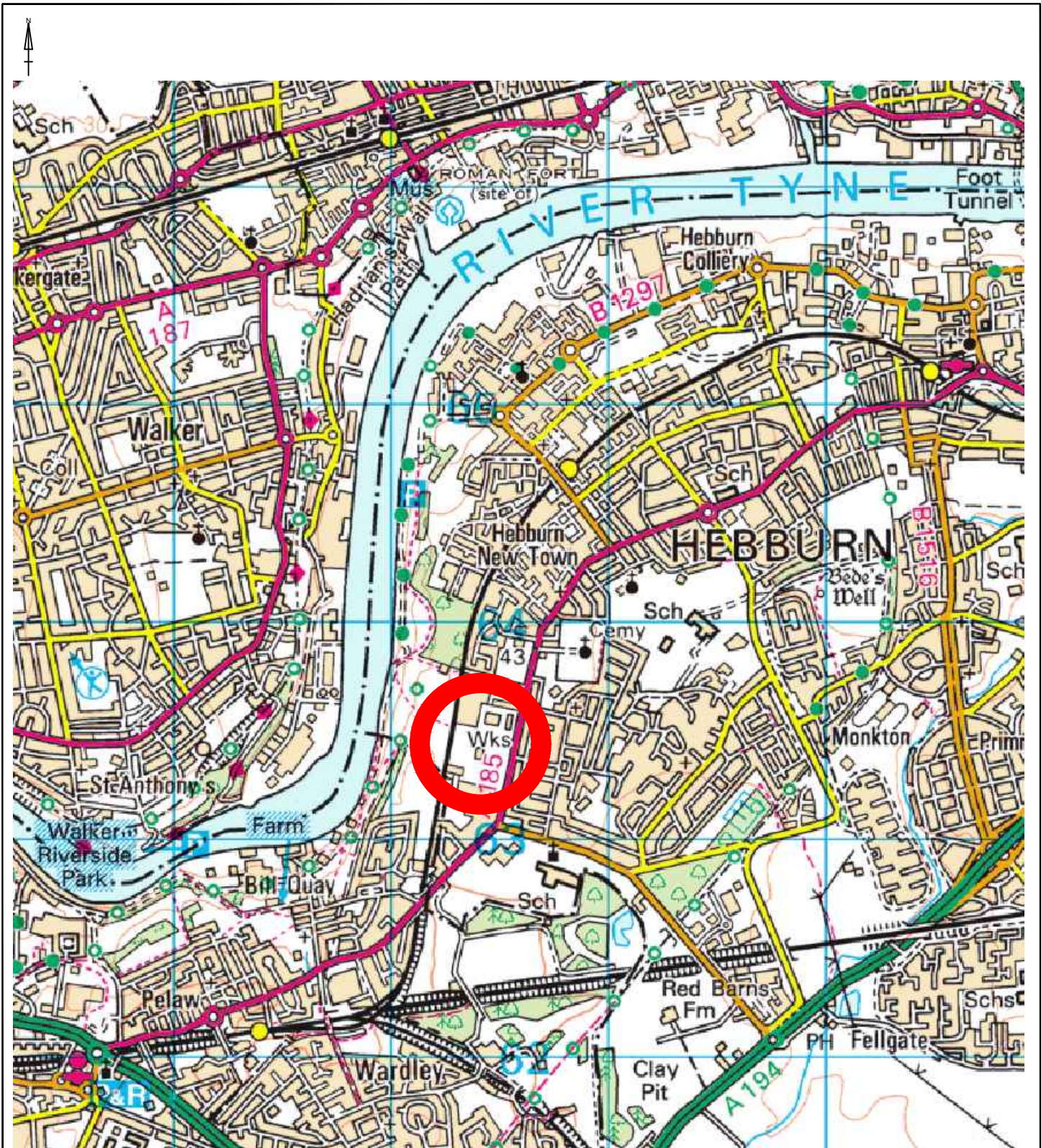
11. REGULATORY APPROVALS

The conclusions and recommendations presented above are considered reasonable based on the findings of the site investigation. However, these cannot be guaranteed to gain regulatory approval and, therefore, the report should be passed to the appropriate regulatory authorities and/or other organisations for their comment and approval prior to undertaking any works on site.





APPENDIX A

FIGURES AND DRAWINGS



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NOTES  Site Location	REVISION 0 For information A >> B >> C >> D >>		CLIENT Miller Homes (North East) Ltd		DRAWING NO. C7074/01		REVISION NO. 0		
	SIRIUS GEOTECHNICAL & ENVIRONMENTAL Russel House, Mill Lane, Langley Moor Durham DH7 8HJ www.the-siriusgroup.com TEL: 0191 378 9972 FAX: 0191 378 1537		SITE Former Siemens Factory, Hebburn		DRAWN BY DT		APPROVED BY PB		
			DRAWING TITLE Site Location Plan		DATE Aug 2016		SCALE 1:25,000		A4



Site Access

Shallow Open
Excavation (Suspected
Extent of Former
Japanese Knotweed
Removal / Treatment)

Concrete
Slabs

Railway /
Traveling
Crane Tracks

Processed
Demolition Rubble
(Suspected ACMs)

Concrete
Slabs

Concrete
Slabs

Area of Possible
Japanese Knotweed

Asphalt Access
Road

Processed
Demolition Rubble
(Suspected ACMs)

Concrete
Slabs

Railway /
Traveling
Crane Tracks

Soil Mounds

Soft Landscaping

Soft Landscaping

Soil Mounds

NOTES

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B	>>
C	>>
D	>>

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& ENVIRONMENTAL
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Thorpe Park,
Leeds
LS15 8GB
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TEL: 0113 264 9960
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CLIENT

**Miller Homes
(North East) Ltd**

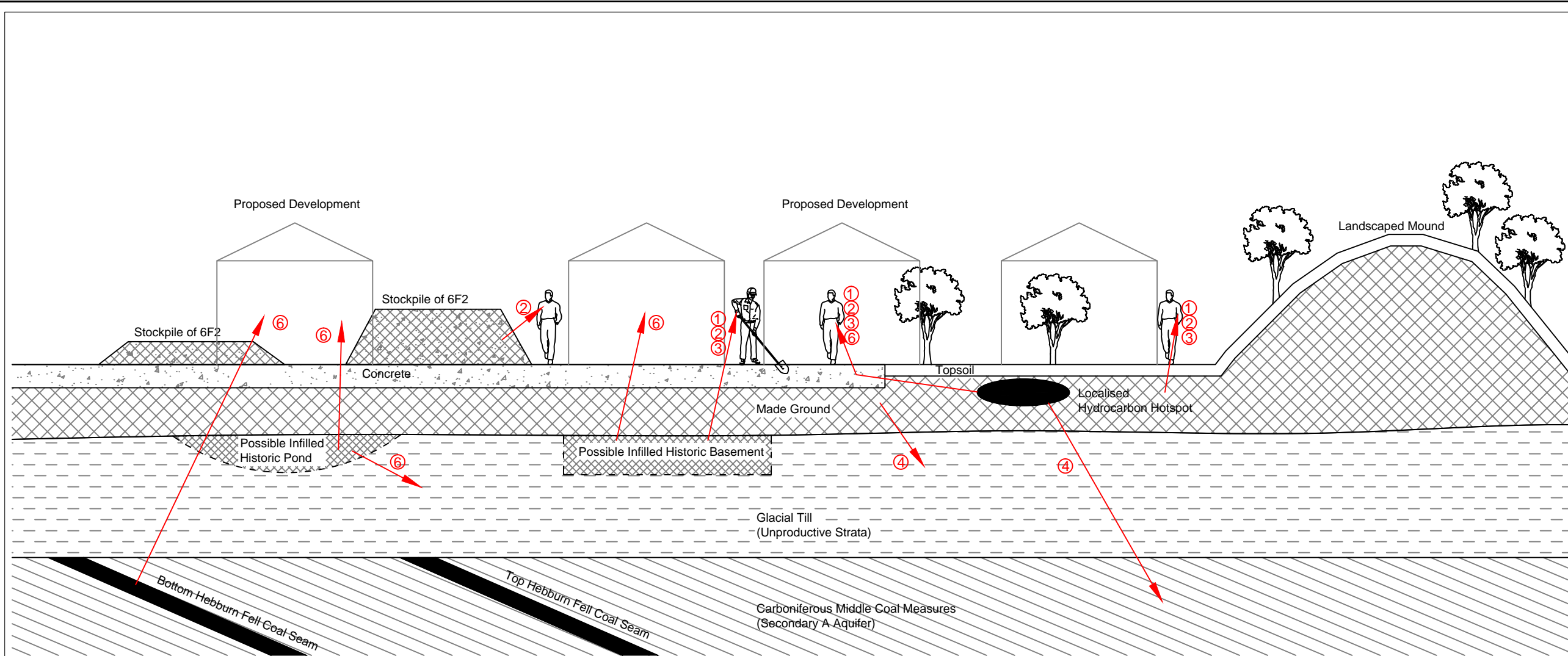
SITE

**Former Siemens Factory,
Hebburn**

DRAWING TITLE

Site Features Plan

DRAWING NO. C7074/02	REVISION NO. 0	
DRAWN BY DT	APPROVED BY PB	
DATE Aug 2016	SCALE 1:1000	PAPER SIZE A2



NOTES

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Contamination Sources	Contamination Pathways	Potential receptors	Likelihood of significant pollutant linkage
Metals, oils, hydrocarbons, acids and alkalis, PCBs and asbestos fibres within made ground soils	① Direct and indirect ingestion	Site end users	Moderate
	② Inhalation of contaminated particles/dust	Construction/Maintenance workers	Moderate - high
	③ Dermal contact	Controlled waters	Low
Asbestos fibres within processed demolition rubble	② Inhalation of contaminated particles/dust	Site end users	Low
		Construction/Maintenance workers	Moderate - high
Hazardous ground gases from on-site Coal Measures strata and made ground	⑥ Migration and accumulation of gases in indoor air	Site end users	Low - moderate

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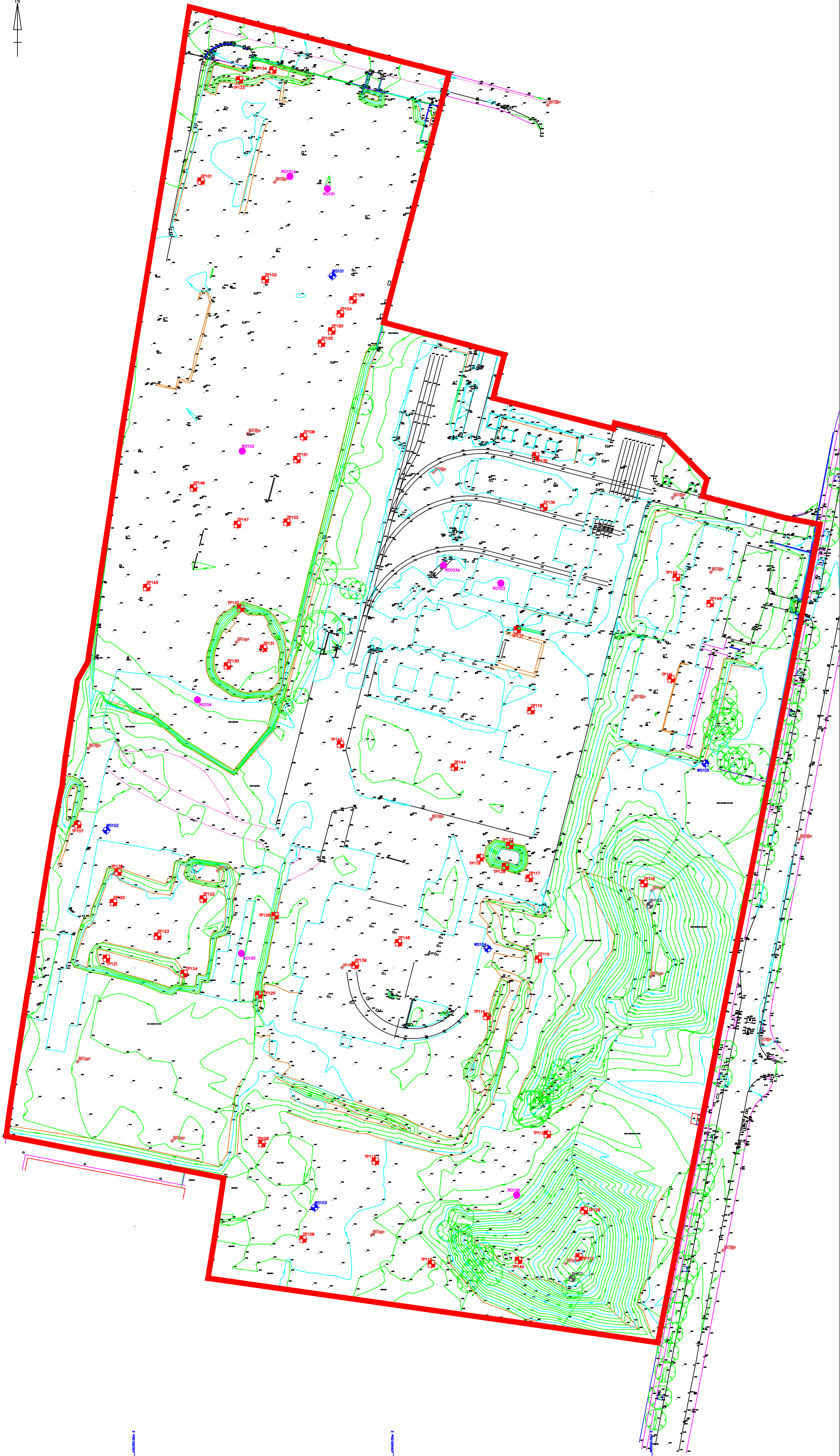
CLIENT

**Miller Homes
 (North East) Ltd**

SITE
**Former Siemens Factory,
 Hebburn**

DRAWING TITLE
**Preliminary Conceptual
 Site Model**

DRAWING NO. C7074/03	REVISION NO. 0
DRAWN BY DT	APPROVED BY PB
DATE Aug 2016	SCALE NTS
	PAPER SIZE A3



NOTES

- ▬ Site Boundary
- ▣ TP Trial Pit Location
- ⊙ WS Window Sample Location
- ⊙ BH Borehole Location
- ⊙ RO Rotary Hole Location

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(North East Region)**

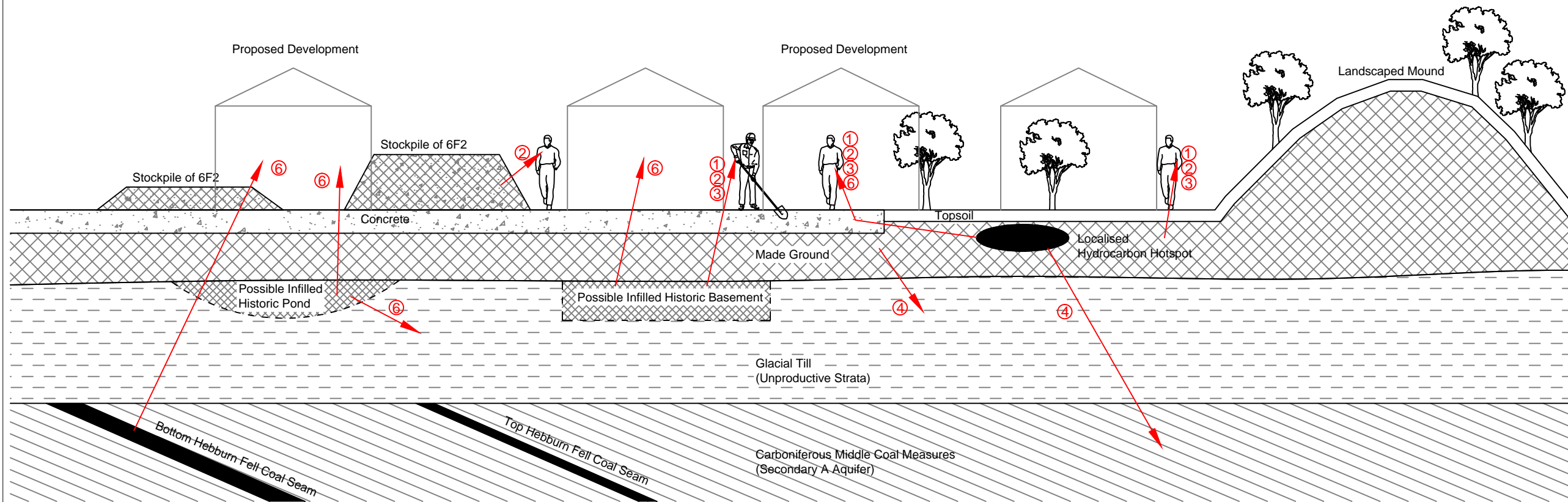
SITE

**Former Siemens Factories,
Hebburn**

DRAWING TITLE

**Exploratory Hole
Location Plan**

DRAWING NO. C7074/04	REVISION NO. 0
DRAWN BY SM	APPROVED BY RS
DATE July 2016	SCALE 1:1000
	PAPER SIZE A2



Contamination Sources	Contamination Pathways	Potential receptors	Likelihood of significant pollutant linkage
Metals, hydrocarbons and asbestos fibres within made ground and topsoil	① Direct and indirect ingestion	Site end users	Moderate - high
	② Inhalation of contaminated particles/dust	Construction/Maintenance workers	Moderate - high
	③ Dermal contact	Controlled waters	Low
	④ Leaching of contaminants	Site end users	Low
Asbestos fibres within processed demolition rubble	② Inhalation of contaminated particles/dust	Construction/Maintenance workers	Moderate - high
		Site end users	Low - moderate
Hazardous ground gases from on-site Coal Measures strata and made ground	⑥ Migration and accumulation of gases in indoor air	Site end users	Low - moderate

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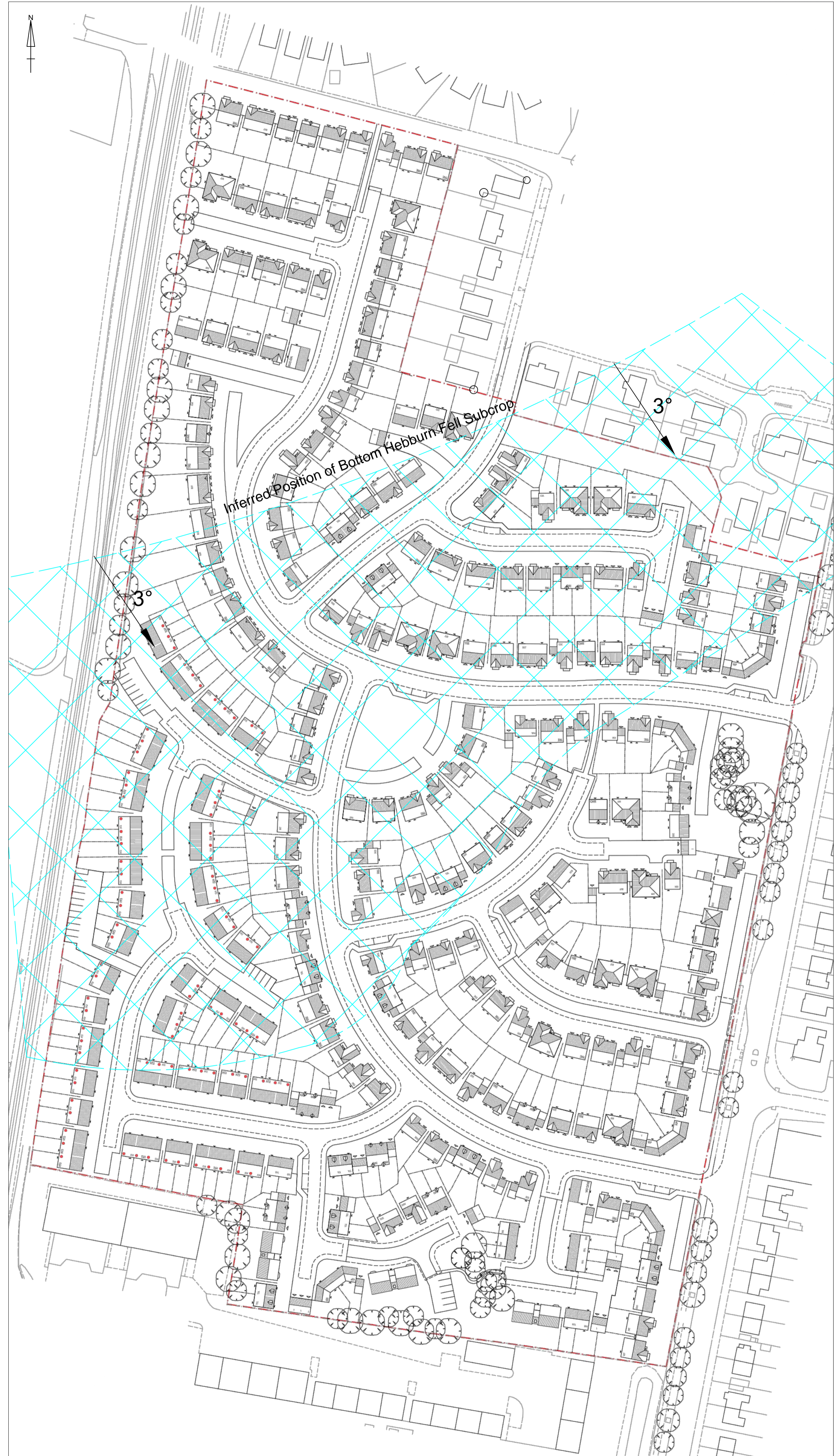
SITE

**Former Siemens Factory,
Hebburn**

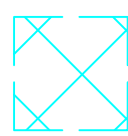
DRAWING TITLE


**Revised Conceptual
Site Model**

DRAWING NO. C7074/05	REVISION NO. 0
DRAWN BY DT	APPROVED BY PB
DATE Aug 2016	SCALE NTS
	PAPER SIZE A3



NOTES

 Approximate extent of Bottom Hebburn Fell without competent cover

 3° Inferred dip direction and angle from BGS data.

The Top Hebburn Fell has been ignored as it considered too thin to be a risk. Zone of influence and absence of workings to be confirmed by proof rotary drilling.

Inferred Position of Bottom Hebburn Fell Subcrop

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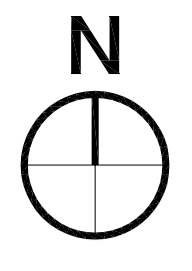
CLIENT

Miller Homes North East Ltd

SITE
Former Siemens Works, Hebburn

DRAWING TITLE
Approximate Likely Zone of Influence - Bottom Hebburn Fell

DRAWING NO. C7074/06	REVISION NO. 0
DRAWN BY SM	APPROVED BY CR
DATE July 2016	SCALE 1:1000
	PAPER SIZE A2



Ecological Corridor
 Affordable House Type



SCHEDULE OF ACCOMMODATION – LAND OF VICTORIA ROAD WEST, HEBBURN 29/07/16

House Type	House Type	Description	No	Parking	Storeys	Space	sq ft	Total
AFFORDABLE	HT2	2 BED SEMI/TERRACED HOUSE	67	PS	2	3	837	56079
	HT3	3 BED SEMI/TERRACED HOUSE	17	PS	2	3	985	16742
2 BEDROOM	APARTMENT	2 BED APARTMENT	18	PS	3	3	623	11214
	YARE	2 BED TERRACED HOUSE	11	PS	2	3	657	7227
3 BEDROOM	TOLKIEN	3 BED TERRACED HOUSE	16	PS	2.5	5	892	14272
	TWEED	3 BED DET HOUSE	8	KG	2	5	892	7138
	DRWELL	3 BED DET HOUSE	8	KG	2	5	1407	7739
	WILKINS	3 BED DET HOUSE	10	SG	2	5	1127	11020
	HARDWICKE	3 BED TERRACED HOUSE	22	PS	2.5	5	1000	22000
	LARKIN	3 BED DET HOUSE	10	KG	2	5	980	9800
4 BEDROOM	ESK	4 BED SEMI DET HOUSE	31	SG	2	6	1105	34255
	TRAYVERS	4 BED DET HOUSE	17	KG	2	6	1265	21503
	BOGCHAN	4 BED DET HOUSE	7	SG	2	6	1264	8949
	STEVENSON	4 BED DET HOUSE	6	DG	2	7	1408	8448
	MITFORD	4 BED DET HOUSE	12	SG	2	7	1388	16656
	WRESSLE	4 BED DET HOUSE	43	KG	2	7	1348	58007
5 BEDROOM	BUTTERMERE	5 BED DET HOUSE	13	IDG	2	8	1509	19617
	JURA	5 BED DET HOUSE	18	IDG	2	9	1679	30222
TOTAL			334					360037
GROSS SITE AREA ACRES	10.24	ha						25.30
PUBLIC OPEN SPACE	1.03	ha						2.56
NETT SITE AREA ACRES	9.21	ha						22.76
COVERAGE SQ FT/ACRE								15818.85



**Land off Victoria Road West,
Hebburn, South Tyneside**

Masterplan as Proposed

Miller Homes Planning
 1:500 00 06:16 MC CVB
 544-MIL SD-10.01 G



APPENDIX B

ENVIROCHECK REPORT



Envirocheck[®] Report:

Datasheet

Order Details:

Order Number:

90505614_1_1

Customer Reference:

C7074/Former Siemens Factory, Hebburn/CR

National Grid Reference:

430400, 563500

Slice:

A

Site Area (Ha):

10.3

Search Buffer (m):

1000

Site Details:

Siemens
North Farm Road
HEBBURN
Tyne and Wear
NE31 1LX

Client Details:

S Howson
Sirius Geotechnical & Environmental Ltd
4245 Park Approach
Thorpe Park
Leeds
LS15 8GB



Report Section	Page Number
Summary	-
Agency & Hydrological	1
Waste	23
Hazardous Substances	-
Geological	32
Industrial Land Use	35
Sensitive Land Use	46
Data Currency	47
Data Suppliers	52
Useful Contacts	53

Introduction

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

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

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Report Version v50.0



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	n/a
Contaminated Land Register Entries and Notices					
Discharge Consents	pg 2			2	62
Prosecutions Relating to Controlled Waters			n/a	n/a	n/a
Enforcement and Prohibition Notices					
Integrated Pollution Controls					
Integrated Pollution Prevention And Control					
Local Authority Integrated Pollution Prevention And Control					
Local Authority Pollution Prevention and Controls	pg 18	2	3	1	2
Local Authority Pollution Prevention and Control Enforcements					
Nearest Surface Water Feature	pg 19		Yes		
Pollution Incidents to Controlled Waters	pg 19				2
Prosecutions Relating to Authorised Processes					
Registered Radioactive Substances	pg 20	1			
River Quality					
River Quality Biology Sampling Points					
River Quality Chemistry Sampling Points					
Substantiated Pollution Incident Register					
Water Abstractions	pg 20				(*1)
Water Industry Act Referrals					
Groundwater Vulnerability	pg 20	Yes	n/a	n/a	n/a
Drift Deposits	pg 20	1	n/a	n/a	n/a
Bedrock Aquifer Designations	pg 20	Yes	n/a	n/a	n/a
Superficial Aquifer Designations	pg 20	Yes	n/a	n/a	n/a
Source Protection Zones					
Extreme Flooding from Rivers or Sea without Defences				n/a	n/a
Flooding from Rivers or Sea without Defences				n/a	n/a
Areas Benefiting from Flood Defences				n/a	n/a
Flood Water Storage Areas				n/a	n/a
Flood Defences				n/a	n/a
Detailed River Network Lines	pg 21		Yes	Yes	n/a
Detailed River Network Offline Drainage					n/a



Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Waste					
BGS Recorded Landfill Sites	pg 23			1	
Historical Landfill Sites	pg 23		1		8
Integrated Pollution Control Registered Waste Sites					
Licensed Waste Management Facilities (Landfill Boundaries)	pg 25				4
Licensed Waste Management Facilities (Locations)	pg 25				8
Local Authority Landfill Coverage		1	n/a	n/a	n/a
Local Authority Recorded Landfill Sites	pg 27				3
Registered Landfill Sites	pg 28				5
Registered Waste Transfer Sites	pg 30				1
Registered Waste Treatment or Disposal Sites	pg 31				2
Hazardous Substances					
Control of Major Accident Hazards Sites (COMAH)					
Explosive Sites					
Notification of Installations Handling Hazardous Substances (NIHHS)					
Planning Hazardous Substance Consents					
Planning Hazardous Substance Enforcements					
Geological					
BGS 1:625,000 Solid Geology	pg 32	Yes	n/a	n/a	n/a
BGS Recorded Mineral Sites	pg 32			1	6
Brine Compensation Area			n/a	n/a	n/a
Coal Mining Affected Areas	pg 33	Yes	n/a	n/a	n/a
Mining Instability	pg 33	Yes	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 33	Yes	Yes	n/a	n/a
Potential for Compressible Ground Stability Hazards	pg 33	Yes	Yes	n/a	n/a
Potential for Ground Dissolution Stability Hazards				n/a	n/a
Potential for Landslide Ground Stability Hazards	pg 33	Yes	Yes	n/a	n/a
Potential for Running Sand Ground Stability Hazards	pg 34	Yes		n/a	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards	pg 34	Yes	Yes	n/a	n/a
Radon Potential - Radon Affected Areas			n/a	n/a	n/a
Radon Potential - Radon Protection Measures			n/a	n/a	n/a



Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Industrial Land Use					
Contemporary Trade Directory Entries	pg 35	1	36	9	69
Fuel Station Entries	pg 45			1	1
Gas Pipelines					
Underground Electrical Cables					
Sensitive Land Use					
Ancient Woodland					
Areas of Adopted Green Belt	pg 46			1	1
Areas of Unadopted Green Belt	pg 46				1
Areas of Outstanding Natural Beauty					
Environmentally Sensitive Areas					
Forest Parks					
Local Nature Reserves	pg 46				1
Marine Nature Reserves					
National Nature Reserves					
National Parks					
Nitrate Sensitive Areas					
Nitrate Vulnerable Zones					
Ramsar Sites					
Sites of Special Scientific Interest					
Special Areas of Conservation					
Special Protection Areas					
World Heritage Sites					



Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A8NE (SE)	0	1	430450 563400
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A8NE (E)	0	1	430500 563500
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A8NE (S)	0	1	430450 563300
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A12SE (NW)	266	1	430050 563750
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A7NE (W)	273	1	430000 563501
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NW (N)	280	1	430399 564050
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13NW (N)	280	1	430300 564050
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NW (NW)	285	1	430100 563950
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A13NW (NW)	287	1	430150 564000
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A7NE (SW)	302	1	429950 563300
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NW (N)	305	1	430200 564050
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A12NE (NW)	326	1	430050 563950
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NW (N)	337	1	430250 564100
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13NW (N)	380	1	430300 564150
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13NW (N)	380	1	430350 564150
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A13NW (N)	381	1	430399 564150
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A12NE (NW)	390	1	430050 564050
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13NW (N)	417	1	430150 564150
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A18SW (N)	430	1	430300 564200
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A18SW (N)	430	1	430350 564200
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A18SW (N)	430	1	430399 564200
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NW (NW)	440	1	430100 564150



Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A9NW (SE)	451	1	430950 563200
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A18SW (N)	463	1	430150 564200
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A7SE (SW)	464	1	429850 563100
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A18SW (N)	480	1	430300 564250
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A18SW (N)	480	1	430350 564250
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A18SW (N)	480	1	430399 564250
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A9NW (E)	481	1	431000 563300
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A18SW (NW)	483	1	430100 564200
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A12SE (W)	486	1	429800 563600
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A12SE (W)	497	1	429800 563650
1	Discharge Consents Operator: Northumbrian Water Limited Property Type: Sewerage Network - Sewers - Water Company Location: Sso At Sw Corner Of Allotment Garde, Hebburn Riverside Park, Hebburn, Tyne And Wear Authority: Environment Agency, North East Region Catchment Area: Tyne (Lower)/Team/Don Reference: 235/1187 Permit Version: 1 Effective Date: 29th October 1992 Issued Date: 29th October 1992 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge: Saline Estuary Environment: Receiving Water: Tyne Estuary Status: New Consent, by Application (Water Resources Act 1991, Section 88) Positional Accuracy: Located by supplier to within 10m	A12SE (NW)	342	2	429980 563800
2	Discharge Consents Operator: Redundant - Northumbrian Water Ltd Property Type: Trade (Unknown/Other) Location: South West Corner Of Allotment Gard, Hebburn Authority: Environment Agency, North East Region Catchment Area: Not Supplied Reference: 235/X/0008 Permit Version: 1 Effective Date: 1st December 1986 Issued Date: 1st December 1986 Revocation Date: 29th October 1992 Discharge Type: Unspecified Discharge: Saline Estuary Environment: Receiving Water: Tyne Estuary Status: Authorisation revokedRevoked Positional Accuracy: Located by supplier to within 10m	A12SE (NW)	374	2	429940 563750

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
3	<p>Discharge Consents</p> <p>Operator: Newcastle City Council Property Type: Sewage Disposal Works - Other Location: Walker Riverside Industrial Estate, Empress Road, Walker, Newcastle Upon Tyne, Ne6 3nw Authority: Environment Agency, North East Region Catchment Area: Not Supplied Reference: 235/1997 Permit Version: 1 Effective Date: 8th August 2005 Issued Date: 8th August 2005 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge: Saline Estuary Environment: Receiving Water: Tyne (Saline Estuary) Status: New Consent, by Application (Water Resources Act 1991, Section 88) Positional Accuracy: Located by supplier to within 10m</p>	A12SE (NW)	540	2	429780 563801
3	<p>Discharge Consents</p> <p>Operator: Duco Ltd Property Type: Insulated Wires & Cables Location: Duco Ltd Walker Riverside, Nelson Road, Walker, Newcastle Upon Tyne Authority: Environment Agency, North East Region Catchment Area: Not Supplied Reference: 235/1680 Permit Version: 1 Effective Date: 12th January 1999 Issued Date: 12th January 1999 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge: Saline Estuary Environment: Receiving Water: River Tyne Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995) Positional Accuracy: Located by supplier to within 10m</p>	A12SE (NW)	540	2	429780 563800
3	<p>Discharge Consents</p> <p>Operator: Technip Umbilicals Ltd Property Type: Insulated Wires & Cables Location: Duco Ltd Walker Riverside, Nelson Road, Walker, Newcastle Upon Tyne Authority: Environment Agency, North East Region Catchment Area: Not Supplied Reference: 235/1681 Permit Version: 1 Effective Date: 12th January 1999 Issued Date: 12th January 1999 Revocation Date: Not Supplied Discharge Type: Trade Discharges - Cooling Water Discharge: Saline Estuary Environment: Receiving Water: River Tyne Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995) Positional Accuracy: Located by supplier to within 10m</p>	A12SE (NW)	540	2	429780 563800
3	<p>Discharge Consents</p> <p>Operator: Duco Ltd Property Type: Insulated Wires & Cables Location: Duco Ltd Walker Riverside, Nelson Road, Walker, Newcastle Upon Tyne Authority: Environment Agency, North East Region Catchment Area: Not Supplied Reference: 235/1679 Permit Version: 1 Effective Date: 12th January 1999 Issued Date: 12th January 1999 Revocation Date: 10th October 2014 Discharge Type: Trade Discharges - Site Drainage Discharge: Saline Estuary Environment: Receiving Water: River Tyne Status: Surrendered under EPR 2010 Positional Accuracy: Located by supplier to within 10m</p>	A12SE (NW)	540	2	429780 563800



Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
3	<p>Discharge Consents</p> <p>Operator: Northumbrian Water Ltd Property Type: Undefined Or Other Location: Caledonia Street/Church Street, WALKER Authority: Environment Agency, North East Region Catchment Area: Not Given Reference: 235/1328 Permit Version: Not Supplied Effective Date: Not Supplied Issued Date: Not Supplied Revocation Date: Not Supplied Discharge Type: Storm sewage overflow discharge Discharge: Saline Estuary Environment: Receiving Water: Tyne Estuary Status: Not Supplied Positional Accuracy: Located by supplier to within 100m</p>	A12SE (NW)	541	2	429785 563835
3	<p>Discharge Consents</p> <p>Operator: Technip Umbilicals Ltd Property Type: Trade (Unknown/Other) Location: Duco North West, Walker Riverside, Newcastle Upon Tyne Authority: Environment Agency, North East Region Catchment Area: Not Supplied Reference: 235/1853 Permit Version: 2 Effective Date: 14th November 2014 Issued Date: 14th November 2014 Revocation Date: Not Supplied Discharge Type: Trade Discharges - Cooling Water Discharge: Saline Estuary Environment: Receiving Water: River Tyne Saline Estuary Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995) Positional Accuracy: Located by supplier to within 10m</p>	A12SE (NW)	546	2	429780 563840
3	<p>Discharge Consents</p> <p>Operator: Technip Umbilicals Ltd Property Type: Trade (Unknown/Other) Location: Duco North West, Walker Riverside, Newcastle Upon Tyne Authority: Environment Agency, North East Region Catchment Area: Not Supplied Reference: 235/1853 Permit Version: 2 Effective Date: 14th November 2014 Issued Date: 14th November 2014 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge: Saline Estuary Environment: Receiving Water: River Tyne Saline Estuary Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995) Positional Accuracy: Located by supplier to within 10m</p>	A12SE (NW)	546	2	429780 563840
3	<p>Discharge Consents</p> <p>Operator: Duco Ltd Property Type: Trade (Unknown/Other) Location: Duco North West, Walker Riverside, Newcastle Upon Tyne Authority: Environment Agency, North East Region Catchment Area: Not Supplied Reference: 235/1853 Permit Version: 1 Effective Date: 19th February 2003 Issued Date: 19th February 2003 Revocation Date: 13th November 2014 Discharge Type: Trade Discharges - Cooling Water Discharge: Saline Estuary Environment: Receiving Water: River Tyne Saline Estuary Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995) Positional Accuracy: Located by supplier to within 10m</p>	A12SE (NW)	546	2	429780 563840



Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
3	<p>Discharge Consents</p> <p>Operator: Duco Ltd Property Type: Trade (Unknown/Other) Location: Duco North West, Walker Riverside, Newcastle Upon Tyne Authority: Environment Agency, North East Region Catchment Area: Not Supplied Reference: 235/1853 Permit Version: 1 Effective Date: 19th February 2003 Issued Date: 19th February 2003 Revocation Date: 13th November 2014 Discharge Type: Trade Discharges - Site Drainage Discharge: Saline Estuary Environment: Receiving Water: River Tyne Saline Estuary Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995) Positional Accuracy: Located by supplier to within 10m</p>	A12SE (NW)	546	2	429780 563840
3	<p>Discharge Consents</p> <p>Operator: Duco Ltd Property Type: Trade (Unknown/Other) Location: Duco North West, Walker Riverside, Newcastle Upon Tyne Authority: Environment Agency, North East Region Catchment Area: Not Supplied Reference: 235/1853 Permit Version: 1 Effective Date: 19th February 2003 Issued Date: 19th February 2003 Revocation Date: 13th November 2014 Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge: Saline Estuary Environment: Receiving Water: River Tyne Saline Estuary Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995) Positional Accuracy: Located by supplier to within 10m</p>	A12SE (NW)	546	2	429780 563840
3	<p>Discharge Consents</p> <p>Operator: Northumbrian Water Limited Property Type: Sewerage Network - Sewers - Water Company Location: Caledonia Street/Church Street Cso, Walker, Newcastle Upon Tyne Authority: Environment Agency, North East Region Catchment Area: Not Given Reference: 235/1328 Permit Version: 1 Effective Date: 4th November 1996 Issued Date: 4th November 1996 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge: Saline Estuary Environment: Receiving Water: Tyne Estuary Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995) Positional Accuracy: Located by supplier to within 10m</p>	A12SE (NW)	546	2	429780 563840
3	<p>Discharge Consents</p> <p>Operator: Redundant - Northumbrian Water Ltd Property Type: Trade (Unknown/Other) Location: Caledonia Street/Church Street, Walker, Newcastle Upon Tyne Authority: Environment Agency, North East Region Catchment Area: Not Supplied Reference: 235/X/0122 Permit Version: 1 Effective Date: 16th July 1987 Issued Date: 16th July 1987 Revocation Date: 28th January 1991 Discharge Type: Unspecified Discharge: Saline Estuary Environment: Receiving Water: Tyne Estuary Status: Authorisation revokedRevoked Positional Accuracy: Located by supplier to within 10m</p>	A12SE (NW)	546	2	429780 563840



Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
3	<p>Discharge Consents</p> <p>Operator: Redundant - Northumbrian Water Ltd Property Type: Trade (Unknown/Other) Location: Caledonia Street/Church Street, Walker, Newcastle Upon Tyne Authority: Environment Agency, North East Region Catchment Area: Not Given Reference: 235/X/0233 Permit Version: 1 Effective Date: 16th July 1987 Issued Date: 16th July 1987 Revocation Date: 4th November 1996 Discharge Type: Unspecified Discharge: Saline Estuary Environment: Receiving Water: Tyne Estuary Status: Authorisation revokedRevoked Positional Accuracy: Located by supplier to within 10m</p>	A12SE (NW)	546	2	429780 563840
4	<p>Discharge Consents</p> <p>Operator: Duco Ltd Property Type: Sewage Disposal Works - Other Location: Dunlop Coflexclip Umbilicals Walker Riverside, Nelson Road, Walker, Newcastle Upon Tyne, Ne6 3pl Authority: Environment Agency, North East Region Catchment Area: Not Given Reference: 235/1474 Permit Version: 1 Effective Date: 31st March 1994 Issued Date: 31st March 1994 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge: Saline Estuary Environment: Receiving Water: Tyne Estuary Status: New Consent, by Application (Water Resources Act 1991, Section 88) Positional Accuracy: Located by supplier to within 10m</p>	A12NE (NW)	557	2	429780 563900
5	<p>Discharge Consents</p> <p>Operator: Wellstream International Limited Property Type: Other Mach & Mech Equipment Location: Wellstream North Sea, Wincomblee Road, Newcastle Upon Tyne Authority: Environment Agency, North East Region Catchment Area: Not Supplied Reference: 235/1837 Permit Version: 1 Effective Date: 23rd November 2001 Issued Date: 23rd November 2001 Revocation Date: 31st May 2007 Discharge Type: Trade Discharge - Process Water Discharge: Saline Estuary Environment: Receiving Water: River Tyne (Saline Estuary) Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995) Positional Accuracy: Located by supplier to within 10m</p>	A7NW (W)	575	2	429680 563410
5	<p>Discharge Consents</p> <p>Operator: Ge Oil & Gas Uk Limited Property Type: Other Mach & Mech Equipment Location: Wellstream North Sea, Wincomblee Road, Newcastle Upon Tyne Authority: Environment Agency, North East Region Catchment Area: Not Supplied Reference: 235/1837 Permit Version: 2 Effective Date: 1st June 2007 Issued Date: 23rd November 2001 Revocation Date: Not Supplied Discharge Type: Trade Discharge - Process Water Discharge: Saline Estuary Environment: Receiving Water: River Tyne (Saline Estuary) Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995) Positional Accuracy: Located by supplier to within 10m</p>	A7NW (W)	575	2	429680 563410

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
6	<p>Discharge Consents</p> <p>Operator: Northumbrian Water Limited Property Type: Trade (Unknown/Other) Location: Hebburn Hall Ponds, Hebburn, County Durham Authority: Environment Agency, North East Region Catchment Area: Tyne (Lower)/Team/Don Reference: 235/B/0008 Permit Version: 1 Effective Date: 6th February 1961 Issued Date: 6th February 1961 Revocation Date: 19th May 2000 Discharge Type: Sewage Discharges - Final/Treated Effluent - Water Company Discharge: Saline Estuary Environment: Receiving Water: Tyne Status: Authorisation revokedRevoked Positional Accuracy: Manually corrected supplier location</p>	A14SE (E)	586	2	431145 563656
7	<p>Discharge Consents</p> <p>Operator: Redundant - Northumbrian Water Ltd Property Type: Trade (Unknown/Other) Location: Rear (South) Reyrolle Works - D22, Hebburn Authority: Environment Agency, North East Region Catchment Area: Not Supplied Reference: 235/X/0007 Permit Version: 1 Effective Date: 1st December 1986 Issued Date: 1st December 1986 Revocation Date: 29th October 1992 Discharge Type: Unspecified Discharge: Saline Estuary Environment: Receiving Water: Tyne Estuary Status: Authorisation revokedRevoked Positional Accuracy: Located by supplier to within 10m</p>	A17SE (NW)	594	2	430000 564270
8	<p>Discharge Consents</p> <p>Operator: Ge Oil & Gas Uk Limited Property Type: Other Mach & Mech Equipment Location: Wellstream North Sea, Wincomblee Road, Newcastle Upon Tyne Authority: Environment Agency, North East Region Catchment Area: Not Supplied Reference: 235/1836 Permit Version: 1 Effective Date: 23rd November 2001 Issued Date: 23rd November 2001 Revocation Date: Not Supplied Discharge Type: Trade Discharges - Cooling Water Discharge: Saline Estuary Environment: Receiving Water: River Tyne (Saline Estuary) Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995) Positional Accuracy: Located by supplier to within 10m</p>	A7NW (W)	640	2	429610 563330
9	<p>Discharge Consents</p> <p>Operator: Northumbrian Water Limited Property Type: Sewerage Network - Sewers - Others Location: Bill Quay Sewer, Gateshead, Tyne And Wear Authority: Environment Agency, North East Region Catchment Area: Not Given Reference: 235/1362 Permit Version: 1 Effective Date: 9th March 1993 Issued Date: 9th March 1993 Revocation Date: 10th May 2000 Discharge Type: Sewage Discharges - Final/Treated Effluent - Water Company Discharge: Saline Estuary Environment: Receiving Water: Tyne Status: Authorisation revokedRevoked Positional Accuracy: Located by supplier to within 100m</p>	A7SW (SW)	661	2	429680 563000

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
10	<p>Discharge Consents</p> <p>Operator: Northumbrian Water Limited Property Type: Sewerage Network - Sewers - Water Company Location: Reyrolle Sewer (South) Cso, Hebburn, Tyne & Wear Authority: Environment Agency, North East Region Catchment Area: Tyne (Lower)/Team/Don Reference: 235/1186 Permit Version: 1 Effective Date: 29th October 1992 Issued Date: 29th October 1992 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge: Saline Estuary Environment: Receiving Water: Tyne Estuary Status: New Consent, by Application (Water Resources Act 1991, Section 88) Positional Accuracy: Located by supplier to within 10m</p>	A17SE (NW)	663	2	430000 564350
11	<p>Discharge Consents</p> <p>Operator: Northumbrian Water Limited Property Type: Sewage Disposal Works - Water Company Location: Albion Inn Septic Tank, Bill Quay, Gateshead Authority: Environment Agency, North East Region Catchment Area: Not Supplied Reference: 235/1748 Permit Version: 1 Effective Date: 11th February 2000 Issued Date: 11th February 2000 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Water Company Discharge: Saline Estuary Environment: Receiving Water: River Tyne Saline Estuary Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995) Positional Accuracy: Located by supplier to within 10m</p>	A7SW (SW)	670	2	429670 563000
11	<p>Discharge Consents</p> <p>Operator: Northumbrian Water Limited Property Type: Sewerage Network - Sewers - Water Company Location: Reay St Cso D32 Reay Street, Bill Quay, Gateshead, Tyne And Wear, Ne10 0ty Authority: Environment Agency, North East Region Catchment Area: Not Supplied Reference: Eprcb3196wp Permit Version: 1 Effective Date: 5th February 2015 Issued Date: 5th February 2015 Revocation Date: 31st March 2020 Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge: Freshwater Stream/River Environment: Receiving Water: River Tyne (Tidal) Status: New issued under EPR 2010 Positional Accuracy: Located by supplier to within 10m</p>	A7SW (SW)	675	2	429663 563002
11	<p>Discharge Consents</p> <p>Operator: Northumbrian Water Limited Property Type: Sewerage Network - Sewers - Water Company Location: Reay St Cso D32 Reay Street, Bill Quay, Gateshead, Tyne And Wear, Ne10 0ty Authority: Environment Agency, North East Region Catchment Area: Not Supplied Reference: Eprcb3196wp Permit Version: 2 Effective Date: 1st April 2020 Issued Date: 5th February 2015 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge: Freshwater Stream/River Environment: Receiving Water: River Tyne (Tidal) Status: New issued under EPR 2010 Positional Accuracy: Located by supplier to within 10m</p>	A7SW (SW)	675	2	429663 563002

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
11	<p>Discharge Consents</p> <p>Operator: Northumbrian Water Limited Property Type: Sewerage Network - Sewers - Water Company Location: Manor Gardens Cso, Wardley, Gateshead Authority: Environment Agency, North East Region Catchment Area: Not Supplied Reference: 235/1965 Permit Version: 2 Effective Date: 1st April 2010 Issued Date: 29th March 2010 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge: Saline Estuary Environment: Receiving Water: Tyne Tributary Status: New Consent, by Application (Water Resources Act 1991, Section 88) Positional Accuracy: Located by supplier to within 10m</p>	A7SW (SW)	688	2	429663 562977
11	<p>Discharge Consents</p> <p>Operator: Northumbrian Water Limited Property Type: Sewerage Network - Sewers - Water Company Location: Manor Gardens Cso, Wardley, Gateshead Authority: Environment Agency, North East Region Catchment Area: Not Supplied Reference: 235/1965 Permit Version: 1 Effective Date: 15th March 2005 Issued Date: 15th March 2005 Revocation Date: 31st March 2010 Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge: Saline Estuary Environment: Receiving Water: Tyne Tributary Status: New Consent, by Application (Water Resources Act 1991, Section 88) Positional Accuracy: Located by supplier to within 10m</p>	A7SW (SW)	689	2	429660 562980
11	<p>Discharge Consents</p> <p>Operator: Northumbrian Water Limited Property Type: Sewerage Network - Sewers - Water Company Location: Manor Gardens Cso, Wardley, Gateshead Authority: Environment Agency, North East Region Catchment Area: Not Given Reference: 235/1443 Permit Version: 1 Effective Date: 31st December 1993 Issued Date: 31st December 1993 Revocation Date: 15th March 2005 Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge: Saline Estuary Environment: Receiving Water: Tyne Tributary Status: Authorisation revokedRevoked Positional Accuracy: Located by supplier to within 10m</p>	A7SW (SW)	689	2	429660 562980
11	<p>Discharge Consents</p> <p>Operator: Northumbrian Water Limited Property Type: Sewerage Network - Sewers - Others Location: Bill Quay Sewer, Felling, Gateshead, Tyne And Wear Authority: Environment Agency, North East Region Catchment Area: Not Supplied Reference: 235/1188 Permit Version: 1 Effective Date: 11th November 1992 Issued Date: 11th November 1992 Revocation Date: 9th March 1993 Discharge Type: Sewage Discharges - Final/Treated Effluent - Water Company Discharge: Saline Estuary Environment: Receiving Water: Tyne Estuary Status: Authorisation revokedRevoked Positional Accuracy: Located by supplier to within 10m</p>	A7SW (SW)	689	2	429660 562980



Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
11	<p>Discharge Consents</p> <p>Operator: Northumbrian Water Limited Property Type: Sewerage Network - Sewers - Water Company Location: Cromwell Road Cso, Bill Quay, Gateshead Authority: Environment Agency, North East Region Catchment Area: Not Given Reference: 235/1199 Permit Version: 1 Effective Date: 3rd September 1992 Issued Date: 3rd September 1992 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge: Saline Estuary Environment: Receiving Water: Tyne Estuary Status: New Consent, by Application (Water Resources Act 1991, Section 88) Positional Accuracy: Located by supplier to within 10m</p>	A7SW (SW)	714	2	429620 563000
11	<p>Discharge Consents</p> <p>Operator: Redundant - Northumbrian Water Ltd Property Type: Trade (Unknown/Other) Location: Cranwell Road, Bill Quay, Gateshead, Tyne And Wear Authority: Environment Agency, North East Region Catchment Area: Not Supplied Reference: 235/X/0009 Permit Version: 1 Effective Date: 1st December 1986 Issued Date: 1st December 1986 Revocation Date: 28th January 1991 Discharge Type: Unspecified Discharge: Saline Estuary Environment: Receiving Water: Tyne Estuary Status: Authorisation revokedRevoked Positional Accuracy: Located by supplier to within 10m</p>	A7SW (SW)	714	2	429620 563000
12	<p>Discharge Consents</p> <p>Operator: Northumbrian Water Limited Property Type: Sewerage Network - Pumping Station - Water Company Location: Wincomblee B Pumping Station, Walker, Newcastle Upon Tyne Authority: Environment Agency, North East Region Catchment Area: Not Supplied Reference: 235/1757 Permit Version: 1 Effective Date: 21st February 2000 Issued Date: 21st February 2000 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Pumping Station - Water Company Discharge: Saline Estuary Environment: Receiving Water: River Tyne Saline Estuary Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995) Positional Accuracy: Located by supplier to within 10m</p>	A17SE (NW)	722	2	429800 564270
12	<p>Discharge Consents</p> <p>Operator: Northumbrian Water Limited Property Type: Sewerage Network - Pumping Station - Water Company Location: Wincomblee B Pumping Station, Walker, Newcastle Upon Tyne Authority: Environment Agency, North East Region Catchment Area: Not Supplied Reference: 235/1757 Permit Version: 1 Effective Date: 21st February 2000 Issued Date: 21st February 2000 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge: Saline Estuary Environment: Receiving Water: River Tyne Saline Estuary Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995) Positional Accuracy: Located by supplier to within 10m</p>	A17SE (NW)	722	2	429800 564270

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
12	<p>Discharge Consents</p> <p>Operator: Northumbrian Water Limited Property Type: Trade (Unknown/Other) Location: British Formet Outfall, Walker, Tyne And Wear Authority: Environment Agency, North East Region Catchment Area: Not Given Reference: 235/1306 Permit Version: 1 Effective Date: 18th May 1993 Issued Date: 18th May 1993 Revocation Date: 3rd August 2000 Discharge Type: Sewage Discharges - Final/Treated Effluent - Water Company Discharge: Saline Estuary Environment: Receiving Water: Tyne Estuary Status: Authorisation revokedRevoked Positional Accuracy: Located by supplier to within 100m</p>	A17SE (NW)	722	2	429810 564280
12	<p>Discharge Consents</p> <p>Operator: Redundant - Northumbrian Water Ltd Property Type: Trade (Unknown/Other) Location: British Formet Outfall No.5, Low Walker Authority: Environment Agency, North East Region Catchment Area: Not Supplied Reference: 235/X/0121 Permit Version: 1 Effective Date: 16th July 1987 Issued Date: 16th July 1987 Revocation Date: 18th May 1993 Discharge Type: Unspecified Discharge: Saline Estuary Environment: Receiving Water: Tyne Estuary Status: Authorisation revokedRevoked Positional Accuracy: Located by supplier to within 10m</p>	A17SE (NW)	722	2	429800 564270
13	<p>Discharge Consents</p> <p>Operator: Ge Oil & Gas Uk Limited Property Type: Other Mach & Mech Equipment Location: Wellstream North Sea, Wincomblee Road, Newcastle Upon Tyne Authority: Environment Agency, North East Region Catchment Area: Not Supplied Reference: 235/1835 Permit Version: 1 Effective Date: 23rd November 2001 Issued Date: 23rd November 2001 Revocation Date: Not Supplied Discharge Type: Trade Discharges - Cooling Water Discharge: Saline Estuary Environment: Receiving Water: River Tyne Saline Estuary Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995) Positional Accuracy: Located by supplier to within 10m</p>	A7NW (W)	735	2	429520 563250
13	<p>Discharge Consents</p> <p>Operator: Wellstream International Limited Property Type: Other Mach & Mech Equipment Location: Wellstream North Sea, Wincomblee Road, Newcastle Upon Tyne Authority: Environment Agency, North East Region Catchment Area: Not Supplied Reference: 235/1838 Permit Version: 1 Effective Date: 23rd November 2001 Issued Date: 23rd November 2001 Revocation Date: 31st May 2007 Discharge Type: Trade Discharge - Process Water Discharge: Saline Estuary Environment: Receiving Water: River Tyne (Saline Estuary) Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995) Positional Accuracy: Located by supplier to within 10m</p>	A7NW (W)	735	2	429520 563250

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
13	<p>Discharge Consents</p> <p>Operator: Ge Oil & Gas Uk Limited Property Type: Other Mach & Mech Equipment Location: Wellstream North Sea, Wincomblee Road, Newcastle Upon Tyne Authority: Environment Agency, North East Region Catchment Area: Not Supplied Reference: 235/1838 Permit Version: 2 Effective Date: 1st June 2007 Issued Date: 23rd November 2001 Revocation Date: Not Supplied Discharge Type: Trade Discharge - Process Water Discharge: Saline Estuary Environment: Receiving Water: River Tyne (Saline Estuary) Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995) Positional Accuracy: Located by supplier to within 10m</p>	A7NW (W)	735	2	429520 563250
13	<p>Discharge Consents</p> <p>Operator: Northumbrian Water Limited Property Type: Sewerage Network - Pumping Station - Water Company Location: Wincomblee Road Pumping Station, Walker Riverside, Newcastle Upon Tyne Authority: Environment Agency, North East Region Catchment Area: Not Given Reference: 235/1600 Permit Version: 1 Effective Date: 15th April 1997 Issued Date: 15th April 1997 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Pumping Station - Water Company Discharge: Saline Estuary Environment: Receiving Water: Tyne Estuary Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995) Positional Accuracy: Located by supplier to within 10m</p>	A7NW (W)	735	2	429520 563250
13	<p>Discharge Consents</p> <p>Operator: City Of Newcastle Upon Tyne Property Type: Pumping Station Location: Windcomblee Ps, WALKER Authority: Environment Agency, North East Region Catchment Area: Not Given Reference: 235/1600 Permit Version: Not Supplied Effective Date: Not Supplied Issued Date: Not Supplied Revocation Date: Not Supplied Discharge Type: Scrend storm-emergency overflow Discharge: Saline Estuary Environment: Receiving Water: Tyne Estuary Status: Not Supplied Positional Accuracy: Located by supplier to within 100m</p>	A7NW (W)	736	2	429520 563245
14	<p>Discharge Consents</p> <p>Operator: Northumbrian Water Limited Property Type: Sewerage Network - Sewers - Water Company Location: Reyrolle Sewer (North) Cso, Hebburn, Tyne & Wear Authority: Environment Agency, North East Region Catchment Area: Tyne (Lower)/Team/Don Reference: 235/1185 Permit Version: 1 Effective Date: 29th October 1992 Issued Date: 29th October 1992 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge: Saline Estuary Environment: Receiving Water: Tyne Estuary Status: New Consent, by Application (Water Resources Act 1991, Section 88) Positional Accuracy: Located by supplier to within 100m</p>	A17SE (N)	773	2	430040 564490



Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
15	<p>Discharge Consents</p> <p>Operator: Redundant - Northumbrian Water Ltd Property Type: Trade (Unknown/Other) Location: Bill Quay Outfall 692, Felling Authority: Environment Agency, North East Region Catchment Area: Not Supplied Reference: 235/X/0372 Permit Version: 1 Effective Date: 28th May 1987 Issued Date: 28th May 1987 Revocation Date: 11th November 1992 Discharge Type: Unspecified Discharge: Saline Estuary Environment: Receiving Water: Tyne Estuary Status: Authorisation revokedRevoked Positional Accuracy: Located by supplier to within 100m</p>	A7SW (SW)	783	2	429600 562900
16	<p>Discharge Consents</p> <p>Operator: Northumbrian Water Limited Property Type: Sewerage Network - Sewers - Water Company Location: Station Road/White Street Cso Walker Cso 15, Station Road/White Street, Walker, Newcastle Upon Tyne, Ne6 3pr Authority: Environment Agency, North East Region Catchment Area: Not Supplied Reference: Eprcb3797vz Permit Version: 1 Effective Date: 16th June 2015 Issued Date: 16th June 2015 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge: Freshwater Stream/River Environment: Receiving Water: River Tyne Status: New issued under EPR 2010 Positional Accuracy: Located by supplier to within 10m</p>	A17SE (NW)	797	2	429812 564383
16	<p>Discharge Consents</p> <p>Operator: Northumbrian Water Limited Property Type: Sewerage Network - Pumping Station - Water Company Location: Wincomblee C Pumping Station, Walker, Newcastle Upon Tyne Authority: Environment Agency, North East Region Catchment Area: Not Supplied Reference: 235/1758 Permit Version: 1 Effective Date: 21st February 2000 Issued Date: 21st February 2000 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Pumping Station - Water Company Discharge: Saline Estuary Environment: Receiving Water: River Tyne Saline Estuary Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995) Positional Accuracy: Located by supplier to within 10m</p>	A17SE (NW)	797	2	429820 564390
16	<p>Discharge Consents</p> <p>Operator: Northumbrian Water Limited Property Type: Sewerage Network - Pumping Station - Water Company Location: Wincomblee C Pumping Station, Walker, Newcastle Upon Tyne Authority: Environment Agency, North East Region Catchment Area: Not Supplied Reference: 235/1758 Permit Version: 1 Effective Date: 21st February 2000 Issued Date: 21st February 2000 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge: Saline Estuary Environment: Receiving Water: River Tyne Saline Estuary Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995) Positional Accuracy: Located by supplier to within 10m</p>	A17SE (NW)	797	2	429820 564390

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
16	<p>Discharge Consents</p> <p>Operator: Northumbrian Water Limited Property Type: Sewerage Network - Sewers - Water Company Location: Wincomblee Road Cso, Walker, Newcastle Upon Tyne Authority: Environment Agency, North East Region Catchment Area: Not Supplied Reference: 235/1759 Permit Version: 1 Effective Date: 21st February 2000 Issued Date: 21st February 2000 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge: Saline Estuary Environment: Receiving Water: River Tyne Saline Estuary Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995) Positional Accuracy: Located by supplier to within 10m</p>	A17SE (NW)	797	2	429820 564390
16	<p>Discharge Consents</p> <p>Operator: Northumbrian Water Limited Property Type: Sewerage Network - Sewers - Water Company Location: White Street/Station Road Cso, Walker, Newcastle Upon Tyne Authority: Environment Agency, North East Region Catchment Area: Not Given Reference: 235/1329 Permit Version: 1 Effective Date: 16th August 1996 Issued Date: 16th August 1996 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge: Saline Estuary Environment: Receiving Water: Tyne Estuary Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995) Positional Accuracy: Located by supplier to within 10m</p>	A17SE (NW)	811	2	429810 564400
16	<p>Discharge Consents</p> <p>Operator: Northumbrian Water Limited Property Type: Sewerage Network - Sewers - Water Company Location: White Street/Station Road Cso, Walker, Newcastle Upon Tyne Authority: Environment Agency, North East Region Catchment Area: Not Given Reference: 235/1330 Permit Version: 1 Effective Date: 16th August 1996 Issued Date: 16th August 1996 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge: Saline Estuary Environment: Receiving Water: Tyne Estuary Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995) Positional Accuracy: Located by supplier to within 10m</p>	A17SE (NW)	811	2	429810 564400
16	<p>Discharge Consents</p> <p>Operator: Redundant - Northumbrian Water Ltd Property Type: Sewerage Network - Sewers - Water Company Location: White Street/Station Road Cso, Walker, Newcastle Upon Tyne Authority: Environment Agency, North East Region Catchment Area: Not Supplied Reference: 235/X/0120 Permit Version: 1 Effective Date: 16th July 1987 Issued Date: 16th July 1987 Revocation Date: 18th May 1993 Discharge Type: Unspecified Discharge: Saline Estuary Environment: Receiving Water: Tyne Estuary Status: Authorisation revokedRevoked Positional Accuracy: Located by supplier to within 10m</p>	A17SE (NW)	811	2	429810 564400

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
16	<p>Discharge Consents</p> <p>Operator: Redundant - Northumbrian Water Ltd Property Type: Sewerage Network - Sewers - Water Company Location: White Street/Station Road Cso, Walker, Newcastle Upon Tyne Authority: Environment Agency, North East Region Catchment Area: Not Given Reference: 235/X/0231 Permit Version: 1 Effective Date: 16th July 1987 Issued Date: 16th July 1987 Revocation Date: 16th August 1996 Discharge Type: Unspecified Discharge: Saline Estuary Environment: Receiving Water: Tyne Estuary Status: Authorisation revokedRevoked Positional Accuracy: Manually corrected supplier location</p>	A17SE (NW)	811	2	429810 564400
16	<p>Discharge Consents</p> <p>Operator: Redundant - Northumbrian Water Ltd Property Type: Sewerage Network - Sewers - Water Company Location: White Street/Station Road Cso, Walker, Newcastle Upon Tyne Authority: Environment Agency, North East Region Catchment Area: Not Given Reference: 235/X/0232 Permit Version: 1 Effective Date: 16th July 1987 Issued Date: 16th July 1987 Revocation Date: 16th August 1996 Discharge Type: Unspecified Discharge: Saline Estuary Environment: Receiving Water: Tyne Estuary Status: Authorisation revokedRevoked Positional Accuracy: Located by supplier to within 10m</p>	A17SE (NW)	811	2	429810 564400
16	<p>Discharge Consents</p> <p>Operator: Northumbrian Water Ltd Property Type: Undefined Or Other Location: White Street/Station Road Cso, NEWCASTLE-UPON-TYNE Authority: Environment Agency, North East Region Catchment Area: Not Given Reference: 235/1329 Permit Version: Not Supplied Effective Date: Not Supplied Issued Date: Not Supplied Revocation Date: Not Supplied Discharge Type: Storm sewage overflow discharge Discharge: Saline Estuary Environment: Receiving Water: Tyne Estuary Status: Not Supplied Positional Accuracy: Located by supplier to within 100m</p>	A17SE (NW)	812	2	429815 564405
16	<p>Discharge Consents</p> <p>Operator: Northumbrian Water Ltd Property Type: Undefined Or Other Location: White Street/Station Road Cso, NEWCASTLE-UPON-TYNE Authority: Environment Agency, North East Region Catchment Area: Not Given Reference: 235/1330 Permit Version: Not Supplied Effective Date: Not Supplied Issued Date: Not Supplied Revocation Date: Not Supplied Discharge Type: Storm sewage overflow discharge Discharge: Saline Estuary Environment: Receiving Water: Tyne Estuary Status: Not Supplied Positional Accuracy: Located by supplier to within 100m</p>	A17SE (NW)	815	2	429810 564405

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
17	<p>Discharge Consents</p> <p>Operator: Redundant - Northumbrian Water Ltd Property Type: Trade (Unknown/Other) Location: Rear (North) Reyrolle Works - D21, Hebburn Authority: Environment Agency, North East Region Catchment Area: Not Supplied Reference: 235/X/0006 Permit Version: 1 Effective Date: 1st December 1986 Issued Date: 1st December 1986 Revocation Date: 29th October 1992 Discharge Type: Unspecified Discharge: Saline Estuary Environment: Receiving Water: Tyne Estuary Status: Authorisation revokedRevoked Positional Accuracy: Located by supplier to within 10m</p>	A17NE (N)	823	2	430030 564540
18	<p>Discharge Consents</p> <p>Operator: Wellstream International Limited Property Type: Other Mach & Mech Equipment Location: Wellstream International Ltd Wellstream House, Wincomblee Road, Walker Riverside, Newcastle Upon Tyne, Ne6 3pf Authority: Environment Agency, North East Region Catchment Area: Tyne (Lower)/Team/Don Reference: Npswqd006011 Permit Version: 1 Effective Date: 10th March 2009 Issued Date: 10th March 2009 Revocation Date: Not Supplied Discharge Type: Trade Effluent Discharge: Saline Estuary Environment: Receiving Water: Sw Drain To River Tyne Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995) Positional Accuracy: Located by supplier to within 10m</p>	A7NW (W)	830	2	429425 563428
19	<p>Discharge Consents</p> <p>Operator: Northumbrian Water Limited Property Type: Sewerage Network - Sewers - Others Location: Marconi No 1 Sewer, Felling, Gateshead, Tyne And Wear Authority: Environment Agency, North East Region Catchment Area: Not Given Reference: 235/1403 Permit Version: 1 Effective Date: 19th July 1993 Issued Date: 19th July 1993 Revocation Date: 10th May 2000 Discharge Type: Sewage Discharges - Final/Treated Effluent - Water Company Discharge: Saline Estuary Environment: Receiving Water: Tyne Estuary Status: Authorisation revokedRevoked Positional Accuracy: Located by supplier to within 100m</p>	A6SE (SW)	948	2	429380 562960
19	<p>Discharge Consents</p> <p>Operator: Northumbrian Water Limited Property Type: Sewerage Network - Sewers - Others Location: Marconi No 1 Sewer, Felling, Gateshead, Tyne And Wear Authority: Environment Agency, North East Region Catchment Area: Not Supplied Reference: 235/1189 Permit Version: 1 Effective Date: 11th November 1992 Issued Date: 11th November 1992 Revocation Date: 19th July 1993 Discharge Type: Sewage Discharges - Final/Treated Effluent - Water Company Discharge: Saline Estuary Environment: Receiving Water: Tyne Estuary Status: Authorisation revokedRevoked Positional Accuracy: Located by supplier to within 10m</p>	A6SE (SW)	948	2	429380 562960

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
19	<p>Discharge Consents</p> <p>Operator: Northumbrian Water Limited Property Type: Sewerage Network - Pumping Station - Water Company Location: Fairfield Industrial Park Ps, Bill Quay, Gateshead Authority: Environment Agency, North East Region Catchment Area: Not Supplied Reference: 235/1749 Permit Version: 1 Effective Date: 11th February 2000 Issued Date: 11th February 2000 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Pumping Station - Water Company Discharge: Saline Estuary Environment: Receiving Water: River Tyne Saline Estuary Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995) Positional Accuracy: Located by supplier to within 10m</p>	A6SE (SW)	957	2	429370 562960
19	<p>Discharge Consents</p> <p>Operator: Northumbrian Water Limited Property Type: Sewerage Network - Pumping Station - Water Company Location: Fairfield Industrial Park Ps, Bill Quay, Gateshead Authority: Environment Agency, North East Region Catchment Area: Not Supplied Reference: 235/1749 Permit Version: 1 Effective Date: 11th February 2000 Issued Date: 11th February 2000 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge: Saline Estuary Environment: Receiving Water: River Tyne Saline Estuary Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995) Positional Accuracy: Located by supplier to within 10m</p>	A6SE (SW)	957	2	429370 562960
20	<p>Discharge Consents</p> <p>Operator: Kdc Contractors Limited Property Type: Gas Distribution And Compressor Stations Location: St Anthony'S Gasholder Site Off Greenford Road, Walker, Newcastle Upon Tyne, *, Ne6 3tj Authority: Environment Agency, North East Region Catchment Area: Not Supplied Reference: Eprab3795en Permit Version: 1 Effective Date: 1st July 2014 Issued Date: 10th June 2014 Revocation Date: 13th April 2015 Discharge Type: Trade Discharge - Process Water Discharge: Saline Estuary Environment: Receiving Water: River Tyne Status: Surrendered under EPR 2010 Positional Accuracy: Located by supplier to within 10m</p>	A6SE (W)	970	2	429295 563165
20	<p>Discharge Consents</p> <p>Operator: Unknown, Property Type: Trade (Unknown/Other) Location: An Outfall At Riverside Park Outfal, Newcastle Upon Tyne Authority: Environment Agency, North East Region Catchment Area: Not Given Reference: 235/1296 Permit Version: 1 Effective Date: 6th November 1995 Issued Date: 6th November 1995 Revocation Date: 5th December 1996 Discharge Type: Sewage Discharges - Final/Treated Effluent - Water Company Discharge: Saline Estuary Environment: Receiving Water: Tyne Estuary Status: Authorisation revokedRevoked Positional Accuracy: Located by supplier to within 10m</p>	A6NE (W)	971	2	429290 563190

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
20	<p>Discharge Consents</p> <p>Operator: Redundant - Northumbrian Water Ltd Property Type: Trade (Unknown/Other) Location: An Outfall At Riverside Park Outfal, Newcastle Upon Tyne Authority: Environment Agency, North East Region Catchment Area: Not Supplied Reference: 235/X/0234 Permit Version: 1 Effective Date: 16th July 1987 Issued Date: 16th July 1987 Revocation Date: 28th January 1991 Discharge Type: Unspecified Discharge: Saline Estuary Environment: Receiving Water: Tyne Estuary Status: Authorisation revokedRevoked Positional Accuracy: Located by supplier to within 10m</p>	A6NE (W)	971	2	429290 563190
20	<p>Discharge Consents</p> <p>Operator: Redundant - Northumbrian Water Ltd Property Type: Trade (Unknown/Other) Location: Riverside Park East Outfall No.7, Low Walker Authority: Environment Agency, North East Region Catchment Area: Not Supplied Reference: 235/X/0166 Permit Version: 1 Effective Date: 16th July 1987 Issued Date: 16th July 1987 Revocation Date: 6th November 1995 Discharge Type: Unspecified Discharge: Saline Estuary Environment: Receiving Water: Tyne Estuary Status: Authorisation revokedRevoked Positional Accuracy: Located by supplier to within 10m</p>	A6SE (W)	976	2	429290 563160
21	<p>Local Authority Pollution Prevention and Controls</p> <p>Name: Nei Reyrolle Switchgear Location: Victoria Roadwest, HEBBURN, Tyne and Wear, NE31 1UP Authority: South Tyneside Metropolitan Borough Council, Environmental Health Department Permit Reference: 024/6.5(A) Dated: Not Supplied Process Type: Local Authority Air Pollution Control Description: PG6/23 Coating of metal and plastic Status: Authorisation revokedRevoked Positional Accuracy: Automatically positioned to the address</p>	A13SE (NE)	0	3	430455 563544
22	<p>Local Authority Pollution Prevention and Controls</p> <p>Name: NEI Reyrolle Location: Bushing, South Drive, HEBBURN, Tyne and Wear, NE31 1UW Authority: South Tyneside Metropolitan Borough Council, Environmental Health Department Permit Reference: 016/6.5(a) Dated: Not Supplied Process Type: Local Authority Air Pollution Control Description: PG6/23 Coating of metal and plastic Status: Authorisation revokedRevoked Positional Accuracy: Manually positioned to the address or location</p>	A13SW (NW)	0	3	430318 563639
23	<p>Local Authority Pollution Prevention and Controls</p> <p>Name: Faceformat Ltd Location: Unit 98/2, Victoria Industrial Estate, HEBBURN, Tyne and Wear, NE31 1UD Authority: South Tyneside Metropolitan Borough Council, Environmental Health Department Permit Reference: 027/6.5(A) Dated: Not Supplied Process Type: Local Authority Air Pollution Control Description: PG6/23 Coating of metal and plastic Status: Authorisation revokedRevoked Positional Accuracy: Manually positioned within the geographical locality</p>	A8NW (S)	42	3	430347 563235
24	<p>Local Authority Pollution Prevention and Controls</p> <p>Name: Transtar Ltd Location: Victoria Roadindustrial Estate, Victoria Road West, HEBBURN, Tyne and Wear, NE31 1UB Authority: South Tyneside Metropolitan Borough Council, Environmental Health Department Permit Reference: 035/6.5(A) Dated: Not Supplied Process Type: Local Authority Air Pollution Control Description: PG6/23 Coating of metal and plastic Status: Authorisation revokedRevoked Positional Accuracy: Manually positioned within the geographical locality</p>	A8NE (S)	76	3	430426 563190

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
25	<p>Local Authority Pollution Prevention and Controls</p> <p>Name: Lister Mouldings Ltd Location: Unit 2 Victoria Industrial Estate, Victoria Road West, Hebburn, Tyne & Wear, NE31 1UB Authority: South Tyneside Metropolitan Borough Council, Environmental Health Department Permit Reference: 043/6.4(A) Dated: Not Supplied Process Type: Local Authority Pollution Prevention and Control Description: PG6/33 Wood coating Status: Application Not Yet Authorised Positional Accuracy: Manually positioned to the road within the address or location</p>	A8SW (S)	110	3	430317 563171
26	<p>Local Authority Pollution Prevention and Controls</p> <p>Name: Victoria Road Filling Station Ltd Location: Victoria Road West, HEBBURN, Tyne and Wear, NE32 3UA Authority: South Tyneside Metropolitan Borough Council, Environmental Health Department Permit Reference: STC/EPR/001 Dated: 17th May 1999 Process Type: Local Authority Pollution Prevention and Control Description: PG1/14 Petrol filling station Status: Permitted Positional Accuracy: Manually positioned to the address or location</p>	A13NE (NE)	369	3	430689 563998
27	<p>Local Authority Pollution Prevention and Controls</p> <p>Name: Mill Lane Service Station Location: Mill Lane, HEBBURN, Tyne and Wear, NE31 2LS Authority: South Tyneside Metropolitan Borough Council, Environmental Health Department Permit Reference: STC/012/1.2(d)/PtB Dated: 14th June 1999 Process Type: Local Authority Pollution Prevention and Control Description: PG1/14 Petrol filling station Status: Permitted Positional Accuracy: Automatically positioned to the address</p>	A9SE (SE)	704	3	431086 562862
28	<p>Local Authority Pollution Prevention and Controls</p> <p>Name: O Donnels Location: Rhodes Street, NEWCASTLE UPON TYNE, Tyne and Wear, NE Authority: City of Newcastle upon Tyne Council, Environmental Health Department Permit Reference: NOT GIVEN Dated: Not Supplied Process Type: Local Authority Air Pollution Control Description: PG3/1Blending, packing, loading and use of bulk cement Status: Authorisation revokedRevoked Positional Accuracy: Manually positioned to the road within the address or location</p>	A17SW (NW)	997	4	429419 564193
	Nearest Surface Water Feature	A8NW (SW)	46	-	430220 563301
29	<p>Pollution Incidents to Controlled Waters</p> <p>Property Type: Miscellaneous Premises: Unknown Location: BILL QUAY Authority: Environment Agency, North East Region Pollutant: Not Given Note: Tyne Estuary Incident Date: 26th October 1994 Incident Reference: 235/002522 Catchment Area: Not Given Receiving Water: Saline Estuary Cause of Incident: Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m</p>	A7SE (SW)	561	2	429800 563000
30	<p>Pollution Incidents to Controlled Waters</p> <p>Property Type: Other General Premises Location: Hebburn, NEWCASTLE UPON TYNE Authority: Environment Agency, North East Region Pollutant: Not Given Note: Tyne Estuary Incident Date: 5th November 1993 Incident Reference: 235/002170 Catchment Area: Not Given Receiving Water: Saline Estuary Cause of Incident: Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m</p>	A18NW (N)	937	2	430200 564700

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
31	<p>Registered Radioactive Substances</p> <p>Name: Nei Reyrolle Ltd Location: Hebburn, HEBBURN, NE31 1UP Authority: Scottish Environment Protection Agency, Head Office Permit Reference: IPB/3/3/011 Dated: 7th May 1985 Process Type: Registration under S10 RSA for the keeping and use of mobile Radioactive sources (was RSA60 S3) Description: Registration under S7 or S10 RSA for the keeping and use of radioactive material or apparatus for 1 or more tracer test sources dated pre April 1991 Status: Not Given Positional Accuracy: Manually positioned to the address or location</p>	A13SW (NW)	0	5	430323 563644
	<p>Water Abstractions</p> <p>Operator: Cookson Inns Limited Licence Number: 01/23/5/024 Permit Version: Not Supplied Location: Location Description Not Available Authority: Environment Agency, North East Region Abstraction: Fish Farming Abstraction Type: Not Supplied Source: Stream Daily Rate (m3): 11 Yearly Rate (m3): 4148 Details: Monkton Beck; Status: Revoked; Lapsed Or Cancelled Authorised Start: Not Supplied Authorised End: Not Supplied Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m</p>	(SE)	1892	2	432000 562100
	<p>Groundwater Vulnerability</p> <p>Soil Classification: Soils of High Leaching Potential (U) - Soil information for restored mineral workings and urban areas is based on fewer observations than elsewhere. A worst case vulnerability classification (H) assumed, until proved otherwise Map Sheet: Sheet 5 Tyne and Tees Scale: 1:100,000</p>	A8NW (SW)	0	2	430399 563501
	<p>Drift Deposits</p> <p>Drift Deposit: Low permeability drift deposits occurring at the surface and overlying Major and Minor Aquifers are head, clay-with-flints, brickearth, peat, river terrace deposits and marine and estuarine alluvium Map Sheet: Sheet 5 Tyne and Tees Scale: 1:100,000</p>	A8NW (SW)	0	2	430399 563501
	<p>Bedrock Aquifer Designations</p> <p>Aquifer Designation: Secondary Aquifer - A</p>	A8NW (SW)	0	1	430399 563501
	<p>Superficial Aquifer Designations</p> <p>Aquifer Designation: Unproductive Strata</p>	A8NW (SW)	0	1	430399 563501
	<p>Superficial Aquifer Designations</p> <p>Aquifer Designation: Unknown (Lakes and Landslip)</p>	A8NE (SE)	0	1	430501 563347
	<p>Superficial Aquifer Designations</p> <p>Aquifer Designation: Unknown (Lakes and Landslip)</p>	A8NE (E)	0	1	430504 563473
	<p>Extreme Flooding from Rivers or Sea without Defences</p> <p>None</p>				
	<p>Flooding from Rivers or Sea without Defences</p> <p>None</p>				
	<p>Areas Benefiting from Flood Defences</p> <p>None</p>				
	<p>Flood Water Storage Areas</p> <p>None</p>				
	<p>Flood Defences</p> <p>None</p>				



Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
32	Detailed River Network Lines River Type: Extended Culvert (greater than 50m) River Name: Not Supplied Hydrographic Area: D013 River Flow Type: Primary Flow Path River Surface Level: Below Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	A8NW (SW)	36	2	430268 563273
33	Detailed River Network Lines River Type: Tertiary River River Name: Not Supplied Hydrographic Area: D013 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	A8NW (SW)	46	2	430220 563301
34	Detailed River Network Lines River Type: Extended Culvert (greater than 50m) River Name: Not Supplied Hydrographic Area: D013 River Flow Type: Primary Flow Path River Surface Level: Below Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	A8NW (W)	141	2	430117 563402
35	Detailed River Network Lines River Type: Down stream of High Water Mark River Name: Not Supplied Hydrographic Area: D013 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	A12SE (W)	344	2	429931 563518
36	Detailed River Network Lines River Type: Tertiary River River Name: Drain Hydrographic Area: D013 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Drain (ditch, Reen, Rhyne, Drain) Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	A7SE (SW)	366	2	429966 563106
37	Detailed River Network Lines River Type: Extended Culvert (greater than 50m) River Name: Drain Hydrographic Area: D013 River Flow Type: Primary Flow Path River Surface Level: Below Surface Drain Feature: Drain (ditch, Reen, Rhyne, Drain) Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	A7SE (SW)	380	2	429939 563118



Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
38	Detailed River Network Lines River Type: Down stream of High Water Mark River Name: Not Supplied Hydrographic Area: D013 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Flood Risk Management Indicative/Statutory Main River Management Status: Water Course: RIVER TYNE Name: Water Course: 0029 Reference:	A12SE (W)	438	2	429849 563604
39	Detailed River Network Lines River Type: Down stream of High Water Mark River Name: Not Supplied Hydrographic Area: D013 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Flood Risk Management Indicative/Statutory Main River Management Status: Water Course: RIVER TYNE Name: Water Course: 0029 Reference:	A12SE (W)	439	2	429843 563573
40	Detailed River Network Lines River Type: Down stream of High Water Mark River Name: Not Supplied Hydrographic Area: D013 River Flow Type: Primary Flow Path River Surface Level: Surface Drain Feature: Not a Drain Flood Risk: Other Rivers Management Status: Water Course: Not Supplied Name: Water Course: Not Supplied Reference:	A7SE (SW)	440	2	429848 563158
	Detailed River Network Offline Drainage None				

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
41	<p>BGS Recorded Landfill Sites</p> <p>Site Name: Prince Consort Road Location: HEBBURN, Tyne & Wear Authority: British Geological Survey, National Geoscience Information Service Ground Water: Information not available Surface Water: Information not available Geology: N/A Positional Accuracy: Manually positioned to the address or location Boundary Accuracy: Derived</p>	A13NW (N)	348	-	430167 564082
42	<p>Historical Landfill Sites</p> <p>Licence Holder: Not Supplied Location: Hebburn New Town Name: Hebburn Quayside Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHL06300 First Input Date: 31st December 1940 Last Input Date: 31st December 1973 Specified Waste Type: Deposited Waste included Industrial and Household Waste EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: 4500/0273 BGS Ref: Not Supplied Other Ref: ST 023, ST 1</p>	A13SW (NW)	127	2	430182 563700
43	<p>Historical Landfill Sites</p> <p>Licence Holder: Mr C Keith Location: Wincomblee Road, Newcastle Upon Tyne, Tyne and Wear Name: C and J Marine Services Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHL06644 First Input Date: Not Supplied Last Input Date: Not Supplied Specified Waste Type: Deposited Waste included Inert Waste EA Waste Ref: 0 Regis Ref: YO1/L/KEI001 WRC Ref: Not Supplied BGS Ref: Not Supplied Other Ref: TW 349 NC</p>	A12NE (NW)	625	2	429798 564110
44	<p>Historical Landfill Sites</p> <p>Licence Holder: Not Supplied Location: Hebburn-New-Town, South Tyneside Name: Prince Consort Road Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHL32551 First Input Date: Not Supplied Last Input Date: Not Supplied Specified Waste Type: Deposited Waste included Industrial and Commercial Waste EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: Not Supplied BGS Ref: 588 Other Ref: Not Supplied</p>	A18SW (N)	643	2	430108 564376
45	<p>Historical Landfill Sites</p> <p>Licence Holder: Common Services Committee Location: Wardley, Gateshead Name: Pelaw Quarry Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHL06204 First Input Date: 28th November 1985 Last Input Date: 8th January 1993 Specified Waste Type: Deposited Waste included Inert, Industrial, Commercial and Household Waste EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: 4500/0143 BGS Ref: Not Supplied Other Ref: TWR 22, GH 047</p>	A3NE (S)	659	2	430707 562630

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
46	Historical Landfill Sites Licence Holder: Tyne and Wear Development Corporation Location: Merton Road / White Street, Newcastle Upon Tyne, Tyne and Wear Name: Walker Railway Cutting Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD06114 First Input Date: 15th August 1989 Last Input Date: 31st December 1990 Specified Waste: Deposited Waste included Inert Waste Type: EA Waste Ref: 0 Regis Ref: YO1/L/TYN008 WRC Ref: 4500/0129 BGS Ref: Not Supplied Other Ref: NC 052, TW 208 NC	A12SW (W)	746	2	429544 563728
47	Historical Landfill Sites Licence Holder: Not Supplied Location: Jonadab Road, Bill Quay Name: Bill Quay Farm Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD06194 First Input Date: Not Supplied Last Input Date: Not Supplied Specified Waste: Not Supplied Type: EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: 4500/0161 BGS Ref: Not Supplied Other Ref: 1300/GH004, GH 27	A2NW (SW)	819	2	429608 562828
48	Historical Landfill Sites Licence Holder: Not Supplied Location: Campbell Park Road, Hebburn Name: Campbell Park Road School Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD06550 First Input Date: Not Supplied Last Input Date: 31st December 1942 Specified Waste: Not Supplied Type: EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: 4500/0267 BGS Ref: Not Supplied Other Ref: ST 008, ST 3	A14NE (NE)	860	2	431291 564039
49	Historical Landfill Sites Licence Holder: Not Supplied Location: Prince Consort Road, Hebburn New Town Name: King Georges Field Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD06299 First Input Date: Not Supplied Last Input Date: 31st December 1960 Specified Waste: Deposited Waste included Inert Waste Type: EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: 4500/0275 BGS Ref: Not Supplied Other Ref: ST 022, ST 2	A18NW (N)	974	2	430248 564742
50	Historical Landfill Sites Licence Holder: Steetley Construction Materials Limited Location: Wardley Lane, Wardley Name: Steetley - Wardley Quarry Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD06205 First Input Date: 30th May 1984 Last Input Date: 31st March 1994 Specified Waste: Deposited Waste included Inert, Industrial, Commercial, Household and Type: Special Waste, and Liquid Sludge EA Waste Ref: 0 Regis Ref: YO1/L/STE001 WRC Ref: 4500/0059 BGS Ref: Not Supplied Other Ref: TW 141 GH, GH 099, TW 109 GH, GH 082, 4500/0079	A3SE (S)	979	2	430587 562279

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
51	<p>Licensed Waste Management Facilities (Landfill Boundaries)</p> <p>Name: Former Monkton Cokeworks Licence Number: 64000 Location: Monkton Cokeworks, Mill Lane, Hebburn, Tyne & Wear, NE31 Licence Holder: Homes And Community Agency Authority: Environment Agency - North East Region, North East Area Site Category: Other Landfill Sites Taking Special Waste Max Input Rate: Not Supplied Licence Status: Closure Issued: Not Supplied Positional Accuracy: Positioned by the supplier Boundary Accuracy: As Supplied</p>	A4NE (SE)	866	2	431247 562815
52	<p>Licensed Waste Management Facilities (Landfill Boundaries)</p> <p>Name: Former Monkton Cokeworks Licence Number: 64000 Location: Monkton Cokeworks, Mill Lane, Hebburn, Tyne & Wear, NE31 Licence Holder: Homes And Community Agency Authority: Environment Agency - North East Region, North East Area Site Category: Other Landfill Sites Taking Special Waste Max Input Rate: Not Supplied Licence Status: Closure Issued: Not Supplied Positional Accuracy: Positioned by the supplier Boundary Accuracy: As Supplied</p>	A4NE (SE)	900	2	431264 562766
53	<p>Licensed Waste Management Facilities (Landfill Boundaries)</p> <p>Name: Wardley Quarry Landfill Site Licence Number: 67460 Location: Wardley Quarry Landfill Site, Wardley Lane, Gateshead, Tyne & Wear, NE10 8AA Licence Holder: Tarmac Aggregates Limited Authority: Environment Agency - North East Region, North East Area Site Category: Household, Commercial And Industrial Waste Landfills Max Input Rate: Not Supplied Licence Status: Modified Issued: Not Supplied Positional Accuracy: Positioned by the supplier Boundary Accuracy: As Supplied</p>	A3SE (S)	982	2	430589 562276
54	<p>Licensed Waste Management Facilities (Landfill Boundaries)</p> <p>Name: Former Monkton Cokeworks Licence Number: 64000 Location: Monkton Cokeworks, Mill Lane, Hebburn, Tyne & Wear, NE31 Licence Holder: Homes And Community Agency Authority: Environment Agency - North East Region, North East Area Site Category: Other Landfill Sites Taking Special Waste Max Input Rate: Not Supplied Licence Status: Closure Issued: Not Supplied Positional Accuracy: Positioned by the supplier Boundary Accuracy: As Supplied</p>	A4NE (SE)	982	2	431324 562708
55	<p>Licensed Waste Management Facilities (Locations)</p> <p>Licence Number: 0 Location: Wincomblee Road, Walker, Newcastle Upon Tyne, Tyne & Wear, NE6 3PL Operator Name: Mr C Keith, C & J Marine Services Operator Location: Wincomblee Road, Walker, Newcastle Upon Tyne, Tyne & Wear, NE6 3PL Authority: Environment Agency - North East Region, Northumbria Area Site Category: Landfills Taking Non-biodegradable Wastes (Not Construction) Licence Status: Surrendered Issued: 27th January 1994 Last Modified: Not Supplied Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: 2nd August 1994 IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m</p>	A12NE (NW)	687	2	429770 564180

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
55	<p>Licensed Waste Management Facilities (Locations)</p> <p>Licence Number: 64570 Location: Wincomblee Road, Walker, Newcastle Upon Tyne, Tyne & Wear, NE6 3PL Operator Name: Mr C Keith, C & J Marine Services Operator Location: Not Supplied Authority: Environment Agency - North East Region, North East Area Site Category: Landfills Taking Non-biodegradeable Wastes (Not Construction) Licence Status: Surrendered Issued: 27th January 1994 Last Modified: Not Supplied Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: 2nd August 1994 IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m</p>	A12NE (NW)	687	2	429770 564180
56	<p>Licensed Waste Management Facilities (Locations)</p> <p>Licence Number: 67542 Location: 1 Wincomblee Road , Walker, Newcastle Upon Tyne, Tyne & Wear, NE6 3PL Operator Name: Jackson & Co Operator Location: Not Supplied Authority: Environment Agency - North East Region, North East Area Site Category: Household, Commercial And Industrial Transfer Stations Licence Status: Surrendered Issued: 4th November 1993 Last Modified: Not Supplied Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: 9th June 1998 IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 100m</p>	A17SW (NW)	817	2	429700 564300
57	<p>Licensed Waste Management Facilities (Locations)</p> <p>Licence Number: 64093 Location: Unit 10, Bill Quay Ind Est, Pelaw, Gateshead, Tyne & Wear, NE10 0SQ Operator Name: Fish Robert Edward Operator Location: Not Supplied Authority: Environment Agency - North East Region, North East Area Site Category: End of Life Vehicles Licence Status: Issued Issued: 4th November 2004 Last Modified: Not Supplied Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 100m</p>	A7SW (SW)	867	2	429500 562900
58	<p>Licensed Waste Management Facilities (Locations)</p> <p>Licence Number: 0 Location: Merton Road / White Street, Newcastle Upon Tyne, Tyne & Wear Operator Name: Tyne & Wear Development Corporation Operator Location: Hadrian House, Higham Place, Newcastle Upon Tyne, Tyne & Wear, NE1 8AF Authority: Environment Agency - North East Region, Northumbria Area Site Category: Landfills Taking Non-biodegradeable Wastes (Not Construction) Licence Status: Surrendered Issued: 27th October 1989 Last Modified: Not Supplied Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: 31st March 1994 IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m</p>	A12SW (W)	876	2	429400 563570

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
58	<p>Licensed Waste Management Facilities (Locations)</p> <p>Licence Number: 64402 Location: Merton Road / White Street, Newcastle Upon Tyne, Tyne & Wear Operator Name: Tyne & Wear Development Corporation Operator Location: Not Supplied Authority: Environment Agency - North East Region, North East Area Site Category: Landfills Taking Non-biodegradeable Wastes (Not Construction) Licence Status: Surrendered Issued: 27th October 1989 Last Modified: Not Supplied Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: 31st March 1994 IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m</p>	A12SW (W)	876	2	429400 563570
59	<p>Licensed Waste Management Facilities (Locations)</p> <p>Licence Number: 67476 Location: Land/premises At, Station Road, Walker, Newcastle Upon Tyne, Tyne & Wear, NE6 3PN Operator Name: Jebb Metals (Newcastle) Ltd Operator Location: Not Supplied Authority: Environment Agency - North East Region, North East Area Site Category: Metal Recycling Sites (Mixed) Licence Status: Modified Issued: 27th March 1991 Last Modified: 10th August 2006 Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 100m</p>	A17SW (NW)	895	2	429600 564300
60	<p>Licensed Waste Management Facilities (Locations)</p> <p>Licence Number: 67561 Location: Walker Station, Station Road, Walker, Newcastle Upon Tyne, Tyne & Wear, NE6 3PN Operator Name: Jebb Metals (Newcastle) Ltd Operator Location: Not Supplied Authority: Environment Agency - North East Region, North East Area Site Category: Metal Recycling Sites (Mixed) Licence Status: Transferred Issued: 10th September 1997 Last Modified: 19th December 2011 Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 100m</p>	A17SW (NW)	958	2	429600 564400
	<p>Local Authority Landfill Coverage</p> <p>Name: South Tyneside Metropolitan Borough Council - Has no landfill data to supply</p>		0	6	430399 563501
	<p>Local Authority Landfill Coverage</p> <p>Name: Gateshead Metropolitan Borough Council - Has supplied landfill data</p>		45	7	430248 563286
	<p>Local Authority Landfill Coverage</p> <p>Name: City of Newcastle Upon Tyne - Has supplied landfill data</p>		402	4	429879 563605
61	<p>Local Authority Recorded Landfill Sites</p> <p>Location: Pelaw Quarry Reference: 1 Authority: Gateshead Metropolitan Borough Council, Development Control Last Reported Status: Unknown Types of Waste: Not Supplied Date of Closure: Not Supplied Positional Accuracy: Positioned by the supplier Boundary Quality: Moderate</p>	A3NE (S)	552	7	430430 562709

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
62	<p>Local Authority Recorded Landfill Sites</p> <p>Location: Bill Quay Reference: 55 Authority: Gateshead Metropolitan Borough Council, Development Control Last Reported Status: Unknown Types of Waste: Not Supplied Date of Closure: Not Supplied Positional Accuracy: Positioned by the supplier Boundary Quality: Moderate</p>	A2NW (SW)	821	7	429609 562824
63	<p>Local Authority Recorded Landfill Sites</p> <p>Location: Wardley Quarry Reference: 21 Authority: Gateshead Metropolitan Borough Council, Development Control Last Reported Status: Unknown Types of Waste: Not Supplied Date of Closure: Not Supplied Positional Accuracy: Positioned by the supplier Boundary Quality: Moderate</p>	A3SE (S)	983	7	430585 562275
64	<p>Registered Landfill Sites</p> <p>Licence Holder: C Keith C & J Marine Services Licence Reference: TW 349 NC Site Location: Wincomblee Road, Walker, NEWCASTLE UPON TYNE, Tyne and Wear, NE6 3PL Licence Easting: 429770 Licence Northing: 564200 Operator Location: As Site Address Authority: Environment Agency - North East Region, Northumbria Area Site Category: Landfill Max Input Rate: Very Small (Less than 10,000 tonnes per year) Waste Source: No known restriction on source of waste Restrictions: Status: Licence known to be surrenderedSurrendered Dated: 27th January 1994 Preceded By: Not Given Licence: Superseded By: Not Given Licence: Positional Accuracy: Manually positioned to the address or location Boundary Accuracy: Not Applicable Authorised Waste: Clean Inert Hardcore/Building Rubble Max. Total Deposit Permitted Prohibited Waste: Biodegradable/Putrescible Waste Hazardous Wastes Polluting Wastes Special Wastes Waste N.O.S.</p>	A17SE (NW)	699	2	429770 564200
65	<p>Registered Landfill Sites</p> <p>Licence Holder: Tyne & Wear Development Corporation Licence Reference: TW 208 NC Site Location: Walker Railway Cutting, Walker, Newcastle Upon Tyne, Tyne And Wear Licence Easting: 429450 Licence Northing: 563550 Operator Location: Hadrian House, Higham Place, NEWCASTLE UPON TYNE, Tyne and Wear, NE1 8AF Authority: Environment Agency - North East Region, Northumbria Area Site Category: Landfill - Railway cutting Max Input Rate: Very Large (Equal to or greater than 250,000 tonnes per year) Waste Source: No known restriction on source of waste Restrictions: Status: Licence known to be surrenderedSurrendered Dated: 27th October 1989 Preceded By: Not Given Licence: Superseded By: Not Given Licence: Positional Accuracy: Manually positioned to the address or location Boundary Accuracy: Not Applicable Authorised Waste: Tyne And Wear C, Renfrew C -Rubble * Tyne And Wear, Renfrew Di -Coh.Inorg * Tyne And Wear, Renfrew Dii -Coh.Inorg * Tyne And Wear, Renfrew E -Frict.Inorg *</p>	A12SW (W)	824	2	429450 563550

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
66	<p>Registered Landfill Sites</p> <p>Licence Holder: Gateshead M.B.C. Licence Reference: TW9 22 GH Site Location: Pelaw Quarry Landfill Site, Wardley Lane, Pelaw, Gateshead, Tyne And Wear Licence Easting: 430900 Licence Northing: 562500 Operator Location: Central Depot, Park Road, GATESHEAD, Tyne and Wear, NE8 3HN Authority: Environment Agency - North East Region, Northumbria Area Site Category: Landfill Max Input Rate: Very Large (Equal to or greater than 250,000 tonnes per year) Waste Source: No known restriction on source of waste Restrictions: Status: Record supersededSuperseded Dated: 1st November 1985 Preceded By: Not Given Licence: Superseded By: TW9 22 GH Licence: Positional Accuracy: Manually positioned to the address or location Boundary Accuracy: Not Applicable Authorised Waste: Tyne & Wear A, Renfrew A. * Tyne & Wear B, Renfrew B. * Tyne And Wear C, Renfrew C * Tyne And Wear D I, Renfrew D I, * Tyne And Wear D II, Renfrew D II, * Tyne And Wear E, Renfrew E, * Tyne And Wear F, Renfrew F * Environment Agency Waste N.O.S must give specific authorisation for this waste to be acceptedWaste requires prior approval</p>	A4SW (SE)	855	2	430900 562500
66	<p>Registered Landfill Sites</p> <p>Licence Holder: Gateshead M.B.C. Licence Reference: TW9 22 GH Site Location: Pelaw Quarry Landfill Site, Wardley Lane, Pelaw, Gateshead, Tyne And Wear Licence Easting: 430900 Licence Northing: 562495 Operator Location: Central Depot, Park Road, GATESHEAD, Tyne and Wear, NE8 3HN Authority: Environment Agency - North East Region, Northumbria Area Site Category: Landfill Max Input Rate: Very Large (Equal to or greater than 250,000 tonnes per year) Waste Source: No known restriction on source of waste Restrictions: Status: Licence lapsed/cancelled/defunct/not applicable/surrenderedCancelled Dated: 1st July 1989 Preceded By: TW9 22 GH Licence: Superseded By: Not Given Licence: Positional Accuracy: Manually positioned to the address or location Boundary Accuracy: Not Applicable Authorised Waste: Drums Over 25 L.Cap To Be Open/Inspect Household + Commercial Waste Industrial Wastes Max.Waste Permitted By Licence-Stated Prohibited Waste: Liquid Wastes - In Drums Or Not Special Wastes</p>	A4SW (SE)	859	2	430900 562495

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
67	<p>Registered Landfill Sites</p> <p>Licence Holder: The Urban Regeneration Agency Licence Reference: EAWML64000 Site Location: Monkton Cokeworks, Mill Lane, Hebburn, Tyne And Wear Licence Easting: 431350 Licence Northing: 562750 Operator Location: St Georges House, Kingsway, Team Valley, GATESHEAD, Tyne and Wear, NE11 0NA</p> <p>Authority: Environment Agency - North East Region, Northumbria Area Site Category: Landfill Max Input Rate: Very Large (Equal to or greater than 250,000 tonnes per year) Waste Source: Some restriction on source of waste Restrictions: Status: Site Closed Dated: 20th August 1998 Preceded By: Not Given Licence: Superseded By: Not Given Licence: Positional Accuracy: Manually positioned to the address or location Boundary Accuracy: Not Applicable Authorised Waste: Maximum Waste Permitted By Licence Ukw 21.01.00 Soils/Subsoils Ukw 22.01.00 Topsoil Ukw 24.01.00 Contaminated Land From Monkton Gasworks Only</p> <p>Prohibited Waste: Other Waste/Waste Not Otherwise Specified Special Waste (As In Epa 1990:S62 Of 1996 Regs) Other Than Contaminated Land</p>	A4NE (SE)	988	2	431350 562750
68	<p>Registered Waste Transfer Sites</p> <p>Licence Holder: Jackson & Co Licence Reference: TW 348 NC Site Location: Dobsons Yard, 1 Wincomlee Road, Walker, NEWCASTLE UPON TYNE, Tyne and Wear, NE6 3PL</p> <p>Operator Location: As Site Address Authority: Environment Agency - North East Region, Northumbria Area Site Category: Transfer Max Input Rate: Very Small (Less than 10,000 tonnes per year) Waste Source: No known restriction on source of waste Restrictions: Licence Status: Licence known to be surrenderedSurrendered Dated: 4th November 1993 Preceded By: Not Given Licence: Superseded By: Not Given Licence: Positional Accuracy: Approximate location provided by supplier Boundary Quality: Not Supplied Authorised Waste: Construction And Demolition Wastes General Waste Cat. B Max.Storage In Licence Steel Timber</p> <p>Prohibited Waste: Biodegradable Waste Difficult Wastes (As In Wmp.26) Liquid Wastes Soluble Chemical Wastes Special Wastes Waste N.O.S.</p>	A17SW (NW)	817	2	429700 564300



Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
69	<p>Registered Waste Treatment or Disposal Sites</p> <p>Licence Holder: C & M Grieveson t/a C & R Grieveson Licence Reference: TW 377 NC Site Location: Walker Station, Station Road, Walker, NEWCASTLE UPON TYNE, Tyne and Wear, NE6 3PN Operator Location: As Site Address Authority: Environment Agency - North East Region, Northumbria Area Site Category: Scrapyard Max Input Rate: Small (Equal to or greater than 10,000 and less than 25,000 tonnes per year) Waste Source: No known restriction on source of waste Restrictions: Licence Status: Operational as far as is knownOperational Dated: 10th September 1997 Preceded By: Not Given Licence: Superseded By: Not Given Licence: Positional Accuracy: Manually positioned to the road within the address or location Boundary Quality: Not Supplied Authorised Waste: Max.Waste Permitted By Licence Scrap Metal As In S.M.Dealers Act'64 Prohibited Waste: Asbestos Clinical Wastes Flammable Solvents Medical (Misuse Of Drugs Act '71) Percussive/Explosive Waste Putrescible Waste Spec.Waste (Epa'90:S62/1996 Regs)N.O.S Sub'S Control. Radioactive Subs Act'60 Waste N.O.S.</p>	A17SW (NW)	927	2	429500 564200
69	<p>Registered Waste Treatment or Disposal Sites</p> <p>Licence Holder: Jebb Metals (Newcastle) Ltd Licence Reference: TW 244 NC Site Location: Station Road, Walker, NEWCASTLE UPON TYNE, Tyne and Wear, NE6 3PN Operator Location: As Site Address Authority: Environment Agency - North East Region, Northumbria Area Site Category: Scrapyard Max Input Rate: Small (Equal to or greater than 10,000 and less than 25,000 tonnes per year) Waste Source: No known restriction on source of waste Restrictions: Licence Status: Operational as far as is knownOperational Dated: 27th March 1991 Preceded By: Not Given Licence: Superseded By: Not Given Licence: Positional Accuracy: Manually positioned to the address or location Boundary Quality: Not Supplied Authorised Waste: Asbestos Batteries Hazardous Items Assoc. With Vehicles Oil & Petrol Scrap Metal As In S.M.Dealers Act 1964 Prohibited Waste: Asbestos Clinical Wastes Flammable Solvents Liable To Cause Environmental Hazards Medical (Misuse Of Drugs Act) Percussive/Explosive Waste Poisonous, Noxious Wastes Radioactive Wastes Spec.Waste (Epa'90:S62/1996 Regs) Transformers/Capacitors Contain. Pcb</p>	A17SW (NW)	927	2	429500 564200

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS 1:625,000 Solid Geology Description: Pennine Middle Coal Measures Formation And South Wales Middle Coal Measures Formation (Undifferentiated)	A8NW (SW)	0	1	430399 563501
70	BGS Recorded Mineral Sites Site Name: Hebburn Clay Pit Location: , Hebburn, South Shields, Tyne & Wear Source: British Geological Survey, National Geoscience Information Service Reference: 95980 Type: Opencast Status: Ceased Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Quaternary Geology: Pelaw Clay Member Commodity: Common Clay and Shale Positional Accuracy: Located by supplier to within 10m	A13NE (N)	419	1	430458 564168
71	BGS Recorded Mineral Sites Site Name: Pelaw (West) Location: , Felling, Gateshead, Tyne & Wear Source: British Geological Survey, National Geoscience Information Service Reference: 5485 Type: Opencast Status: Ceased Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Pennine Middle Coal Measures Formation Commodity: Common Clay and Shale Positional Accuracy: Located by supplier to within 100m	A3SE (S)	763	1	430600 562500
71	BGS Recorded Mineral Sites Site Name: Pelaw (West) Location: , Felling, Gateshead, Tyne & Wear Source: British Geological Survey, National Geoscience Information Service Reference: 5485 Type: Opencast Status: Ceased Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Quaternary Geology: Pelaw Clay Member, Tyne & Wear Glaciolacustrine Formation Commodity: Common Clay and Shale Positional Accuracy: Located by supplier to within 100m	A3SE (S)	763	1	430600 562500
72	BGS Recorded Mineral Sites Site Name: Walker Brick Works Location: , Walker, Newcastle Upon Tyne, Tyne And Wear Source: British Geological Survey, National Geoscience Information Service Reference: 95982 Type: Opencast Status: Ceased Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Quaternary Geology: Till, Devensian Commodity: Common Clay and Shale Positional Accuracy: Located by supplier to within 10m	A7NW (W)	810	1	429454 563490
73	BGS Recorded Mineral Sites Site Name: Pelaw Location: , Felling, Gateshead, Tyne & Wear Source: British Geological Survey, National Geoscience Information Service Reference: 5484 Type: Opencast Status: Ceased Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Middle Coal Measures Commodity: Common Clay and Shale Positional Accuracy: Located by supplier to within 100m	A4SW (SE)	855	1	430900 562500

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
73	BGS Recorded Mineral Sites Site Name: Pelaw Location: , Felling, Gateshead, Tyne & Wear Source: British Geological Survey, National Geoscience Information Service Reference: 5484 Type: Opencast Status: Ceased Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Quaternary Geology: Pelaw Clay Member, Tyne & Wear Glaciolacustrine Formation Commodity: Common Clay and Shale Positional Accuracy: Located by supplier to within 100m	A4SW (SE)	855	1	430900 562500
74	BGS Recorded Mineral Sites Site Name: Wardley Clay Pit Location: , Wardley, Gateshead, Tyne And Wear Source: British Geological Survey, National Geoscience Information Service Reference: 99197 Type: Opencast Status: Ceased Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Pennine Middle Coal Measures Formation Commodity: Common Clay and Shale Positional Accuracy: Located by supplier to within 10m	A3SE (S)	939	1	430506 562317
	Coal Mining Affected Areas Description: In an area which may be affected by coal mining activity. It is recommended that a coal mining report is obtained from the Coal Authority. Contact details are included in the Useful Contacts section of this report.	A8NW (SW)	0	8	430399 563501
	Mining Instability Mining Evidence: Inconclusive Coal Mining Source: Ove Arup & Partners Boundary Quality: As Supplied	A8NW (SW)	0	-	430399 563501
	Non Coal Mining Areas of Great Britain No Hazard				
	Potential for Collapsible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A8NW (SW)	0	1	430399 563501
	Potential for Collapsible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A7NE (W)	250	1	430000 563501
	Potential for Compressible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A8NE (SE)	0	1	430501 563347
	Potential for Compressible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A8NE (E)	0	1	430504 563473
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A8NW (SW)	0	1	430399 563501
	Potential for Compressible Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A8NW (SW)	32	1	430209 563334
	Potential for Compressible Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A7NE (W)	250	1	430000 563501
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A8NW (SW)	0	1	430399 563501
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A7NE (W)	250	1	430000 563501
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A8NW (SW)	0	1	430399 563501

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13SW (NW)	136	1	430149 563624
	Potential for Landslide Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A13SW (NW)	194	1	430142 563846
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A7NE (W)	237	1	430011 563391
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A7NE (W)	250	1	430000 563392
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A8NE (SE)	0	1	430501 563347
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A8NE (E)	0	1	430504 563473
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A8NW (SW)	0	1	430399 563501
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A7NE (W)	250	1	430000 563501
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A8NW (SW)	0	1	430399 563501
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A8NE (SE)	0	1	430501 563347
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A8NE (E)	0	1	430504 563473
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A7NE (W)	250	1	430000 563501
	Radon Potential - Radon Affected Areas Affected Area: The property is in a lower probability radon area, as less than 1% of homes are above the action level Source: British Geological Survey, National Geoscience Information Service	A8NW (SW)	0	1	430399 563501
	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	A8NW (SW)	0	1	430399 563501

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
75	<p>Contemporary Trade Directory Entries</p> <p>Name: Trench (Uk) Ltd Location: South Drive, Hebburn, Tyne and Wear, NE31 1UW Classification: Transformer Manufacturers Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A13SW (N)	0	-	430361 563617
76	<p>Contemporary Trade Directory Entries</p> <p>Name: Millennium Conveyor Services Ltd Location: Unit 15, Victoria Ind Est, Victoria Rd, Hebburn, Tyne & Wear, NE31 1UB Classification: Conveyors & Conveyor Belts Status: Inactive Positional Accuracy: Manually positioned to the address or location</p>	A8NE (S)	7	-	430432 563259
76	<p>Contemporary Trade Directory Entries</p> <p>Name: Northeast Thermocouple Sensors Location: Unit 14c, Victoria Industrial Estate, Victoria Road West, Hebburn, Tyne and Wear, NE31 1UB Classification: Thermometers & Thermostats Status: Active Positional Accuracy: Automatically positioned to the address</p>	A8NE (S)	9	-	430470 563252
77	<p>Contemporary Trade Directory Entries</p> <p>Name: Barkston Location: 3c-3d, Victoria Industrial Estate, Victoria Road West, Hebburn, Tyne and Wear, NE31 1UB Classification: Plastics - Welding Status: Active Positional Accuracy: Automatically positioned to the address</p>	A8NW (SW)	16	-	430303 563310
78	<p>Contemporary Trade Directory Entries</p> <p>Name: Victoria Coatings Location: Unit 11a-11b, Victoria Industrial Estate, Victoria Road West, Hebburn, Tyne and Wear, NE31 1UB Classification: Powder Coatings Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A8NW (S)	26	-	430322 563255
78	<p>Contemporary Trade Directory Entries</p> <p>Name: Automation & Security Location: Unit 11c, Victoria Industrial Estate, Victoria Road West, Hebburn, Tyne and Wear, NE31 1UB Classification: Automation Systems & Equipment Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A8NW (S)	28	-	430343 563250
78	<p>Contemporary Trade Directory Entries</p> <p>Name: Durham Filtration Engineers Ltd Location: Unit 2, Victoria Industrial Estate, Victoria Road West, Hebburn, Tyne and Wear, NE31 1UB Classification: Filter Manufacturers & Suppliers Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A8NW (S)	74	-	430322 563206
78	<p>Contemporary Trade Directory Entries</p> <p>Name: Mcnulty Boats Ltd Location: Unit 7, Victoria Industrial Estate, Victoria Road West, Hebburn, Tyne and Wear, NE31 1UB Classification: Boatbuilders & Repairers Status: Inactive Positional Accuracy: Automatically positioned in the proximity of the address</p>	A8NW (S)	82	-	430330 563197
78	<p>Contemporary Trade Directory Entries</p> <p>Name: T S B Precision Engineering Ltd Location: Unit 6, Victoria Industrial Estate, Victoria Road West, Hebburn, Tyne and Wear, NE31 1UB Classification: Engineers - General Status: Inactive Positional Accuracy: Automatically positioned in the proximity of the address</p>	A8NW (S)	82	-	430330 563197
79	<p>Contemporary Trade Directory Entries</p> <p>Name: Kenneth James Ltd Location: 11d, Victoria Industrial Estate, Victoria Road West, Hebburn, Tyne and Wear, NE31 1UB Classification: Packaging & Wrapping Equipment & Supplies Status: Active Positional Accuracy: Automatically positioned to the address</p>	A8NW (S)	28	-	430354 563248

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
79	<p>Contemporary Trade Directory Entries</p> <p>Name: Crest Security Location: Unit 11d, Victoria Industrial Estate, Victoria Road West, Hebburn, Tyne and Wear, NE31 1UB Classification: Safes & Vaults - Suppliers & Installers Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A8NW (S)	28	-	430354 563248
79	<p>Contemporary Trade Directory Entries</p> <p>Name: Star Centre Location: Unit 10 Victoria Industrial Estate, Victoria Road West, Hebburn, Tyne And Wear, NE31 1UB Classification: Disability Equipment - Manufacturers & Suppliers Status: Active Positional Accuracy: Manually positioned within the geographical locality</p>	A8NW (S)	30	-	430367 563245
79	<p>Contemporary Trade Directory Entries</p> <p>Name: Mattei Compressors Ltd Location: Unit 12c, Victoria Industrial Estate, Victoria Road West, Hebburn, Tyne and Wear, NE31 1UB Classification: Air Compressors Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A8NW (S)	30	-	430385 563242
79	<p>Contemporary Trade Directory Entries</p> <p>Name: Electrical Industrial Accessories Ltd Location: Unit 12a, Victoria Industrial Estate, Victoria Road West, Hebburn, Tyne and Wear, NE31 1UB Classification: Power Transmission Equipment Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A8NW (S)	30	-	430367 563245
79	<p>Contemporary Trade Directory Entries</p> <p>Name: Northrop Grumman Sperry Marine Location: Unit 12C,Victoria Ind Est,Victoria Rd West, Hebburn, Tyne and Wear, NE31 1UB Classification: Marine Electrical & Electronic Equipment Manufacturers Status: Inactive Positional Accuracy: Manually positioned to the address or location</p>	A8NW (S)	30	-	430384 563242
79	<p>Contemporary Trade Directory Entries</p> <p>Name: Precision Glass Location: Unit 1,Victoria Ind Est,Victoria Rd West, Hebburn, Tyne And Wear, NE31 1UB Classification: Mirrors & Decorative Glass Status: Inactive Positional Accuracy: Manually positioned within the geographical locality</p>	A8NW (S)	30	-	430367 563245
79	<p>Contemporary Trade Directory Entries</p> <p>Name: Mashamoto Location: Unit 8a-C,Victoria Ind Est,Victoria Rd West, Hebburn, Tyne And Wear, NE31 1UB Classification: Car Body Repairs Status: Inactive Positional Accuracy: Manually positioned within the geographical locality</p>	A8NW (S)	30	-	430367 563245
79	<p>Contemporary Trade Directory Entries</p> <p>Name: Tyne Autogas Location: Unit 12/A, Victoria Industrial Estate, Victoria Road West, Hebburn, Tyne and Wear, NE31 1UB Classification: Autogas Suppliers & Installers Status: Inactive Positional Accuracy: Manually positioned to the address or location</p>	A8NW (S)	30	-	430367 563245
79	<p>Contemporary Trade Directory Entries</p> <p>Name: Deep Star Subsea Location: Unit 15 Victoria Industrial Estate, Victoria Road West, Hebburn, Tyne And Wear, NE31 1UB Classification: Oil & Gas Exploration Supplies & Services Status: Active Positional Accuracy: Manually positioned within the geographical locality</p>	A8NW (S)	31	-	430379 563242
79	<p>Contemporary Trade Directory Entries</p> <p>Name: Valve & Fitting Solutions Location: Unit 13a,Victoria Ind Est,Victoria Rd West, Hebburn, Tyne And Wear, NE31 1UB Classification: Valve Manufacturers & Suppliers Status: Inactive Positional Accuracy: Manually positioned to the address or location</p>	A8NW (S)	31	-	430406 563238

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
79	<p>Contemporary Trade Directory Entries</p> <p>Name: Tinted Vison Location: 13a, Victoria Industrial Estate, Victoria Road West, Hebburn, Tyne and Wear, NE31 1UB Classification: Window Tinting Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A8NW (S)	31	-	430406 563238
79	<p>Contemporary Trade Directory Entries</p> <p>Name: Victoria Metall Works Location: Unit AC, Victoria Industrial Estate, Victoria Rd West, Hebburn, Tyne and Wear, NE31 1UB Classification: Sheet Metal Work Status: Inactive Positional Accuracy: Manually positioned within the geographical locality</p>	A8NW (S)	43	-	430366 563232
80	<p>Contemporary Trade Directory Entries</p> <p>Name: C Rutherford Location: 29, Lambley Crescent, Hebburn, Tyne and Wear, NE31 2NF Classification: Road Haulage Services Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A8NE (E)	57	-	430599 563456
81	<p>Contemporary Trade Directory Entries</p> <p>Name: Drillturn Engineering Ltd Location: Victoria Road West, Hebburn, Tyne and Wear, NE31 1UB Classification: Engineers - General Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A8NE (S)	76	-	430426 563190
81	<p>Contemporary Trade Directory Entries</p> <p>Name: Oak Engineering Co Ltd Location: Unit 7, 1, Victoria Industrial Estate, Victoria Road West, Hebburn, Tyne and Wear, NE31 1UB Classification: Precision Engineers Status: Active Positional Accuracy: Automatically positioned to the address</p>	A8NE (S)	76	-	430426 563190
81	<p>Contemporary Trade Directory Entries</p> <p>Name: Alfa Windows Ltd Location: Unit 7, Victoria Industrial Estate, Victoria Road West, Hebburn, Tyne and Wear, NE31 1UB Classification: Window Frame Manufacturers Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A8NE (S)	76	-	430426 563190
82	<p>Contemporary Trade Directory Entries</p> <p>Name: Glenray Garage Location: Unit 9f, Victoria Industrial Estate, Victoria Road West, Hebburn, Tyne and Wear, NE31 1UB Classification: Garage Services Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A8NW (SW)	120	-	430239 563201
82	<p>Contemporary Trade Directory Entries</p> <p>Name: Abbey Joinery Northeast Location: Unit 9D, Victoria Ind Est, Victoria Rd West, Hebburn, Tyne and Wear, NE31 1UB Classification: Joinery Manufacturers Status: Inactive Positional Accuracy: Manually positioned to the address or location</p>	A8NW (SW)	132	-	430236 563186
82	<p>Contemporary Trade Directory Entries</p> <p>Name: High Spec Fabrications Location: Unit 9A, Victoria Ind Est, Victoria Rd West, Hebburn, Tyne and Wear, NE31 1UB Classification: PVC-U Products - Manufacturers & Suppliers Status: Inactive Positional Accuracy: Manually positioned to the address or location</p>	A8SW (SW)	151	-	430230 563166
83	<p>Contemporary Trade Directory Entries</p> <p>Name: Select A Panel Location: Unit 8f, Victoria Industrial Estate, Victoria Road West, Hebburn, Tyne and Wear, NE31 1UB Classification: Control Panel Manufacturers Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A8SW (S)	143	-	430301 563140

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
83	<p>Contemporary Trade Directory Entries</p> <p>Name: Chameleon Manufacturing Location: Unit 8/F, Victoria Industrial Estate, Victoria Road West, Hebburn, Tyne and Wear, NE31 1UB Classification: Textile Manufacturing Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A8SW (S)	143	-	430301 563140
83	<p>Contemporary Trade Directory Entries</p> <p>Name: Prima Ceramica Location: Unit 8i-8j, Victoria Industrial Estate, Victoria Road West, Hebburn, Tyne and Wear, NE31 1UB Classification: Ceramic Manufacturers, Supplies & Services Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A8SW (S)	145	-	430282 563143
83	<p>Contemporary Trade Directory Entries</p> <p>Name: D & E Autos Location: Unit 8i-8j, Victoria Industrial Estate, Victoria Road West, Hebburn, Tyne and Wear, NE31 1UB Classification: Garage Services Status: Inactive Positional Accuracy: Manually positioned to the address or location</p>	A8SW (S)	145	-	430282 563143
83	<p>Contemporary Trade Directory Entries</p> <p>Name: Dd Racing Location: 8i, Victoria Industrial Estate, Victoria Road West, Hebburn, Tyne and Wear, NE31 1UB Classification: Garage Services Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A8SW (S)	145	-	430282 563143
84	<p>Contemporary Trade Directory Entries</p> <p>Name: Carpet Commando S Location: 4, St. Josephs Court, Hebburn, Tyne and Wear, NE31 2EN Classification: Carpet, Curtain & Upholstery Cleaners Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A8SE (S)	161	-	430524 563097
85	<p>Contemporary Trade Directory Entries</p> <p>Name: The Classic Touch Location: 6, Cloverhill Avenue, Hebburn, Tyne and Wear, NE31 2LS Classification: Printers - Glass, Metal, Plastics Etc. Status: Active Positional Accuracy: Automatically positioned to the address</p>	A8SE (SE)	188	-	430669 563170
86	<p>Contemporary Trade Directory Entries</p> <p>Name: Save Service Station Location: Fire Station Houses, Victoria Road West, Hebburn, Tyne and Wear, NE31 1UD Classification: Petrol Filling Stations Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A8SE (S)	220	-	430412 563046
86	<p>Contemporary Trade Directory Entries</p> <p>Name: Shield Motor Co Location: Fire Station Houses, Victoria Road West, HEBBURN, Tyne and Wear, NE31 1UD Classification: Car Dealers Status: Active Positional Accuracy: Automatically positioned to the address</p>	A8SW (S)	251	-	430403 563017
86	<p>Contemporary Trade Directory Entries</p> <p>Name: Victoria Location: Victoria Garage, Fire Station Houses, Victoria Road West, Hebburn, Tyne and Wear, NE31 1UD Classification: Powder Coatings Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A8SW (S)	251	-	430403 563017
87	<p>Contemporary Trade Directory Entries</p> <p>Name: P J Electronic Services Ltd Location: 17, Longdean Close, HEBBURN, Tyne and Wear, NE31 1NZ Classification: Electronic Equipment - Manufacturers & Assemblers Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A13NE (N)	333	-	430486 564072
87	<p>Contemporary Trade Directory Entries</p> <p>Name: P J Electronic Services Ltd Location: 17, Longdean Close, Hebburn, Tyne and Wear, NE31 1NZ Classification: Electronic Equipment - Manufacturers & Assemblers Status: Active Positional Accuracy: Automatically positioned to the address</p>	A13NE (N)	333	-	430486 564072

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
88	<p>Contemporary Trade Directory Entries</p> <p>Name: Jet Location: 94, Victoria Road West, Hebburn, NE31 1LS Classification: Petrol Filling Stations Status: Active Positional Accuracy: Manually positioned to the address or location</p>	A13NE (NE)	369	-	430686 564002
89	<p>Contemporary Trade Directory Entries</p> <p>Name: Siemens Location: North Farm Road, Hebburn, NE31 1LX Classification: Electronic Component Manufacturers & Distributors Status: Active Positional Accuracy: Automatically positioned to the address</p>	A13NW (N)	383	-	430375 564150
90	<p>Contemporary Trade Directory Entries</p> <p>Name: Siemens Location: 7, North Farm Road, Hebburn, Tyne and Wear, NE31 1LX Classification: Engineering Services Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A13NE (NE)	421	-	430664 564089
91	<p>Contemporary Trade Directory Entries</p> <p>Name: Glenn McIntosh, Authorised Distributor For The Utility Warehouse Discount Club Location: 4, Alfred Street, Hebburn, Tyne and Wear, NE31 1LZ Classification: Gas Suppliers Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A13NE (NE)	471	-	430669 564145
92	<p>Contemporary Trade Directory Entries</p> <p>Name: Modern Valves & Fittings Location: 56, Marian Drive, Gateshead, Tyne and Wear, NE10 0TJ Classification: Valve Manufacturers & Suppliers Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A7SE (SW)	500	-	429910 562970
93	<p>Contemporary Trade Directory Entries</p> <p>Name: Brag Engineering Ltd Location: Glen Street Works, Glen Street, Hebburn, Tyne and Wear, NE31 1NE Classification: Engineers - General Status: Active Positional Accuracy: Automatically positioned to the address</p>	A18SE (N)	542	-	430524 564278
94	<p>Contemporary Trade Directory Entries</p> <p>Name: Hadrian Cash Registers Location: 25, Gullane Close, Gateshead, Tyne and Wear, NE10 0TQ Classification: Cash Registers & Check-Out Equipment Status: Active Positional Accuracy: Automatically positioned to the address</p>	A2NE (SW)	560	-	430045 562797
95	<p>Contemporary Trade Directory Entries</p> <p>Name: Fairway Tyres Location: Mill Lane, Hebburn, Tyne and Wear, NE31 2EU Classification: Tyre Dealers Status: Inactive Positional Accuracy: Automatically positioned in the proximity of the address</p>	A9SW (SE)	579	-	430971 562916
96	<p>Contemporary Trade Directory Entries</p> <p>Name: Shepherd Offshore Services Ltd Location: Offshore Technology Park, Nelson Road, Newcastle upon Tyne, NE6 3NL Classification: Oil & Gas Extraction Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A12NE (NW)	604	-	429745 563949
97	<p>Contemporary Trade Directory Entries</p> <p>Name: Currys Location: Brunton Way, Gateshead, Tyne and Wear, NE10 0TH Classification: Electrical Goods Sales, Manufacturers & Wholesalers Status: Inactive Positional Accuracy: Manually positioned to the road within the address or location</p>	A2NE (SW)	608	-	429982 562780
98	<p>Contemporary Trade Directory Entries</p> <p>Name: Willow Garage Location: Glen Street Works, Glen St, Hebburn, Tyne And Wear, NE31 1NE Classification: Garage Services Status: Inactive Positional Accuracy: Manually positioned within the geographical locality</p>	A18SE (N)	622	-	430571 564348

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
99	<p>Contemporary Trade Directory Entries</p> <p>Name: Duco Ltd Location: Nelson Road, NEWCASTLE UPON TYNE, NE6 3NL Classification: Hose, Tubing & Fittings Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A12SW (NW)	654	-	429672 563849
100	<p>Contemporary Trade Directory Entries</p> <p>Name: Morland Motors Location: Rear Of, Glen Street, Hebburn, Tyne and Wear, NE31 1NU Classification: Car Body Repairs Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A18SE (N)	671	-	430593 564394
101	<p>Contemporary Trade Directory Entries</p> <p>Name: Thunderbolt Dispatch Location: Unit 2, Empress Road, Newcastle upon Tyne, NE6 3NW Classification: Distribution Services Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A12SW (W)	680	-	429624 563704
102	<p>Contemporary Trade Directory Entries</p> <p>Name: Gulliver Safety Glass Location: Unit 1, Empress Road, Walker Riverside, Newcastle upon Tyne, NE6 3NW Classification: Glass Products - Manufacturers Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A12SW (W)	680	-	429614 563655
103	<p>Contemporary Trade Directory Entries</p> <p>Name: S & R Reid Location: Unit 6, Empress Road, Newcastle upon Tyne, Tyne and Wear, NE6 3NW Classification: Food Products - Manufacturers Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A12SW (W)	681	-	429635 563791
104	<p>Contemporary Trade Directory Entries</p> <p>Name: Glen Location: 66, Glen Street, Hebburn, Tyne and Wear, NE31 1NG Classification: Pest & Vermin Control Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A18SE (N)	703	-	430645 564412
105	<p>Contemporary Trade Directory Entries</p> <p>Name: Mill Lane Service Station Location: Mill Lane, Hebburn, Tyne and Wear, NE31 2EU Classification: Petrol Filling Stations Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A9SE (SE)	704	-	431086 562862
106	<p>Contemporary Trade Directory Entries</p> <p>Name: Poss Tub Laundry & South Tyneside Community Laundry Location: 5-7 St Johns Precinct, Hebburn, Tyne And Wear, NE31 1LG Classification: Ironing & Home Laundry Services Status: Active Positional Accuracy: Manually positioned within the geographical locality</p>	A19SW (NE)	735	-	430880 564319
107	<p>Contemporary Trade Directory Entries</p> <p>Name: Dickies Formet Location: Wincomblee Rd, Walker, Newcastle Upon Tyne, Northumberland, NE6 3QQ Classification: Blacksmiths & Forgemasters Status: Inactive Positional Accuracy: Manually positioned to the road within the address or location</p>	A12NW (NW)	737	-	429618 563990
107	<p>Contemporary Trade Directory Entries</p> <p>Name: Lloyds Kone Cranes Location: Wincomblee Rd, Walker, Newcastle Upon Tyne, Northumberland, NE6 3QQ Classification: Crane Manufacturers Status: Inactive Positional Accuracy: Manually positioned to the road within the address or location</p>	A12NW (NW)	739	-	429618 563994
108	<p>Contemporary Trade Directory Entries</p> <p>Name: Allsorts Light Commercials Location: Wincomblee Rd, Newcastle Upon Tyne, NE6 3PL Classification: Car Breakers & Dismantlers Status: Inactive Positional Accuracy: Manually positioned to the road within the address or location</p>	A12NW (NW)	738	-	429648 564070
109	<p>Contemporary Trade Directory Entries</p> <p>Name: Glenstreet Mot Centre Location: Glen St, Hebburn, Tyne & Wear, NE31 1NU Classification: Garage Services Status: Inactive Positional Accuracy: Manually positioned to the road within the address or location</p>	A18SE (N)	738	-	430694 564430

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
110	<p>Contemporary Trade Directory Entries</p> <p>Name: A1 Upholstery Cleaners Location: 50, St. Aloysius View, Hebburn, Tyne and Wear, NE31 1RQ Classification: Carpet, Curtain & Upholstery Cleaners Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A18SE (N)	740	-	430485 564492
111	<p>Contemporary Trade Directory Entries</p> <p>Name: C P Insulations Location: Unit 2, Walker Riverside, Wincomblee Road, Newcastle upon Tyne, NE6 3PF Classification: Insulation Materials Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A12SW (W)	750	-	429524 563549
111	<p>Contemporary Trade Directory Entries</p> <p>Name: Royston Location: Unit 3, Walker Riverside, Wincomblee Road, Newcastle upon Tyne, NE6 3PF Classification: Marine Engineering Equipment Manufacturers Status: Active Positional Accuracy: Automatically positioned to the address</p>	A12SW (W)	784	-	429487 563528
112	<p>Contemporary Trade Directory Entries</p> <p>Name: Barrett Energy Products Location: Wincomblee Road, Walker, Newcastle upon Tyne, NE6 3QQ Classification: Metal Finishing Services Status: Active Positional Accuracy: Automatically positioned to the address</p>	A17SE (NW)	764	-	429762 564290
113	<p>Contemporary Trade Directory Entries</p> <p>Name: Bill Quay Auto Salvage Location: Drake St, Bill Quay, Gateshead, Tyne & Wear, NE10 0UT Classification: Car Breakers & Dismantlers Status: Inactive Positional Accuracy: Manually positioned within the geographical locality</p>	A2NE (SW)	765	-	429756 562752
114	<p>Contemporary Trade Directory Entries</p> <p>Name: Smiths Bros Location: 44, Glen Street, Hebburn, Tyne and Wear, NE31 1NU Classification: Printers Status: Active Positional Accuracy: Automatically positioned to the address</p>	A18SE (N)	776	-	430714 564463
114	<p>Contemporary Trade Directory Entries</p> <p>Name: Smith Bros Location: 44, Glen Street, Hebburn, Tyne and Wear, NE31 1NU Classification: Printers Status: Active Positional Accuracy: Automatically positioned to the address</p>	A18SE (N)	776	-	430714 564463
114	<p>Contemporary Trade Directory Entries</p> <p>Name: Smith Bros Location: 44, Glen Street, Hebburn, Tyne and Wear, NE31 1NU Classification: Printers Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A18SE (N)	776	-	430714 564463
114	<p>Contemporary Trade Directory Entries</p> <p>Name: Glen Street Mot Ltd Location: 40, Glen Street, Hebburn, Tyne and Wear, NE31 1NU Classification: Mot Testing Centres Status: Inactive Positional Accuracy: Manually positioned to the address or location</p>	A18SE (N)	788	-	430721 564473
114	<p>Contemporary Trade Directory Entries</p> <p>Name: A C Pillar Tools Location: Rear Of, Glen Street, Hebburn, Tyne and Wear, NE31 1NU Classification: Precision Engineers Status: Inactive Positional Accuracy: Automatically positioned in the proximity of the address</p>	A19SW (N)	816	-	430745 564493
115	<p>Contemporary Trade Directory Entries</p> <p>Name: Vee-Dubs Location: 10 Bill Quay Industrial Estate, Gateshead, Tyne And Wear, NE10 0UA Classification: Garage Services Status: Active Positional Accuracy: Manually positioned within the geographical locality</p>	A7SW (SW)	789	-	429586 562909
116	<p>Contemporary Trade Directory Entries</p> <p>Name: Starling Location: Wincomblee Rd, Newcastle Upon Tyne, Northumberland, NE6 3PL Classification: Car Body Repairs Status: Inactive Positional Accuracy: Manually positioned to the road within the address or location</p>	A17SW (NW)	790	-	429658 564198

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
117	<p>Contemporary Trade Directory Entries</p> <p>Name: Lloyds Hedley Handling Services Ltd Location: Wincomblee Road, Walker, Newcastle upon Tyne, NE6 3QQ Classification: Materials Handling Equipment Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A17SE (NW)	792	-	429779 564348
118	<p>Contemporary Trade Directory Entries</p> <p>Name: N I M Engineering Ltd Location: The High Yard, Wincomblee Road, Newcastle upon Tyne, NE6 3PL Classification: Marine Engineers Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A12NW (NW)	795	-	429610 564125
119	<p>Contemporary Trade Directory Entries</p> <p>Name: Bewick Engineering Ltd Location: Unit 4, Walker Riverside, Wincomblee Road, Newcastle upon Tyne, NE6 3PF Classification: Hydraulic Engineers Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A7NW (W)	799	-	429461 563467
119	<p>Contemporary Trade Directory Entries</p> <p>Name: Wellstream Location: Unit 5, Walker Riverside, Wincomblee Road, Newcastle upon Tyne, Tyne and Wear, NE6 3PF Classification: Manufacturers Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A7NW (W)	812	-	429445 563445
120	<p>Contemporary Trade Directory Entries</p> <p>Name: Blazes Fire Surrounds Ltd Location: Hylton Terrace, Gateshead, Tyne and Wear, NE10 0SL Classification: Fireplaces & Mantelpieces Status: Active Positional Accuracy: Automatically positioned to the address</p>	A2NE (SW)	802	-	429991 562553
121	<p>Contemporary Trade Directory Entries</p> <p>Name: Watson Norie Ltd Location: Wincomblee Road, NEWCASTLE UPON TYNE, NE6 3PL Classification: Electrical Engineers Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A17SW (NW)	807	-	429684 564266
122	<p>Contemporary Trade Directory Entries</p> <p>Name: North East Appliance Repairs Location: 41, Station Road, Hebburn, Tyne and Wear, NE31 1LA Classification: Electrical Goods Sales, Manufacturers & Wholesalers Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A19SW (NE)	853	-	430965 564402
123	<p>Contemporary Trade Directory Entries</p> <p>Name: Bill Quay Auto Care Location: Unit 1 Bill Quay Indust Est, Gateshead, Tyne & Wear, NE10 0SQ Classification: Garage Services Status: Inactive Positional Accuracy: Manually positioned within the geographical locality</p>	A7SW (SW)	884	-	429512 562849
124	<p>Contemporary Trade Directory Entries</p> <p>Name: Singleton Metalworks Ltd Location: Shop 7 Block C, Wincomblee Road, Newcastle upon Tyne, Tyne And Wear, NE6 3QS Classification: Metal Products - Fabricated Status: Active Positional Accuracy: Manually positioned within the geographical locality</p>	A17SE (NW)	886	-	429732 564431
125	<p>Contemporary Trade Directory Entries</p> <p>Name: Minster Insulation & Dry Lining Location: Wincomblee Road, Newcastle upon Tyne, NE6 3QS Classification: Insulation Materials Status: Active Positional Accuracy: Automatically positioned to the address</p>	A17SW (NW)	890	-	429655 564360
125	<p>Contemporary Trade Directory Entries</p> <p>Name: Robertson Rewinds Location: Wincomblee Road, Newcastle upon Tyne, NE6 3QS Classification: Electric Motor Sales & Service Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A17SW (NW)	912	-	429663 564402

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
125	<p>Contemporary Trade Directory Entries</p> <p>Name: Pearson Engineering Ltd Location: Wincomblee Road, Newcastle upon Tyne, NE6 3QS Classification: Engineers - General Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A17SW (NW)	912	-	429663 564402
126	<p>Contemporary Trade Directory Entries</p> <p>Name: Jewson Ltd Location: Station Rd, Hebburn, Tyne and Wear, NE31 1BD Classification: Builders' Merchants Status: Inactive Positional Accuracy: Manually positioned to the road within the address or location</p>	A19NW (NE)	894	-	430841 564534
127	<p>Contemporary Trade Directory Entries</p> <p>Name: Jebb Metals Ltd Location: Station Road, Walker, Newcastle upon Tyne, NE6 3PN Classification: Scrap Metal Merchants Status: Active Positional Accuracy: Automatically positioned to the address</p>	A12NW (NW)	921	-	429472 564123
127	<p>Contemporary Trade Directory Entries</p> <p>Name: Garage The Location: Station Rd, Walker, Newcastle Upon Tyne, NE6 3PN Classification: Garage Services Status: Inactive Positional Accuracy: Manually positioned to the road within the address or location</p>	A12NW (NW)	933	-	429456 564118
128	<p>Contemporary Trade Directory Entries</p> <p>Name: C & R Grieveson Location: Station Road, Walker, Newcastle upon Tyne, NE6 3PN Classification: Scrap Metal Merchants Status: Active Positional Accuracy: Automatically positioned to the address</p>	A17SW (NW)	927	-	429511 564219
129	<p>Contemporary Trade Directory Entries</p> <p>Name: Pci Construction Systems Ltd Location: Adair Way, Hebburn, Tyne & Wear, NE31 2HG Classification: Adhesives, Glues & Sealants Status: Inactive Positional Accuracy: Manually positioned within the geographical locality</p>	A9SE (SE)	931	-	431340 562851
130	<p>Contemporary Trade Directory Entries</p> <p>Name: Vauxhall Centre Location: Unit 4, Station Rd, Walker, Newcastle Upon Tyne, Northumberland, NE6 3PN Classification: Car Dealers - Used Status: Inactive Positional Accuracy: Manually positioned to the road within the address or location</p>	A12NW (NW)	931	-	429428 564030
130	<p>Contemporary Trade Directory Entries</p> <p>Name: D'Ostuni'S Location: 30a, Station Road, Walker, Newcastle upon Tyne, NE6 3UP Classification: Ice Cream Manufacturers & Suppliers Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A12NW (NW)	945	-	429418 564049
131	<p>Contemporary Trade Directory Entries</p> <p>Name: Express Cleaning Location: 14, Severn Avenue, Hebburn, Tyne and Wear, NE31 2JJ Classification: Carpet, Curtain & Upholstery Cleaners Status: Active Positional Accuracy: Automatically positioned to the address</p>	A10NW (E)	940	-	431458 563254
132	<p>Contemporary Trade Directory Entries</p> <p>Name: White Street Garage Location: UNIT 33 White St, Newcastle upon Tyne, Tyne and Wear, NE6 3PJ Classification: Garage Services Status: Inactive Positional Accuracy: Manually positioned to the road within the address or location</p>	A17SW (NW)	941	-	429616 564393
133	<p>Contemporary Trade Directory Entries</p> <p>Name: Metal Services Location: White St, Newcastle upon Tyne, Tyne and Wear, NE6 3PJ Classification: Aluminium Fabricators Status: Inactive Positional Accuracy: Manually positioned to the road within the address or location</p>	A17SW (NW)	947	-	429624 564411
133	<p>Contemporary Trade Directory Entries</p> <p>Name: Quality Commissioning Ltd Location: 63-65 White St, Newcastle Upon Tyne, Northumberland, NE6 3PJ Classification: Blast Cleaning Status: Inactive Positional Accuracy: Manually positioned to the road within the address or location</p>	A17SW (NW)	952	-	429628 564422



Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
133	<p>Contemporary Trade Directory Entries</p> <p>Name: A1 Venetian Blinds Ltd Location: Unit 2,10,Wincomblee Workshops,White St, Newcastle upon Tyne, Tyne and Wear, NE6 3PJ Classification: Blinds, Awnings & Canopies Status: Inactive Positional Accuracy: Manually positioned to the road within the address or location</p>	A17SW (NW)	953	-	429630 564426
133	<p>Contemporary Trade Directory Entries</p> <p>Name: Willow Tree Country Kitchens Location: Unit 11, Wincomblee Workshops, White Street, NEWCASTLE UPON TYNE, NE6 3PJ Classification: Food Products - Manufacturers Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A17SW (NW)	982	-	429616 564453
133	<p>Contemporary Trade Directory Entries</p> <p>Name: A1 Blinds Ltd Location: Wincomblee Workshops, White Street, NEWCASTLE UPON TYNE, NE6 3PJ Classification: Blinds, Awnings & Canopies Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A17SW (NW)	982	-	429616 564453
133	<p>Contemporary Trade Directory Entries</p> <p>Name: Custom Print Location: Unit 7, Wincomblee Workshops, White Street, NEWCASTLE UPON TYNE, NE6 3PJ Classification: Printers Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A17SW (NW)	982	-	429616 564453
134	<p>Contemporary Trade Directory Entries</p> <p>Name: North East Castors & Wheels Location: 1, Station Road, Bill Quay, Gateshead, NE10 0UH Classification: Wheel Manufacturers Status: Active Positional Accuracy: Automatically positioned to the address</p>	A2NW (SW)	953	-	429631 562611
135	<p>Contemporary Trade Directory Entries</p> <p>Name: Lowry'S Garage Location: Church St,Off Welbeck Rd, Walker, Newcastle Upon Tyne, NE6 3NX Classification: Garage Services Status: Inactive Positional Accuracy: Manually positioned within the geographical locality</p>	A11SE (W)	956	-	429354 563771
136	<p>Contemporary Trade Directory Entries</p> <p>Name: United Flexo Supplies Ltd Location: Rhodes Street, Walker, Newcastle upon Tyne, NE6 3LZ Classification: Tapes - Industrial Status: Active Positional Accuracy: Automatically positioned to the address</p>	A17SW (NW)	965	-	429469 564221
136	<p>Contemporary Trade Directory Entries</p> <p>Name: C R Polystyrene Ltd Location: Station Road, Walker, NEWCASTLE UPON TYNE, NE6 3PN Classification: Packaging Materials Manufacturers & Suppliers Status: Active Positional Accuracy: Automatically positioned to the address</p>	A17SW (NW)	976	-	429481 564266
137	<p>Contemporary Trade Directory Entries</p> <p>Name: Sunkisst Location: 3 Parkside House Station Road, Bill Quay, Gateshead, Tyne And Wear, NE10 0RS Classification: Commercial Cleaning Services Status: Inactive Positional Accuracy: Manually positioned within the geographical locality</p>	A2NW (SW)	970	-	429659 562567
138	<p>Contemporary Trade Directory Entries</p> <p>Name: A Richardson Location: Fairfield Industrial Park, Bill Quay, Gateshead, Tyne and Wear, NE10 0UR Classification: Packaging & Wrapping Equipment & Supplies Status: Inactive Positional Accuracy: Automatically positioned in the proximity of the address</p>	A6SE (SW)	981	-	429379 562885
139	<p>Contemporary Trade Directory Entries</p> <p>Name: Rotech Location: Unit 4,Robert Frazer Ind Est,Station Rd, Hebburn, Tyne & Wear, NE31 1BD Classification: Distribution Services Status: Inactive Positional Accuracy: Manually positioned to the road within the address or location</p>	A18NE (N)	988	-	430727 564684



Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
140	<p>Contemporary Trade Directory Entries</p> <p>Name: L C P North East Ltd Location: 14c, Fairfield Industrial Park, Bill Quay, Gateshead, NE10 0UR Classification: Boxes & Cartons Status: Active Positional Accuracy: Automatically positioned to the address</p>	A6SE (SW)	1000	-	429335 562932
140	<p>Contemporary Trade Directory Entries</p> <p>Name: Vitalis Location: 14a, Fairfield Industrial Park, Bill Quay, Gateshead, NE10 0UR Classification: Boilers - Servicing, Replacements & Repairs Status: Active Positional Accuracy: Automatically positioned to the address</p>	A6SE (SW)	1000	-	429335 562932
140	<p>Contemporary Trade Directory Entries</p> <p>Name: David Huddart Location: 14a, Fairfield Industrial Park, Bill Quay, Gateshead, Tyne and Wear, NE10 0UR Classification: Joinery Manufacturers Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A6SE (SW)	1000	-	429335 562932
140	<p>Contemporary Trade Directory Entries</p> <p>Name: Newcastle Furniture Company Location: 15, Fairfield Industrial Park, Bill Quay, Gateshead, Tyne and Wear, NE10 0UR Classification: Kitchen Furniture Manufacturers Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A6SE (SW)	1000	-	429335 562932
141	<p>Contemporary Trade Directory Entries</p> <p>Name: Tyne Building Supplies Location: Rhodes St, Newcastle Upon Tyne, Northumberland, NE6 3PF Classification: Builders' Merchants Status: Inactive Positional Accuracy: Manually positioned to the road within the address or location</p>	A17SW (NW)	1000	-	429417 564196
142	<p>Fuel Station Entries</p> <p>Name: Victoria Road Filling Station Location: 94, Victoria Road West, Hebburn, NE31 1LS Brand: Jet Premises Type: Petrol Station Status: Open Positional Accuracy: Manually positioned to the address or location</p>	A13NE (NE)	369	-	430686 564002
143	<p>Fuel Station Entries</p> <p>Name: Mill Lane Filling Station Location: Mill Lane, Hebburn, Tyne & Wear, NE31 2EU Brand: Total Premises Type: Petrol Station Status: Closed Positional Accuracy: Manually positioned to the address or location</p>	A9SE (SE)	705	-	431086 562862

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
144	Areas of Adopted Green Belt Authority: South Tyneside Metropolitan Borough Council, Planning Department Plan Name: Core Strategy Status: Adopted Plan Date: 30th June 2007	A8SW (S)	336	6	430367 562936
145	Areas of Adopted Green Belt Authority: Gateshead Metropolitan Borough Council, Development Control Plan Name: Gateshead Unitary Development Plan Status: Adopted Plan Date: 19th July 2007	A3NE (S)	554	7	430432 562707
146	Areas of Unadopted Green Belt Authority: Gateshead Metropolitan Borough Council, Development Control Plan Name: Core Strategy And Urban Core Plan Status: Submission Draft Plan Date: 24th February 2014	A3NE (S)	555	7	430433 562706
147	Local Nature Reserves Name: Pelaw Quarry Pond Multiple Area: N Area (m2): 52248.25 Source: Natural England Designation Date: 28th March 2012	A4NW (SE)	584	9	430906 562834

Agency & Hydrological	Version	Update Cycle
Contaminated Land Register Entries and Notices South Tyneside Metropolitan Borough Council - Neighbourhood Services Gateshead Metropolitan Borough Council - Environmental Health Department North Tyneside Metropolitan Borough Council - Environmental Health Department Sunderland City Metropolitan Borough Council - Environmental Health Department City of Newcastle upon Tyne Council - Environmental Health Department	December 2014 July 2013 March 2015 March 2015 October 2014	Annual Rolling Update Annual Rolling Update Annual Rolling Update Annually Annual Rolling Update
Discharge Consents Environment Agency - North East Region	April 2016	Quarterly
Enforcement and Prohibition Notices Environment Agency - North East Region	March 2013	As notified
Integrated Pollution Controls Environment Agency - North East Region	October 2008	Not Applicable
Integrated Pollution Prevention And Control Environment Agency - North East Region	April 2016	Quarterly
Local Authority Integrated Pollution Prevention And Control North Tyneside Metropolitan Borough Council - Environmental Health Department Gateshead Metropolitan Borough Council - Environmental Health Department City of Newcastle upon Tyne Council - Environmental Health Department Sunderland City Metropolitan Borough Council - Environmental Health Department South Tyneside Metropolitan Borough Council - Environmental Health Department	April 2014 February 2013 June 2013 May 2016 September 2012	Annual Rolling Update Annual Rolling Update Annual Rolling Update Annual Rolling Update Annual Rolling Update
Local Authority Pollution Prevention and Controls North Tyneside Metropolitan Borough Council - Environmental Health Department City of Newcastle upon Tyne Council - Environmental Health Department Sunderland City Metropolitan Borough Council - Environmental Health Department Gateshead Metropolitan Borough Council - Environmental Health Department South Tyneside Metropolitan Borough Council - Environmental Health Department	April 2014 January 2015 May 2016 October 2014 September 2012	Annual Rolling Update Annual Rolling Update Annual Rolling Update Annual Rolling Update Annual Rolling Update
Local Authority Pollution Prevention and Control Enforcements North Tyneside Metropolitan Borough Council - Environmental Health Department City of Newcastle upon Tyne Council - Environmental Health Department Sunderland City Metropolitan Borough Council - Environmental Health Department Gateshead Metropolitan Borough Council - Environmental Health Department South Tyneside Metropolitan Borough Council - Environmental Health Department	April 2014 January 2015 May 2016 October 2014 September 2012	Annual Rolling Update Annual Rolling Update Annual Rolling Update Annual Rolling Update Annual Rolling Update
Nearest Surface Water Feature Ordnance Survey	July 2012	Quarterly
Pollution Incidents to Controlled Waters Environment Agency - North East Region	December 1998	Not Applicable
Prosecutions Relating to Authorised Processes Environment Agency - North East Region	March 2013	As notified
Prosecutions Relating to Controlled Waters Environment Agency - North East Region	March 2013	As notified
Registered Radioactive Substances Scottish Environment Protection Agency - Head Office	January 1998	Not Applicable
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 - North East Region - North East Area Environment Agency - North East Region - Northumbria Area	April 2016 April 2016	Quarterly Quarterly

Agency & Hydrological	Version	Update Cycle
Water Abstractions Environment Agency - North East Region	April 2016	Quarterly
Water Industry Act Referrals Environment Agency - North East Region	April 2016	Quarterly
Groundwater Vulnerability Environment Agency - Head Office	April 2015	Not Applicable
Drift Deposits Environment Agency - Head Office	January 1999	Not Applicable
Bedrock Aquifer Designations British Geological Survey - National Geoscience Information Service	August 2015	As notified
Superficial Aquifer Designations British Geological Survey - National Geoscience Information Service	August 2015	As notified
Source Protection Zones Environment Agency - Head Office	April 2016	Quarterly
Extreme Flooding from Rivers or Sea without Defences Environment Agency - Head Office	February 2016	Quarterly
Flooding from Rivers or Sea without Defences Environment Agency - Head Office	February 2016	Quarterly
Areas Benefiting from Flood Defences Environment Agency - Head Office	February 2016	Quarterly
Flood Water Storage Areas Environment Agency - Head Office	February 2016	Quarterly
Flood Defences Environment Agency - Head Office	February 2016	Quarterly
Detailed River Network Lines Environment Agency - Head Office	March 2012	Annually
Detailed River Network Offline Drainage Environment Agency - Head Office	March 2012	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	May 2016	Quarterly
Integrated Pollution Control Registered Waste Sites Environment Agency - North East Region	October 2008	Not Applicable
Licensed Waste Management Facilities (Landfill Boundaries) Environment Agency - North East Region - North East Area Environment Agency - North East Region - Northumbria Area	May 2016 May 2016	Quarterly Quarterly
Licensed Waste Management Facilities (Locations) Environment Agency - North East Region - North East Area Environment Agency - North East Region - Northumbria Area	April 2016 April 2016	Quarterly Quarterly
Local Authority Landfill Coverage City of Newcastle upon Tyne Council - Environmental Health Department Gateshead Metropolitan Borough Council - Development Control North Tyneside Metropolitan Borough Council - Environmental Health Department South Tyneside Metropolitan Borough Council - Planning Department Sunderland City Metropolitan Borough Council - Environmental Health Department	May 2000 May 2000 May 2000 May 2000 May 2000	Not Applicable Not Applicable Not Applicable Not Applicable Not Applicable
Local Authority Recorded Landfill Sites City of Newcastle upon Tyne Council - Environmental Health Department Gateshead Metropolitan Borough Council - Development Control North Tyneside Metropolitan Borough Council - Environmental Health Department South Tyneside Metropolitan Borough Council - Planning Department Sunderland City Metropolitan Borough Council - Environmental Health Department	May 2000 May 2000 May 2000 May 2000 May 2000	Not Applicable Not Applicable Not Applicable Not Applicable Not Applicable
Registered Landfill Sites Environment Agency - North East Region - Northumbria Area	March 2003	Not Applicable
Registered Waste Transfer Sites Environment Agency - North East Region - Northumbria Area	March 2003	Not Applicable
Registered Waste Treatment or Disposal Sites Environment Agency - North East Region - Northumbria Area	March 2003	Not Applicable
Hazardous Substances	Version	Update Cycle
Control of Major Accident Hazards Sites (COMAH) Health and Safety Executive	February 2016	Bi-Annually
Explosive Sites Health and Safety Executive	February 2016	Bi-Annually
Notification of Installations Handling Hazardous Substances (NIHHS) Health and Safety Executive	November 2000	Not Applicable
Planning Hazardous Substance Enforcements City of Newcastle upon Tyne Council Gateshead Metropolitan Borough Council - Development Control North Tyneside Metropolitan Borough Council - Development Function South Tyneside Metropolitan Borough Council - Planning Department Sunderland City Metropolitan Borough Council - Planning	February 2016 February 2016 February 2016 February 2016 February 2016	Annual Rolling Update Annual Rolling Update Annual Rolling Update Annual Rolling Update Annual Rolling Update
Planning Hazardous Substance Consents City of Newcastle upon Tyne Council Gateshead Metropolitan Borough Council - Development Control North Tyneside Metropolitan Borough Council - Development Function South Tyneside Metropolitan Borough Council - Planning Department Sunderland City Metropolitan Borough Council - Planning	February 2016 February 2016 February 2016 February 2016 February 2016	Annual Rolling Update Annual Rolling Update Annual Rolling Update Annual Rolling Update Annual Rolling Update

Geological	Version	Update Cycle
BGS 1:625,000 Solid Geology British Geological Survey - National Geoscience Information Service	January 2009	Not Applicable
BGS Recorded Mineral Sites British Geological Survey - National Geoscience Information Service	May 2016	Bi-Annually
Brine Compensation Area Cheshire Brine Subsidence Compensation Board	August 2011	Not Applicable
Coal Mining Affected Areas The Coal Authority - Property Searches	March 2014	As notified
Mining Instability Ove Arup & Partners	October 2000	Not Applicable
Non Coal Mining Areas of Great Britain British Geological Survey - National Geoscience Information Service	May 2015	Not Applicable
Potential for Collapsible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	Annually
Potential for Compressible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	Annually
Potential for Ground Dissolution Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	Annually
Potential for Landslide Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	Annually
Potential for Running Sand Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	Annually
Potential for Shrinking or Swelling Clay Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	Annually
Radon Potential - Radon Affected Areas British Geological Survey - National Geoscience Information Service	July 2011	As notified
Radon Potential - Radon Protection Measures British Geological Survey - National Geoscience Information Service	July 2011	As notified
Industrial Land Use	Version	Update Cycle
Contemporary Trade Directory Entries Thomson Directories	June 2016	Quarterly
Fuel Station Entries Catalist Ltd - Experian	June 2016	Quarterly
Gas Pipelines National Grid	July 2014	Quarterly
Underground Electrical Cables National Grid	January 2016	Bi-Annually

Sensitive Land Use	Version	Update Cycle
Ancient Woodland Natural England	June 2015	Bi-Annually
Areas of Adopted Green Belt City of Newcastle upon Tyne Council Gateshead Metropolitan Borough Council - Development Control North Tyneside Metropolitan Borough Council South Tyneside Metropolitan Borough Council - Planning Department Sunderland City Metropolitan Borough Council - Planning	May 2016 May 2016 May 2016 May 2016 May 2016	As notified As notified As notified As notified As notified
Areas of Unadopted Green Belt City of Newcastle upon Tyne Council Gateshead Metropolitan Borough Council - Development Control North Tyneside Metropolitan Borough Council South Tyneside Metropolitan Borough Council - Planning Department Sunderland City Metropolitan Borough Council - Planning	November 2015 November 2015 November 2015 November 2015 November 2015	As notified As notified As notified As notified As notified
Areas of Outstanding Natural Beauty Natural England	April 2016	Bi-Annually
Environmentally Sensitive Areas Natural England	April 2016	Annually
Forest Parks Forestry Commission	April 1997	Not Applicable
Local Nature Reserves Natural England	April 2016	Bi-Annually
Marine Nature Reserves Natural England	April 2016	Bi-Annually
National Nature Reserves Natural England	April 2016	Bi-Annually
National Parks Natural England	March 2016	Bi-Annually
Nitrate Sensitive Areas Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	April 2016	Not Applicable
Nitrate Vulnerable Zones Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	October 2015	Annually
Ramsar Sites Natural England	April 2016	Bi-Annually
Sites of Special Scientific Interest Natural England	April 2016	Bi-Annually
Special Areas of Conservation Natural England	April 2016	Bi-Annually
Special Protection Areas Natural England	April 2016	Bi-Annually
World Heritage Sites English Heritage - National Monument Record Centre	September 2015	Bi-Annually

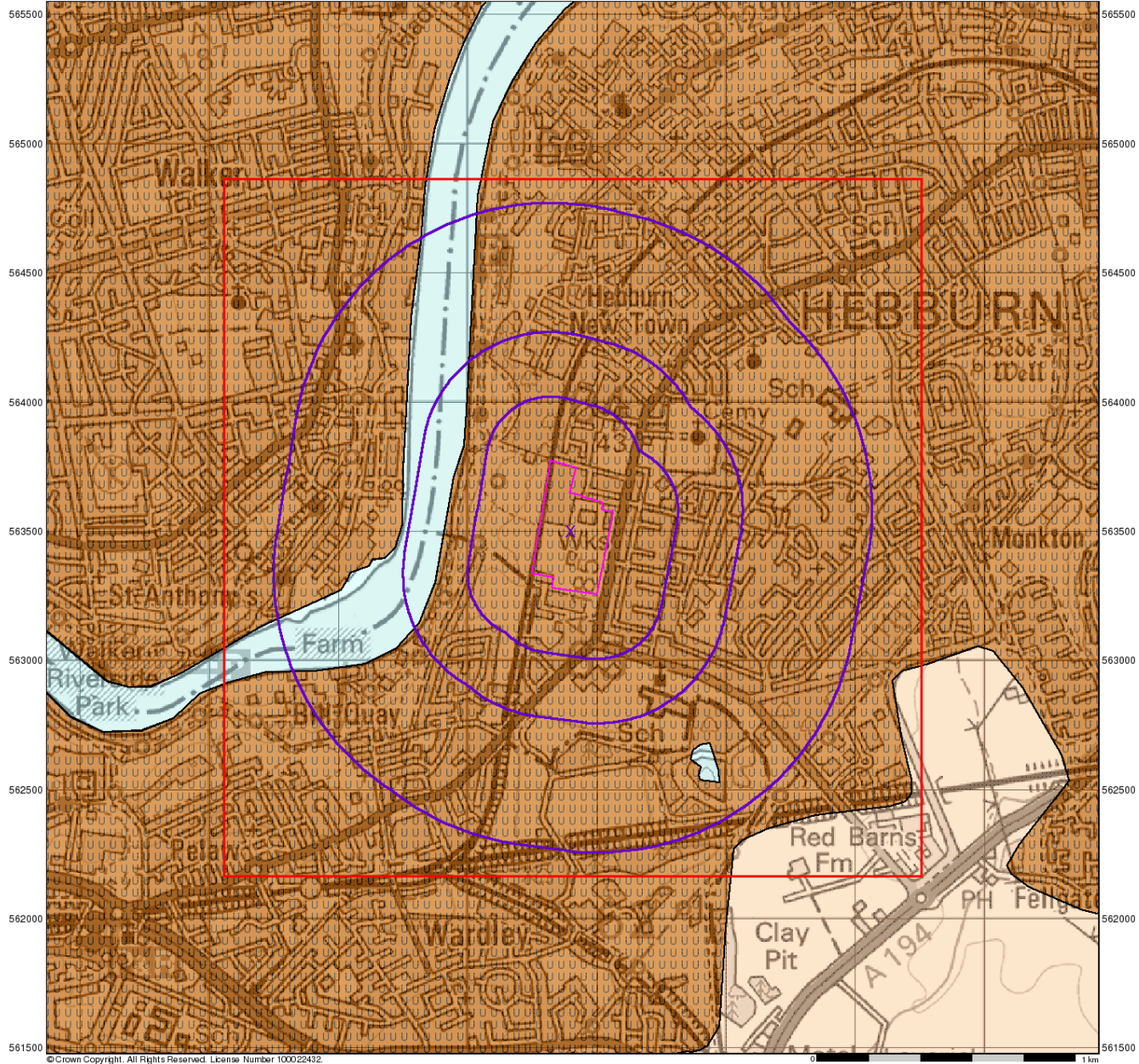
A selection of organisations who provide data within this report

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

Contact	Name and Address	Contact Details
1	British Geological Survey - Enquiry Service British Geological Survey, Kingsley Dunham Centre, Keyworth, Nottingham, Nottinghamshire, NG12 5GG	Telephone: 0115 936 3143 Fax: 0115 936 3276 Email: enquiries@bgs.ac.uk Website: www.bgs.ac.uk
2	Environment Agency - National Customer Contact Centre (NCCC) PO Box 544, Templeborough, Rotherham, S60 1BY	Telephone: 03708 506 506 Email: enquiries@environment-agency.gov.uk
3	South Tyneside Metropolitan Borough Council - Environmental Health Department Central Library Building, Prince George Square, South Shields, Tyne And Wear, NE33 2PE	Telephone: 0191 427 1717 Fax: 0191 427 7171 Website: www.s-tyneside-mbc.gov.uk
4	City of Newcastle upon Tyne Council - Environmental Health Department Civic Centre, Barras Bridge, Newcastle-upon-tyne, Tyne And Wear, NE1 8PB	Telephone: 0191 232 8520 Fax: 0191 211 4962 Email: phep@newcastle.gov.uk Website: www.newcastle.gov.uk
5	Scottish Environment Protection Agency - Head Office Erskine Court, The Castle Business Park, Stirling, Stirlingshire, FK9 4TR	Telephone: 01786 457700 Fax: 01786 446885
6	South Tyneside Metropolitan Borough Council - Planning Department Town Hall & Civic Offices, Westoe Road, South Shields, Tyne & Wear, NE33 2RL	Telephone: 0191 427 1717 Fax: 0191 427 7171 Website: www.s-tyneside-mbc.gov.uk
7	Gateshead Metropolitan Borough Council - Development Control Civic Centre, Regent Street, Gateshead, Tyne & Wear, NE8 1HH	Telephone: 0191 477 1011 Fax: 0191 478 3495 Website: www.gateshead.gov.uk
8	The Coal Authority - Property Searches 200 Lichfield Lane, Mansfield, Nottinghamshire, NG18 4RG	Telephone: 0345 762 6848 Fax: 01623 637 338 Email: groundstability@coal.gov.uk
9	Natural England County Hall, Spetchley Road, Worcester, WR5 2NP	Telephone: 0300 060 3900 Email: enquiries@naturalengland.org.uk Website: www.naturalengland.org.uk
10	English Heritage - National Monument Record Centre Kemble Drive, Swindon, Wiltshire, SN2 2GZ	Telephone: 01793 414600 Fax: 01793 414606 Email: nmrinfo@english-heritage.org.uk Website: www.english-heritage.org.uk
-	Public Health England - Radon Survey, Centre for Radiation, Chemical and Environmental Hazards Chilton, Didcot, Oxfordshire, OX11 0RQ	Telephone: 01235 822622 Fax: 01235 833891 Email: radon@phe.gov.uk Website: www.ukradon.org
-	Landmark Information Group Limited Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	Telephone: 0844 844 9952 Fax: 0844 844 9951 Email: customerservices@landmarkinfo.co.uk Website: www.landmarkinfo.co.uk

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

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0 1 km



Groundwater Vulnerability

General

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

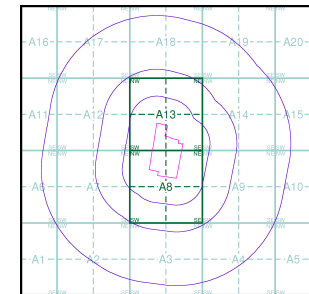
Agency and Hydrological

Geological Classes

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

Soil Classes

Site Sensitivity Context Map - Slice A



Order Details

Order Number: 90505614_1_1
 Customer Ref: C7074/Former Siemens Factory, Hebburn/CR
 National Grid Reference: 430400, 563500
 Slice: A
 Site Area (Ha): 10.3
 Search Buffer (m): 1000

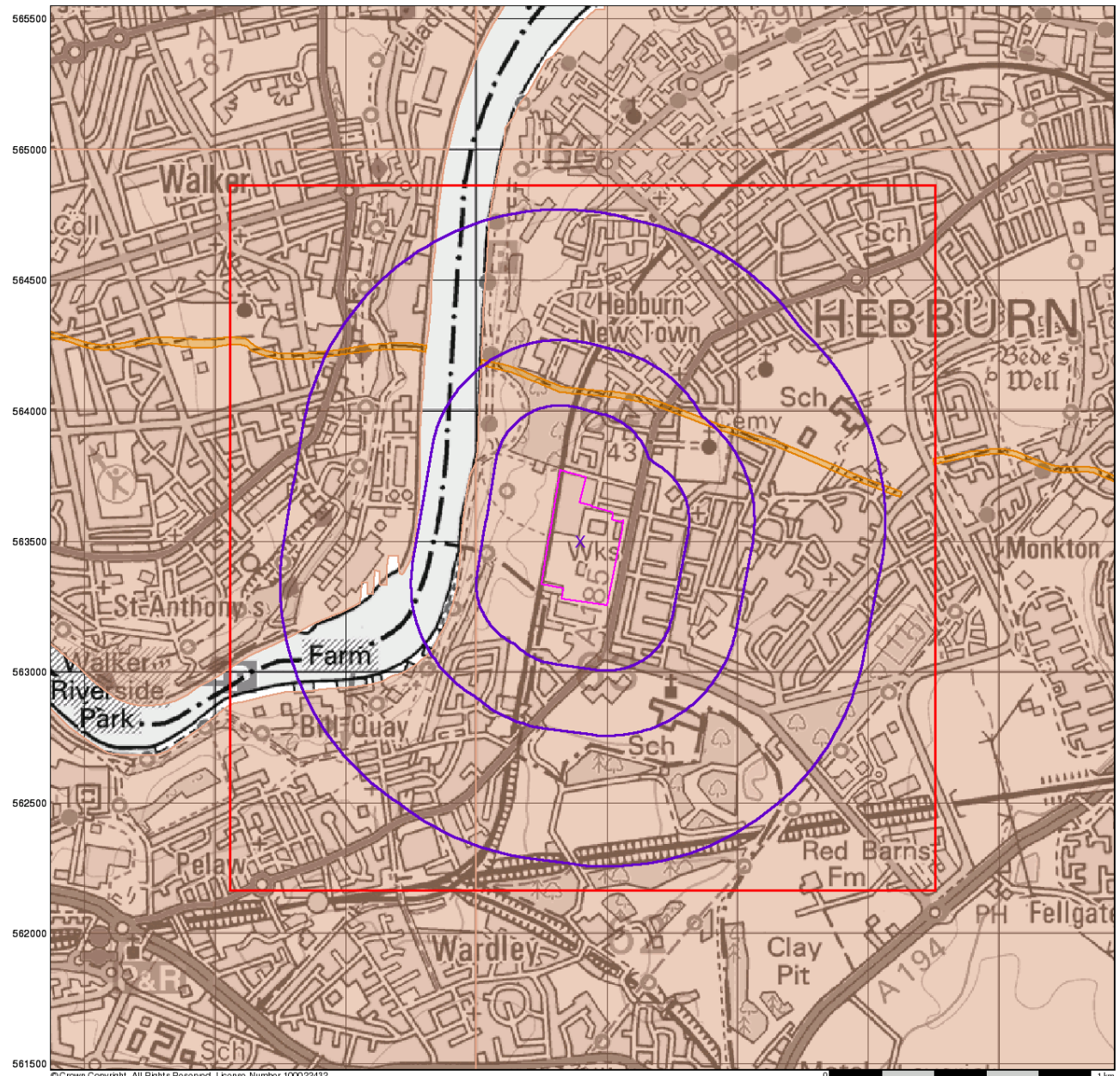
Site Details

Siemens, North Farm Road, HEBBURN, Tyne and Wear, NE31 1LX



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Bedrock Aquifer Designation

General

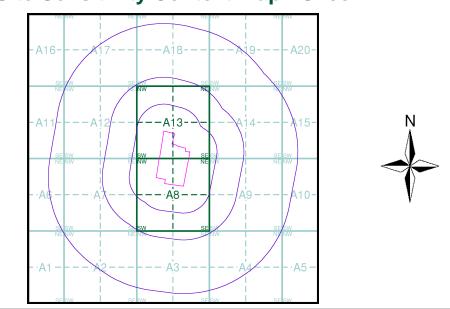
- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice
- Map ID

Agency and Hydrological

Geological Classes

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

Site Sensitivity Context Map - Slice A



Order Details

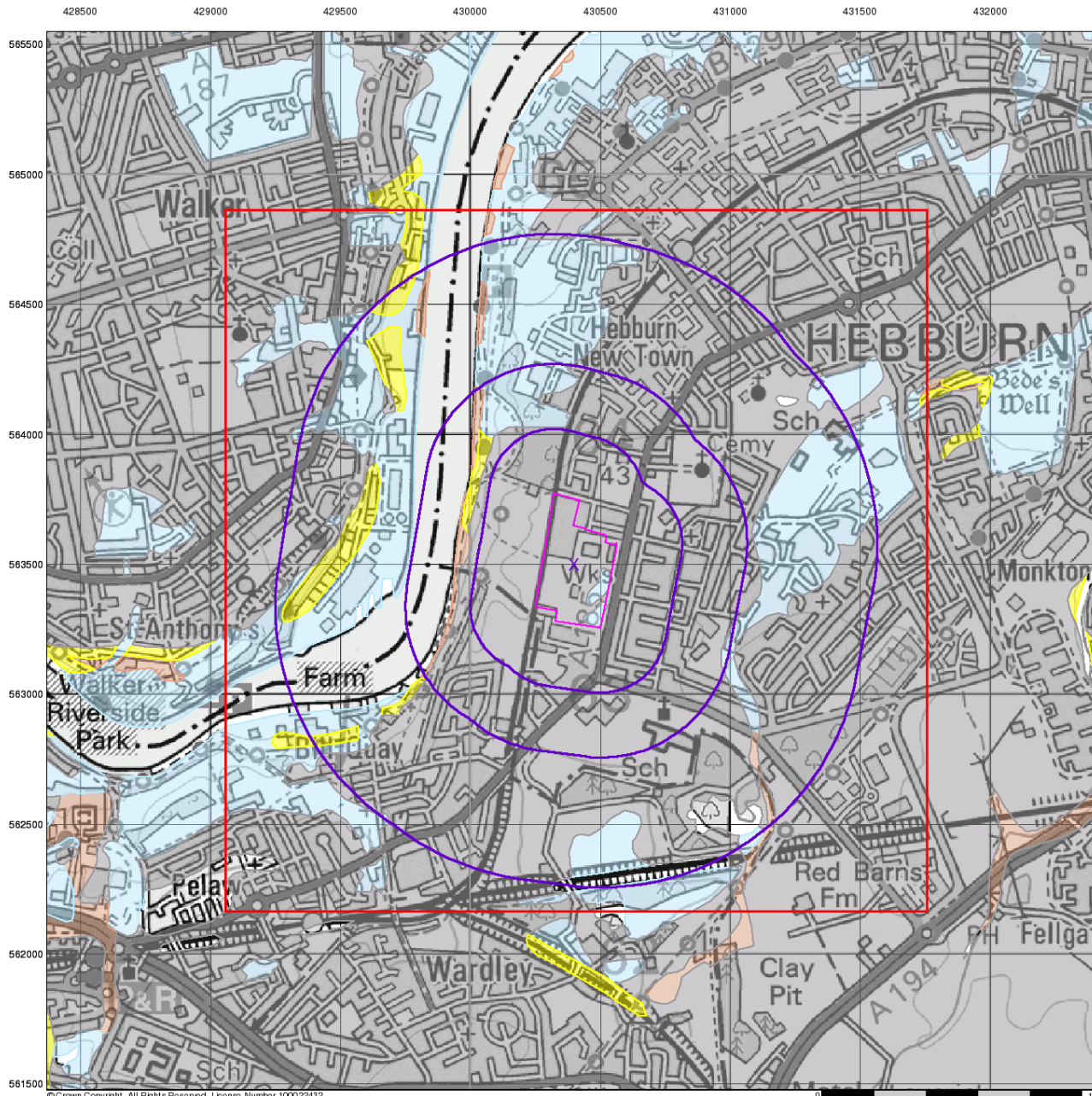
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 National Grid Reference: 430400, 563500
 Slice: A
 Site Area (Ha): 10.3
 Search Buffer (m): 1000

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Superficial Aquifer Designation

General

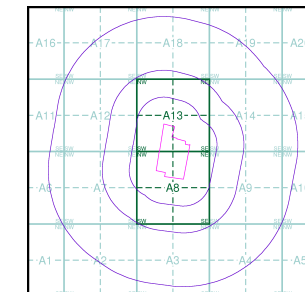
- ▭ Specified Site
- Specified Buffer(s)
- ✕ Bearing Reference Point
- ▭ Slice
- B Map ID

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

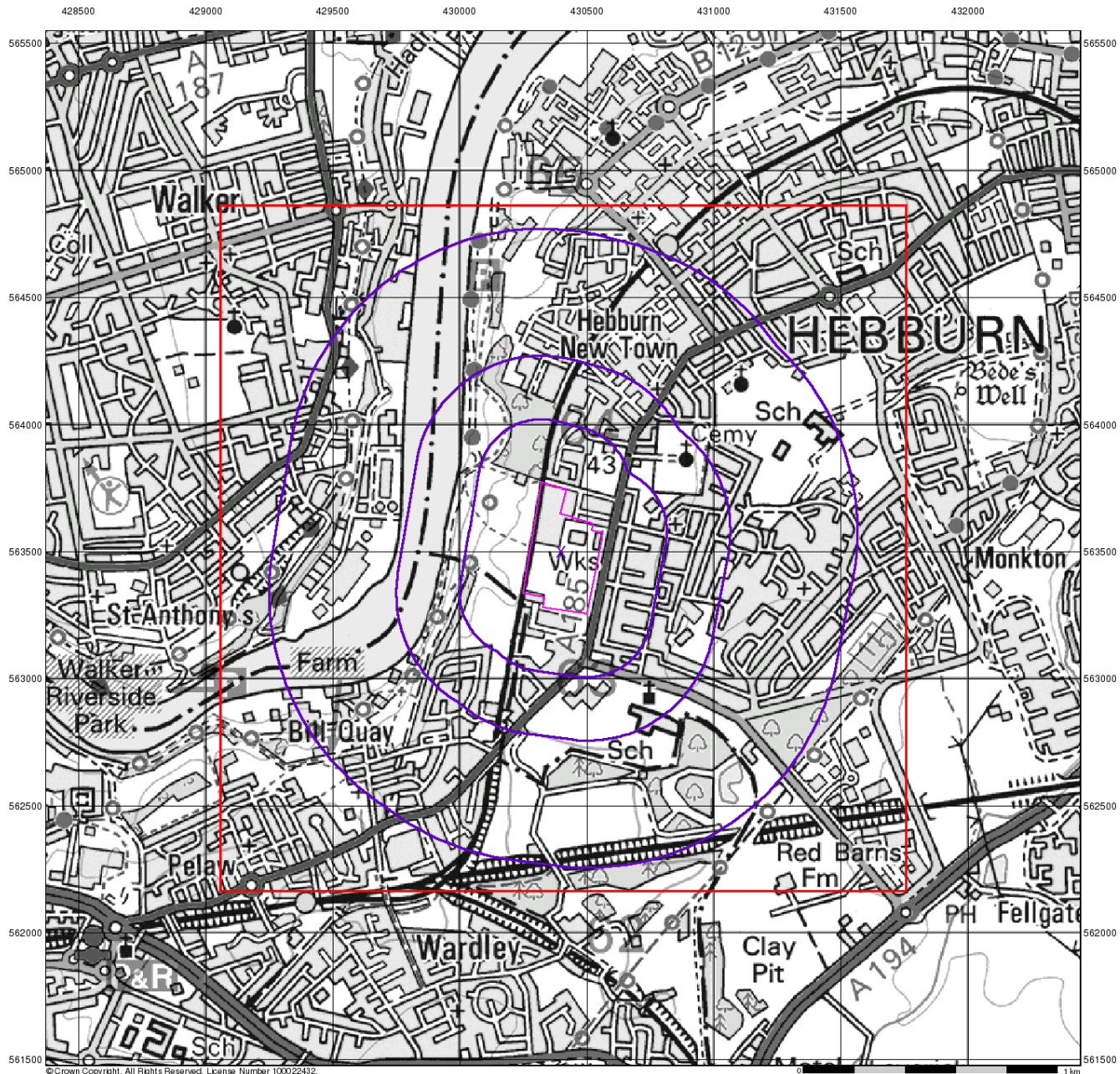
Order Number:	90505614_1_1
Customer Ref:	C7074/Former Siemens Factory, Hebburn/CR
National Grid Reference:	430400, 563500
Slice:	A
Site Area (Ha):	10.3
Search Buffer (m):	1000

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Source Protection Zones

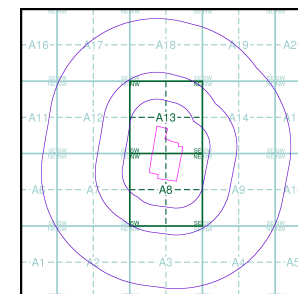
General

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

Agency and Hydrological

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

Site Sensitivity Context Map - Slice A



Order Details

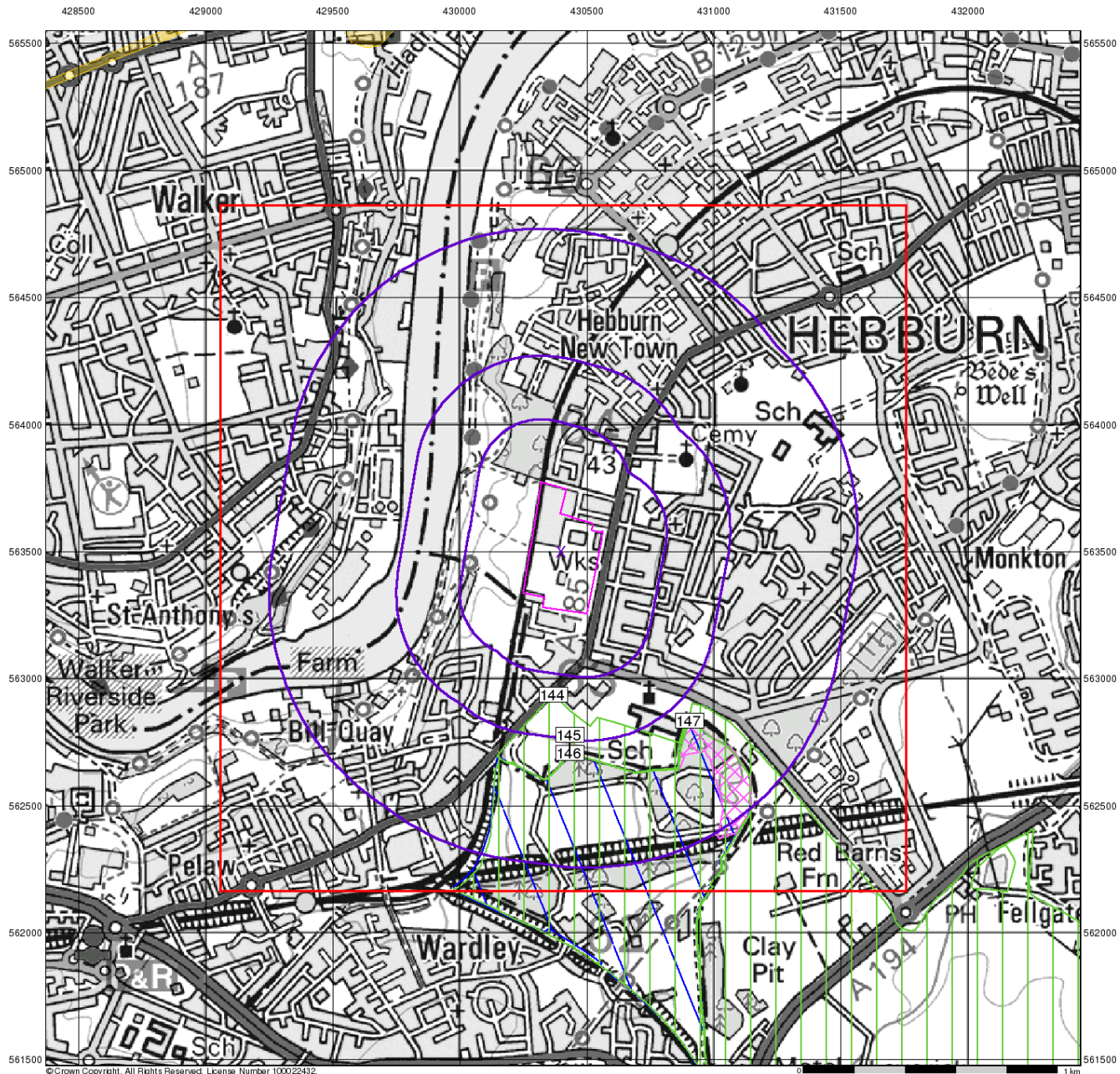
Order Number:	90505614_1_1
Customer Ref:	C7074/Former Siemens Factory, Hebburn/CR
National Grid Reference:	430400, 563500
Slice:	A
Site Area (Ha):	10.3
Search Buffer (m):	1000

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Sensitive Land Uses

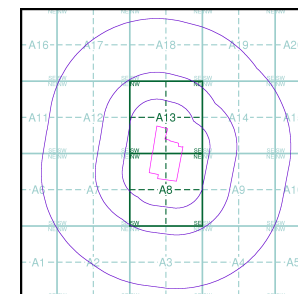
General

- 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

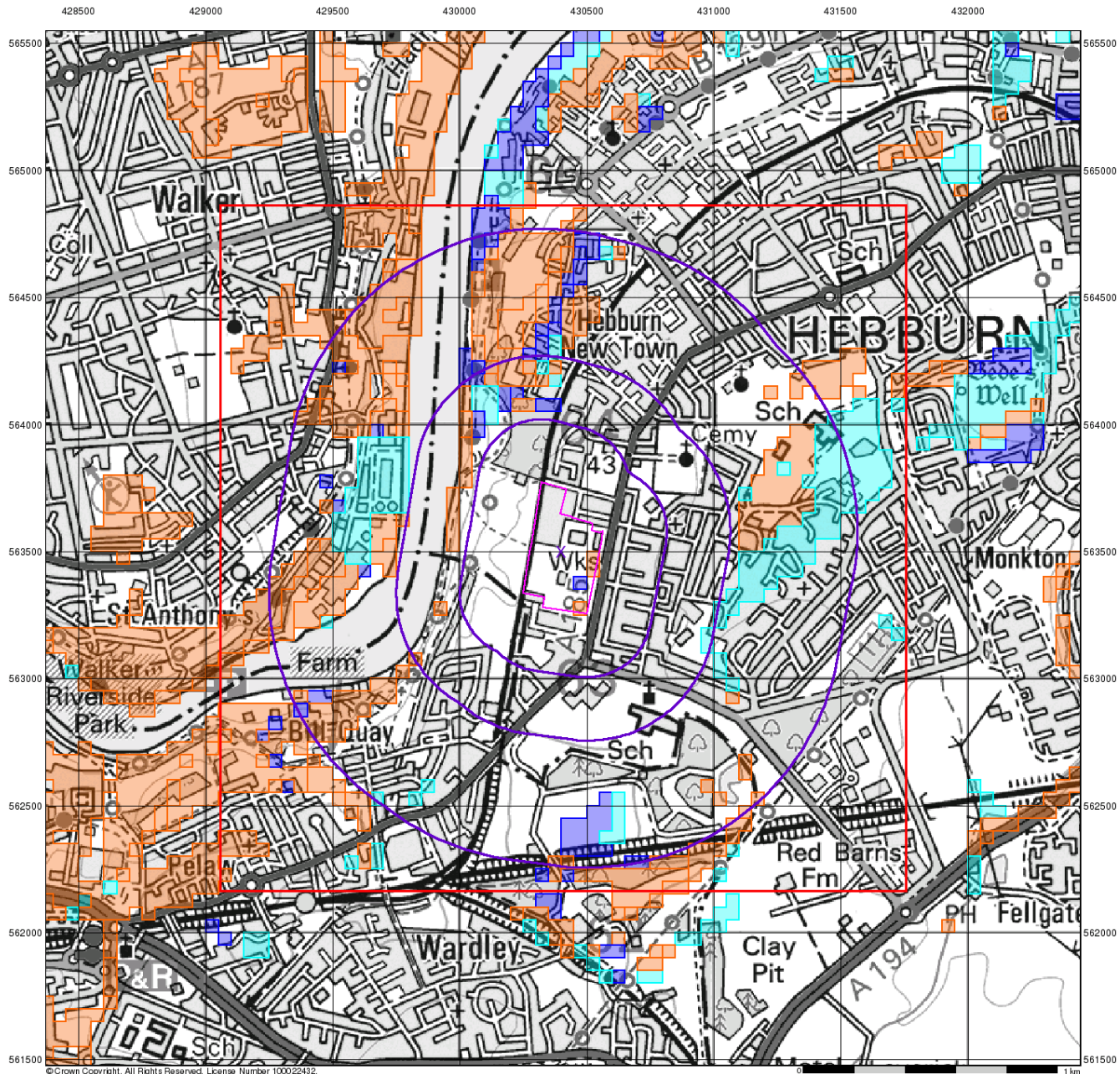
Order Number: 90505614_1_1
 Customer Ref: C7074/Former Siemens Factory, Hebburn/CR
 National Grid Reference: 430400, 563500
 Slice: A
 Site Area (Ha): 10.3
 Search Buffer (m): 1000

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BGS Flood GFS Data

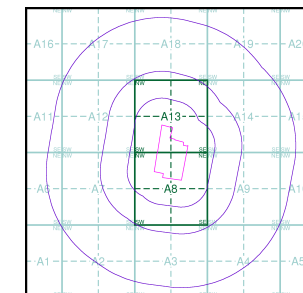
General

- 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: 90505614_1_1
 Customer Ref: C7074/Former Siemens Factory, Hebburn/CR
 National Grid Reference: 430400, 563500
 Slice: A
 Site Area (Ha): 10.3
 Search Buffer (m): 1000

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Geology 1:50,000 Maps Legends








Artificial Ground and Landslip

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	MGR	Made Ground (Undivided)	Artificial Deposit	Holocene - Holocene

Superficial Geology

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	SUPNM	Superficial Theme Not Mapped [For Digital Map Use Only]	Unknown/Unclassified Entry	Not Supplied - Not Supplied
	ALV	Alluvium	Clay, Silt, Sand and Gravel	Flandrian - Flandrian
	PELC	Pelaw Clay Member	Clay	Devensian - Devensian
	GLLDD	Glaciolacustrine Deposits, Devensian	Clay and Silt	Devensian - Devensian
	TILLD	Till, Devensian	Diamicton	Devensian - Devensian
	GFDUD	Glaciofluvial Deposits, Devensian	Sand and Gravel	Devensian - Devensian

Bedrock and Faults

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	HBDY	Hebburn Dyke	Microgabbro	Palaeogene - Palaeogene
	GNP	Grindstone Post Member	Sandstone	Bolsovian - Bolsovian
	PMCM	Pennine Middle Coal Measures Formation	Mudstone, Siltstone and Sandstone	Bolsovian - Duckmantian
	PMCM	Pennine Middle Coal Measures Formation	Sandstone	Bolsovian - Duckmantian
	SFP	Seventy Fathom Post Member	Sandstone	Duckmantian - Duckmantian
		Rock Segments		
		Faults		



Geology 1:50,000 Maps

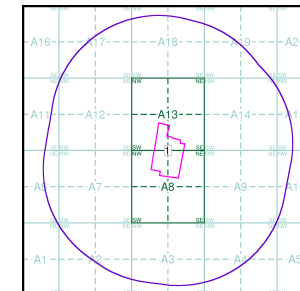
This report contains geological map extracts taken from the BGS Digital Geological map of Great Britain at 1:50,000 scale and is designed for users carrying out preliminary site assessments who require geological maps for the area around the site. This mapping may be more up to date than previously published paper maps.

The various geological layers - artificial and landslip deposits, superficial geology and solid (bedrock) geology are displayed in separate maps, but superimposed on the final 'Combined Surface Geology' map. All map legends feature on this page. Not all layers have complete nationwide coverage, so availability of data for relevant map sheets is indicated below.

Geology 1:50,000 Maps Coverage

Map ID:	1
Map Sheet No:	021
Map Name:	Sunderland
Map Date:	1978
Bedrock Geology:	Available
Superficial Geology:	Available
Artificial Geology:	Available
Faults:	Not Supplied
Landslip:	Available
Rock Segments:	Not Supplied

Geology 1:50,000 Maps - Slice A



Order Details:

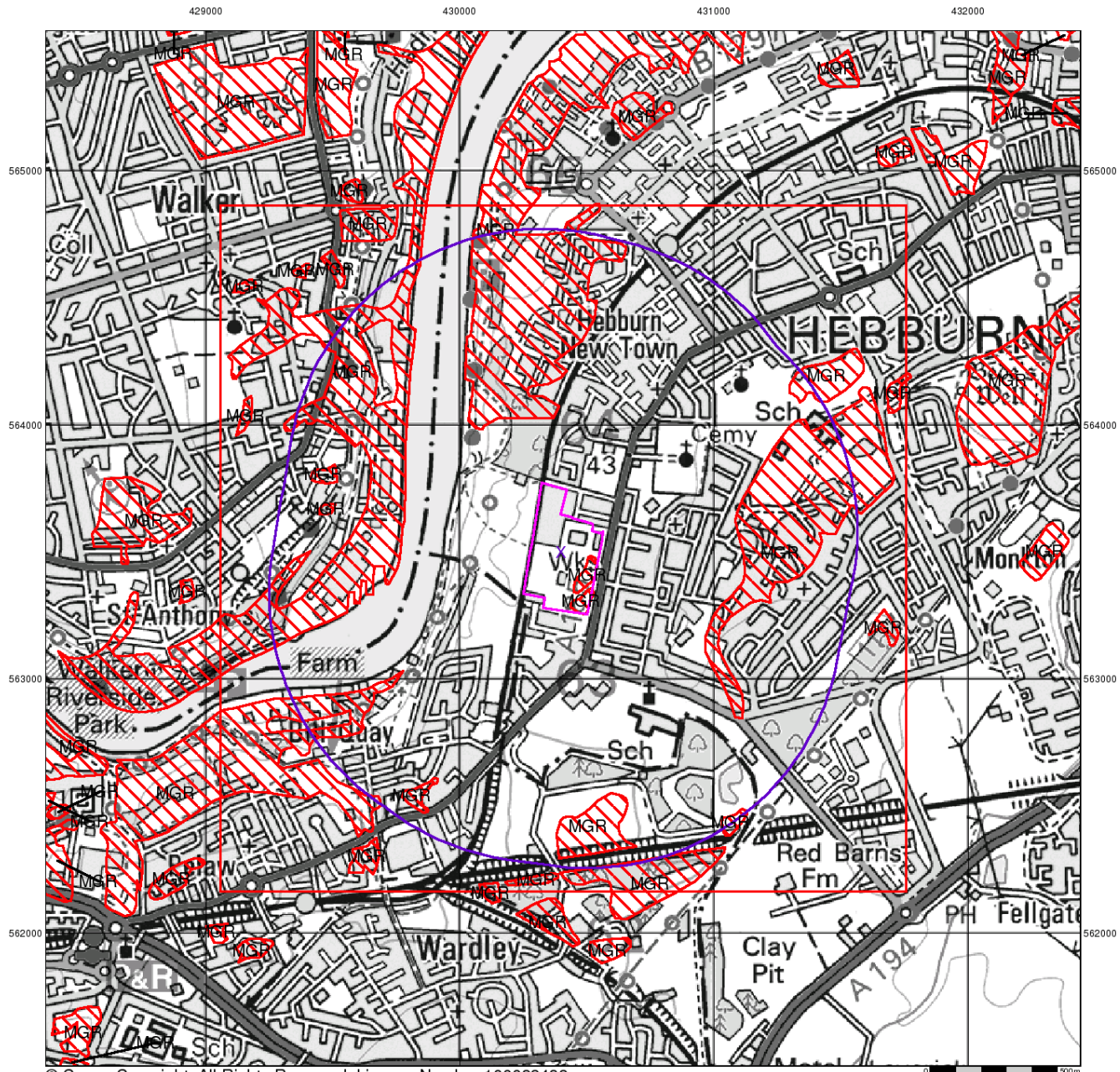
Order Number:	90505614_1_1
Customer Reference:	C7074/Former Siemens Factory, Hebburn/CR
National Grid Reference:	430400, 563500
Slice:	A
Site Area (Ha):	10.3
Search Buffer (m):	1000

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Artificial Ground and Landslip

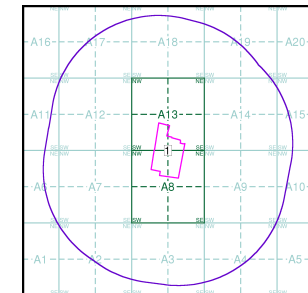
Artificial ground is a term used by BGS for those areas where the ground surface has been significantly modified by human activity. Information about previously developed ground is especially important, as it is often associated with potentially contaminated material, unpredictable engineering conditions and unstable ground.

Artificial ground includes:

- Made ground - man-made deposits such as embankments and spoil heaps on the natural ground surface.
- Worked ground - areas where the ground has been cut away such as quarries and road cuttings.
- Infilled ground - areas where the ground has been cut away then wholly or partially backfilled.
- Landscaped ground - areas where the surface has been reshaped.
- Disturbed ground - areas of ill-defined shallow or near surface mineral workings where it is impracticable to map made and worked ground separately.

Mass movement (landslip) deposits on BGS geological maps are primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground. The dataset also includes foundered strata, where the ground has collapsed due to subsidence.

Artificial Ground and Landslip Map - Slice A



Order Details:

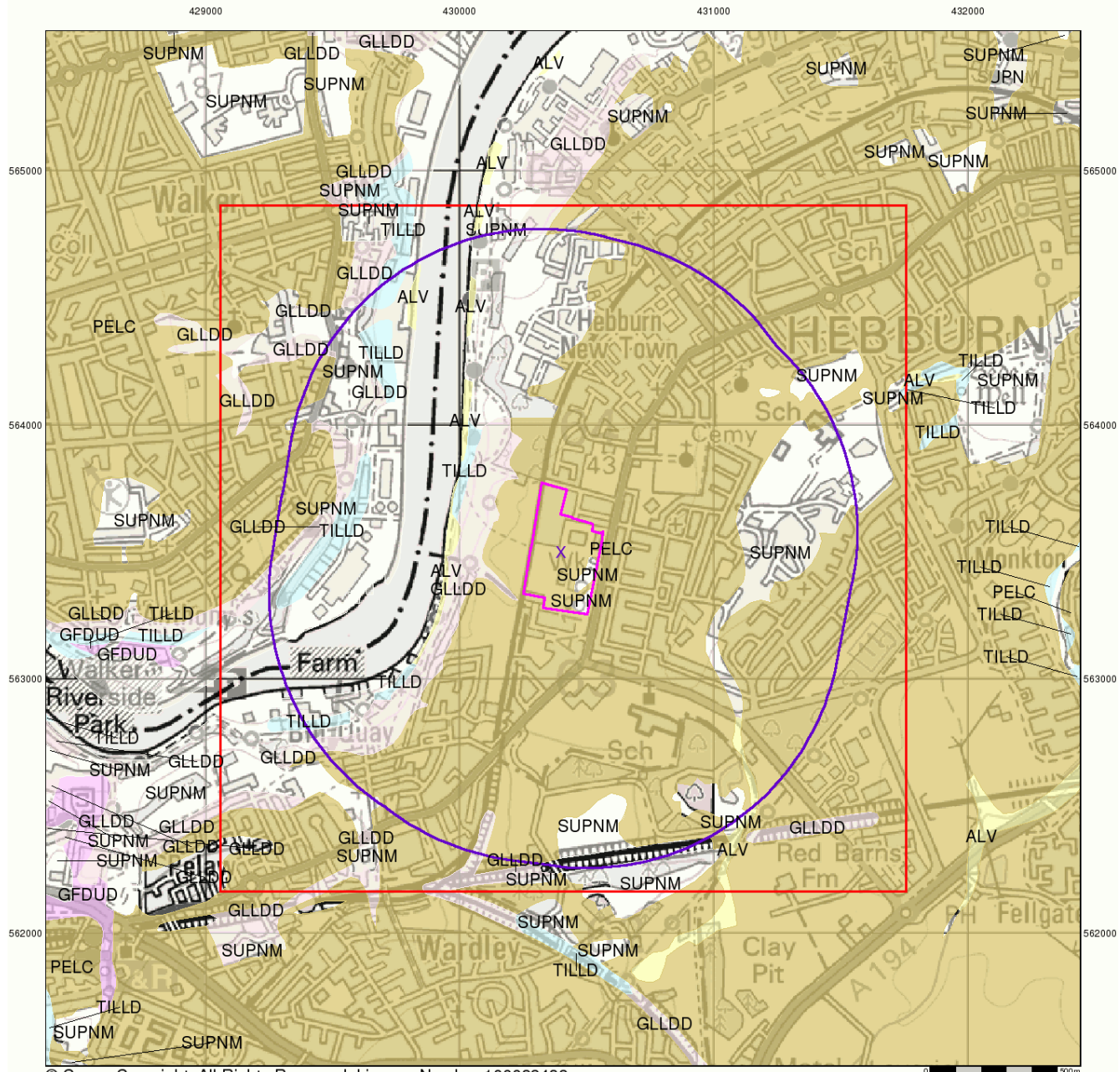
Order Number: 90505614_1.1
 Customer Reference: C7074/Former Siemens Factory, Hebburn/CR
 National Grid Reference: 430400, 563500
 Slice: A
 Site Area (Ha): 10.3
 Search Buffer (m): 1000

Site Details:

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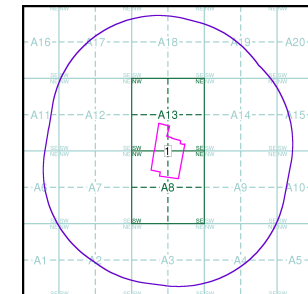
Superficial Geology

Superficial Deposits are the youngest geological deposits formed during the most recent period of geological time, the Quaternary, which extends back about 1.8 million years from the present.

They rest on older deposits or rocks referred to as Bedrock. This dataset contains Superficial deposits that are of natural origin and 'in place'. Other superficial strata may be held in the Mass Movement dataset where they have been moved, or in the Artificial Ground dataset where they are of man-made origin.

Most of these Superficial deposits are unconsolidated sediments such as gravel, sand, silt and clay, and onshore they form relatively thin, often discontinuous patches or larger spreads.

Superficial Geology Map - Slice A



Order Details:

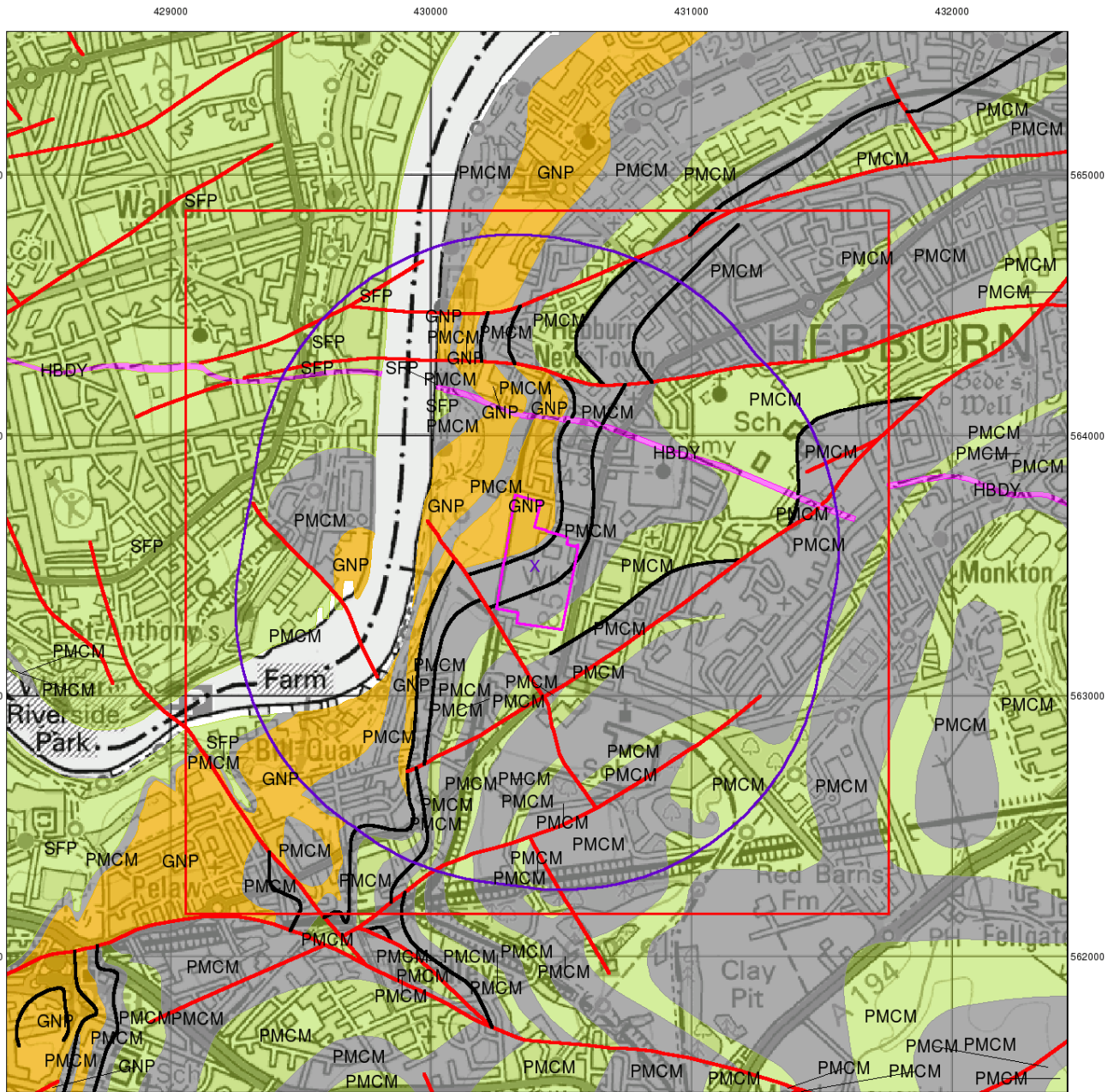
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 Customer Reference: C7074/Former Siemens Factory, Hebburn/CR
 National Grid Reference: 430400, 563500
 Slice: A
 Site Area (Ha): 10.3
 Search Buffer (m): 1000

Site Details:

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Bedrock and Faults

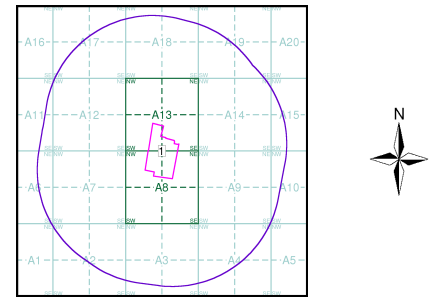
Bedrock geology is a term used for the main mass of rocks forming the Earth and are present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

The bedrock has formed over vast lengths of geological time ranging from ancient and highly altered rocks of the Proterozoic, some 2500 million years ago, or older, up to the relatively young Pliocene, 1.8 million years ago.

The bedrock geology includes many lithologies, often classified into three types based on origin: igneous, metamorphic and sedimentary.

The BGS Faults and Rock Segments dataset includes geological faults (e.g. normal, thrust), and thin beds mapped as lines (e.g. coal seam, gypsum bed). Some of these are linked to other particular 1:50,000 Geology datasets, for example, coal seams are part of the bedrock sequence, most faults and mineral veins primarily affect the bedrock but cut across the strata and post date its deposition.

Bedrock and Faults Map - Slice A



Order Details:

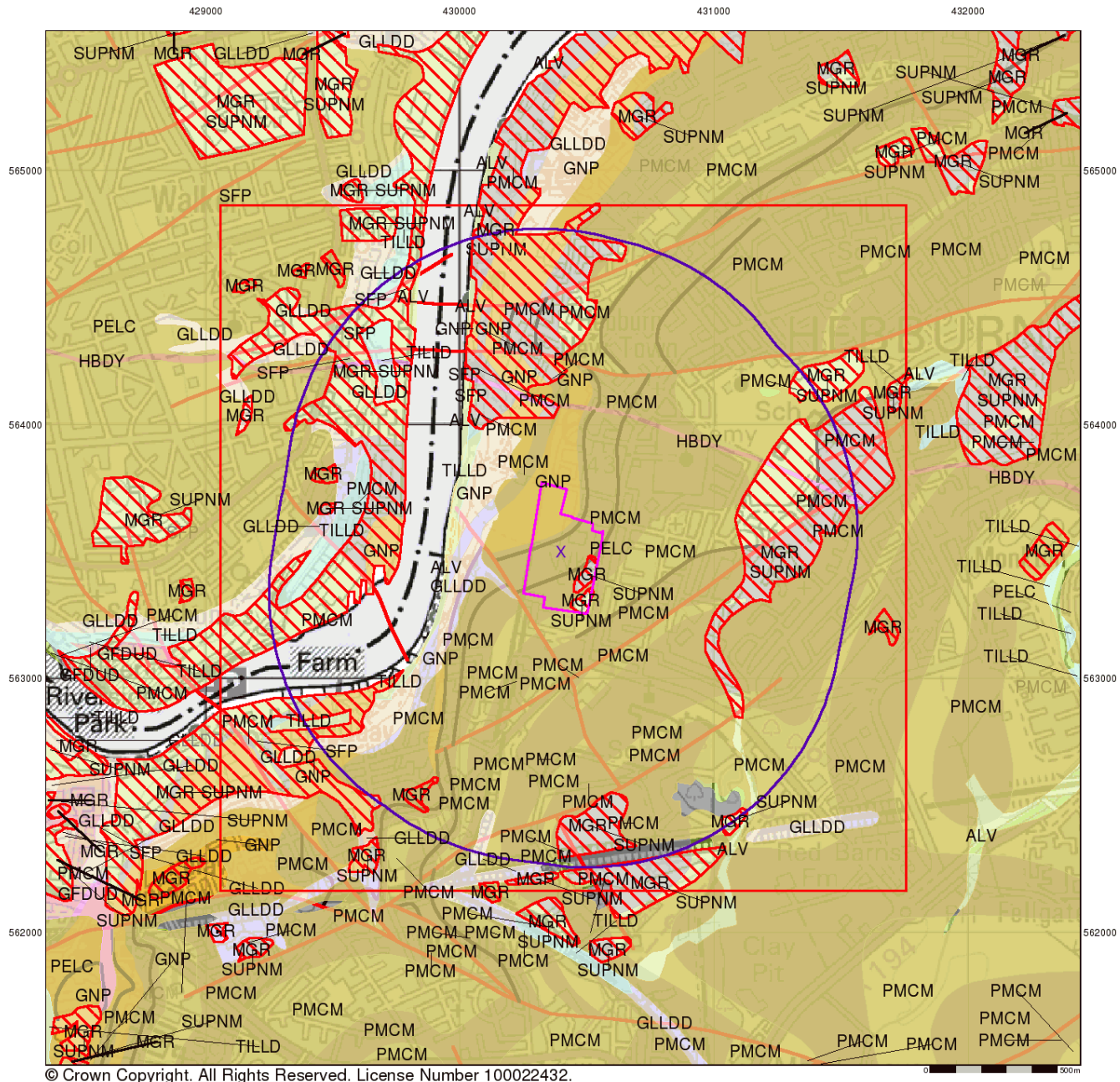
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 Customer Reference: C7074/Former Siemens Factory, Hebburn/CR
 National Grid Reference: 430400, 563500
 Slice: A
 Site Area (Ha): 10.3
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Combined Surface Geology

The Combined Surface Geology map combines all the previous maps into one combined geological overview of your site.

Please consult the legends to the previous maps to interpret the Combined "Surface Geology" map.

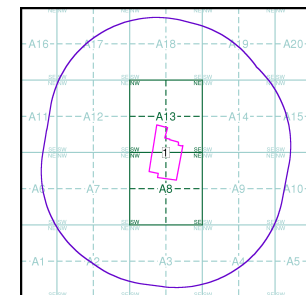
Additional Information

More information on 1:50,000 Geological mapping and explanations of rock classifications can be found on the BGS website. Using the LEX Codes in this report, further descriptions of rock types can be obtained by interrogating the 'BGS Lexicon of Named Rock Units'. This database can be accessed by following the 'Information and Data' link on the BGS website.

Contact

British Geological Survey
 Kingsley Dunham Centre
 Keyworth
 Nottingham
 NG12 5GG
 Telephone: 0115 936 3143
 Fax: 0115 936 3276
 email: enquiries@bgs.ac.uk
 website: www.bgs.ac.uk

Combined Geology Map - Slice A



Order Details:

Order Number: 90505614_1.1
 Customer Reference: C7074/Former Siemens Factory, Hebburn/CR
 National Grid Reference: 430400, 563500
 Slice: A
 Site Area (Ha): 10.3
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Site Details:

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Historical Mapping Legends

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

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

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

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

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

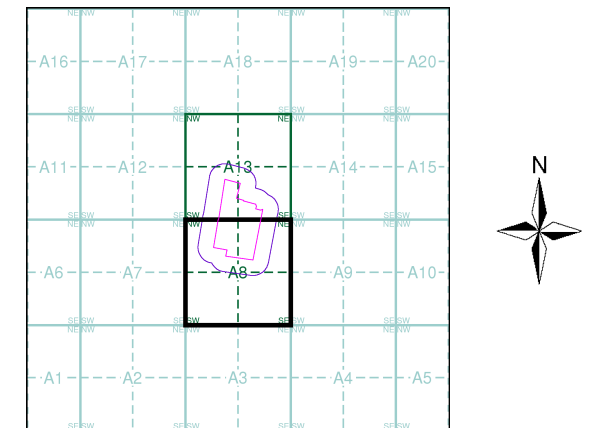
Cliff **Slopes** **Top**
Rock **Rock (scattered)**
Boulders **Boulders (scattered)**
Positioned Boulder **Scree**
Non-Coniferous Tree (surveyed) **Coniferous Tree (surveyed)**
Non-Coniferous Trees (not surveyed) **Coniferous Trees (not surveyed)**
Orchard Tree **Scrub** **Bracken**
Coppice, Osier **Reeds**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



Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Durham	1:2,500	1857 - 1873	2
Northumberland	1:2,500	1859	3
Northumberland	1:2,500	1861 - 1887	4
Durham	1:2,500	1897	5
Durham	1:2,500	1916	6
Durham	1:2,500	1941	7
Ordnance Survey Plan	1:1,250	1956 - 1957	8
Ordnance Survey Plan	1:2,500	1957	9
Ordnance Survey Plan	1:1,250	1962 - 1983	10
Ordnance Survey Plan	1:2,500	1967 - 1968	11
Ordnance Survey Plan	1:1,250	1971 - 1986	12
Additional SIMs	1:1,250	1979 - 1991	13
Additional SIMs	1:1,250	1986	14
Large-Scale National Grid Data	1:1,250	1993	15
Large-Scale National Grid Data	1:1,250	1994	16

Historical Map - Segment A8



Order Details

Order Number: 90505614_1_1
 Customer Ref: C7074/Former Siemens Factory, Hebburn/CR
 National Grid Reference: 430400, 563500
 Slice: A
 Site Area (Ha): 10.3
 Search Buffer (m): 100

Site Details

Siemens, North Farm Road, HEBBURN, Tyne and Wear, NE31 1LX



Tel: 0844 844 9952
 Fax: 0844 844 9951
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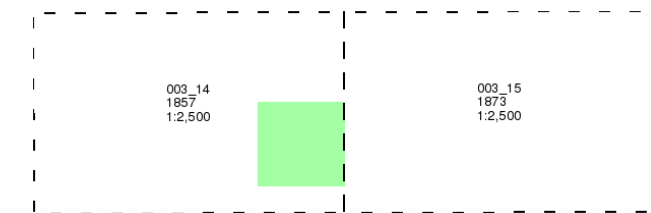
Durham

Published 1857 - 1873

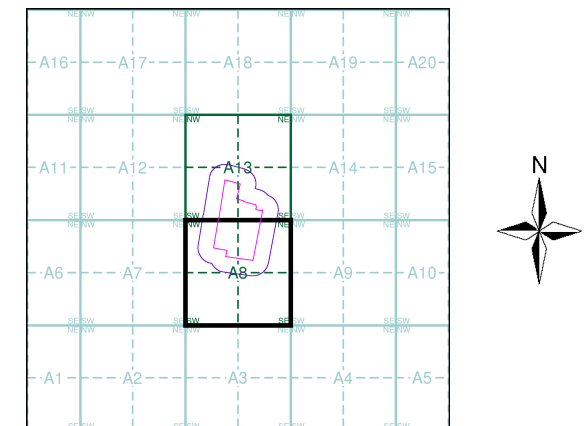
Source map scale - 1:2,500

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 A8



Order Details

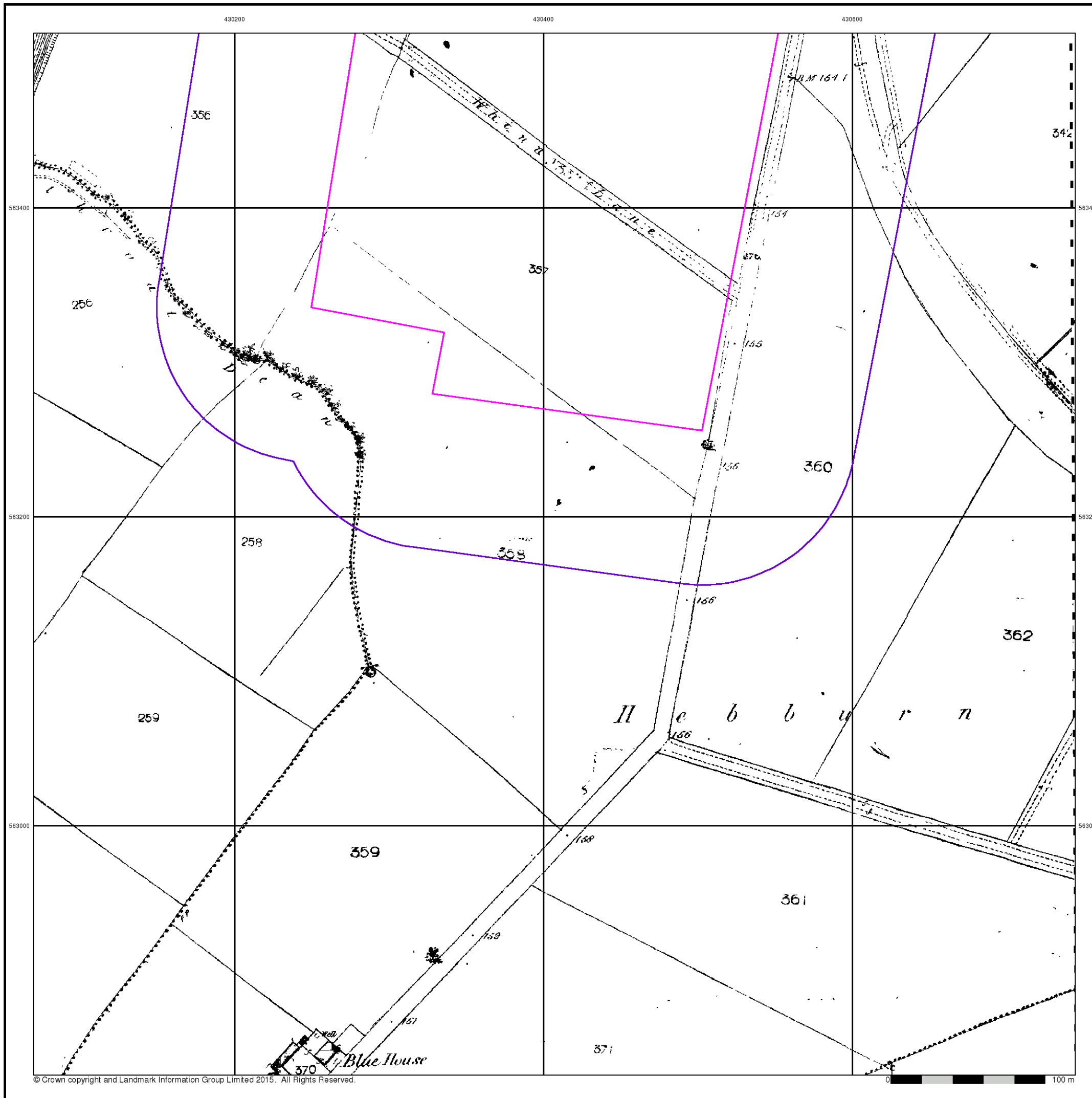
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Customer Ref: C7074/Former Siemens Factory, Hebburn/CR
National Grid Reference: 430400, 563500
Slice: A
Site Area (Ha): 10.3
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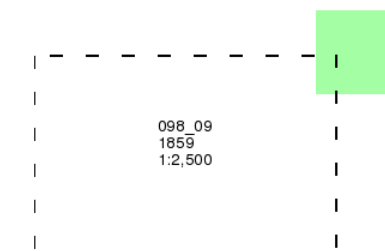
Northumberland

Published 1859

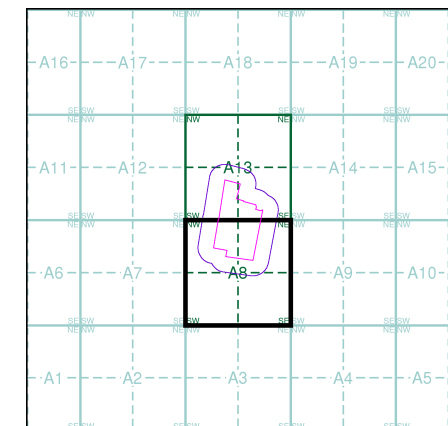
Source map scale - 1:2,500

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 A8



Order Details

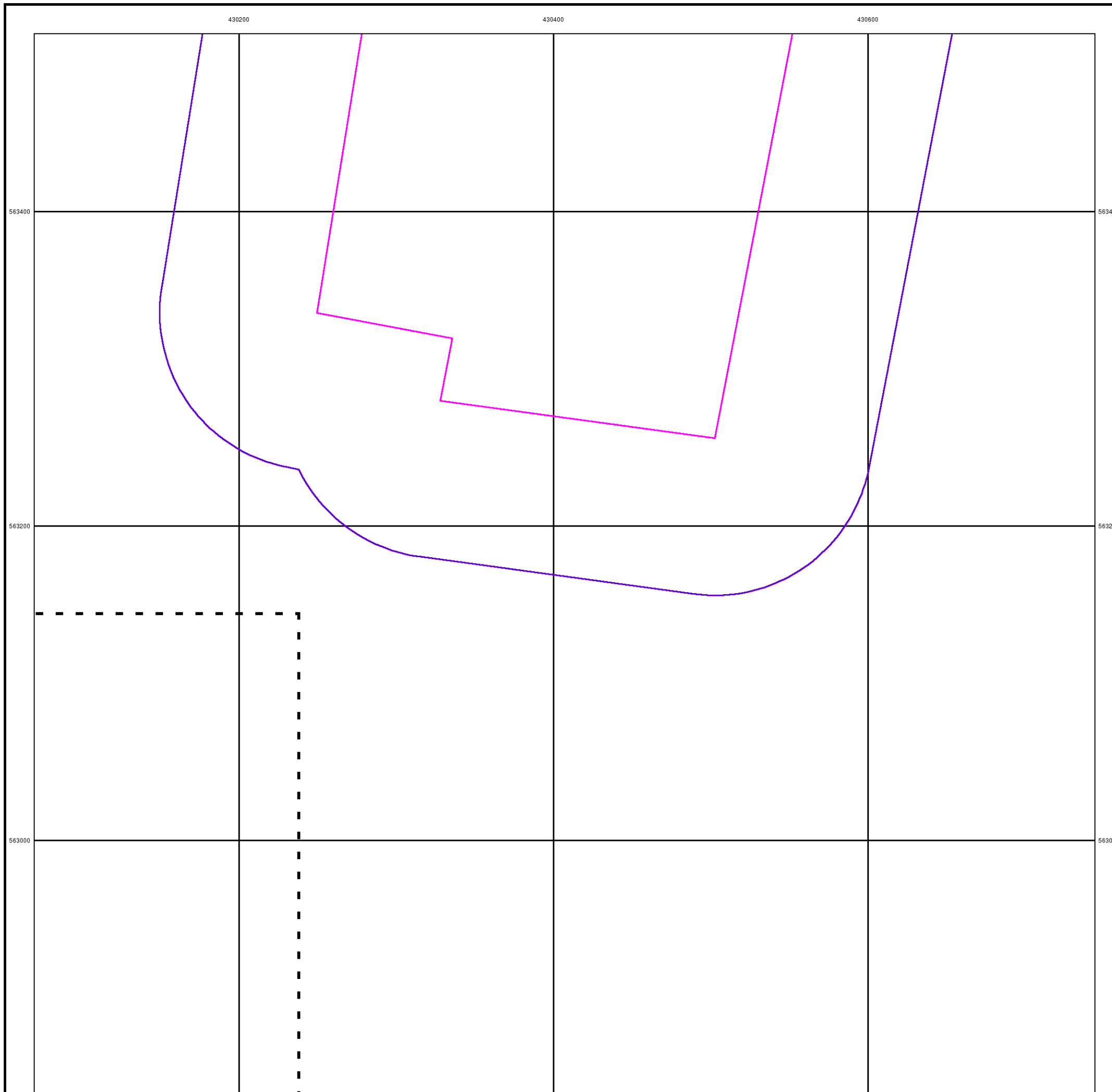
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 Customer Ref: C7074/Former Siemens Factory, Hebburn/CR
 National Grid Reference: 430400, 563500
 Slice: A
 Site Area (Ha): 10.3
 Search Buffer (m): 100

Site Details

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Northumberland

Published 1861 - 1887

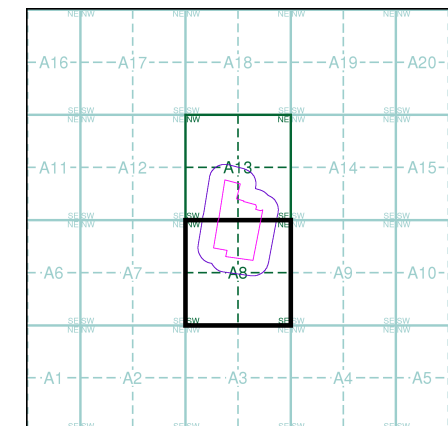
Source map scale - 1:2,500

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)

098_05 1887 1:2,500	<input type="checkbox"/>
098_09 1861 1:2,500	<input checked="" type="checkbox"/>

Historical Map - Segment A8



Order Details

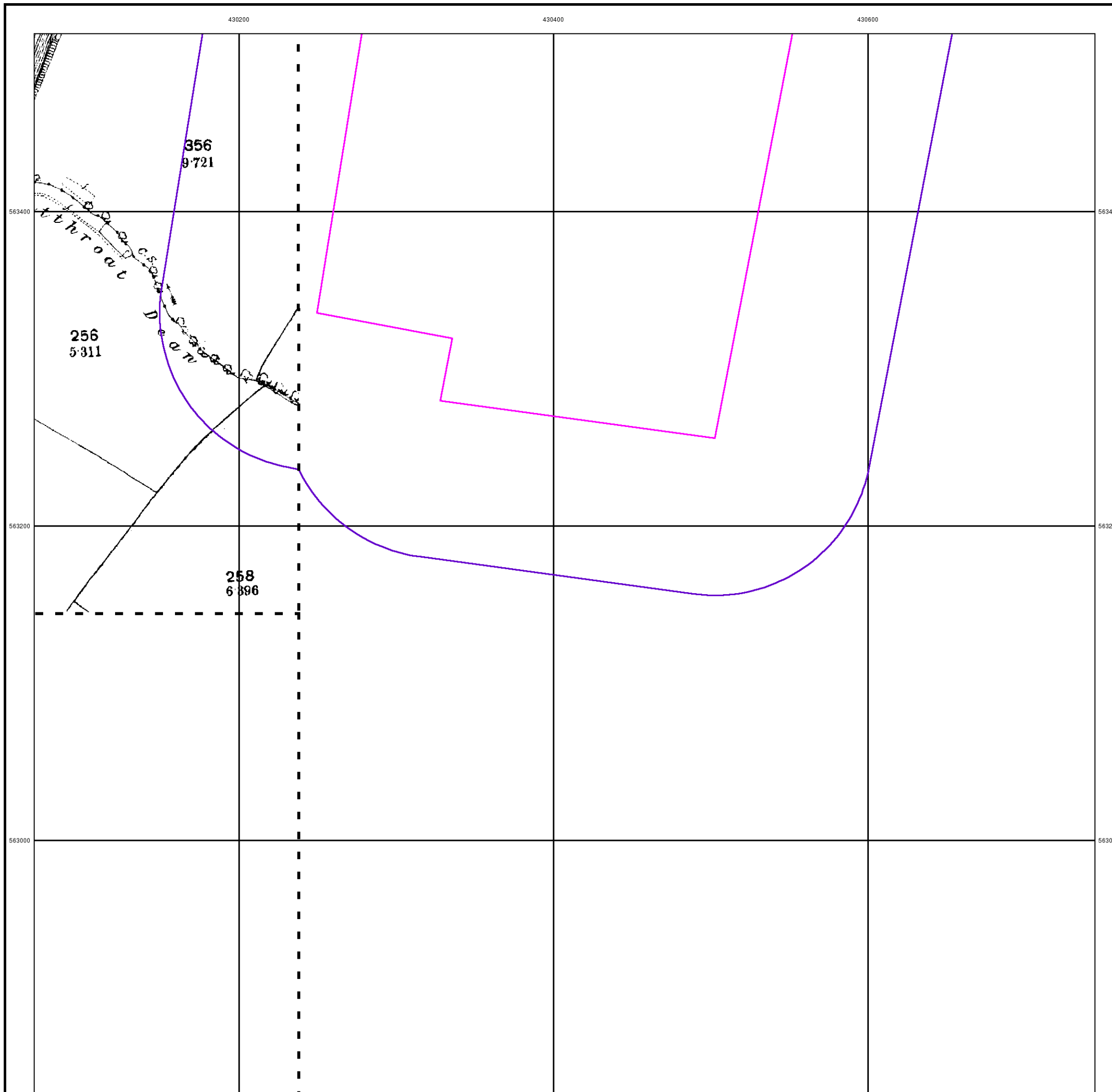
Order Number: 90505614_1_1
 Customer Ref: C7074/Former Siemens Factory, Hebburn/CR
 National Grid Reference: 430400, 563500
 Slice: A
 Site Area (Ha): 10.3
 Search Buffer (m): 100

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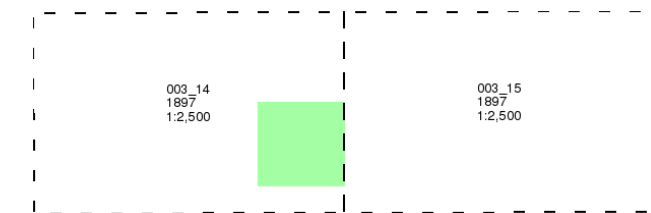
Durham

Published 1897

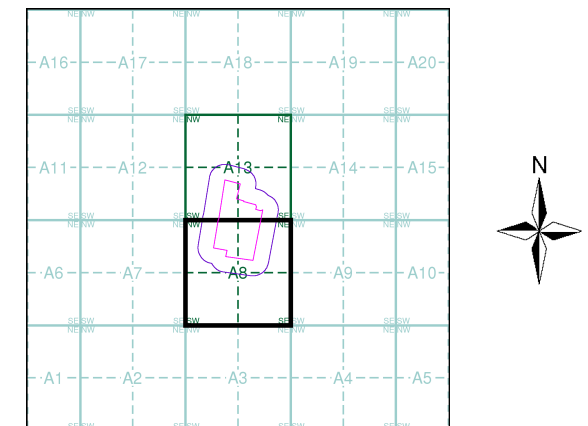
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The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered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

Map Name(s) and Date(s)



Historical Map - Segment A8



Order Details

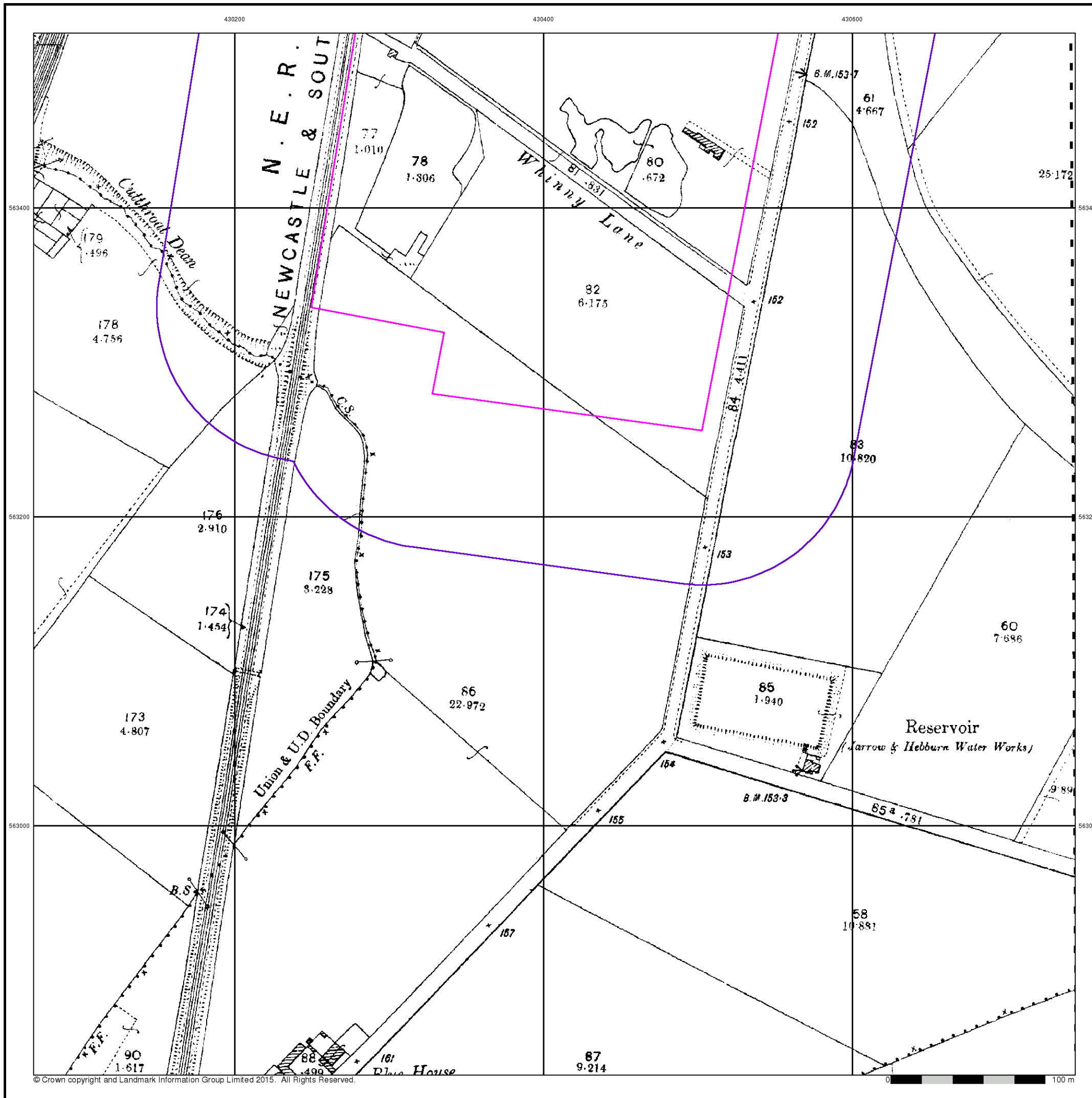
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Customer Ref: C7074/Former Siemens Factory, Hebburn/CR
National Grid Reference: 430400, 563500
Slice: A
Site Area (Ha): 10.3
Search Buffer (m): 100

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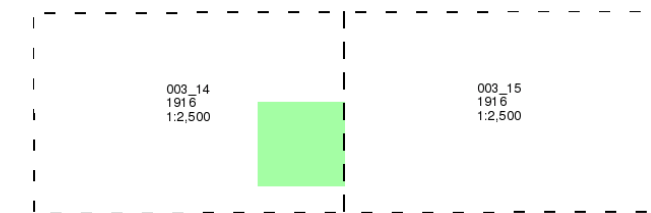
Durham

Published 1916

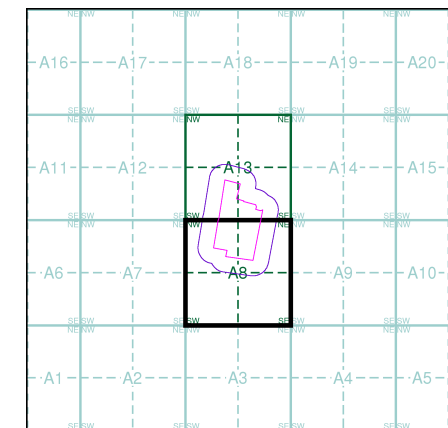
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A8



Order Details

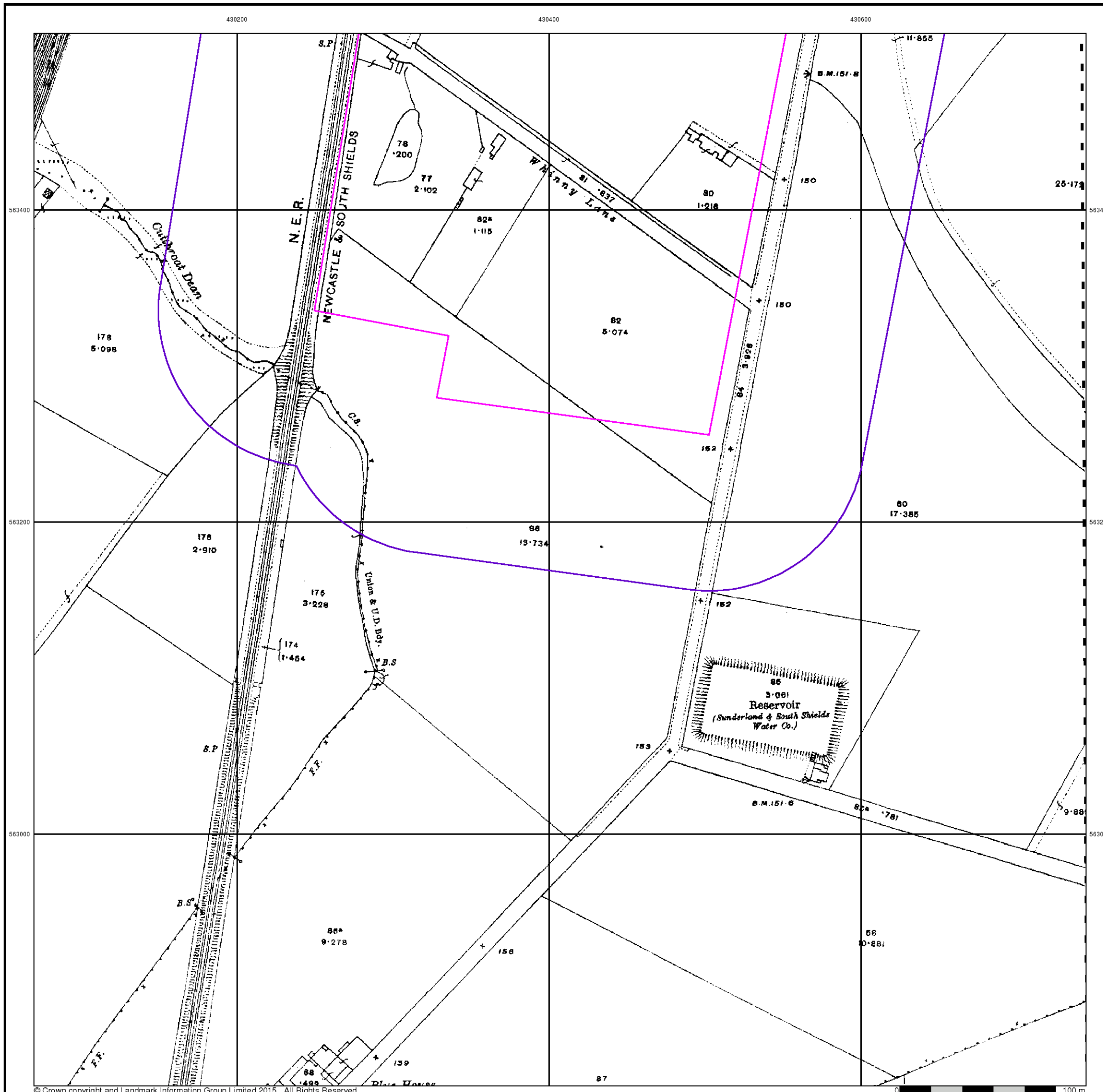
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Customer Ref: C7074/Former Siemens Factory, Hebburn/CR
National Grid Reference: 430400, 563500
Slice: A
Site Area (Ha): 10.3
Search Buffer (m): 100

Site Details

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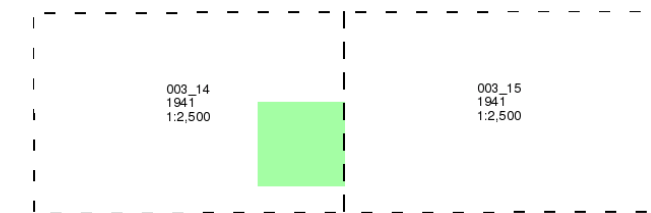
Durham

Published 1941

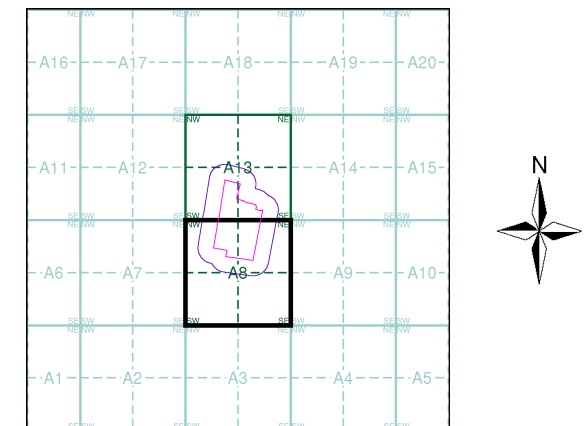
Source map scale - 1:2,500

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 A8



Order Details

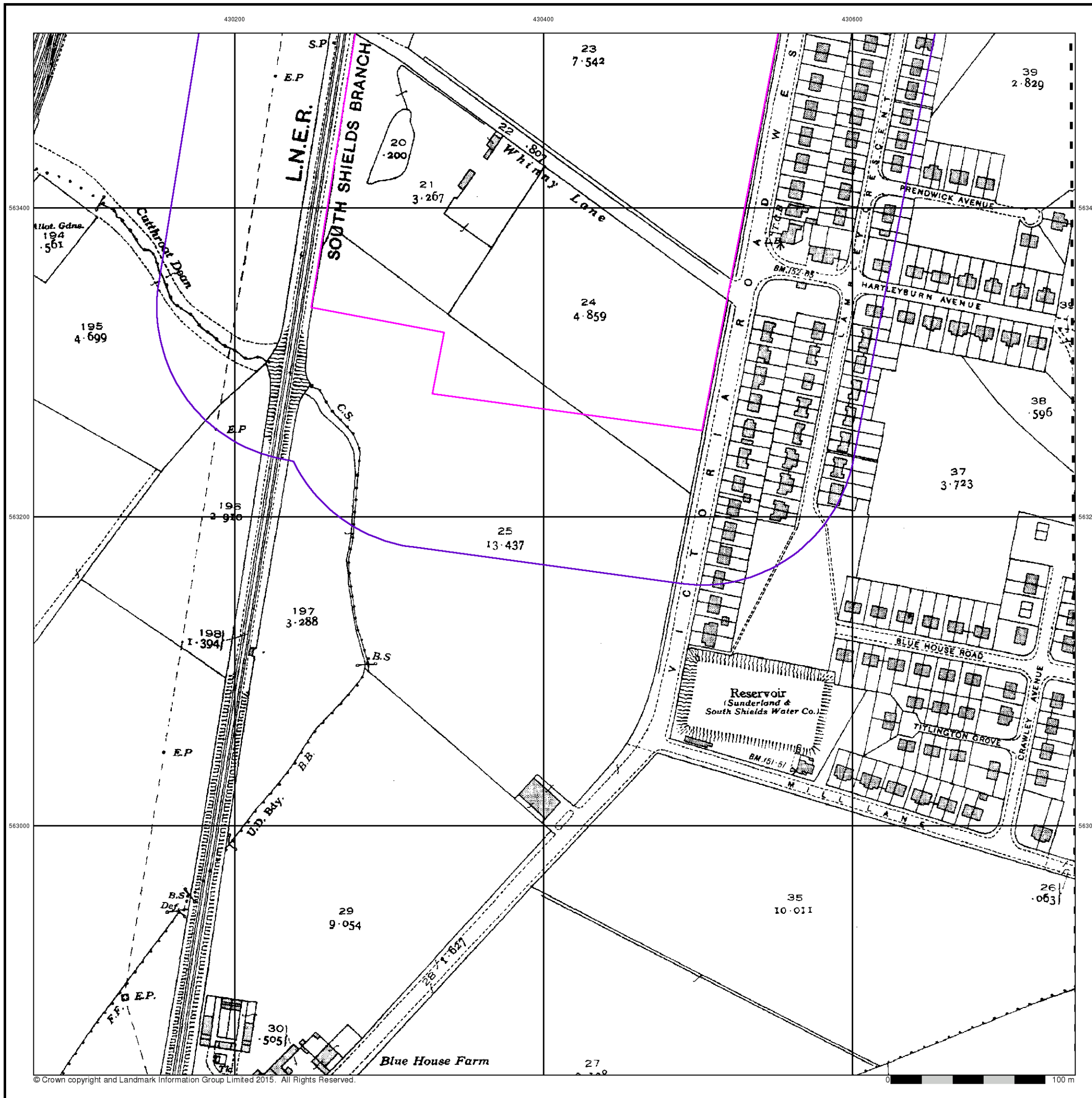
Order Number: 90505614_1_1
Customer Ref: C7074/Former Siemens Factory, Hebburn/CR
National Grid Reference: 430400, 563500
Slice: A
Site Area (Ha): 10.3
Search Buffer (m): 100

Site Details

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Ordnance Survey Plan

Published 1956 - 1957

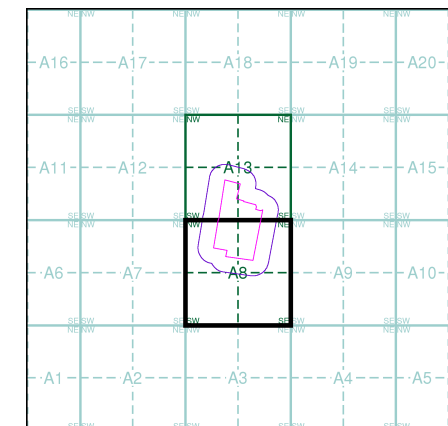
Source map scale - 1:1,250

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

Map Name(s) and Date(s)

Z3063NW	Z3063NE
957	1957
1:1,250	1:1,250
Z3063SW	Z3063SE
957	1957
1:1,250	1:1,250
Z3062NW	Z3062NE
956	1957
1:1,250	1:1,250

Historical Map - Segment A8



Order Details

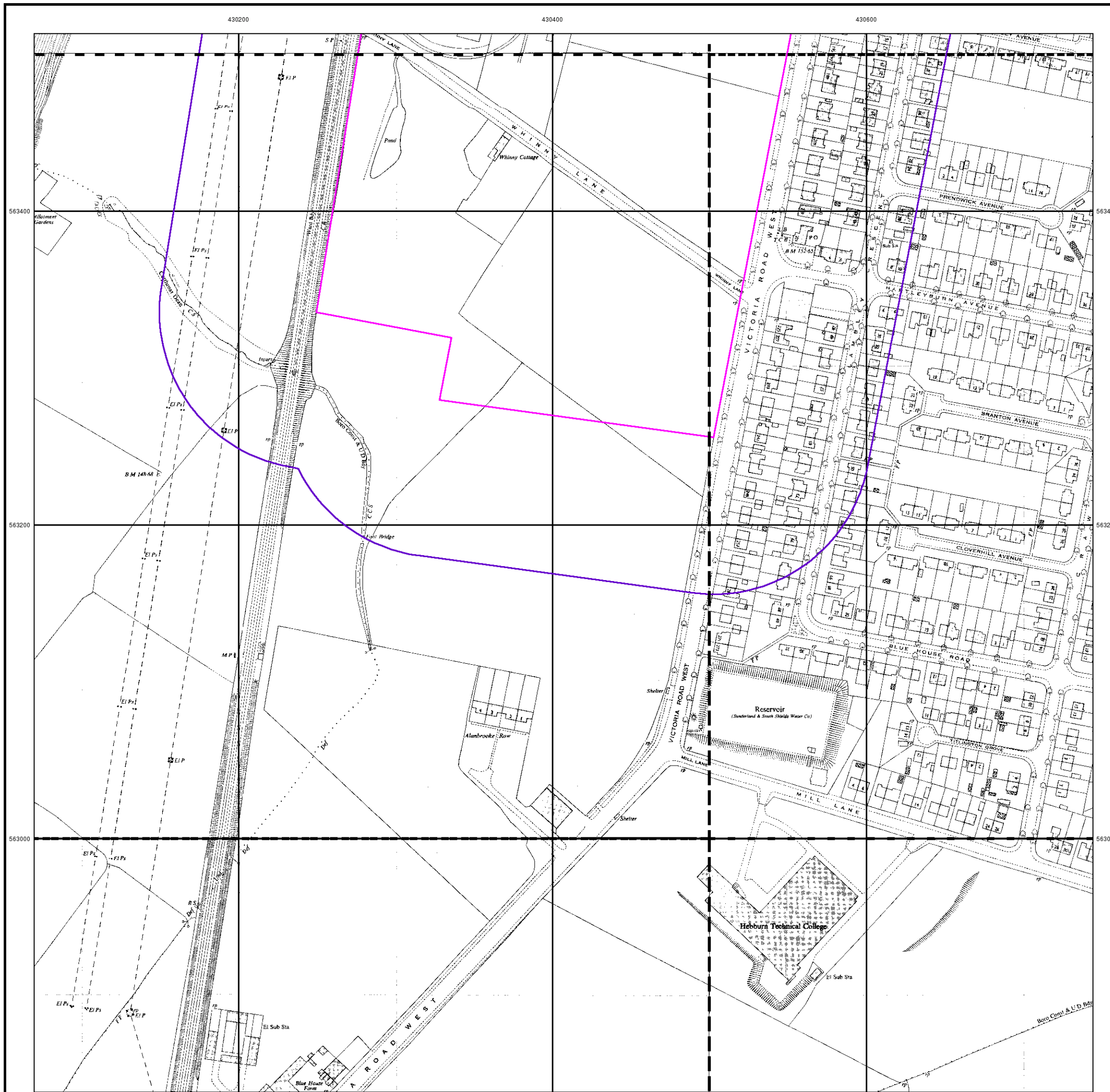
Order Number: 90505614_1_1
 Customer Ref: C7074/Former Siemens Factory, Hebburn/CR
 National Grid Reference: 430400, 563500
 Slice: A
 Site Area (Ha): 10.3
 Search Buffer (m): 100

Site Details

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Ordnance Survey Plan

Published 1957

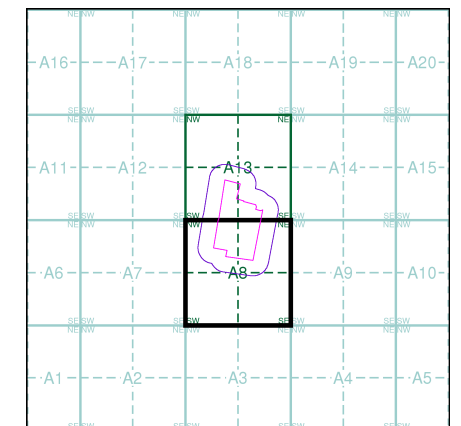
Source map scale - 1:2,500

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)

NZ3063
1957
1:2,500
NZ3062
1957
1:2,500

Historical Map - Segment A8



Order Details

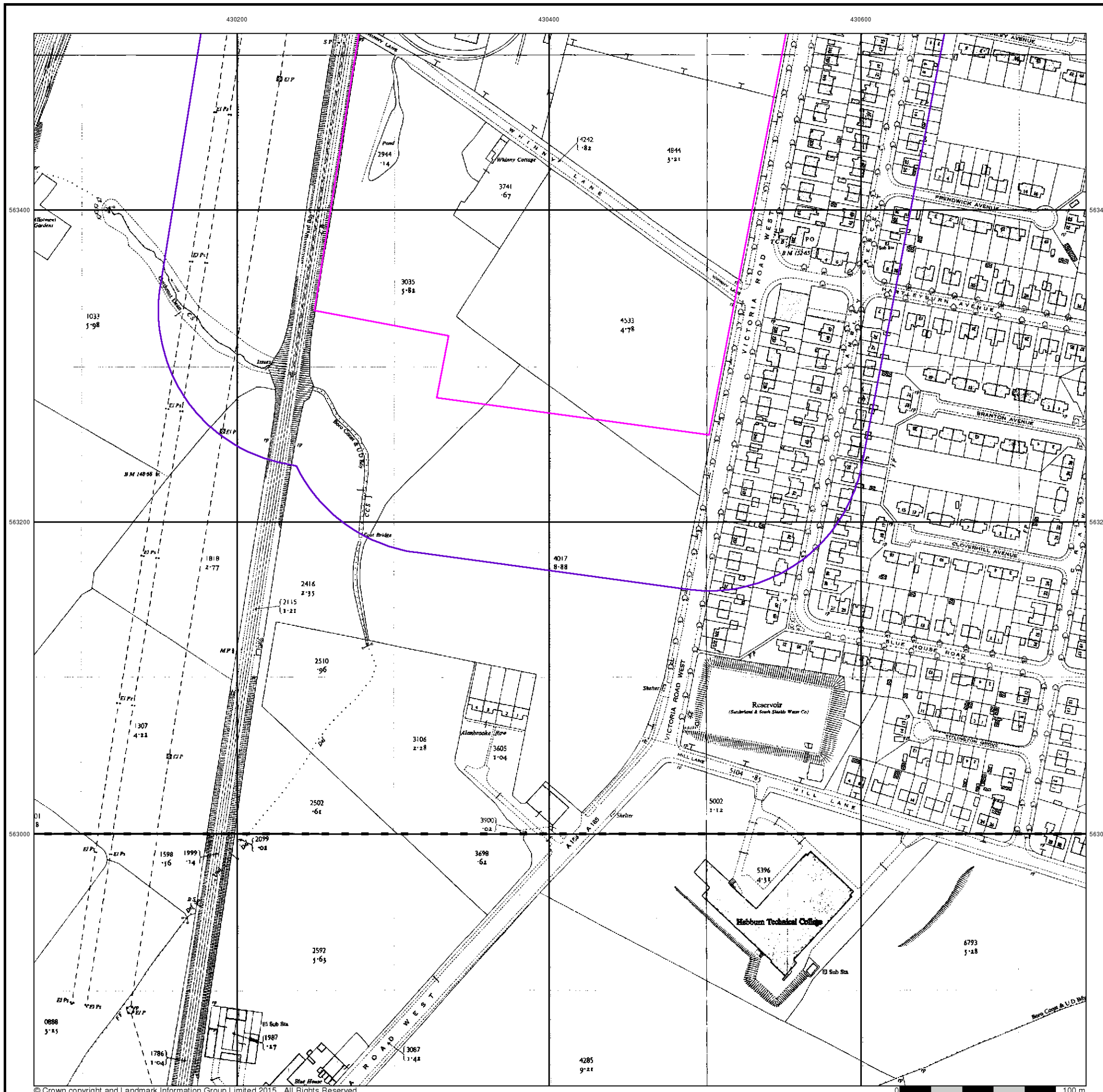
Order Number: 90505614_1_1
 Customer Ref: C7074/Former Siemens Factory, Hebburn/CR
 National Grid Reference: 430400, 563500
 Slice: A
 Site Area (Ha): 10.3
 Search Buffer (m): 100

Site Details

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Ordnance Survey Plan

Published 1962 - 1983

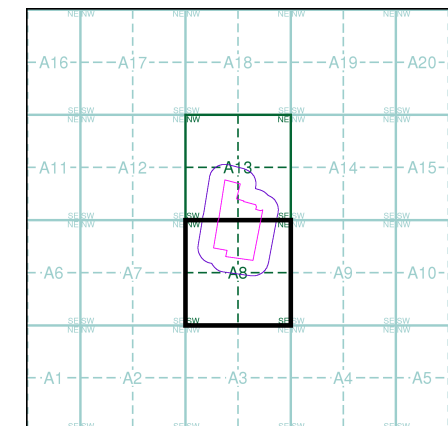
Source map scale - 1:1,250

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

Map Name(s) and Date(s)

Z3063NW	Z3063NE
983	1976
1:1,250	1:1,250
Z3063SW	Z3063SE
964	1962
1:1,250	1:1,250
Z3062NW	Z3062NE
966	1962
1:1,250	1:1,250

Historical Map - Segment A8



Order Details

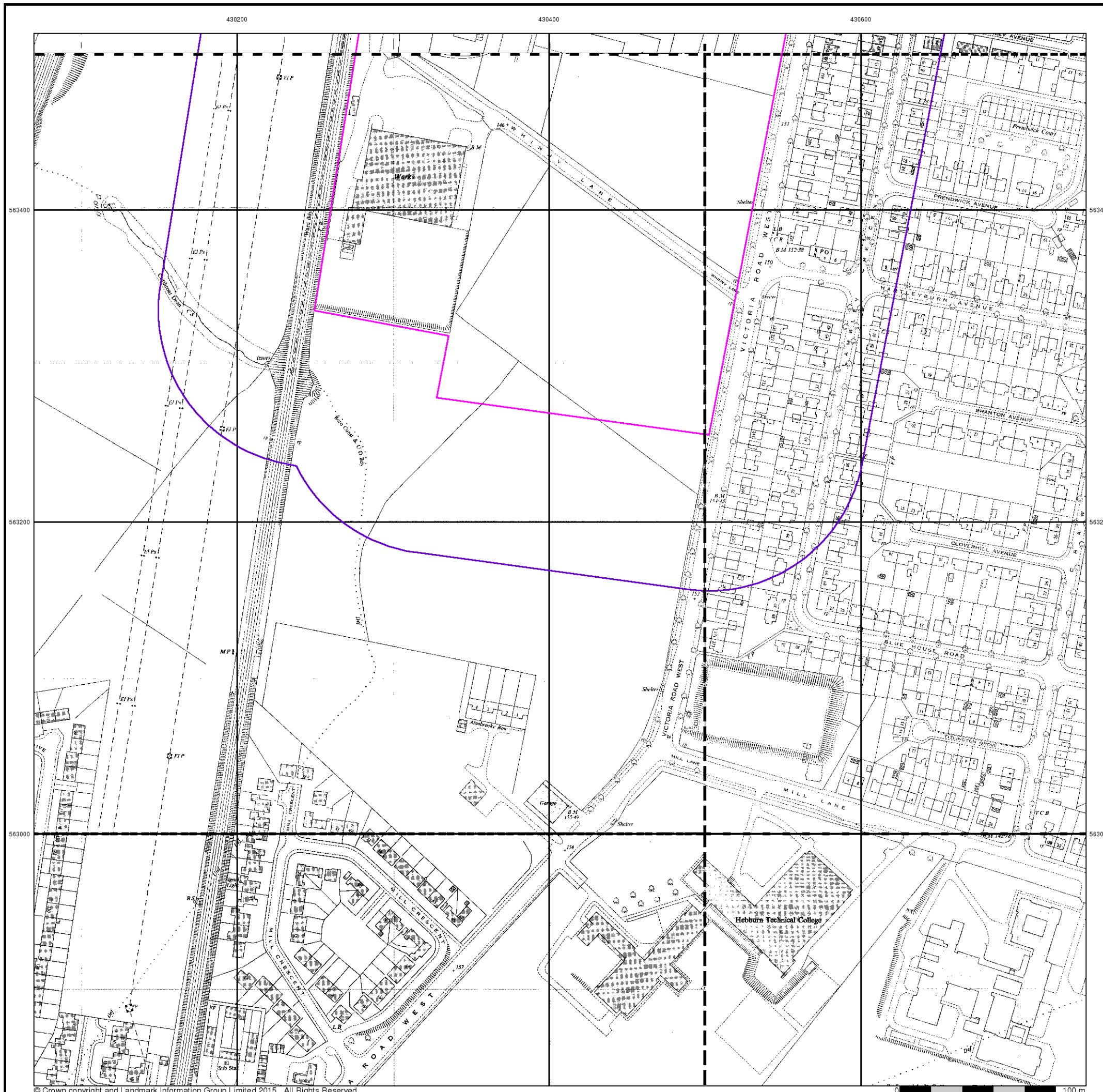
Order Number: 90505614_1_1
 Customer Ref: C7074/Former Siemens Factory, Hebburn/CR
 National Grid Reference: 430400, 563500
 Slice: A
 Site Area (Ha): 10.3
 Search Buffer (m): 100

Site Details

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Ordnance Survey Plan

Published 1967 - 1968

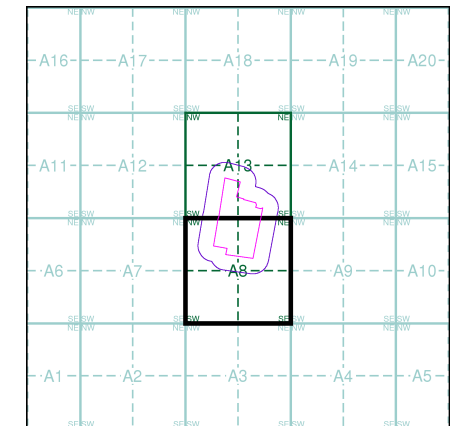
Source map scale - 1:2,500

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)

NZ3063
1968
1:2,500
NZ3062
1967
1:2,500

Historical Map - Segment A8



Order Details

Order Number: 90505614_1_1
 Customer Ref: C7074/Former Siemens Factory, Hebburn/CR
 National Grid Reference: 430400, 563500
 Slice: A
 Site Area (Ha): 10.3
 Search Buffer (m): 100

Site Details

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 Fax: 0844 844 9951
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Ordnance Survey Plan

Published 1971 - 1986

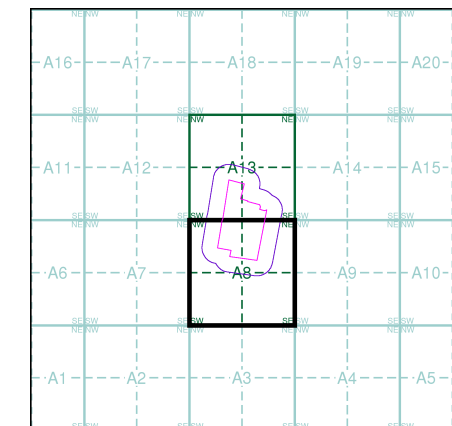
Source map scale - 1:1,250

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

Map Name(s) and Date(s)

NZ3063SW 1976 1:1,250	NZ3063SE 1976 1:1,250
NZ3062NW 1986 1:1,250	NZ3062NE 1971 1:1,250

Historical Map - Segment A8



Order Details

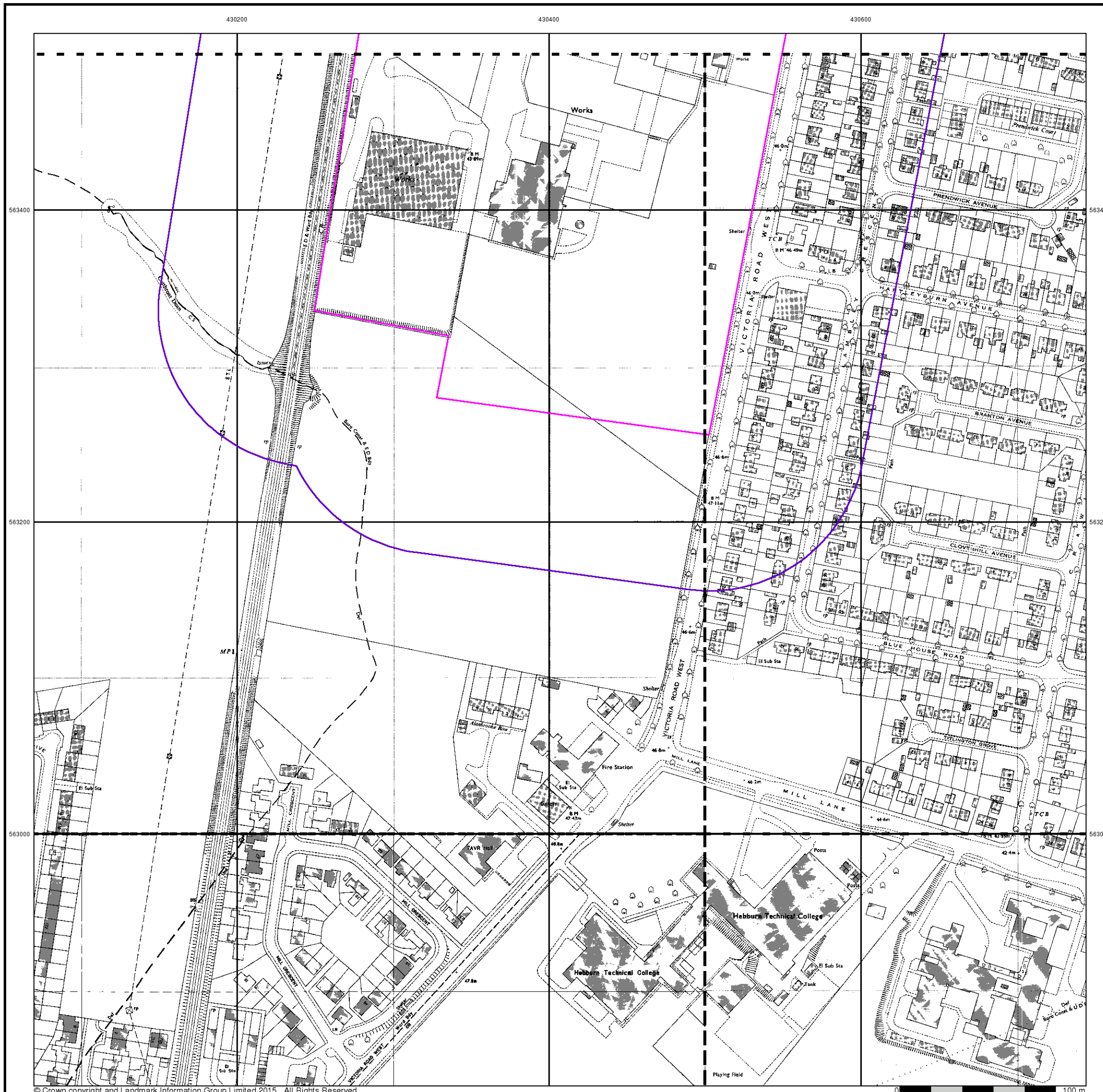
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 Customer Ref: C7074/Former Siemens Factory, Hebburn/CR
 National Grid Reference: 430400, 563500
 Slice: A
 Site Area (Ha): 10.3
 Search Buffer (m): 100

Site Details

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Additional SIMs

Published 1979 - 1991

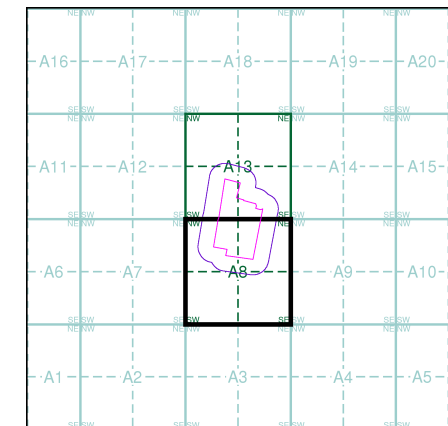
Source map scale - 1:1,250

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

Map Name(s) and Date(s)

UZ3063NW	UZ3063NE
983	1991
1:1,250	1:1,250
UZ3063SW	UZ3063SE
979	1987
1:1,250	1:1,250
UZ3062NW	UZ3062NE
982	1989
1:1,250	1:1,250

Historical Map - Segment A8



Order Details

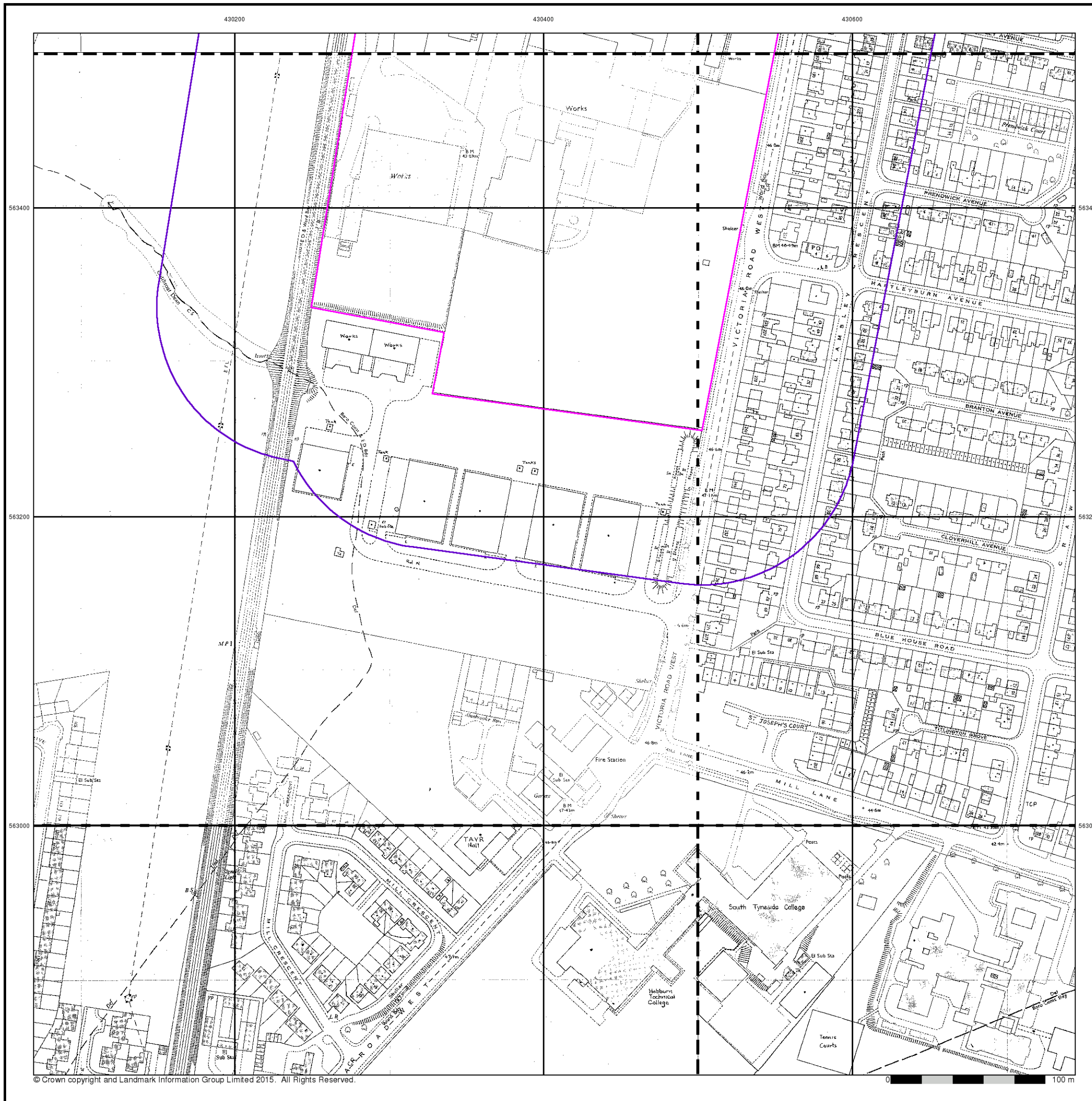
Order Number: 90505614_1_1
 Customer Ref: C7074/Former Siemens Factory, Hebburn/CR
 National Grid Reference: 430400, 563500
 Slice: A
 Site Area (Ha): 10.3
 Search Buffer (m): 100

Site Details

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Additional SIMs

Published 1986

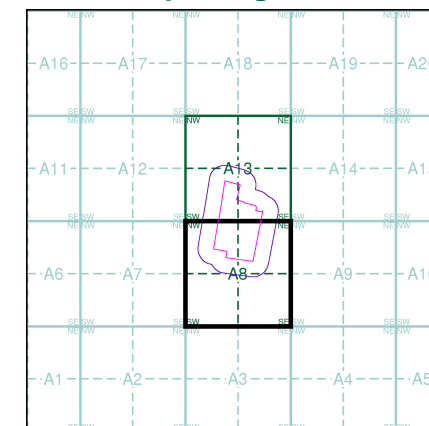
Source map scale - 1:1,250

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

Map Name(s) and Date(s)

NZ3063SW	1986	1:1,250
NZ3062NW	1986	1:1,250

Historical Map - Segment A8



Order Details

Order Number: 90505614_1_1
 Customer Ref: C7074/Former Siemens Factory, Hebburn/CR

National Grid Reference: 430400, 563500

Slice: A
 Site Area (Ha): 10.3
 Search Buffer (m): 100

Site Details

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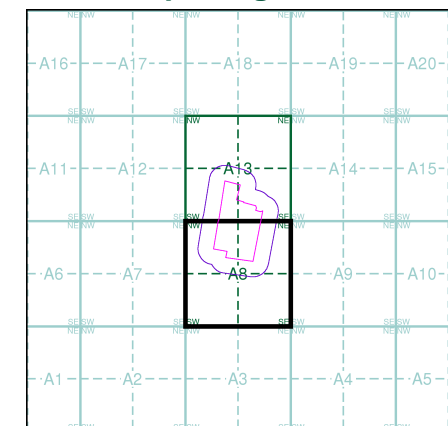
Large-Scale National Grid Data
Published 1993
Source map scale - 1:1,250

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

Map Name(s) and Date(s)

QZ3063NW	QZ3063NE
993	993
1:1,250	1:1,250
QZ3063SW	
993	
1:1,250	
QZ3062NW	QZ3062NE
993	993
1:1,250	1:1,250

Historical Map - Segment A8



Order Details

Order Number: 90505614_1_1
 Customer Ref: C7074/Former Siemens Factory, Hebburn/CR
 National Grid Reference: 430400, 563500
 Slice: A
 Site Area (Ha): 10.3
 Search Buffer (m): 100

Site Details

Siemens, North Farm Road, HEBBURN, Tyne and Wear, NE31 1LX



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



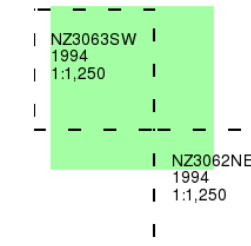
Large-Scale National Grid Data

Published 1994

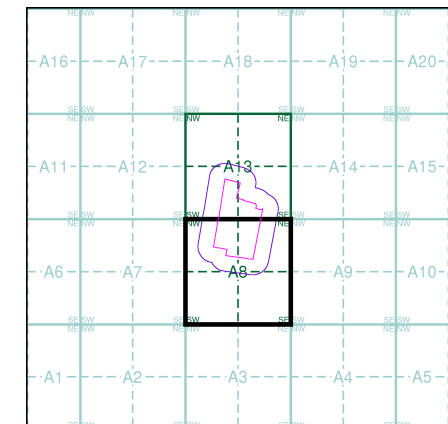
Source map scale - 1:1,250

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

Map Name(s) and Date(s)



Historical Map - Segment A8



Order Details

Order Number: 90505614_1_1
 Customer Ref: C7074/Former Siemens Factory, Hebburn/CR
 National Grid Reference: 430400, 563500
 Slice: A
 Site Area (Ha): 10.3
 Search Buffer (m): 100

Site Details

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Historical Mapping Legends

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

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

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

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

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

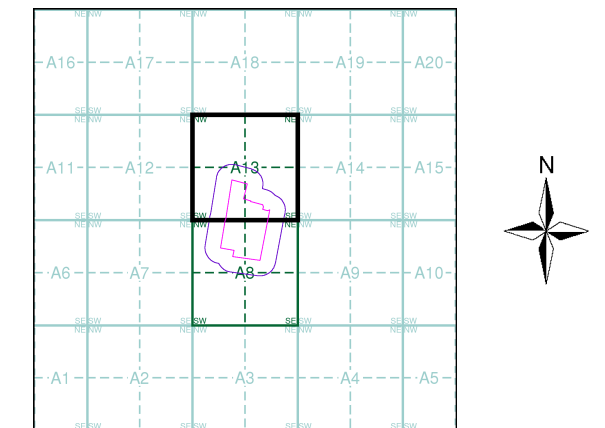
Cliff **Slopes** **Top**
Rock **Rock (scattered)**
Boulders **Boulders (scattered)**
Positioned Boulder **Scree**
Non-Coniferous Tree (surveyed) **Coniferous Tree (surveyed)**
Non-Coniferous Trees (not surveyed) **Coniferous Trees (not surveyed)**
Orchard Tree **Scrub** **Bracken**
Coppice, Osier **Reeds**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



Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Durham	1:2,500	1857 - 1873	2
Northumberland	1:2,500	1887	3
Durham	1:2,500	1897	4
Durham	1:2,500	1916	5
Durham	1:2,500	1941	6
Ordnance Survey Plan	1:1,250	1957	7
Ordnance Survey Plan	1:2,500	1957 - 1958	8
Ordnance Survey Plan	1:1,250	1967 - 1983	9
Ordnance Survey Plan	1:2,500	1968 - 1970	10
Ordnance Survey Plan	1:1,250	1975	11
Additional SIMs	1:1,250	1983 - 1991	12
Ordnance Survey Plan	1:1,250	1985	13
Large-Scale National Grid Data	1:1,250	1993	14
Large-Scale National Grid Data	1:1,250	1996	15

Historical Map - Segment A13



Order Details

Order Number: 90505614_1_1
Customer Ref: C7074/Former Siemens Factory, Hebburn/CR
National Grid Reference: 430400, 563500
Slice: A
Site Area (Ha): 10.3
Search Buffer (m): 100

Site Details

Siemens, North Farm Road, HEBBURN, Tyne and Wear, NE31 1LX



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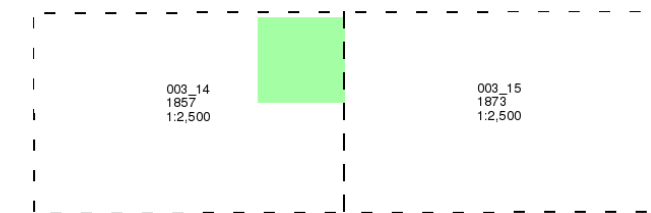
Durham

Published 1857 - 1873

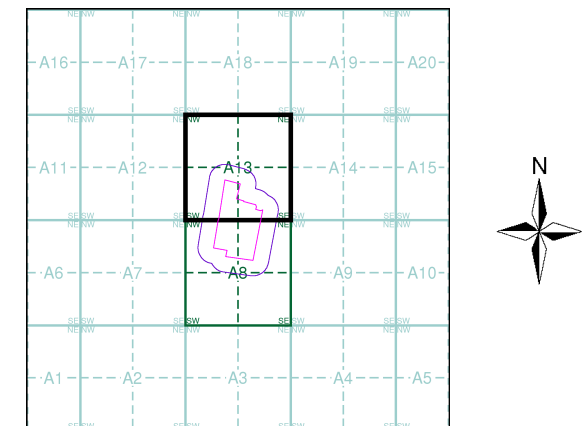
Source map scale - 1:2,500

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

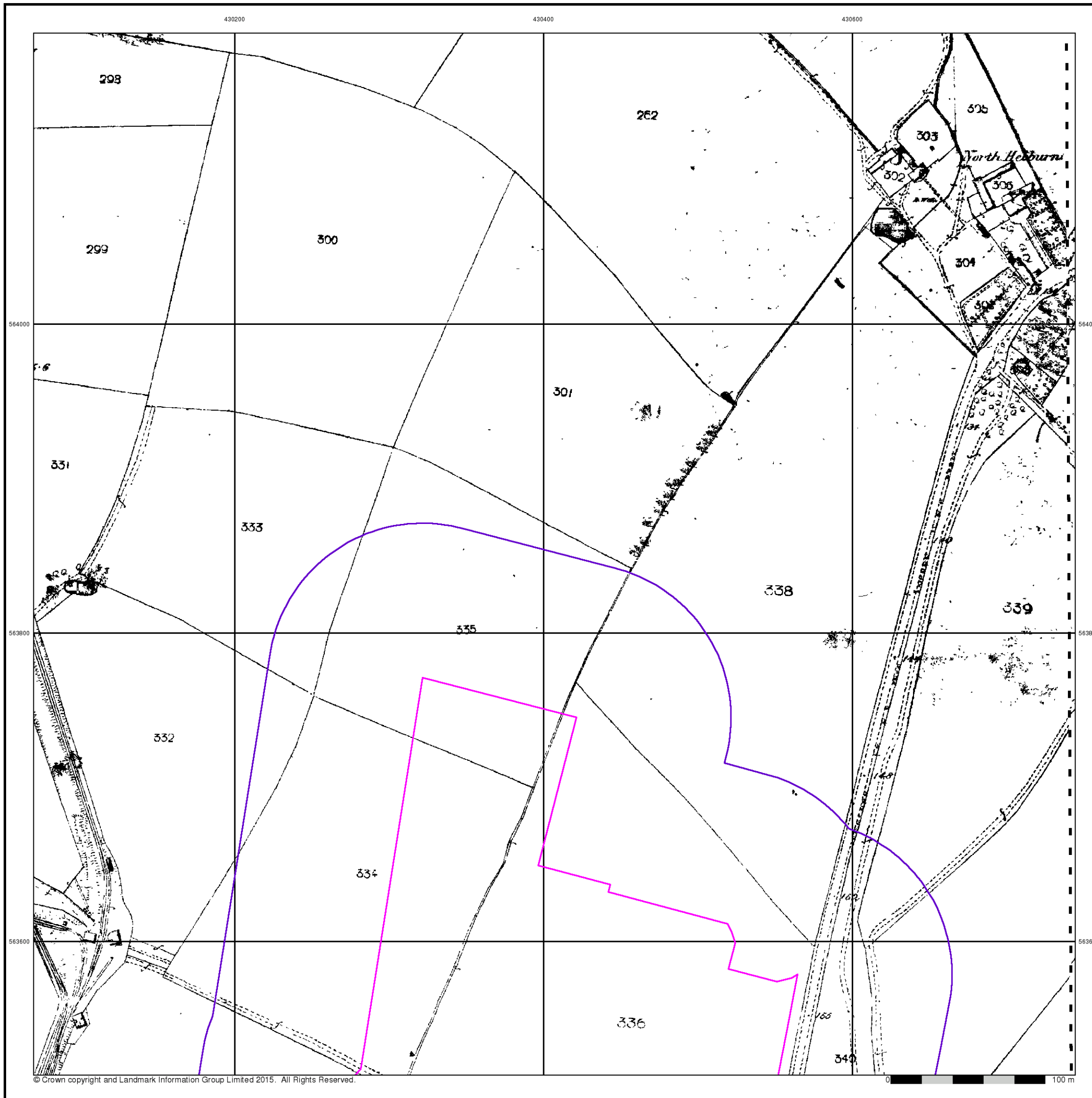
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 Customer Ref: C7074/Former Siemens Factory, Hebburn/CR
 National Grid Reference: 430400, 563500
 Slice: A
 Site Area (Ha): 10.3
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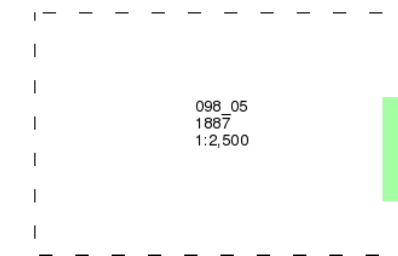
Northumberland

Published 1887

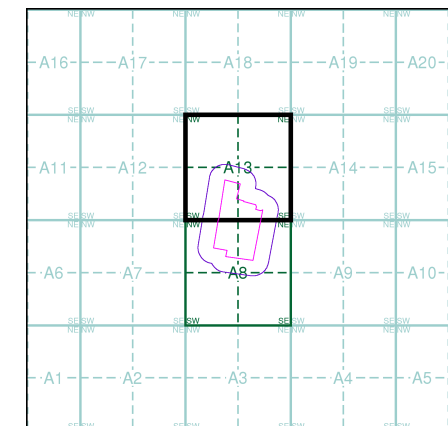
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The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered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

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

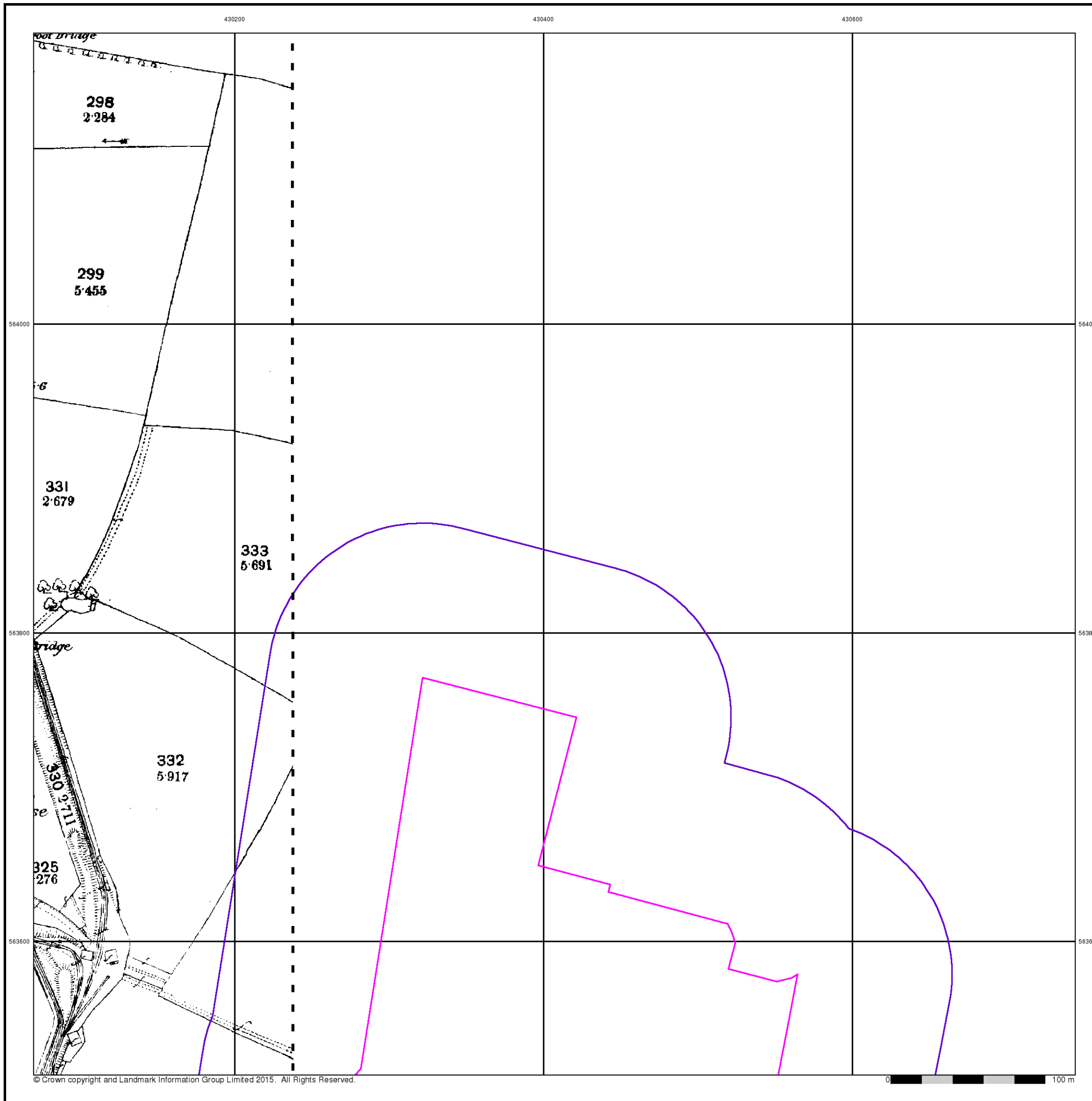
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Customer Ref:	C7074/Former Siemens Factory, Hebburn/CR
National Grid Reference:	430400, 563500
Slice:	A
Site Area (Ha):	10.3
Search Buffer (m):	100

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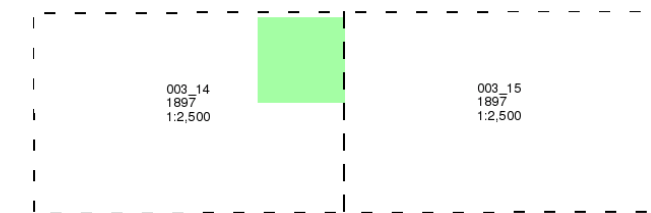
Durham

Published 1897

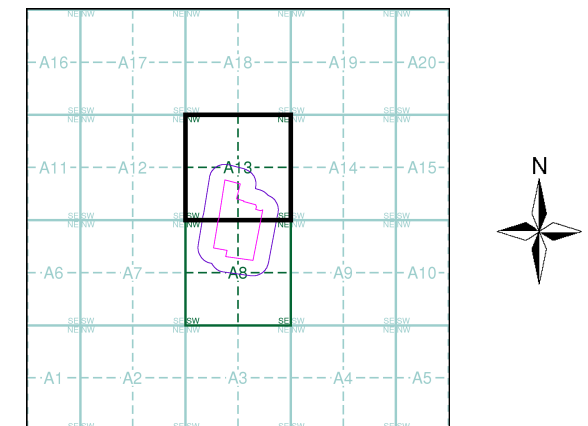
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

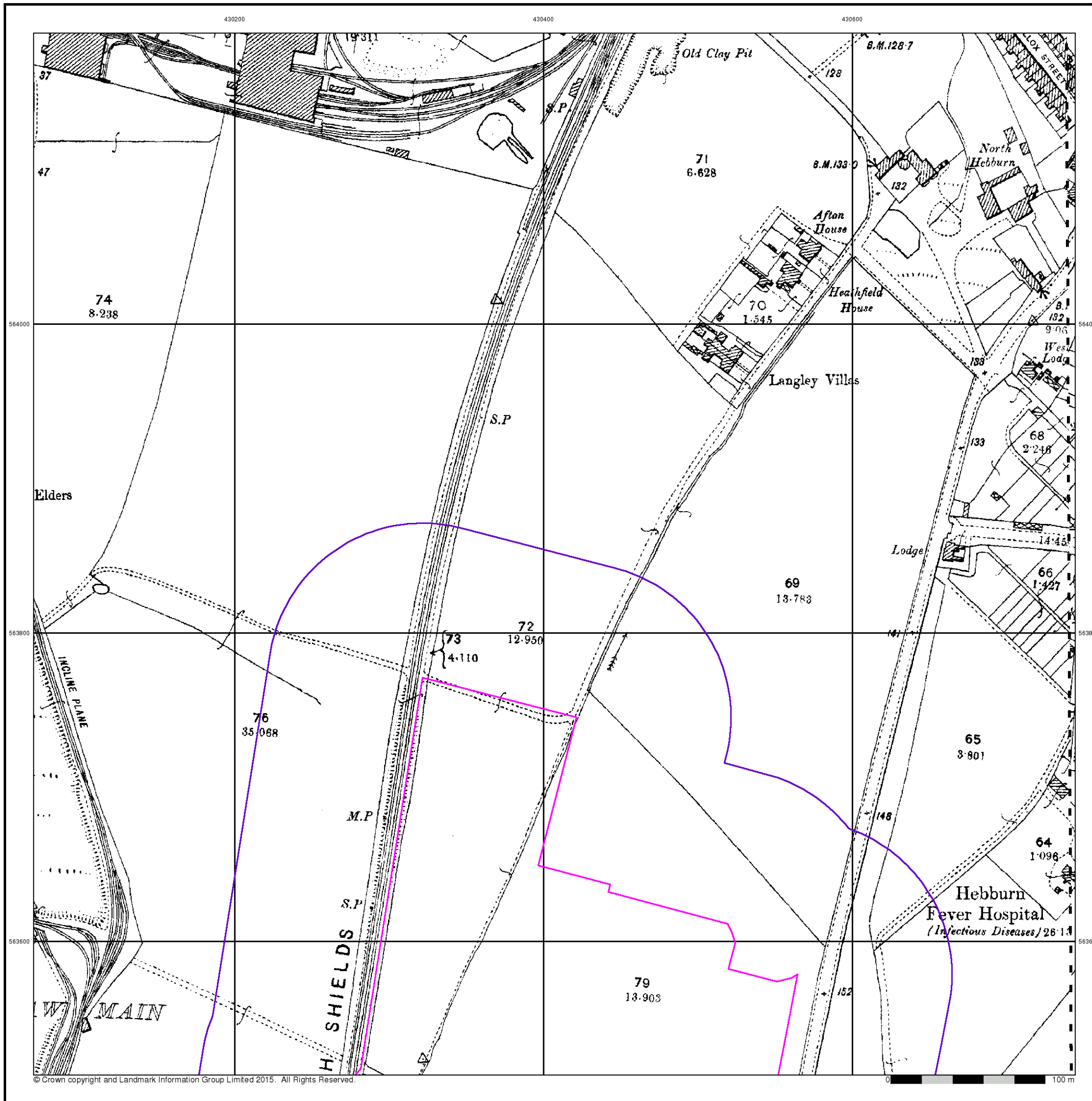
Order Number: 90505614_1_1
Customer Ref: C7074/Former Siemens Factory, Hebburn/CR
National Grid Reference: 430400, 563500
Slice: A
Site Area (Ha): 10.3
Search Buffer (m): 100

Site Details

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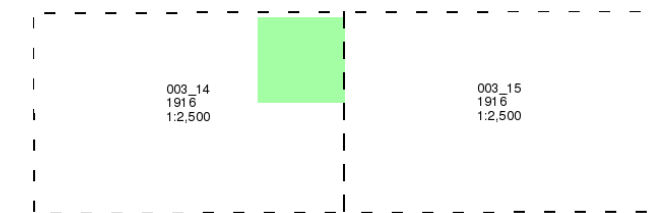
Durham

Published 1916

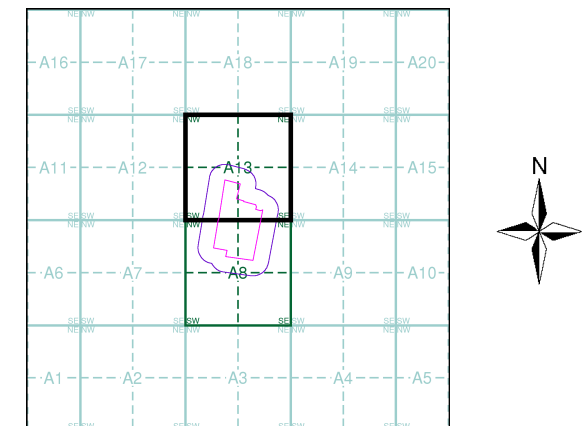
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

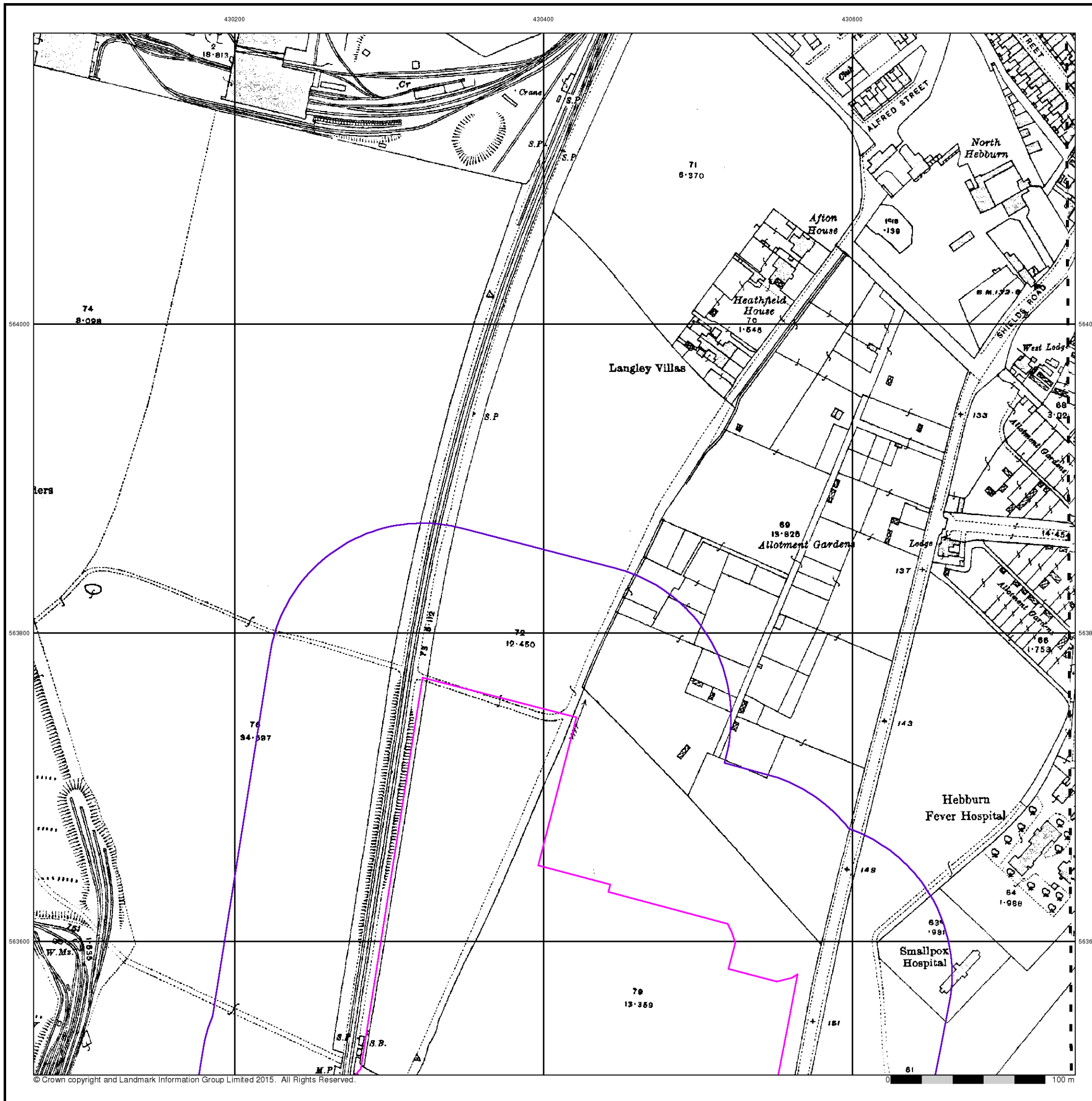
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Customer Ref: C7074/Former Siemens Factory, Hebburn/CR
National Grid Reference: 430400, 563500
Slice: A
Site Area (Ha): 10.3
Search Buffer (m): 100

Site Details

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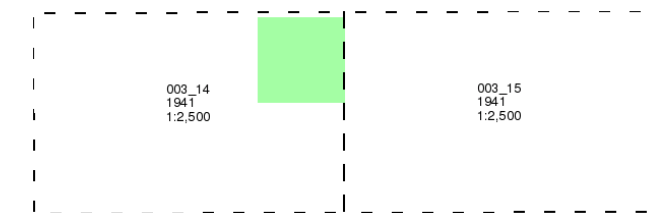
Durham

Published 1941

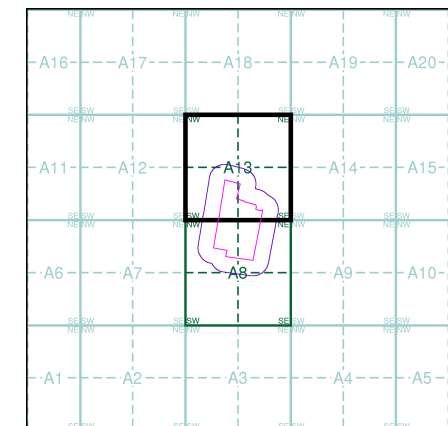
Source map scale - 1:2,500

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

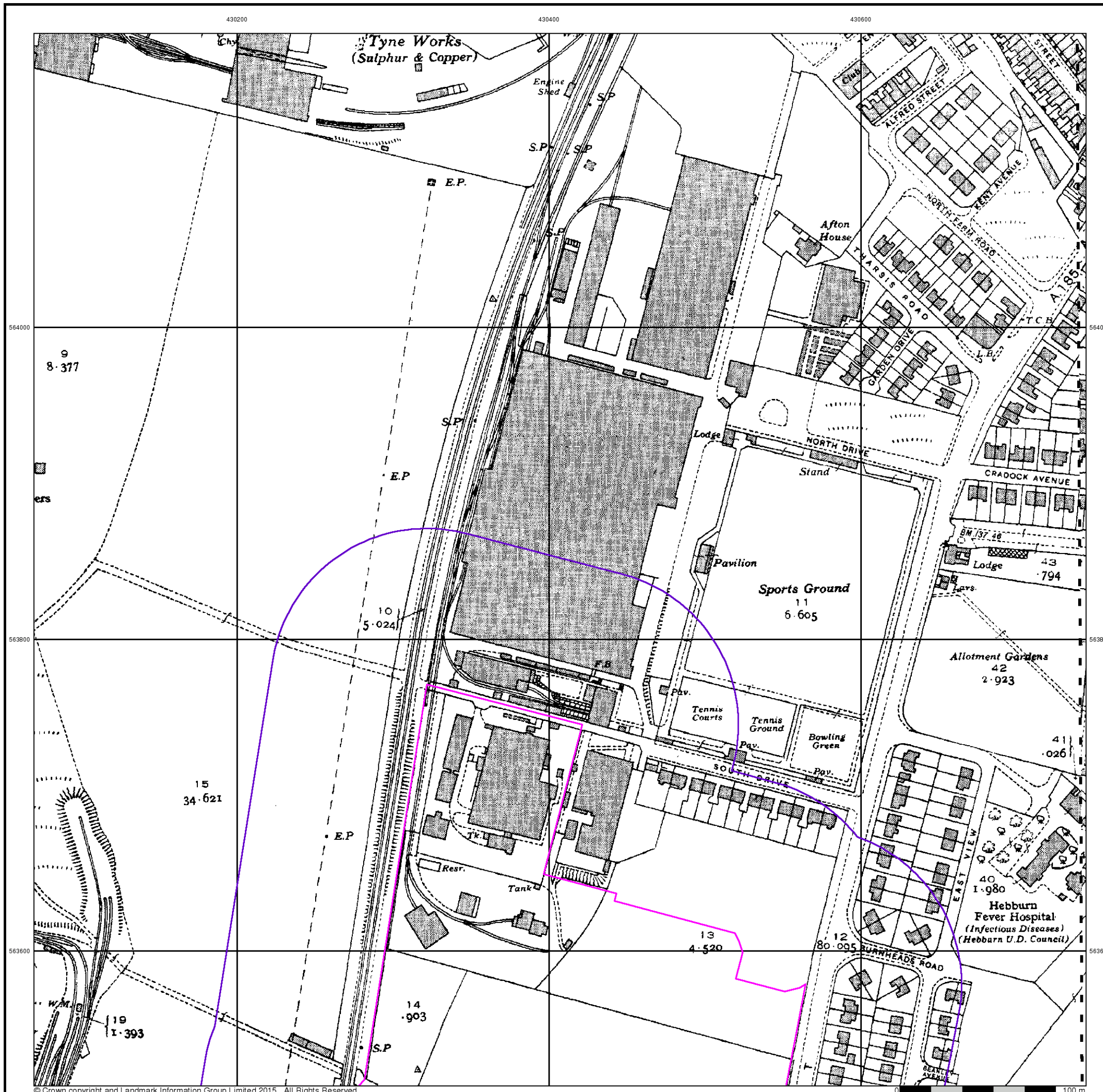
Order Number: 90505614_1_1
Customer Ref: C7074/Former Siemens Factory, Hebburn/CR
National Grid Reference: 430400, 563500
Slice: A
Site Area (Ha): 10.3
Search Buffer (m): 100

Site Details

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Ordnance Survey Plan

Published 1957

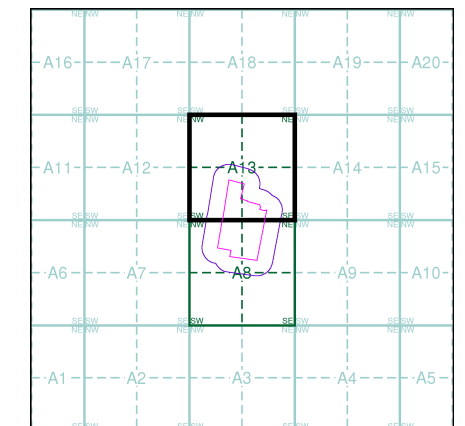
Source map scale - 1:1,250

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

Map Name(s) and Date(s)

NZ3064SW 1957 1:1,250	NZ3064SE 1957 1:1,250
NZ3063NW 1957 1:1,250	NZ3063NE 1957 1:1,250

Historical Map - Segment A13



Order Details

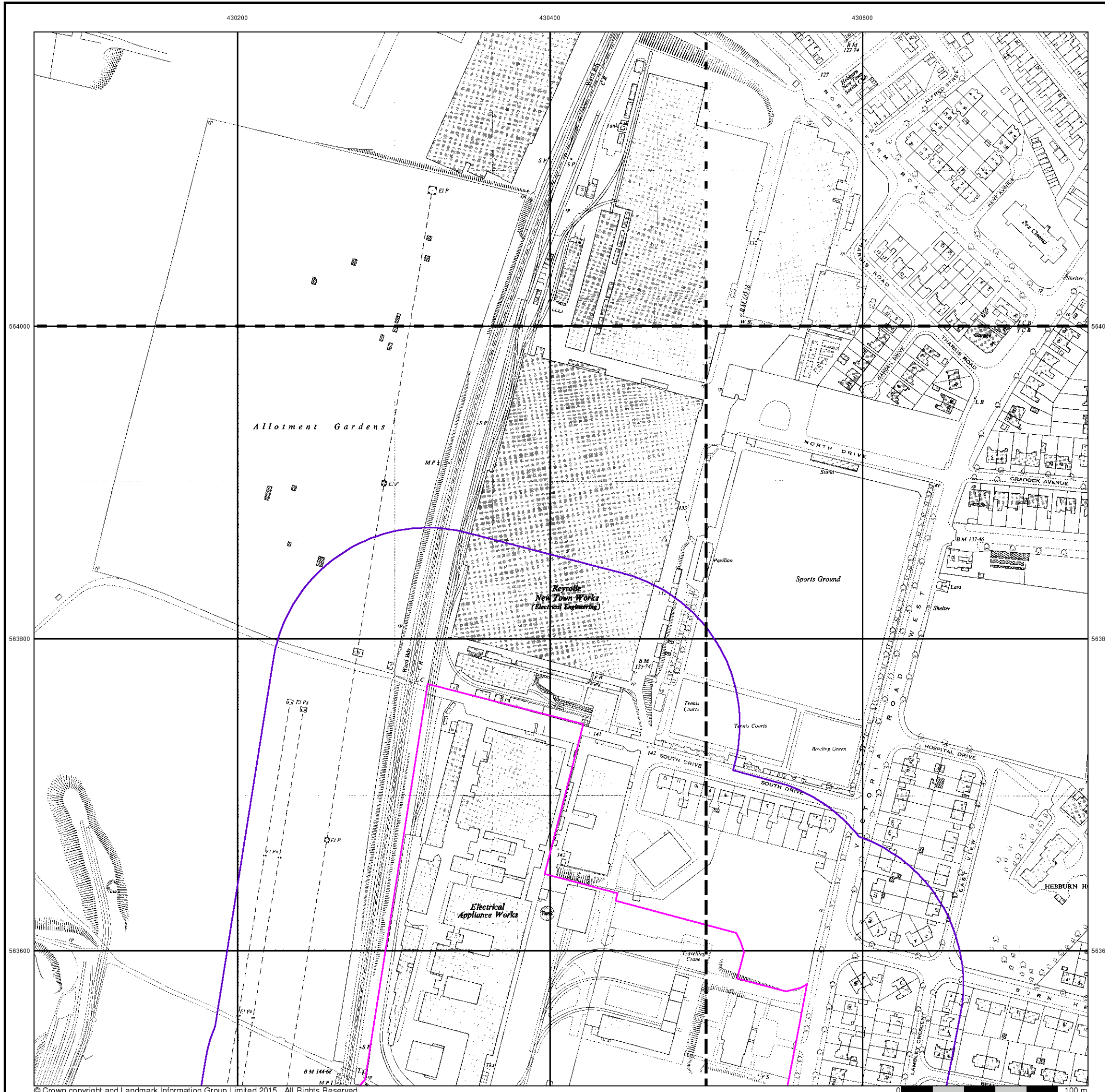
Order Number: 90505614_1_1
 Customer Ref: C7074/Former Siemens Factory, Hebburn/CR
 National Grid Reference: 430400, 563500
 Slice: A
 Site Area (Ha): 10.3
 Search Buffer (m): 100

Site Details

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Ordnance Survey Plan

Published 1957 - 1958

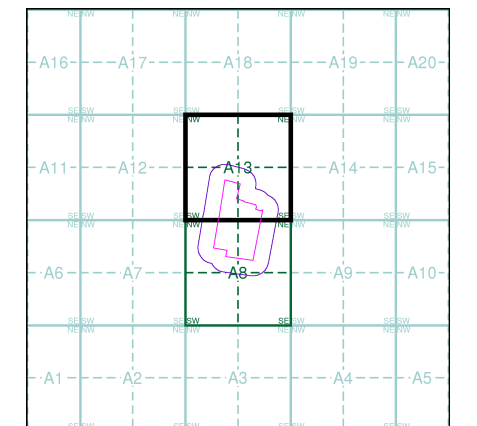
Source map scale - 1:2,500

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Map Name(s) and Date(s)

NZ3064	1958	1:2,500
NZ3063	1957	1:2,500

Historical Map - Segment A13



Order Details

Order Number: 90505614_1_1
 Customer Ref: C7074/Former Siemens Factory, Hebburn/CR
 National Grid Reference: 430400, 563500
 Slice: A
 Site Area (Ha): 10.3
 Search Buffer (m): 100

Site Details

Siemens, North Farm Road, HEBBURN, Tyne and Wear, NE31 1LX



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Ordnance Survey Plan

Published 1967 - 1983

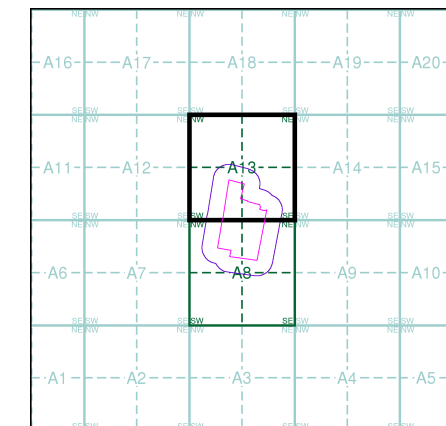
Source map scale - 1:1,250

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

Map Name(s) and Date(s)

NZ3064SW 1967 1:1,250	NZ3064SE 1968 1:1,250
NZ3063NW 1983 1:1,250	NZ3063NE 1976 1:1,250

Historical Map - Segment A13



Order Details

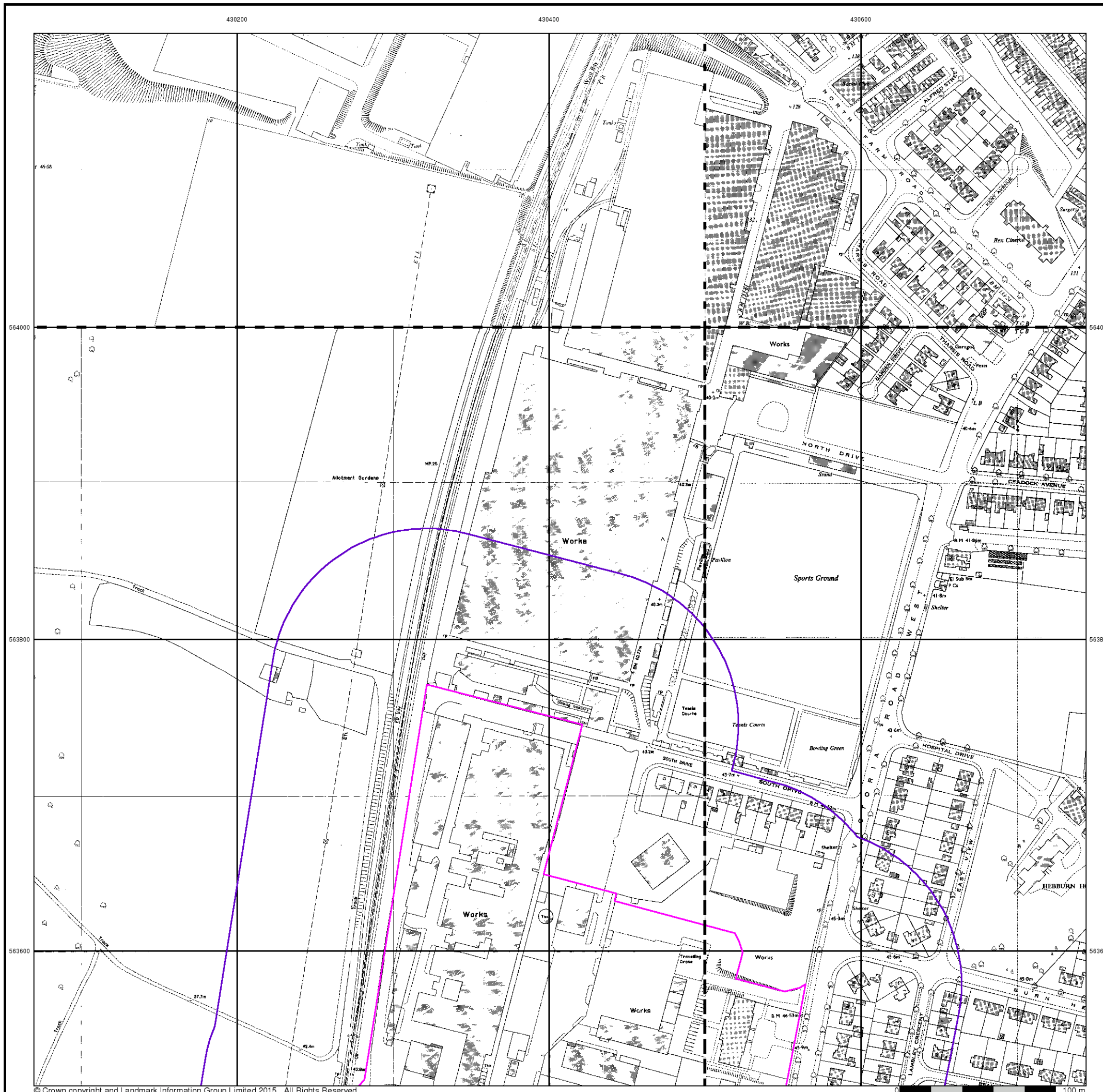
Order Number: 90505614_1_1
 Customer Ref: C7074/Former Siemens Factory, Hebburn/CR
 National Grid Reference: 430400, 563500
 Slice: A
 Site Area (Ha): 10.3
 Search Buffer (m): 100

Site Details

Siemens, North Farm Road, HEBBURN, Tyne and Wear, NE31 1LX



Tel: 0844 844 9952
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Ordnance Survey Plan

Published 1968 - 1970

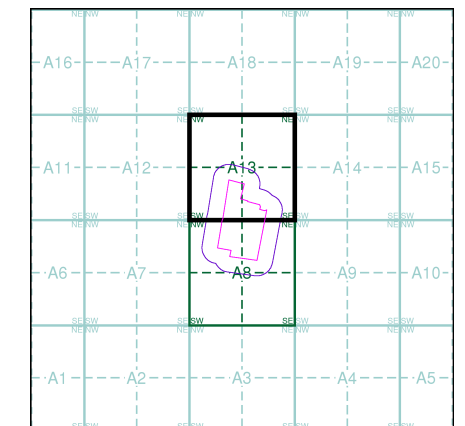
Source map scale - 1:2,500

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)

NZ3064	1970	1:2,500
NZ3063	1968	1:2,500

Historical Map - Segment A13



Order Details

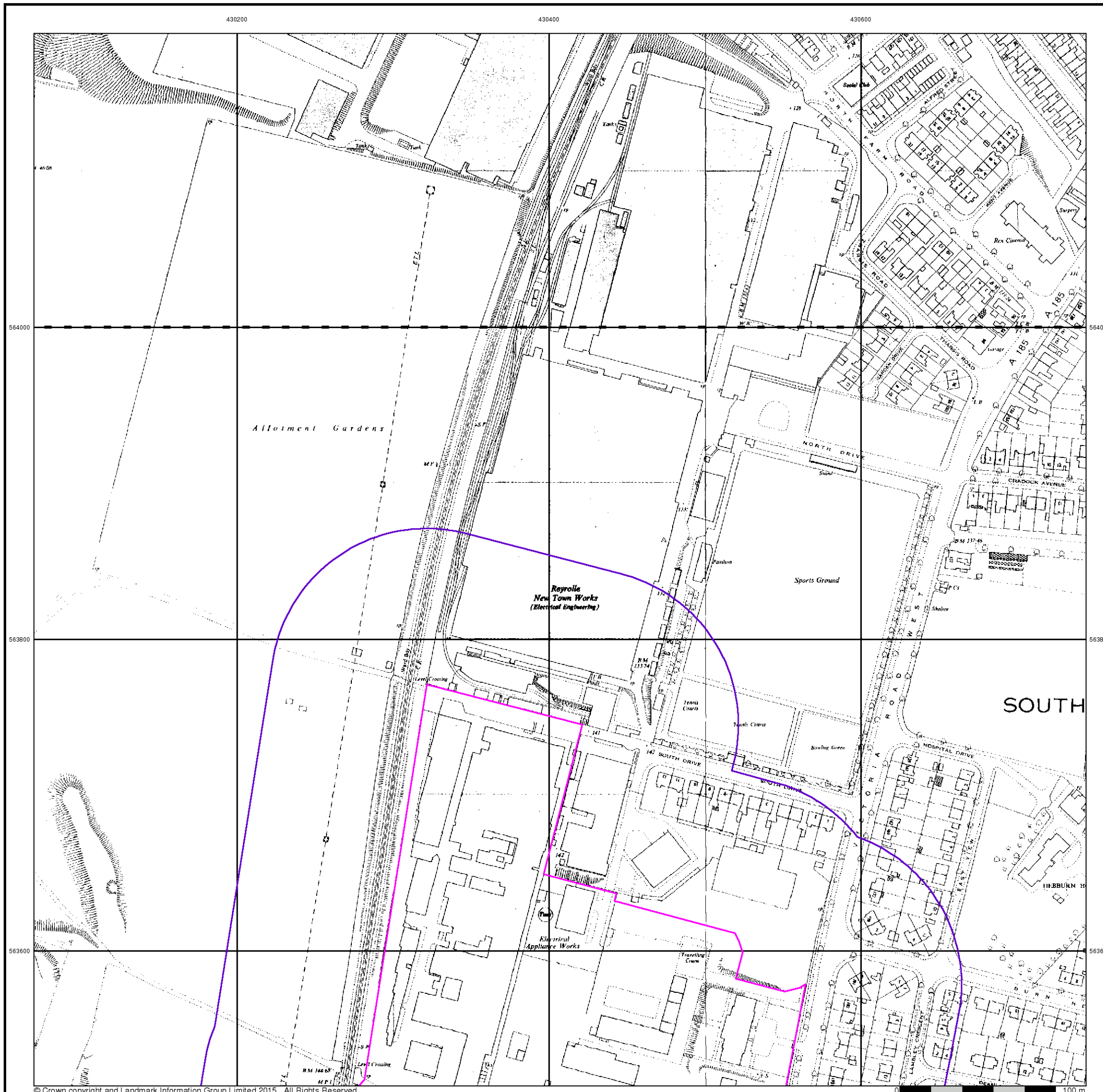
Order Number: 90505614_1_1
 Customer Ref: C7074/Former Siemens Factory, Hebburn/CR
 National Grid Reference: 430400, 563500
 Slice: A
 Site Area (Ha): 10.3
 Search Buffer (m): 100

Site Details

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430200

430400

430600



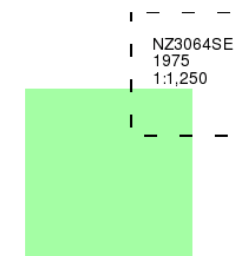
Ordnance Survey Plan

Published 1975

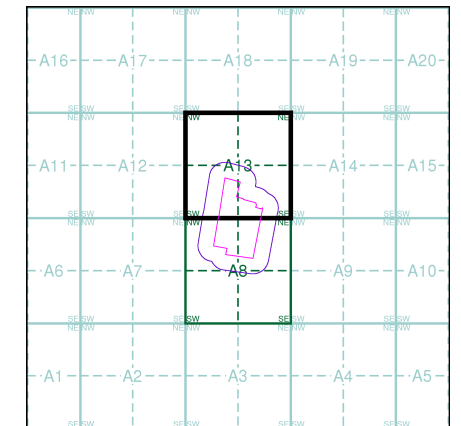
Source map scale - 1:1,250

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

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number: 90505614_1_1
 Customer Ref: C7074/Former Siemens Factory, Hebburn/CR
 National Grid Reference: 430400, 563500
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 Site Area (Ha): 10.3
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Additional SIMs

Published 1983 - 1991

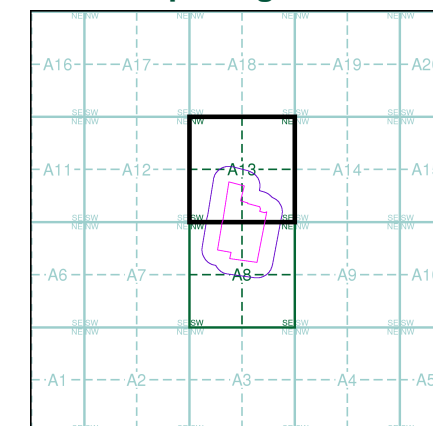
Source map scale - 1:1,250

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

Map Name(s) and Date(s)

NZ3064SW 1991 1:1,250	NZ3064SE 1985 1:1,250
NZ3063NW 1983 1:1,250	NZ3063NE 1991 1:1,250

Historical Map - Segment A13



Order Details

Order Number: 90505614_1_1
 Customer Ref: C7074/Former Siemens Factory, Hebburn/CR

National Grid Reference: 430400, 563500

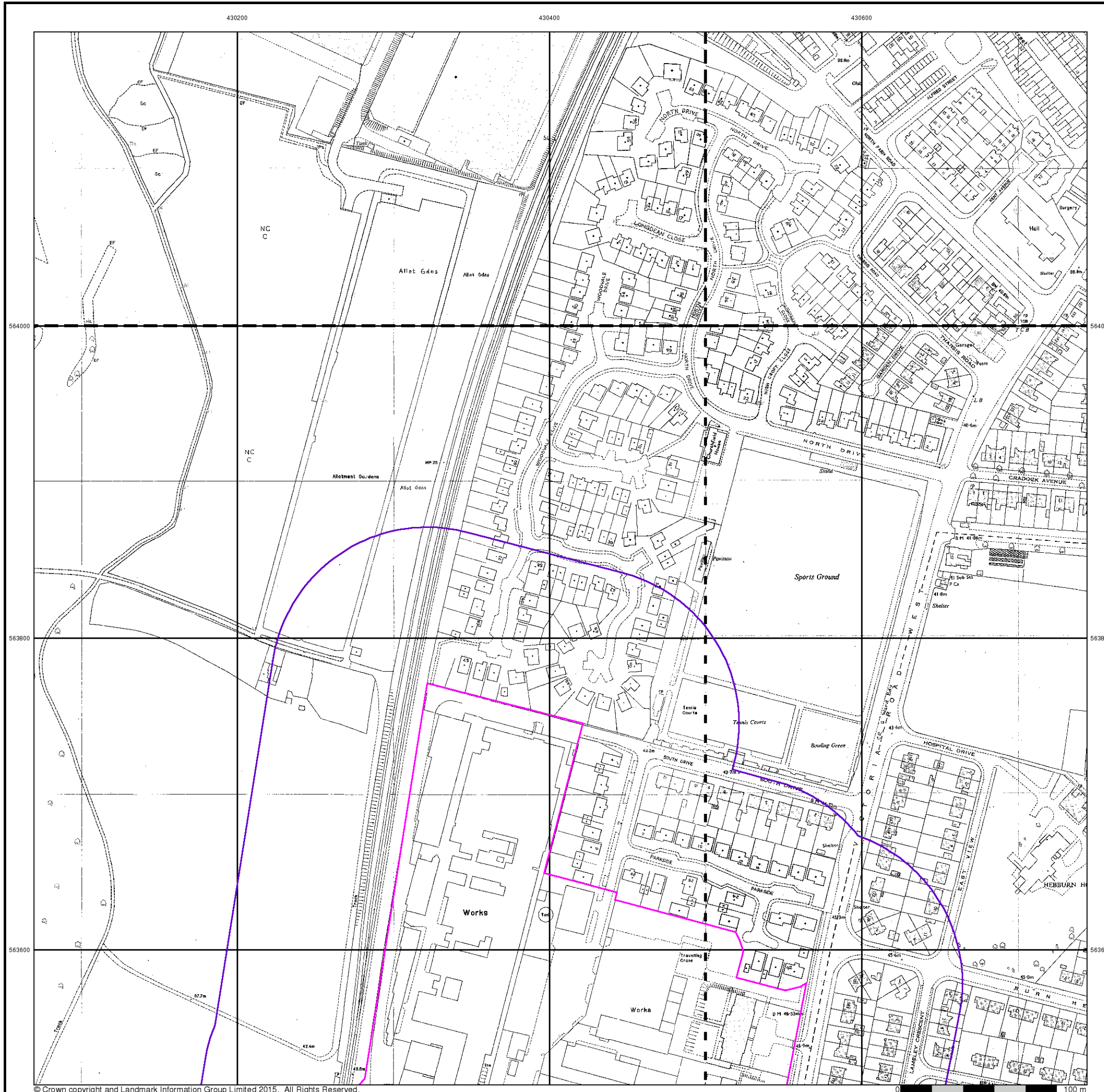
Slice: A
 Site Area (Ha): 10.3
 Search Buffer (m): 100

Site Details

Siemens, North Farm Road, HEBBURN, Tyne and Wear, NE31 1LX



Tel: 0844 844 9952
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430200

430400

430600



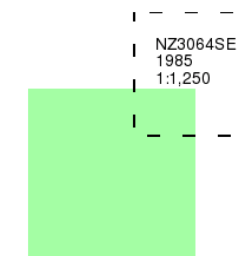
Ordnance Survey Plan

Published 1985

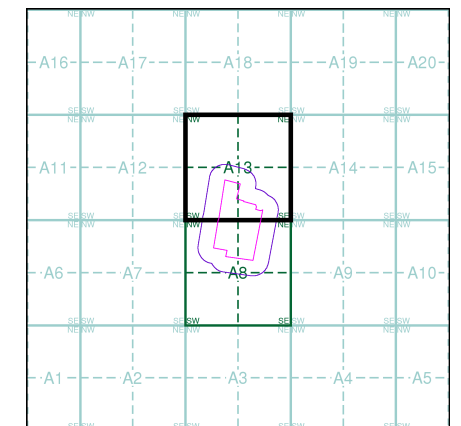
Source map scale - 1:1,250

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

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number: 90505614_1_1
 Customer Ref: C7074/Former Siemens Factory, Hebburn/CR
 National Grid Reference: 430400, 563500
 Slice: A
 Site Area (Ha): 10.3
 Search Buffer (m): 100

Site Details

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564000

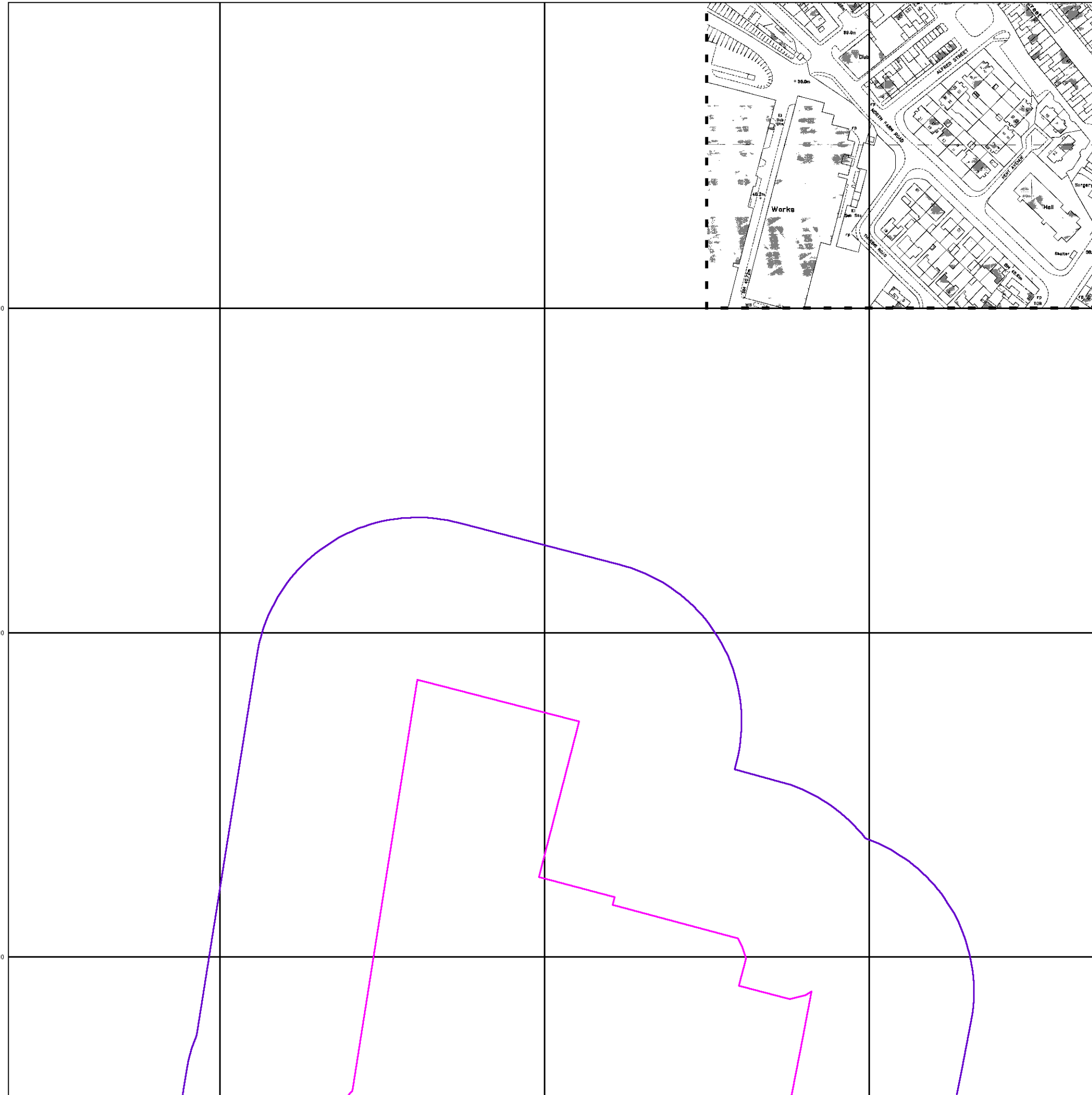
564000

563800

563800

563600

563600





Large-Scale National Grid Data

Published 1993

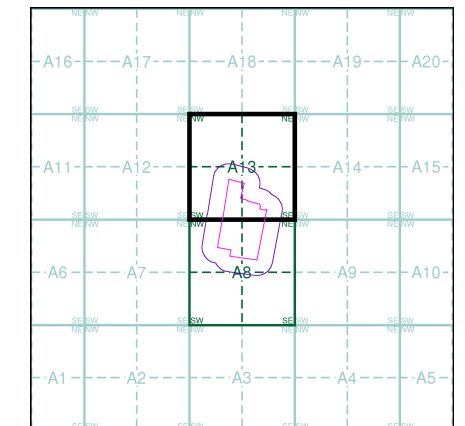
Source map scale - 1:1,250

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

Map Name(s) and Date(s)

NZ3064SW 1993 1:1,250	NZ3064SE 1993 1:1,250
NZ3063NW 1993 1:1,250	NZ3063NE 1993 1:1,250

Historical Map - Segment A13



Order Details

Order Number: 90505614_1_1
Customer Ref: C7074/Former Siemens Factory, Hebburn/CR

National Grid Reference: 430400, 563500

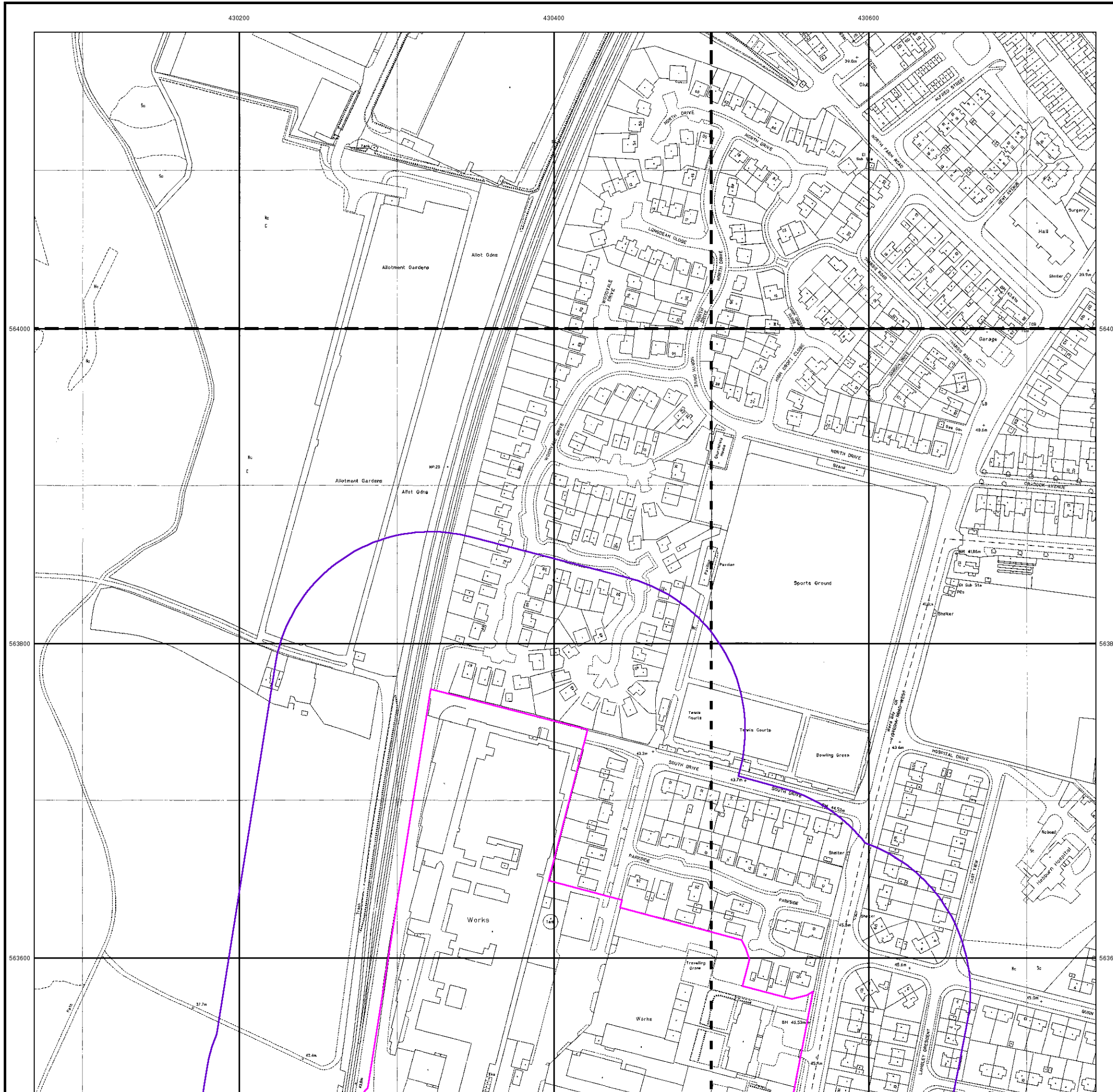
Slice: A
Site Area (Ha): 10.3
Search Buffer (m): 100

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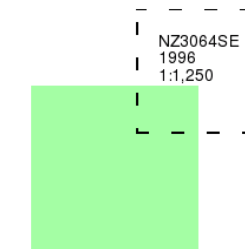
Large-Scale National Grid Data

Published 1996

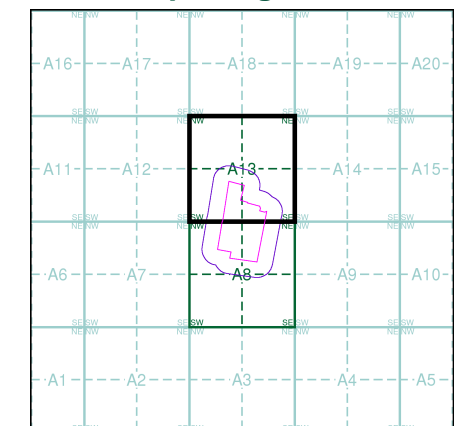
Source map scale - 1:1,250

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

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

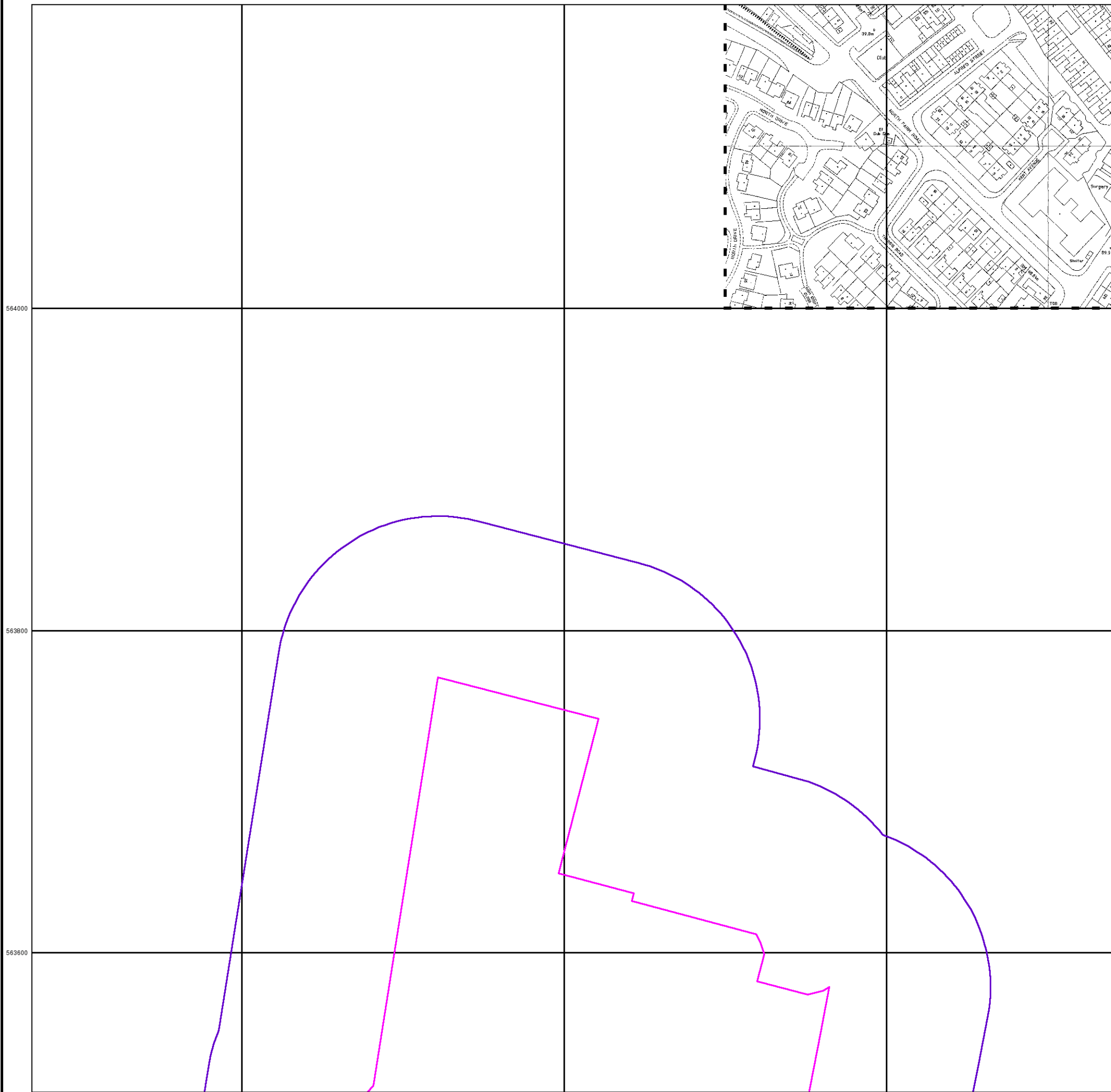
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 Customer Ref: C7074/Former Siemens Factory, Hebburn/CR
 National Grid Reference: 430400, 563500
 Slice: A
 Site Area (Ha): 10.3
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Historical Mapping Legends

Ordnance Survey County Series 1:10,560

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

Ordnance Survey Plan 1:10,000

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

1:10,000 Raster Mapping

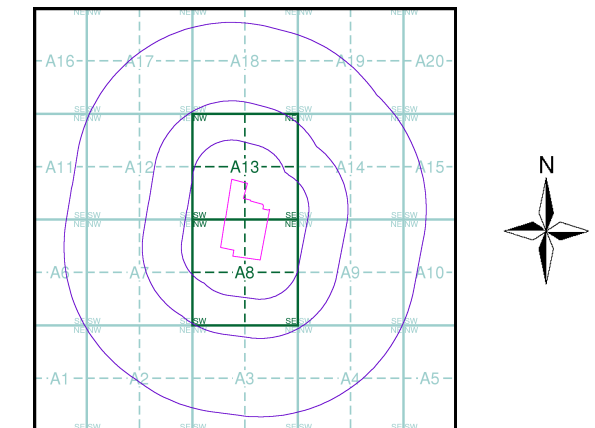
	Gravel Pit		Refuse tip or slag heap
	Rock		Rock (scattered)
	Boulders		Boulders (scattered)
	Shingle		Mud
	Sand		Sand Pit
	Slopes		Top of cliff
	General detail		Underground detail
	Overhead detail		Narrow gauge railway
	Multi-track railway		Single track railway
	County boundary (England only)		Civil,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



Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Durham	1:10,560	1862	2
Northumberland	1:10,560	1864	3
Durham	1:10,560	1898	4
Northumberland	1:10,560	1899	5
Durham	1:10,560	1921	6
Durham	1:10,560	1938	7
Durham	1:10,560	1938	8
Ordnance Survey Plan	1:10,000	1951 - 1952	9
Ordnance Survey Plan	1:10,000	1957	10
Ordnance Survey Plan	1:10,000	1958	11
Ordnance Survey Plan	1:10,000	1967	12
Ordnance Survey Plan	1:10,000	1973 - 1975	13
Ordnance Survey Plan	1:10,000	1984	14
Ordnance Survey Plan	1:10,000	1991 - 1992	15
10K Raster Mapping	1:10,000	2000	16
Street View	1:10,000	2016	17

Historical Map - Slice A



Order Details

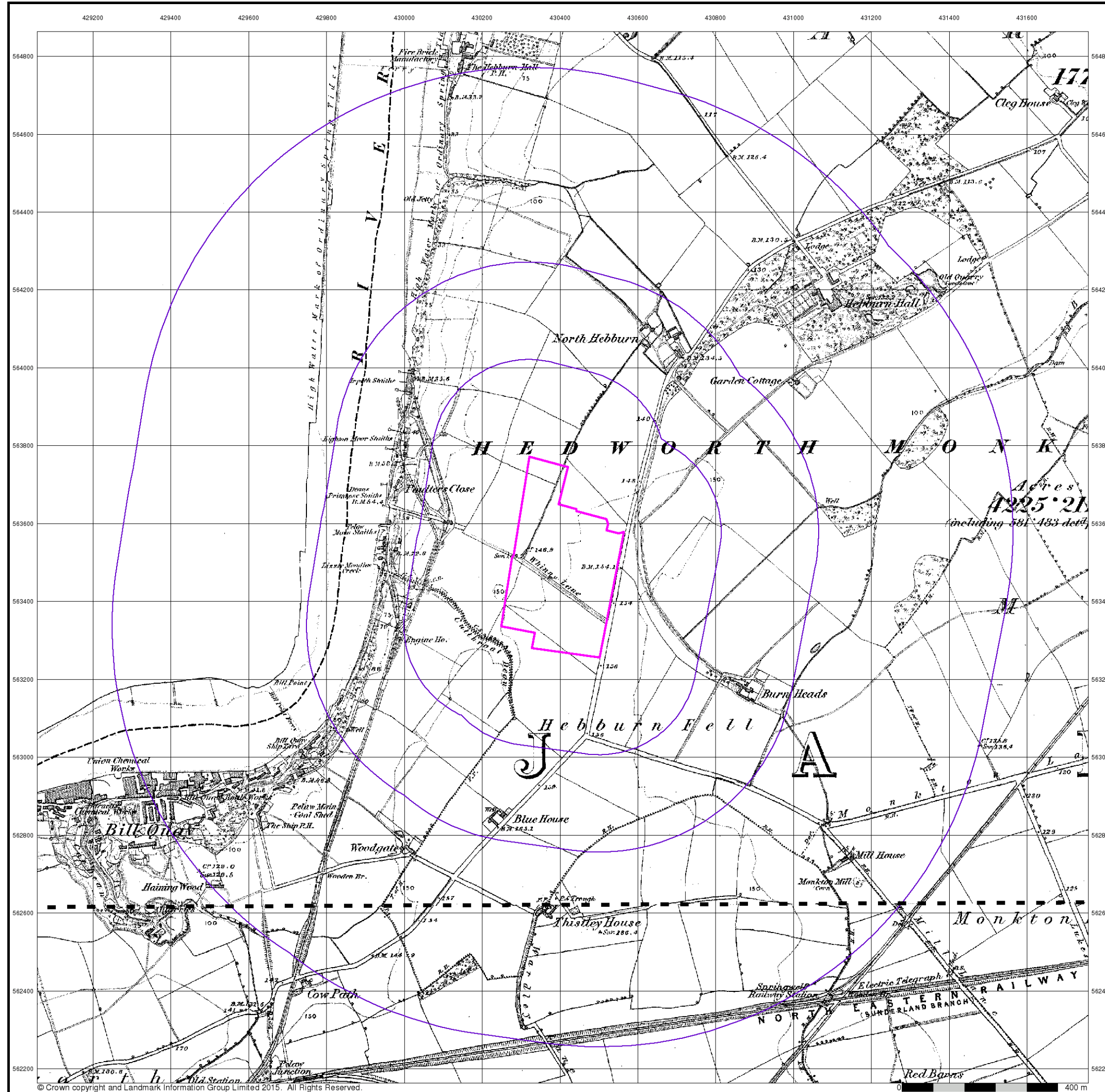
Order Number: 90505614_1_1
 Customer Ref: C7074/Former Siemens Factory, Hebburn/CR
 National Grid Reference: 430400, 563500
 Slice: A
 Site Area (Ha): 10.3
 Search Buffer (m): 1000

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Durham

Published 1862

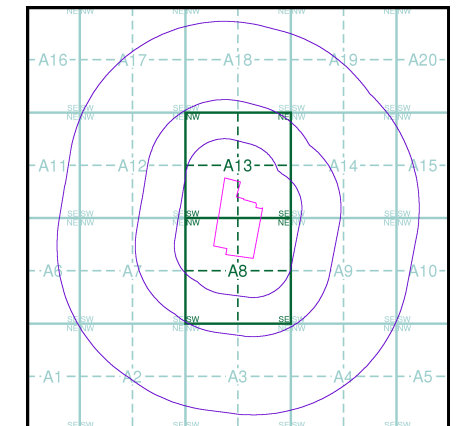
Source map scale - 1:10,560

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)

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00700	1862	1:10,560

Historical Map - Slice A



Order Details

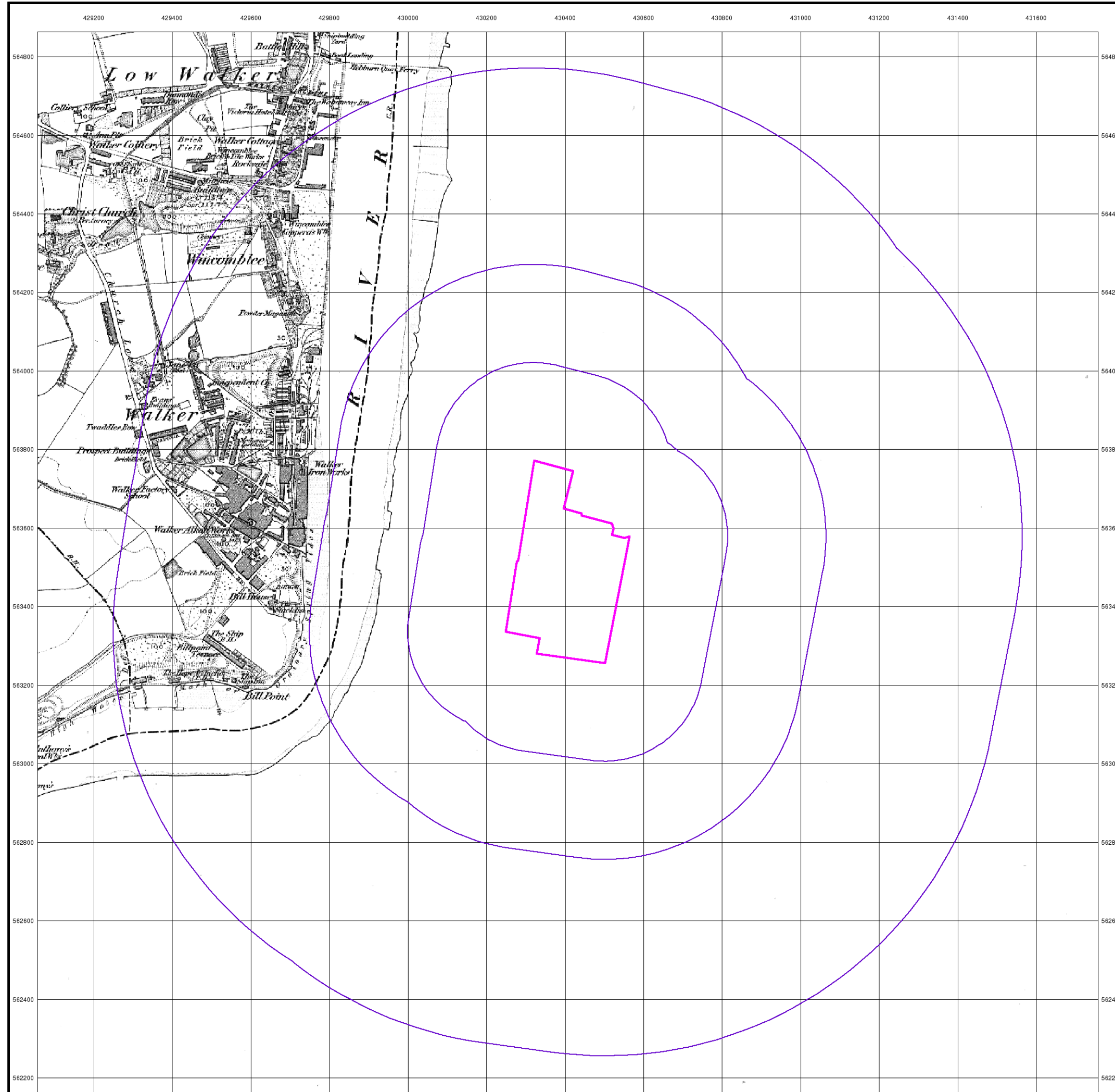
Order Number: 90505614_1_1
 Customer Ref: C7074/Former Siemens Factory, Hebburn/CR
 National Grid Reference: 430400, 563500
 Slice: A
 Site Area (Ha): 10.3
 Search Buffer (m): 1000

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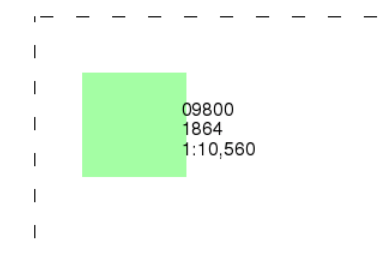
Northumberland

Published 1864

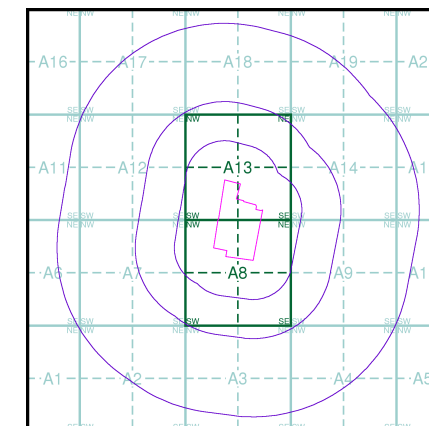
Source map scale - 1:10,560

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: 90505614_1_1
 Customer Ref: C7074/Former Siemens Factory, Hebburn/CR
 National Grid Reference: 430400, 563500
 Slice: A
 Site Area (Ha): 10.3
 Search Buffer (m): 1000

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Durham

Published 1898

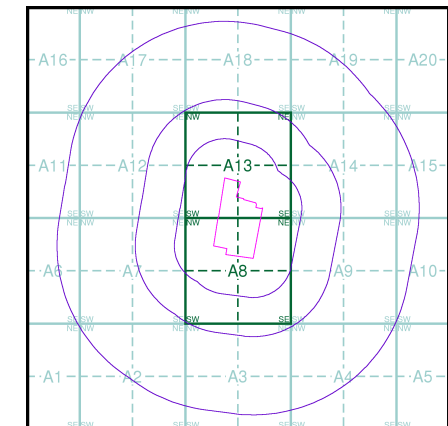
Source map scale - 1:10,560

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)

003SW 1898 1:10,560	003SE 1898 1:10,560
007NW 1898 1:10,560	007NE 1898 1:10,560

Historical Map - Slice A



Order Details

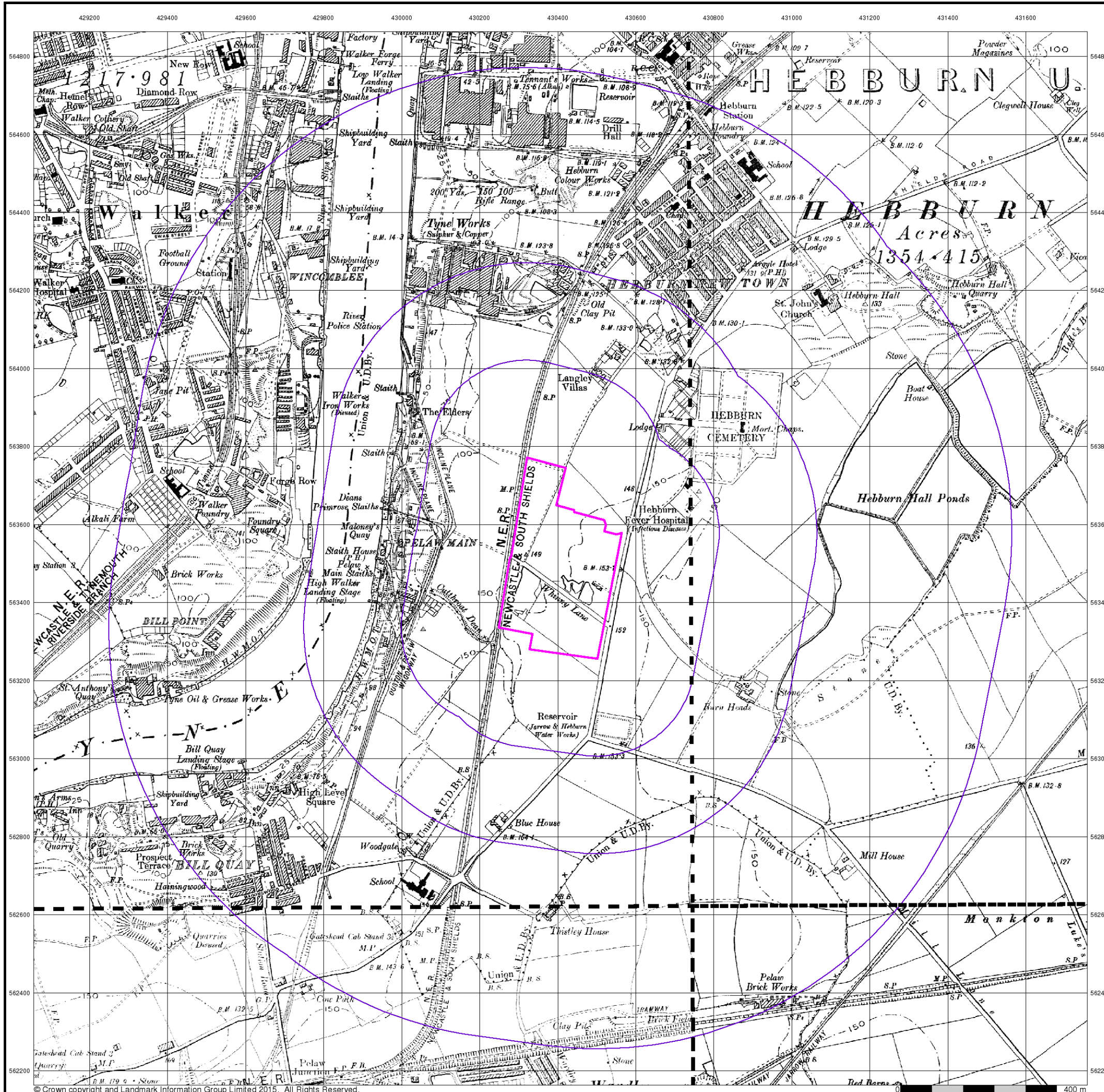
Order Number: 90505614_1_1
 Customer Ref: C7074/Former Siemens Factory, Hebburn/CR
 National Grid Reference: 430400, 563500
 Slice: A
 Site Area (Ha): 10.3
 Search Buffer (m): 1000

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Northumberland

Published 1899

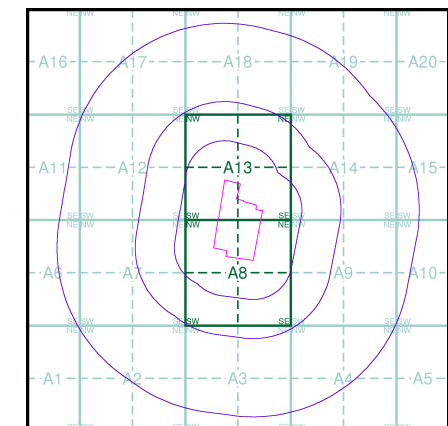
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The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps.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

098NW	1899	1:10,560
098SW	1899	1:10,560

Historical Map - Slice A



Order Details

Order Number: 90505614_1_1
 Customer Ref: C7074/Former Siemens Factory, Hebburn/CR
 National Grid Reference: 430400, 563500
 Slice: A
 Site Area (Ha): 10.3
 Search Buffer (m): 1000

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Durham

Published 1921

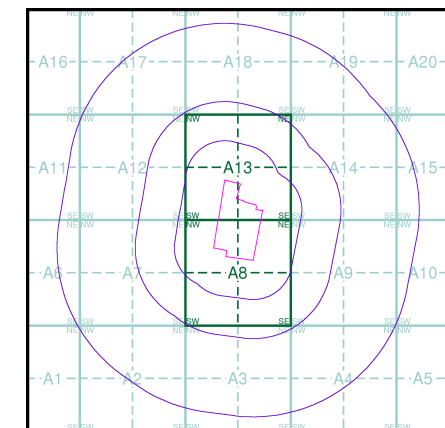
Source map scale - 1:10,560

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)

003SW 1921 1:10,560	003SE 1921 1:10,560
007NW 1921 1:10,560	007NE 1921 1:10,560

Historical Map - Slice A



Order Details

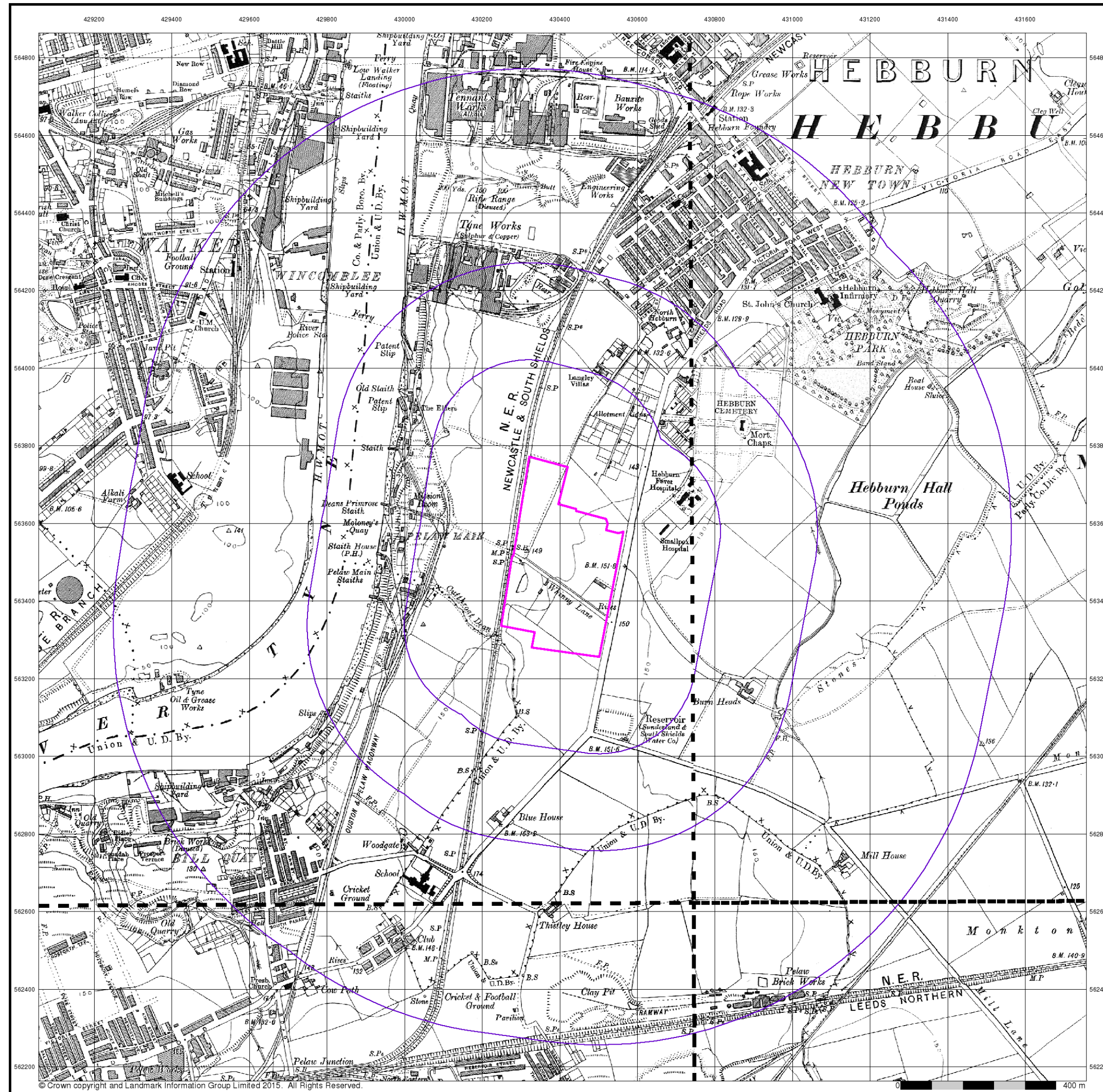
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 Customer Ref: C7074/Former Siemens Factory, Hebburn/CR
 National Grid Reference: 430400, 563500
 Slice: A
 Site Area (Ha): 10.3
 Search Buffer (m): 1000

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Durham

Published 1938

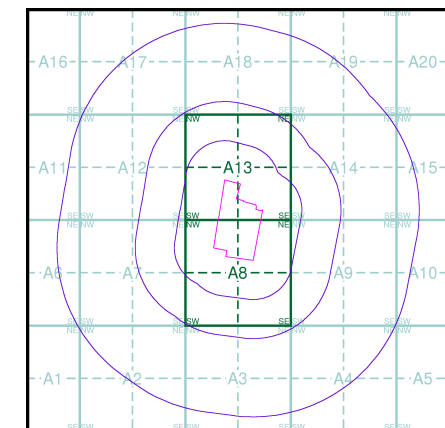
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The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps.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

Map Name(s) and Date(s)

003SW 1938 1:10,560	003SE 1938 1:10,560
007NW 1938 1:10,560	007NE 1938 1:10,560

Historical Map - Slice A



Order Details

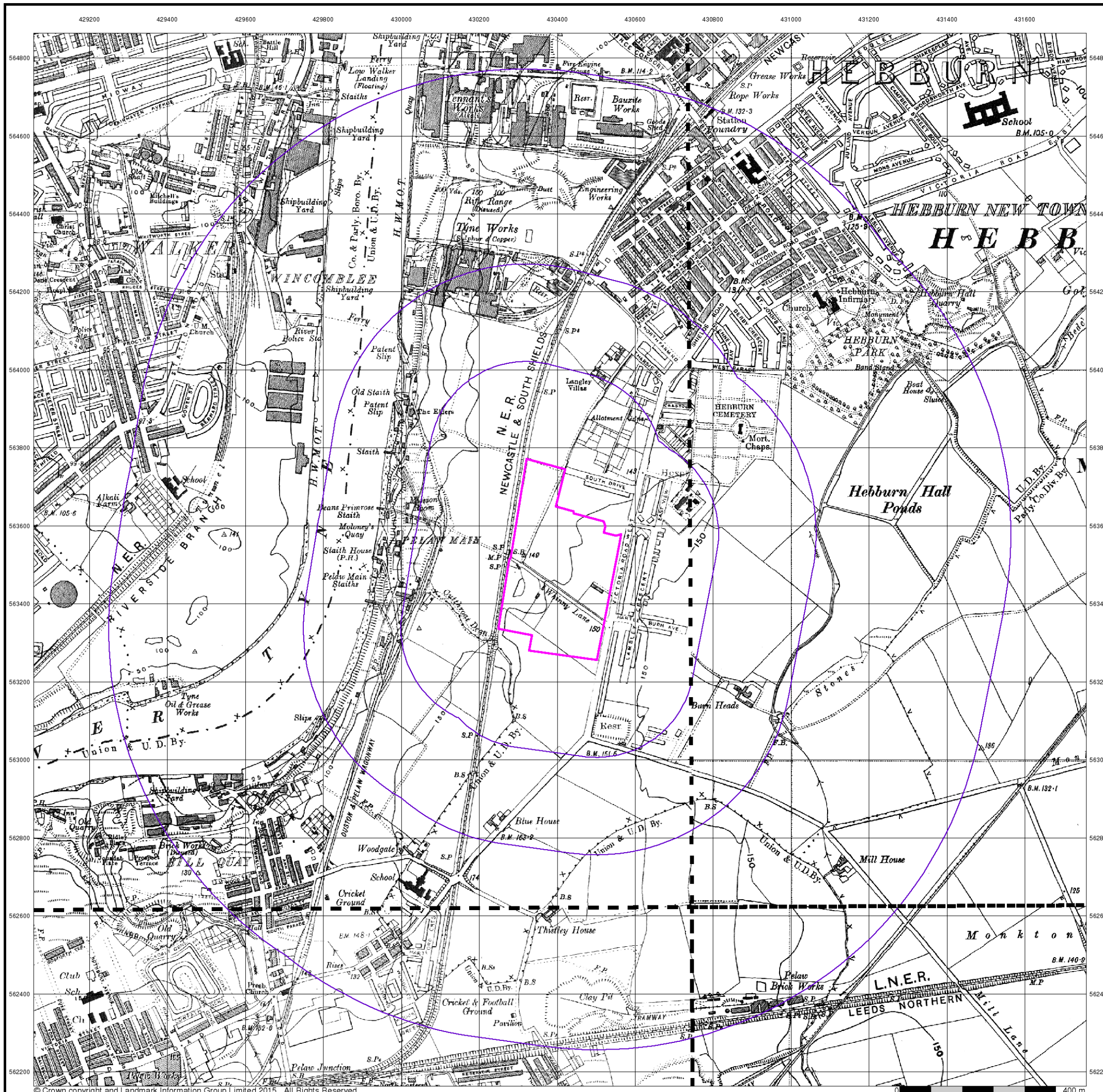
Order Number: 90505614_1_1
 Customer Ref: C7074/Former Siemens Factory, Hebburn/CR
 National Grid Reference: 430400, 563500
 Slice: A
 Site Area (Ha): 10.3
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Durham

Published 1938

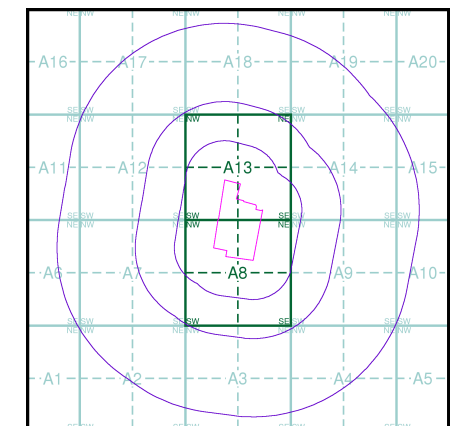
Source map scale - 1:10,560

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)

003SW	1938	1:10,560
007NW	1938	1:10,560

Historical Map - Slice A



Order Details

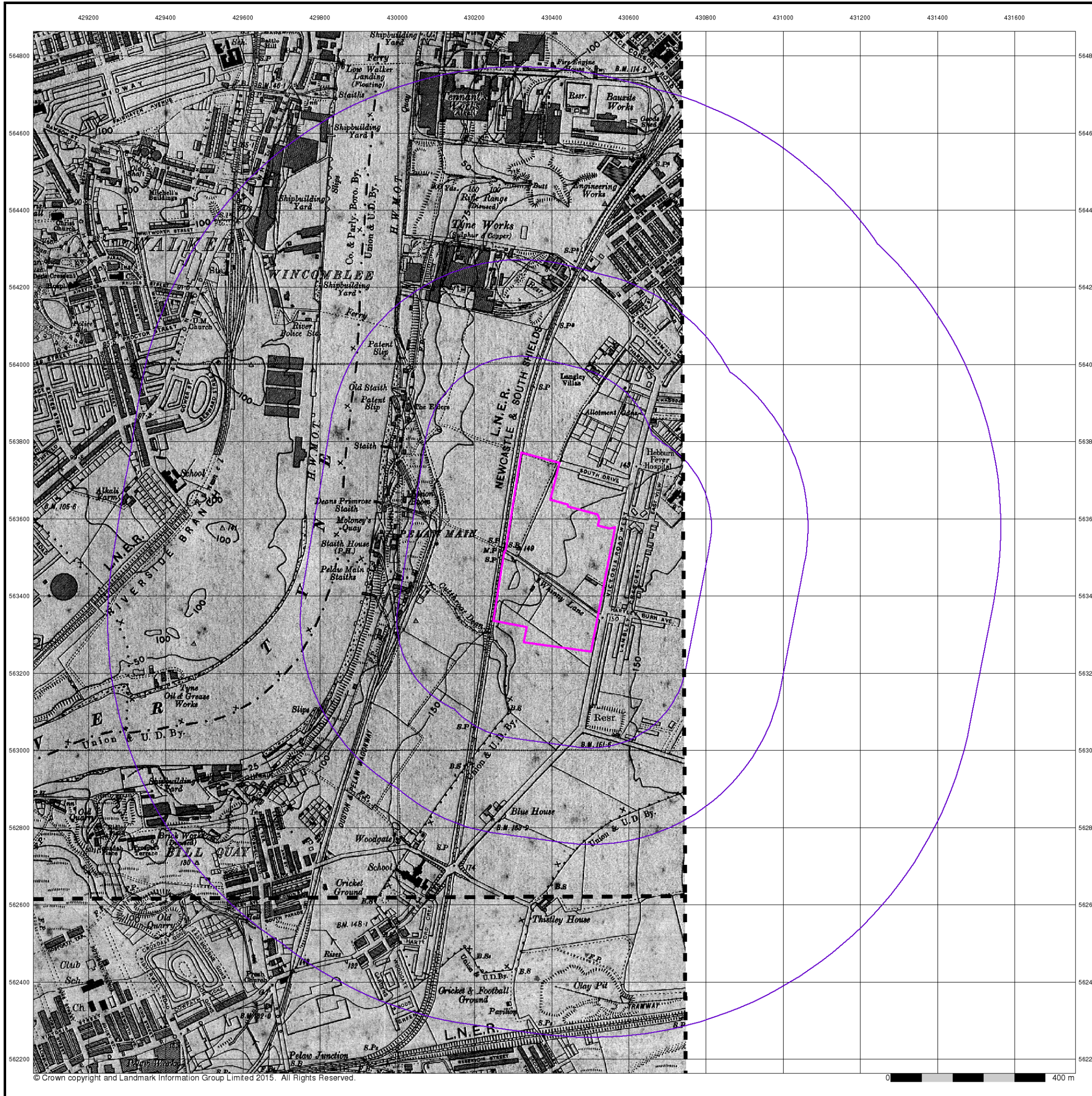
Order Number: 90505614_1_1
 Customer Ref: C7074/Former Siemens Factory, Hebburn/CR
 National Grid Reference: 430400, 563500
 Slice: A
 Site Area (Ha): 10.3
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Site Details

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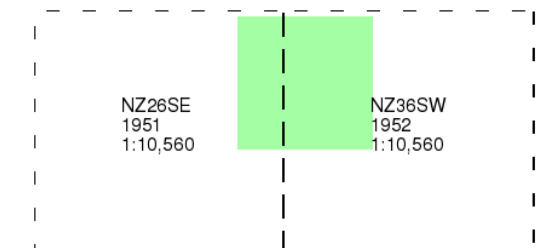
Ordnance Survey Plan

Published 1951 - 1952

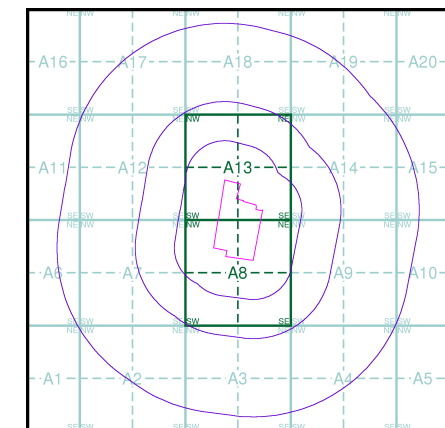
Source map scale - 1:10,000

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

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

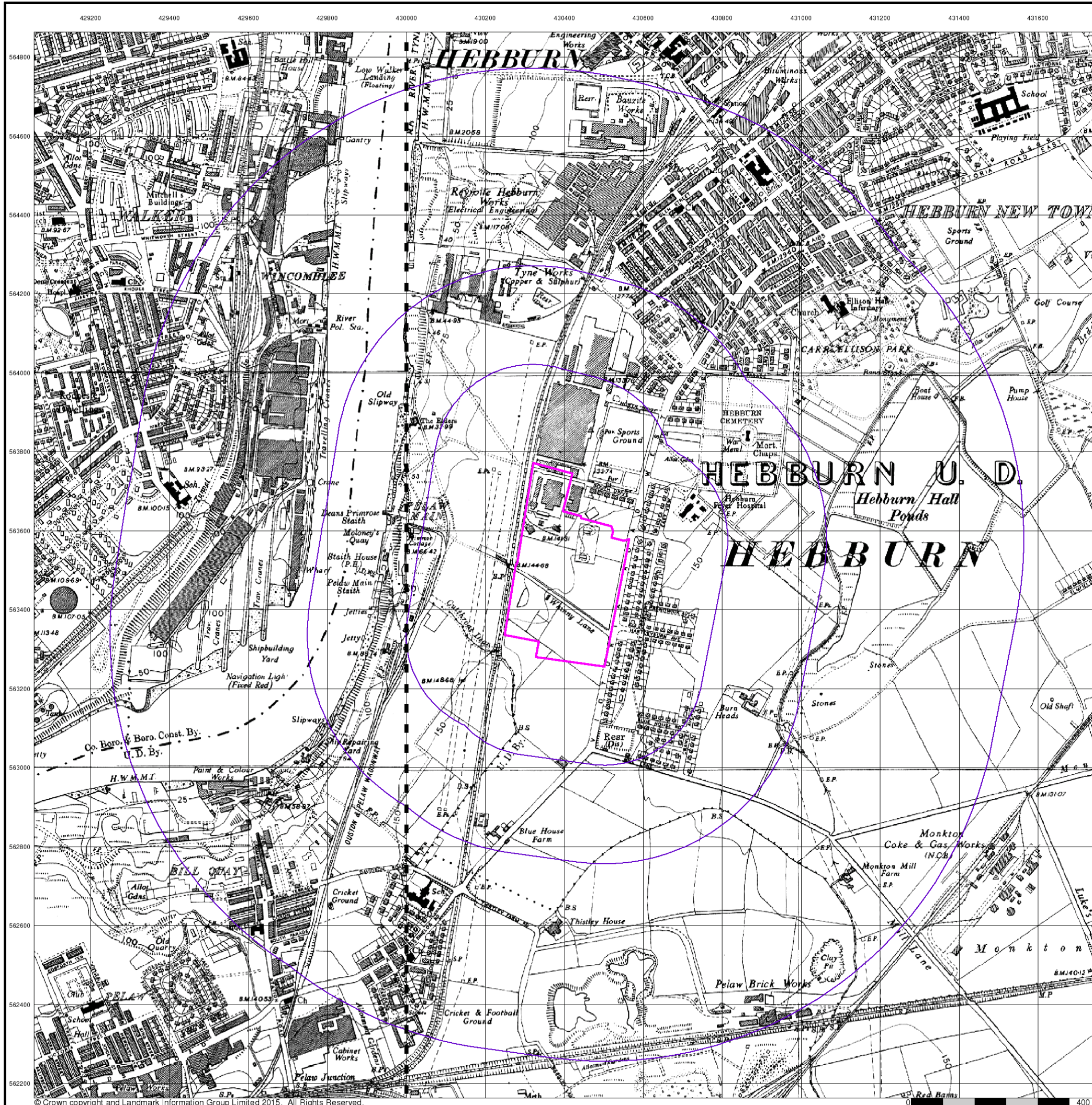
Order Number: 90505614_1_1
Customer Ref: C7074/Former Siemens Factory, Hebburn/CR
National Grid Reference: 430400, 563500
Slice: A
Site Area (Ha): 10.3
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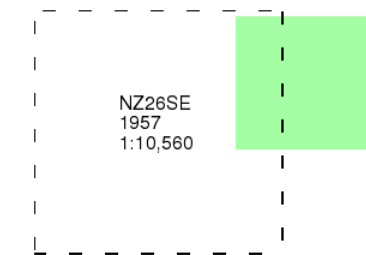
Ordnance Survey Plan

Published 1957

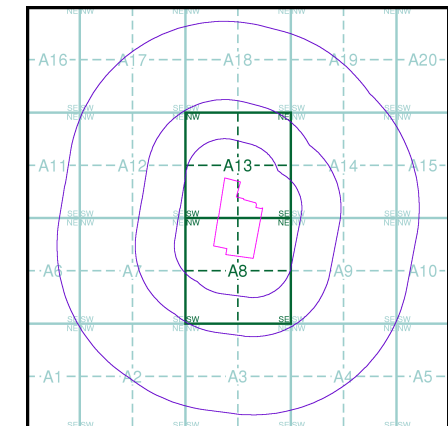
Source map scale - 1:10,000

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

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

Order Number: 90505614_1_1
Customer Ref: C7074/Former Siemens Factory, Hebburn/CR
National Grid Reference: 430400, 563500
Slice: A
Site Area (Ha): 10.3
Search Buffer (m): 1000

Site Details

Siemens, North Farm Road, HEBBURN, Tyne and Wear, NE31 1LX



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





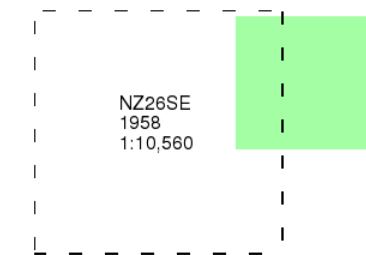
Ordnance Survey Plan

Published 1958

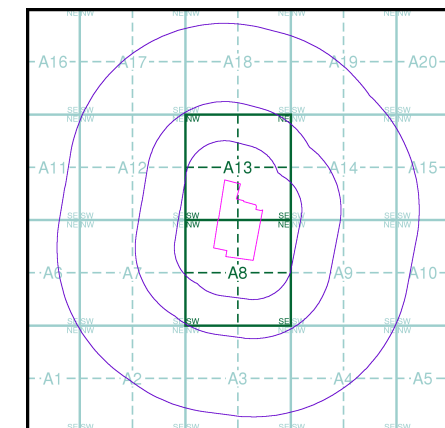
Source map scale - 1:10,000

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

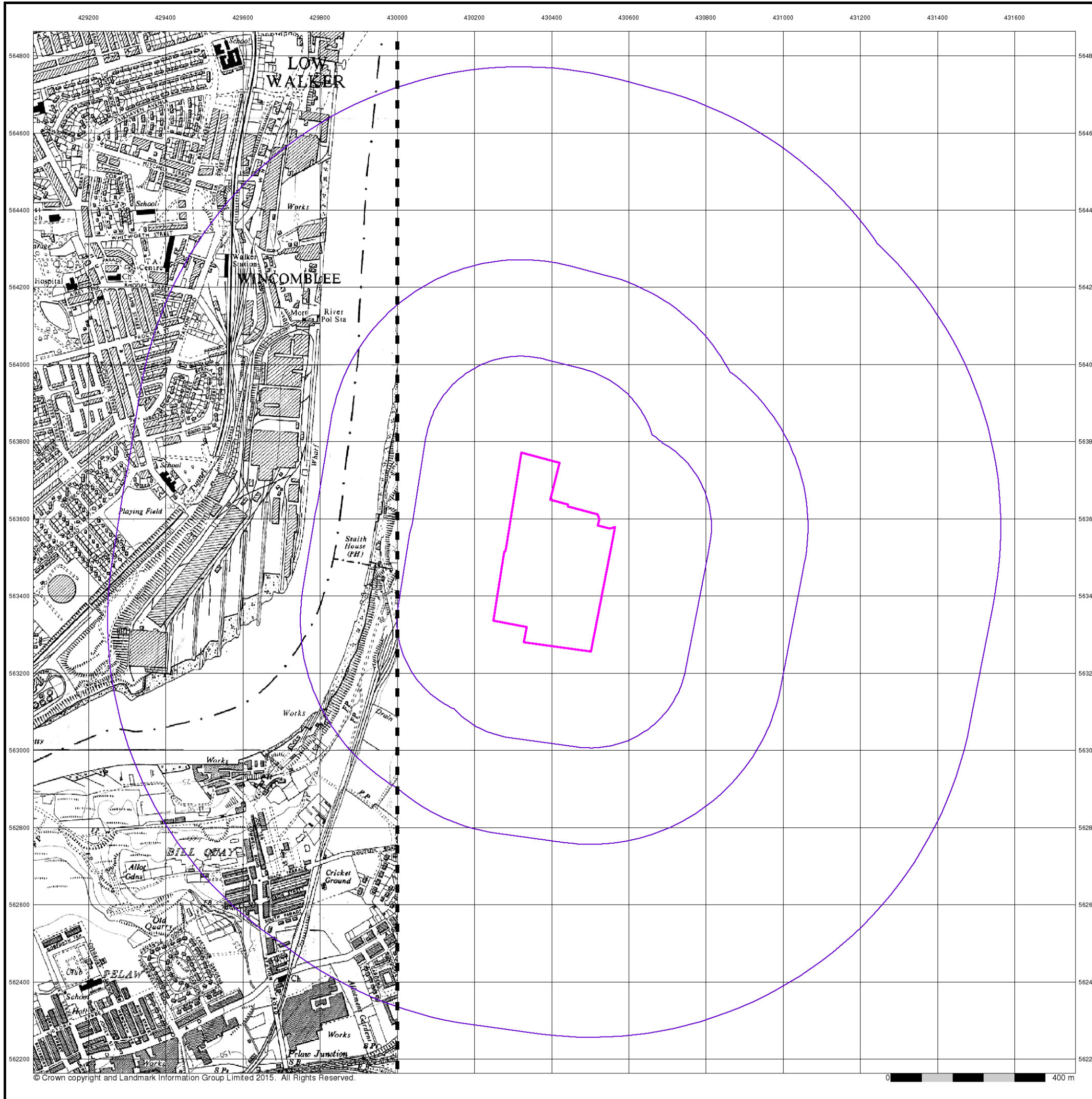
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Customer Ref: C7074/Former Siemens Factory, Hebburn/CR
National Grid Reference: 430400, 563500
Slice: A
Site Area (Ha): 10.3
Search Buffer (m): 1000

Site Details

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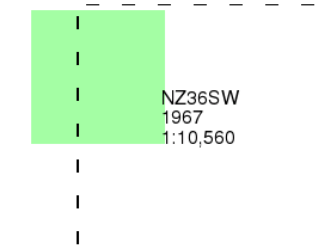
Ordnance Survey Plan

Published 1967

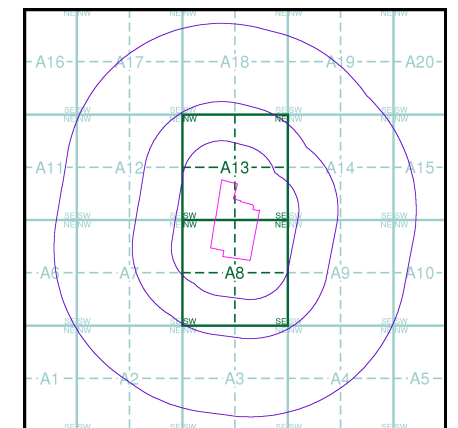
Source map scale - 1:10,000

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Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

Order Number:	90505614_1_1
Customer Ref:	C7074/Former Siemens Factory, Hebburn/CR
National Grid Reference:	430400, 563500
Slice:	A
Site Area (Ha):	10.3
Search Buffer (m):	1000

Site Details

Siemens, North Farm Road, HEBBURN, Tyne and Wear, NE31 1LX



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





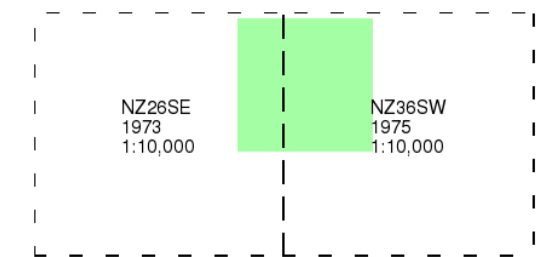
Ordnance Survey Plan

Published 1973 - 1975

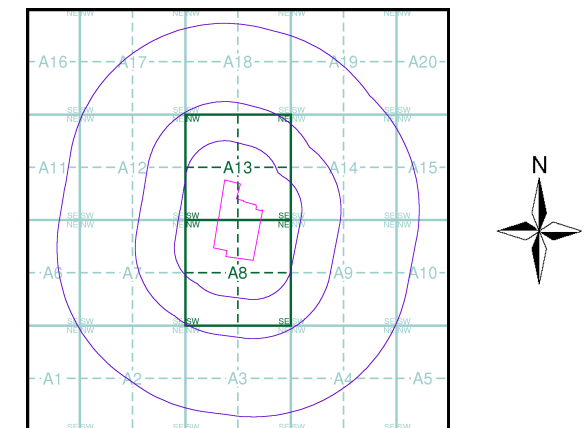
Source map scale - 1:10,000

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

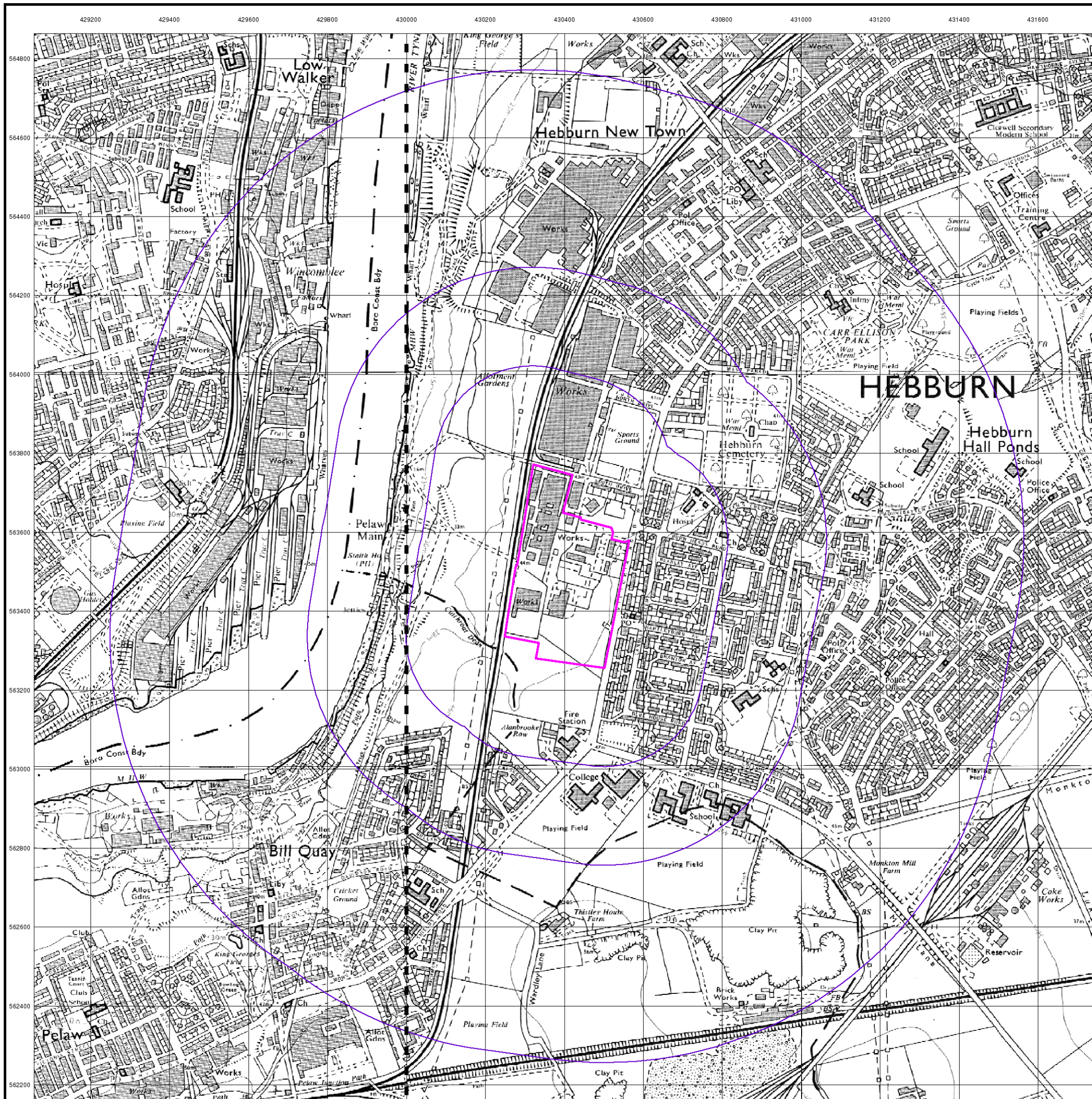
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Customer Ref: C7074/Former Siemens Factory, Hebburn/CR
National Grid Reference: 430400, 563500
Slice: A
Site Area (Ha): 10.3
Search Buffer (m): 1000

Site Details

Siemens, North Farm Road, HEBBURN, Tyne and Wear, NE31 1LX



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





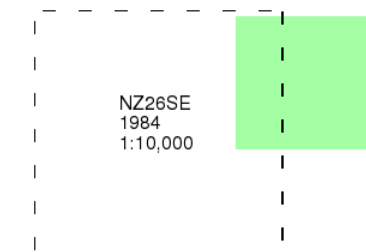
Ordnance Survey Plan

Published 1984

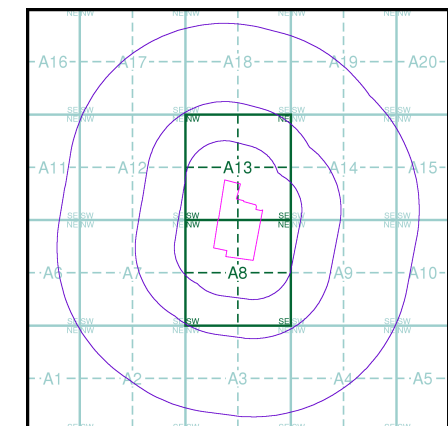
Source map scale - 1:10,000

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

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

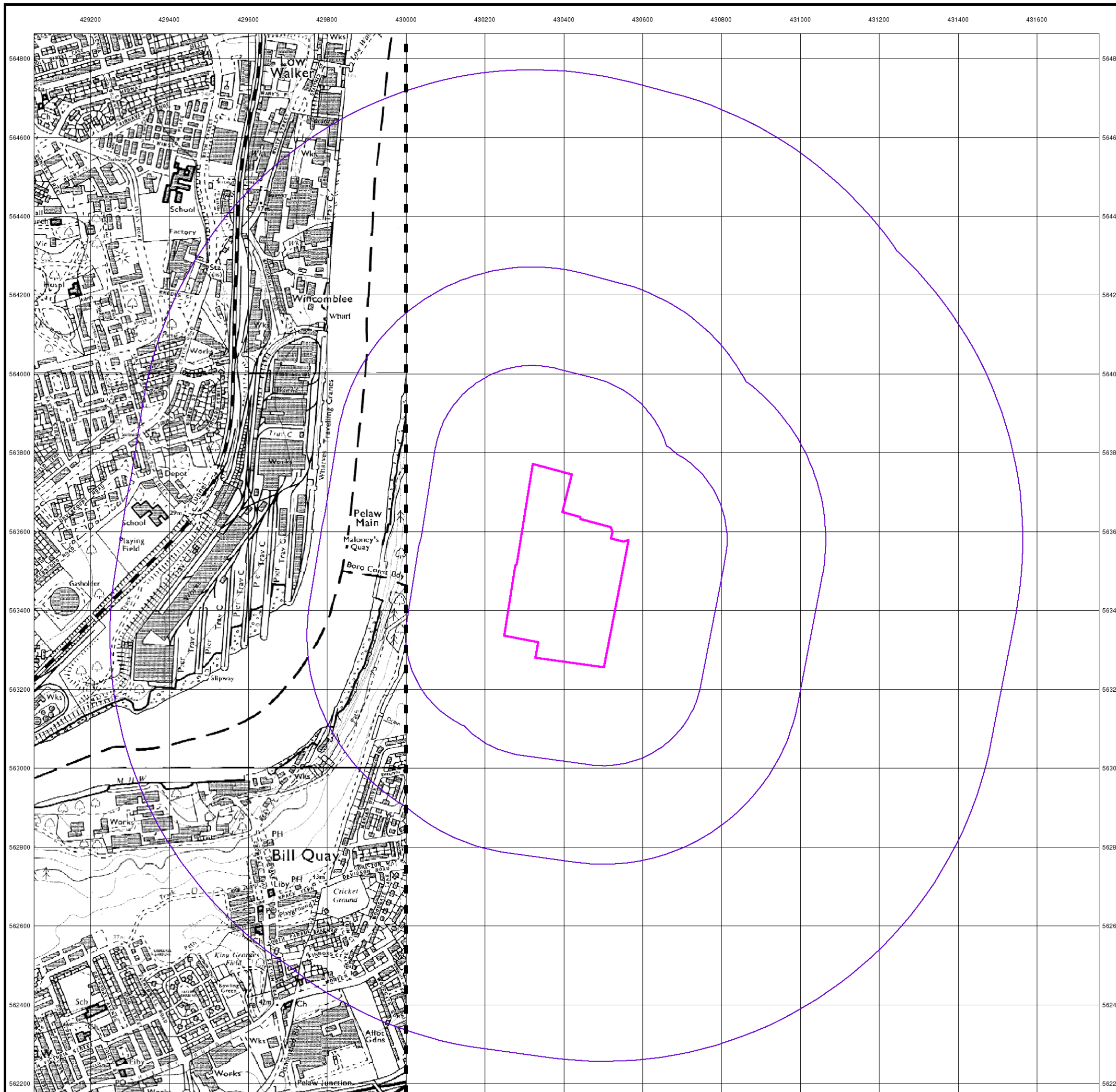
Order Number: 90505614_1_1
Customer Ref: C7074/Former Siemens Factory, Hebburn/CR
National Grid Reference: 430400, 563500
Slice: A
Site Area (Ha): 10.3
Search Buffer (m): 1000

Site Details

Siemens, North Farm Road, HEBBURN, Tyne and Wear, NE31 1LX



Tel: 0844 844 9952
Fax: 0844 844 9951
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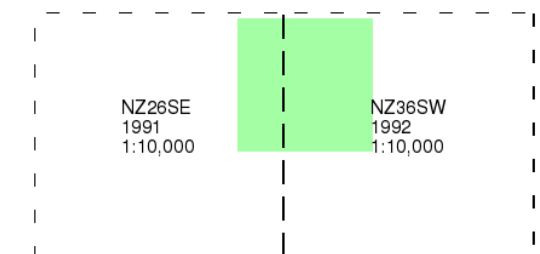
Ordnance Survey Plan

Published 1991 - 1992

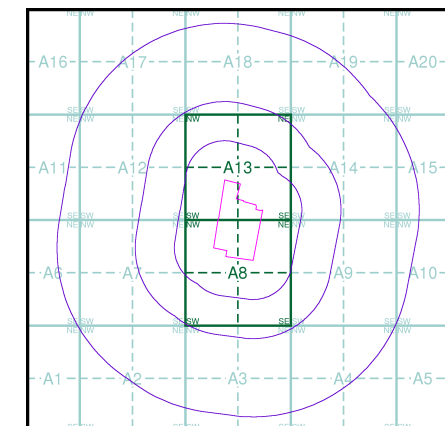
Source map scale - 1:10,000

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

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

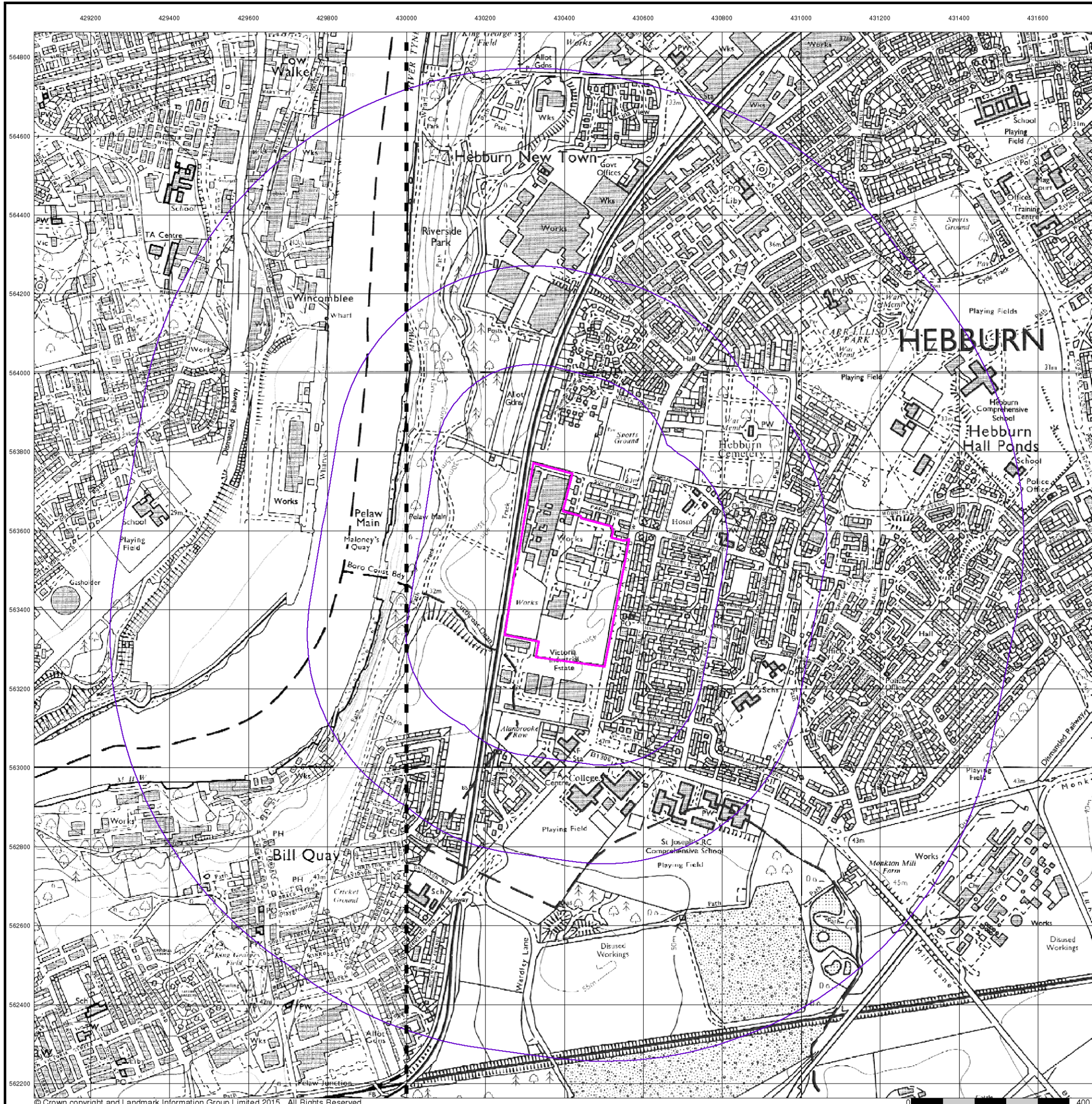
Order Number: 90505614_1_1
 Customer Ref: C7074/Former Siemens Factory, Hebburn/CR
 National Grid Reference: 430400, 563500
 Slice: A
 Site Area (Ha): 10.3
 Search Buffer (m): 1000

Site Details

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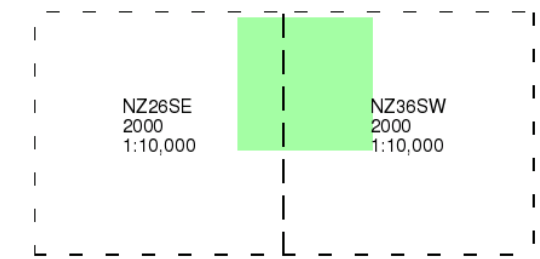
10k Raster Mapping

Published 2000

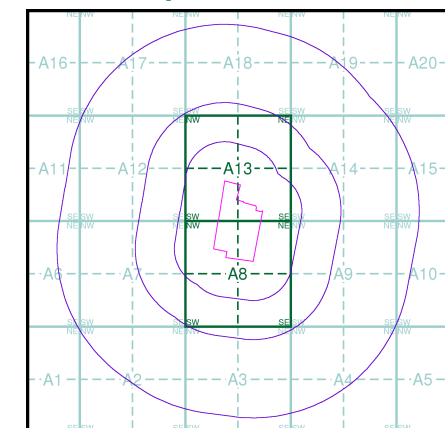
Source map scale - 1:10,000

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)



Historical Map - Slice A



Order Details

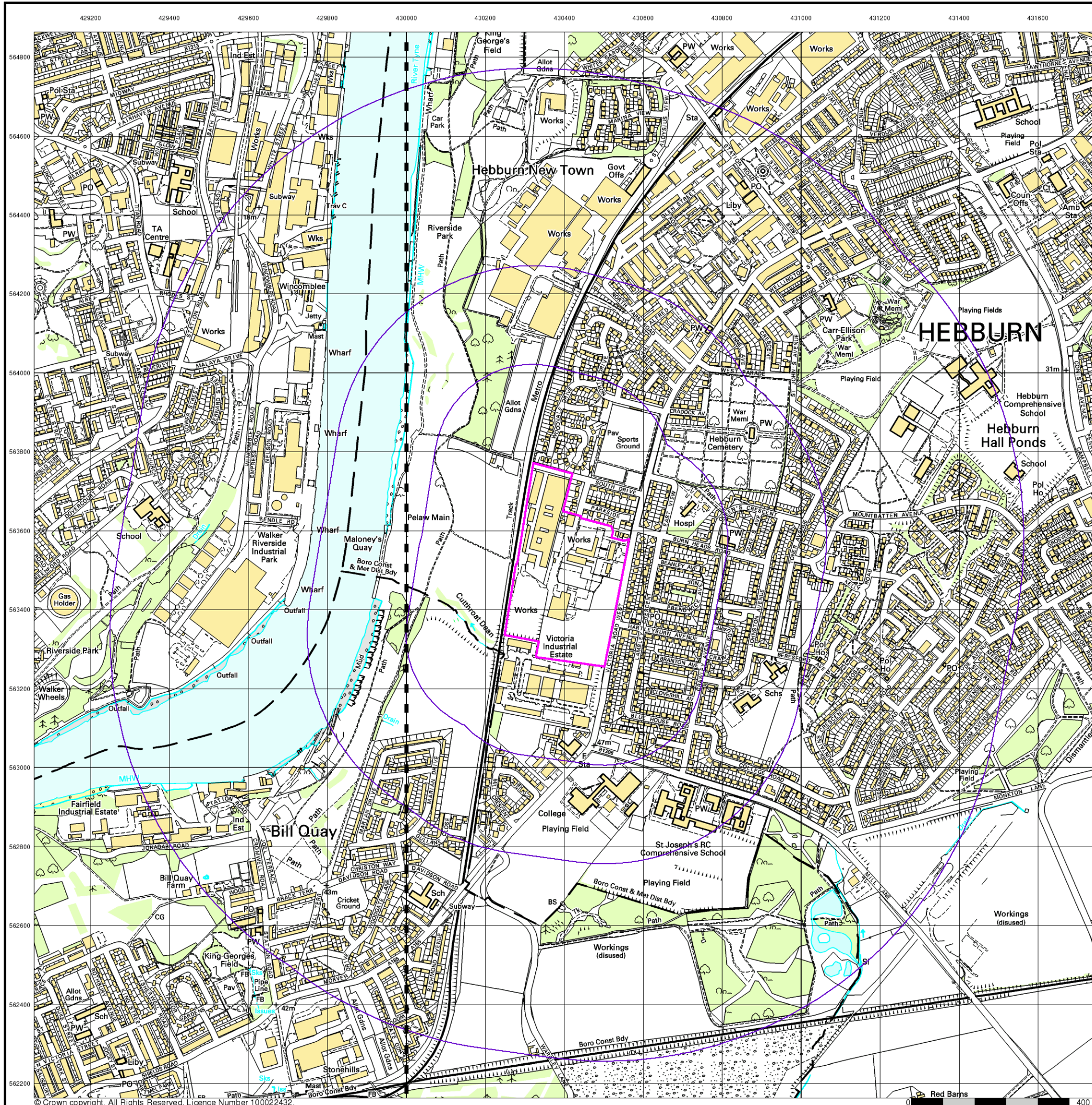
Order Number: 90505614_1_1
Customer Ref: C7074/Former Siemens Factory, Hebburn/CR
National Grid Reference: 430400, 563500
Slice: A
Site Area (Ha): 10.3
Search Buffer (m): 1000

Site Details

Siemens, North Farm Road, HEBBURN, Tyne and Wear, NE31 1LX



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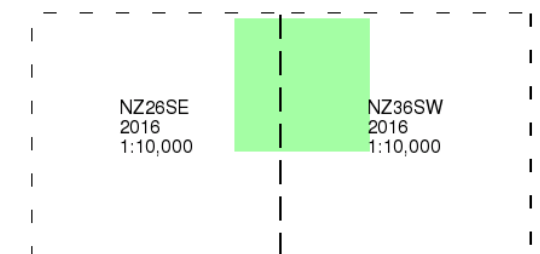
Street View

Published 2016

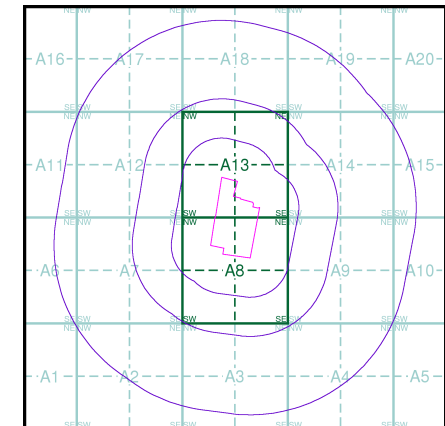
Source map scale - 1:10,000

Street View is a street-level map for the whole of Great Britain produced by the Ordnance Survey. These maps are provided at a nominal scale of 1:10,000

Map Name(s) and Date(s)



Street View Map - Slice A



Order Details

Order Number: 90505614_1_1
 Customer Ref: C7074/Former Siemens Factory, Hebburn/CR
 National Grid Reference: 430400, 563500
 Slice: A
 Site Area (Ha): 10.3
 Search Buffer (m): 1000

Site Details

Siemens, North Farm Road, HEBBURN, Tyne and Wear, NE31 1LX



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



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 Enforcement
- Pollution Incident to Controlled Waters
- Prosecution Relating to Authorised Processes
- Prosecution Relating to Controlled Waters
- Registered Radioactive Substance
- River Network or Water Feature
- River Quality Sampling Point
- Substantiated Pollution Incident Register
- Water Abstraction
- Water Industry Act Referral

Waste

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

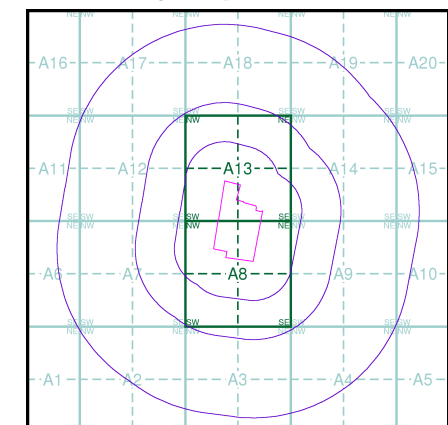
Geological

- BGS Recorded Mineral Site

Industrial Land Use

- Contemporary Trade Directory Entry
- Fuel Station Entry
- COMAH Site
- Explosive Site
- NIHS Site
- Planning Hazardous Substance Consent
- Planning Hazardous Substance Enforcement

Site Sensitivity Map - Slice A



Order Details

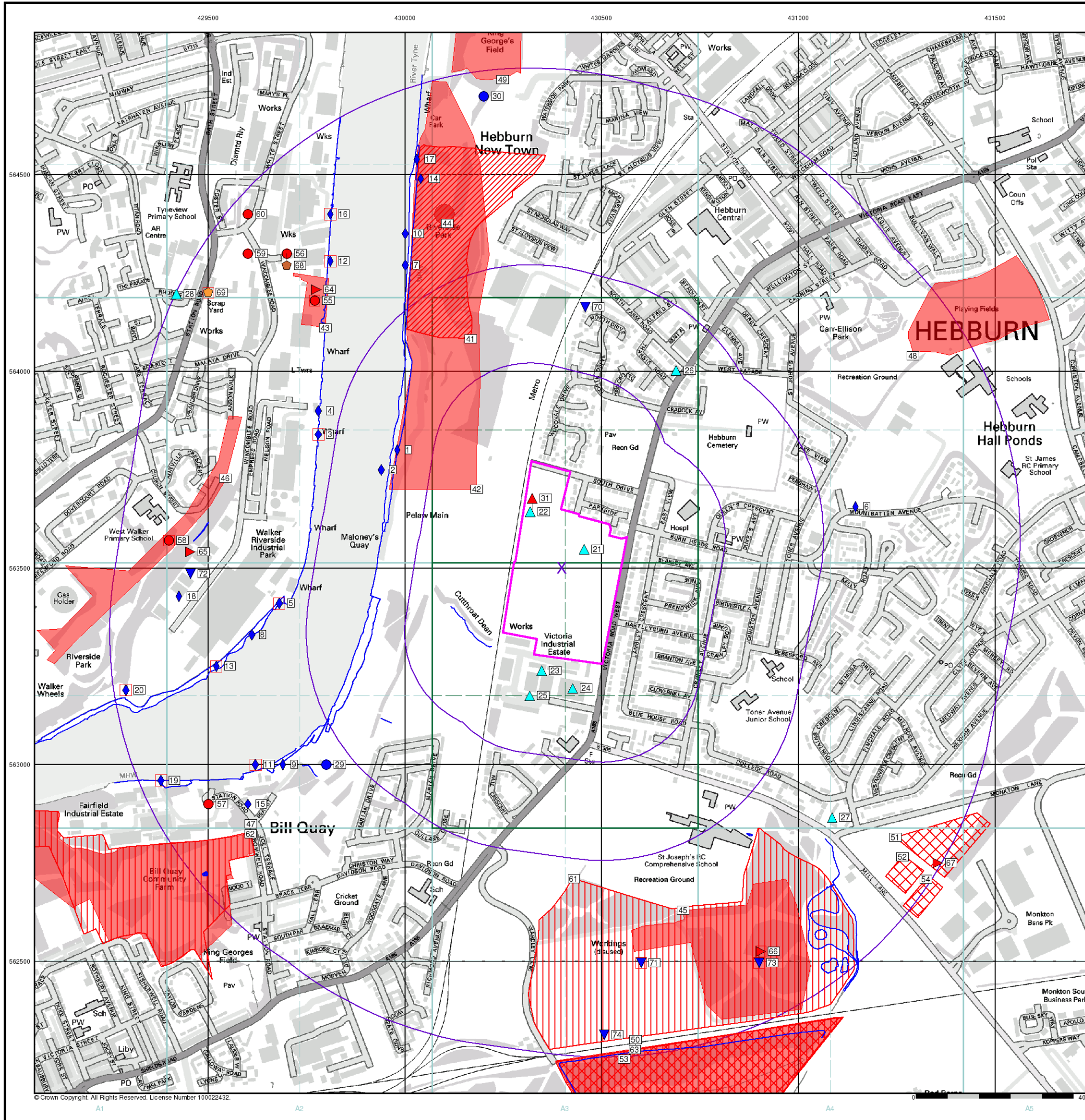
Order Number: 90505614_1_1
 Customer Ref: C7074/Former Siemens Factory, Hebburn/CR
 National Grid Reference: 430400, 563500
 Slice: A
 Site Area (Ha): 10.3
 Search Buffer (m): 1000

Site Details

Siemens, North Farm Road, HEBBURN, Tyne and Wear, NE31 1LX



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Industrial Land Use Map

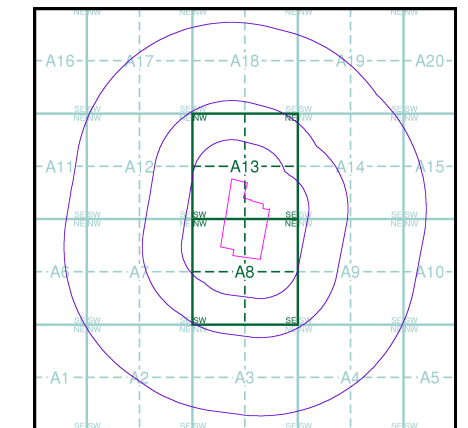
General

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

Industrial Land Use

- Contemporary Trade Directory Entry
- Fuel Station Entry
- Gas Pipeline
- Underground Electrical Cables

Industrial Land Use Map - Slice A



Order Details

Order Number: 90505614_1_1
 Customer Ref: C7074/Former Siemens Factory, Hebburn/CR
 National Grid Reference: 430400, 563500
 Slice: A
 Site Area (Ha): 10.3
 Search Buffer (m): 1000

Site Details

Siemens, North Farm Road, HEBBURN, Tyne and Wear, NE31 1LX



Tel: 0844 844 9952
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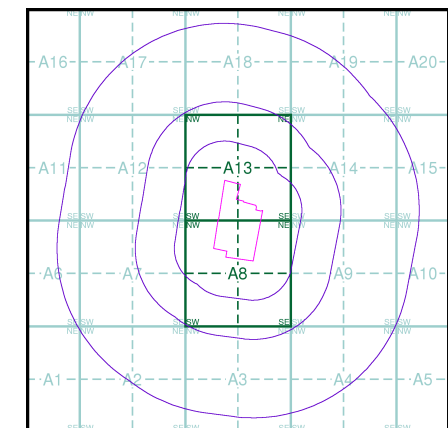
General

- 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

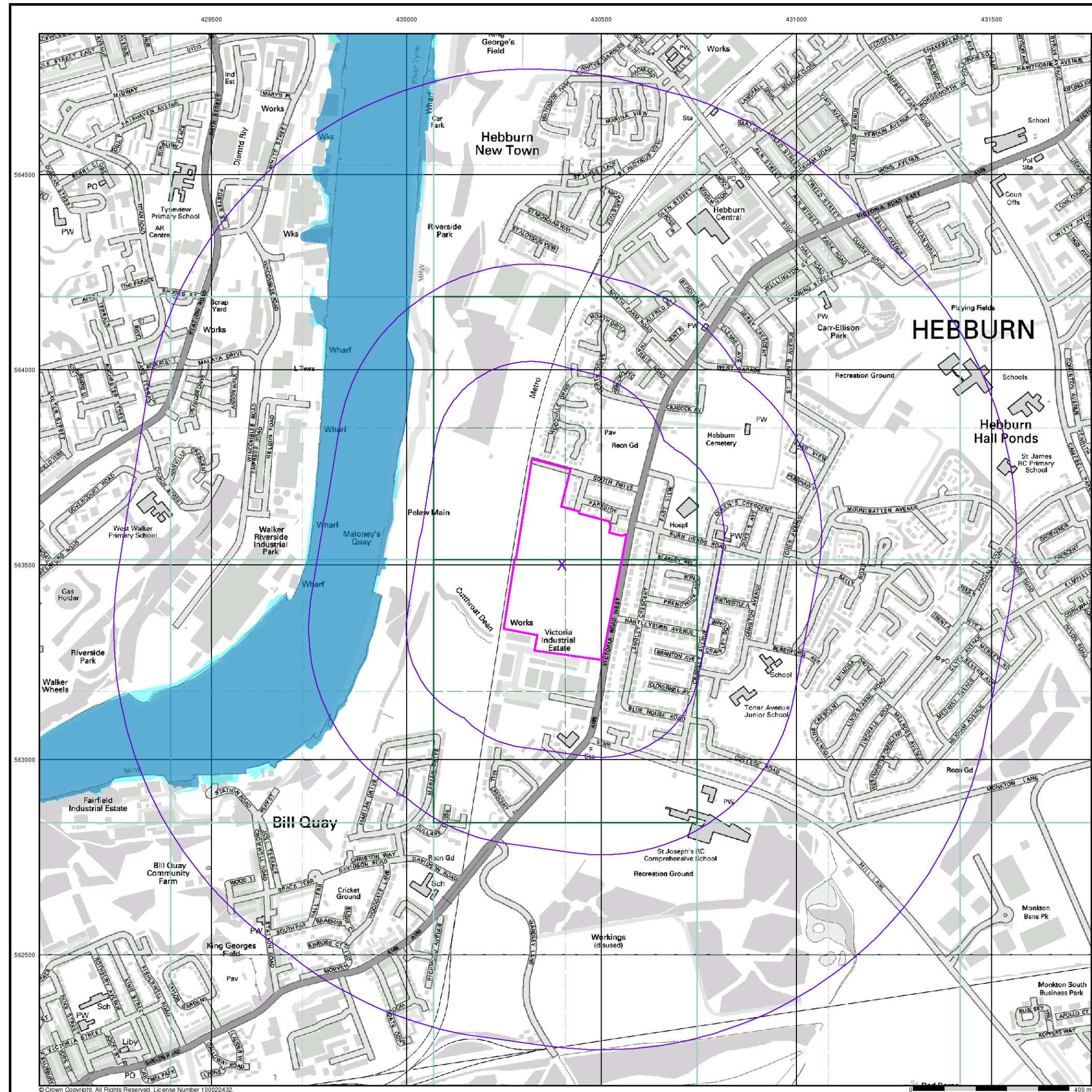
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 National Grid Reference: 430400, 563500
 Slice: A
 Site Area (Ha): 10.3
 Search Buffer (m): 1000

Site Details

Siemens, North Farm Road, HEBBURN, Tyne and Wear, NE31 1LX



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 Fax: 0844 844 9951
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General

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

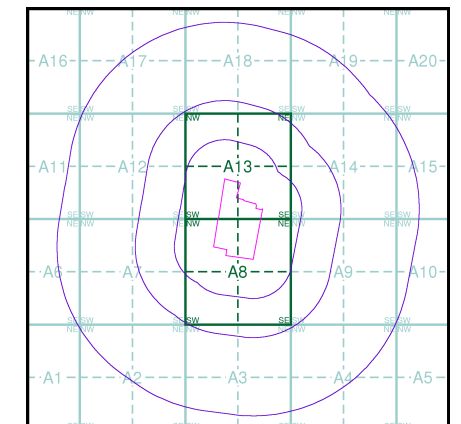
Agency and Hydrological (Boreholes)

- 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

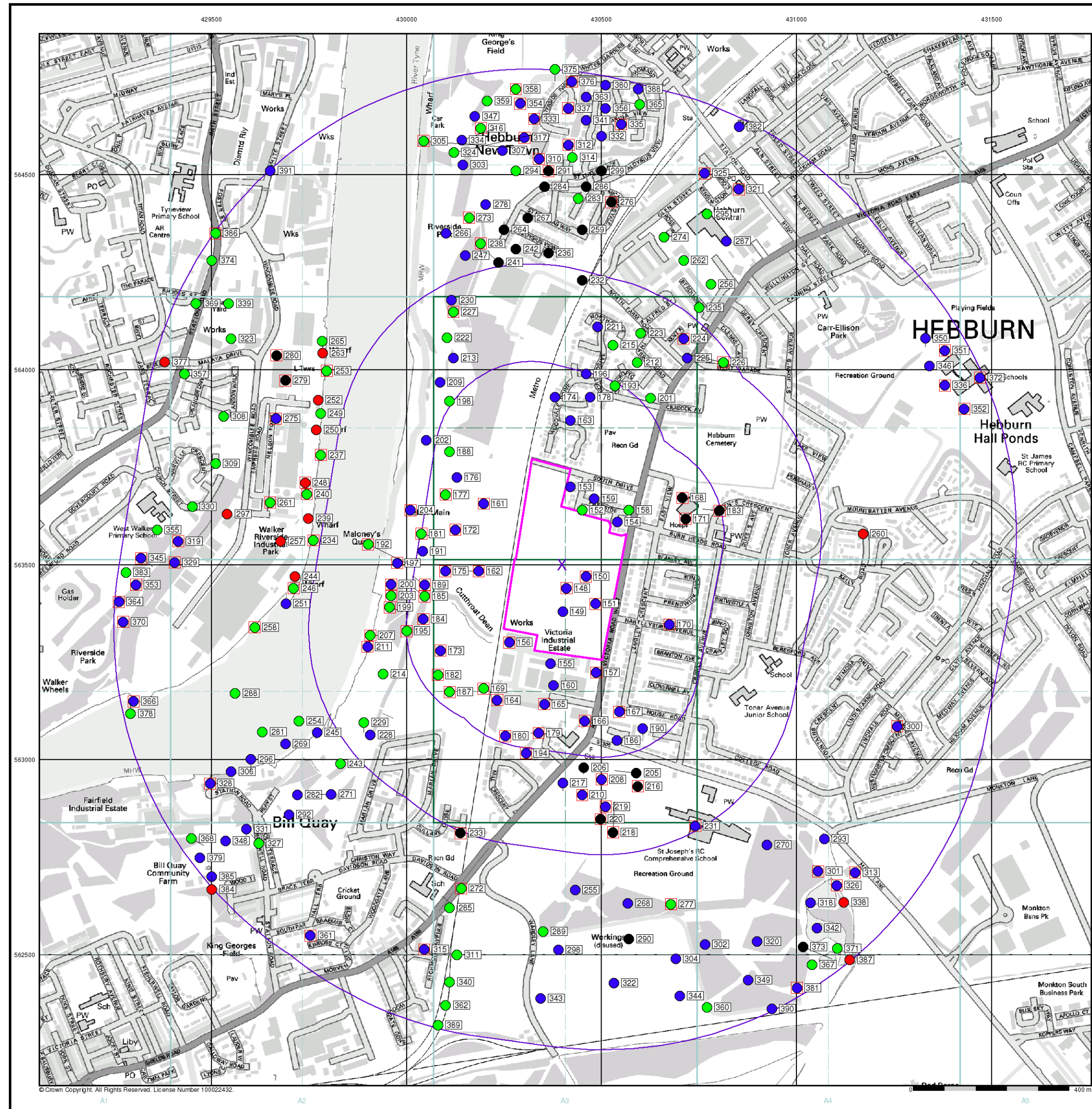
Order Number: 90505614_1_1
 Customer Ref: C7074/Former Siemens Factory, Hebburn/CR
 National Grid Reference: 430400, 563500
 Slice: A
 Site Area (Ha): 10.3
 Search Buffer (m): 1000

Site Details

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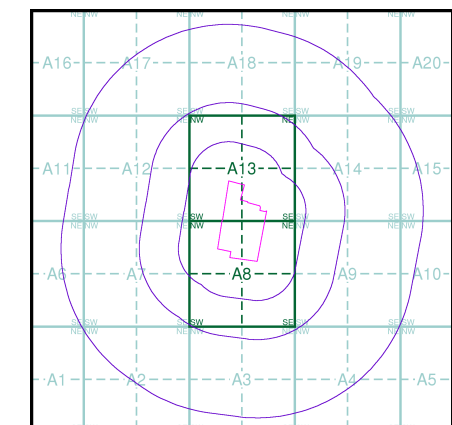
General

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

Detailed River Network Data

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

EANRW Detailed River Network Map - Slice A



Order Details

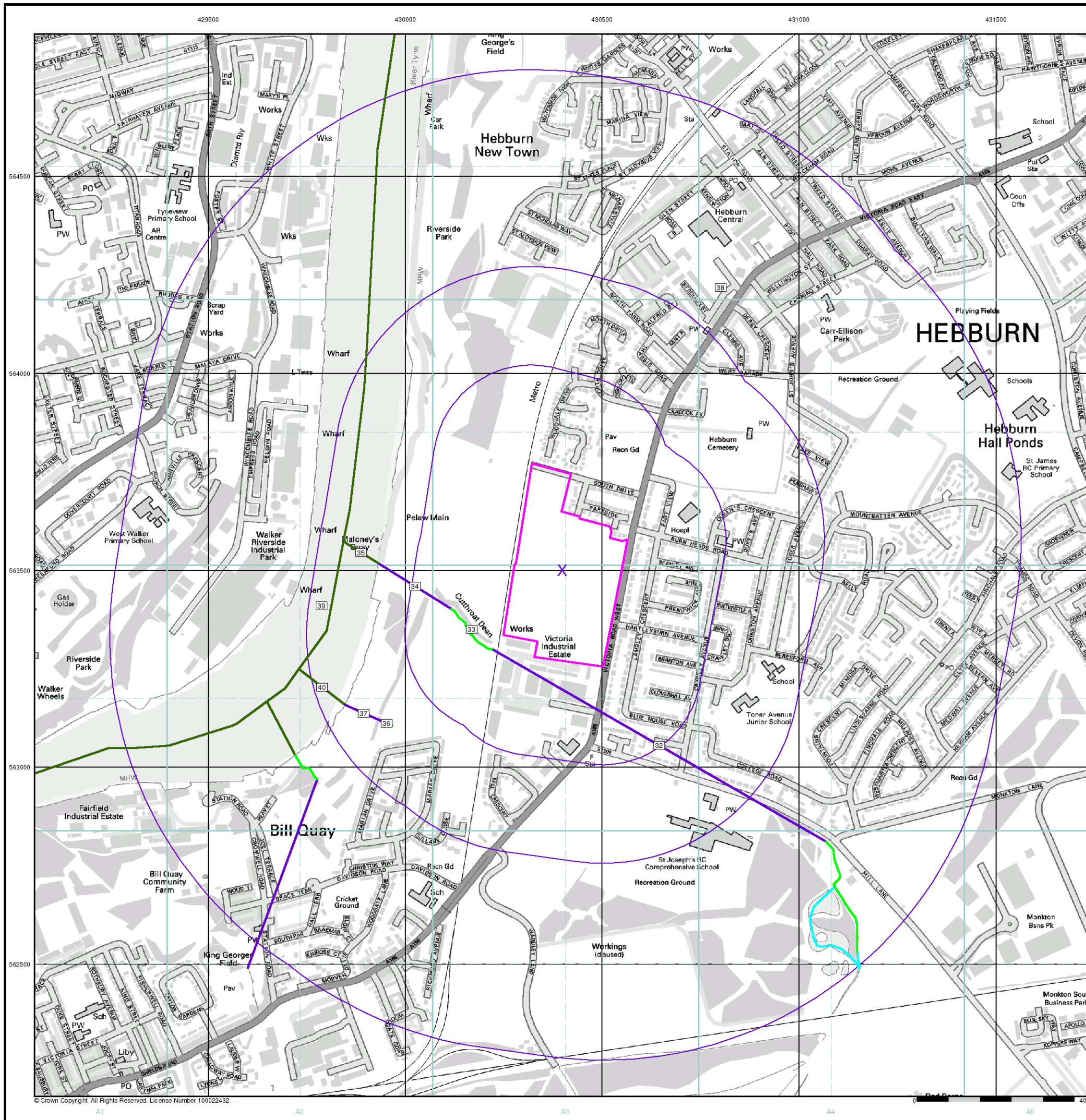
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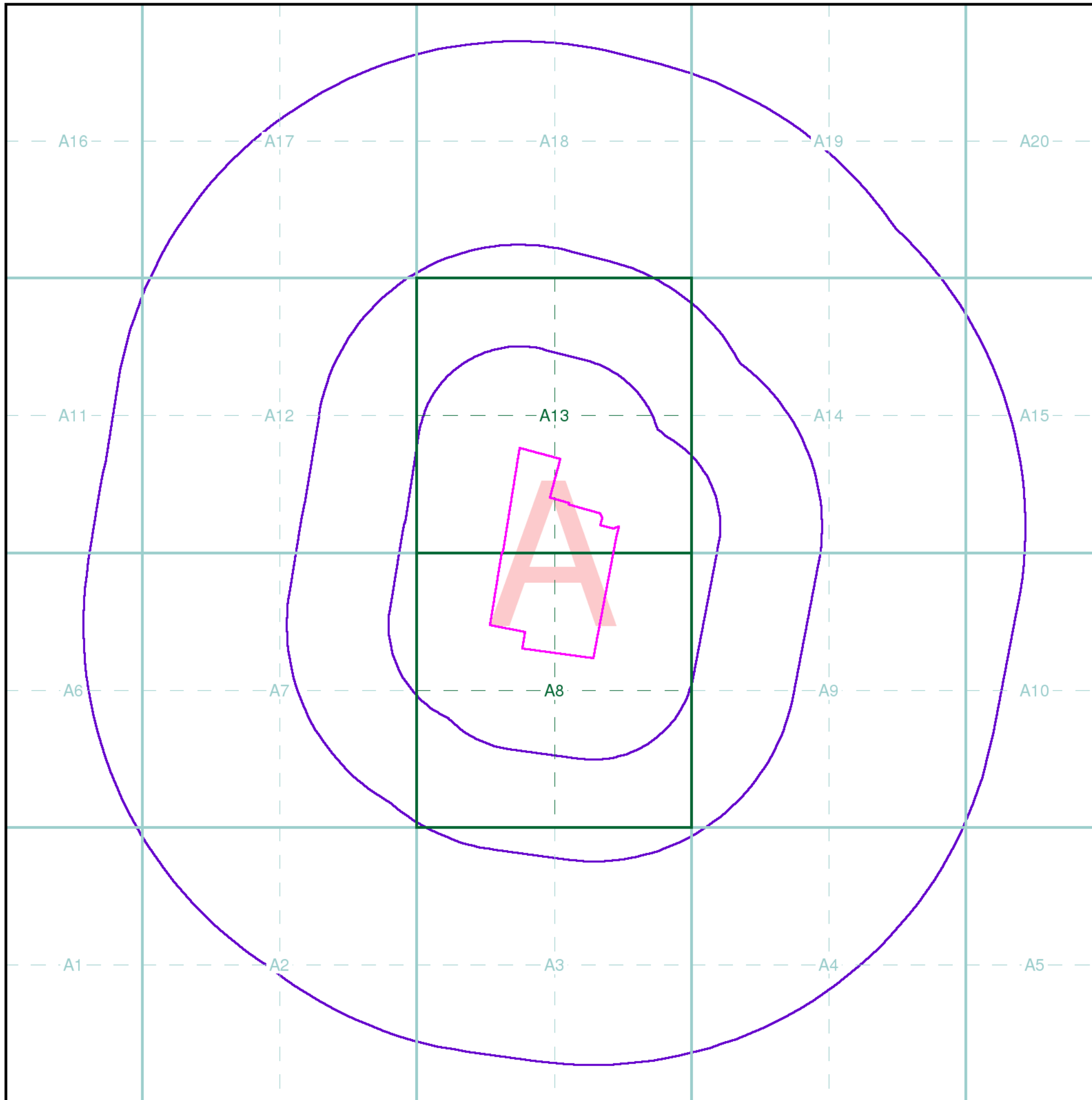
Siemens, North Farm Road, HEBBURN, Tyne and Wear, NE31 1LX



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 Web: www.envirocheck.co.uk



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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

S Howson, Sirius Geotechnical & Environmental Ltd, 4245 Park Approach, Thorpe Park, Leeds, LS15 8GB

Order Details

Order Number: 90505614_1_1
 Customer Ref: C7074/Former Siemens Factory, Hebburn/CR
 National Grid Reference: 430400, 563480
 Site Area (Ha): 10.3
 Search Buffer (m): 1000

Site Details

Siemens, North Farm Road, HEBBURN, Tyne and Wear, NE31 1LX

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<http://www.landmarkinfo.co.uk/Terms/Show/515>



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APPENDIX C
MINING REPORT



The Coal
Authority

Resolving the **impacts** of mining

CON29M Non-Residential Mining Report

SIEMENS
NORTH FARM ROAD
HEBBURN
TYNE & WEAR

Date of enquiry: 08 July 2016
Date enquiry received: 08 July 2016
Issue date: 08 July 2016

Our reference: 51001201696001
Your reference: 90505614_2 |



CON29M Non-Residential Mining Report

This report is based on, and limited to, the records held by the Coal Authority and the Cheshire Brine Subsidence Compensation Board's records, at the time we answer the search.

Client name

LANDMARK INFORMATION GROUP LIMITED

Enquiry address

SIEMENS, NORTH FARM ROAD, HEBBURN, TYNE & WEAR

How to contact us

0345 762 6848 (UK)
+44 (0)1623 637 000 (International)

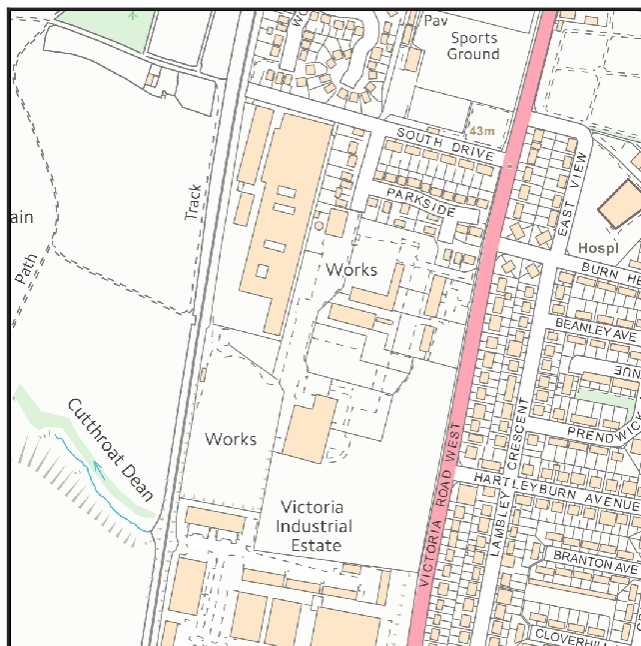
200 Lichfield Lane
Mansfield
Nottinghamshire
NG18 4RG

www.gov.uk/coalauthority

 /company/the-coal-authority

 /thecoalauthority

 /coalauthority



Approximate position of property



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Summary

Has the search report highlighted evidence or potential of		
1	Past underground coal mining	Yes
2	Present underground coal mining	No
3	Future underground coal mining	Yes
4	Mine entries	Yes
5	Coal mining geology	No
6	Past opencast coal mining	No
7	Present opencast coal mining	No
8	Future opencast coal mining	No
9	Coal mining subsidence	No
10	Mine gas	No
11	Hazards related to coal mining	No
12	Withdrawal of support	No
13	Working facilities order	No
14	Payments to owners of former copyhold land	No
15	Information from the Cheshire Brine Subsidence Compensation Board	No

For detailed findings, please go to page 4.

Detailed findings

1. Past underground coal mining

The property is in a surface area that could be affected by underground mining in 4 seams of coal at 210m to 400m depth, and last worked in 1947.

Any movement in the ground due to coal mining activity should have stopped.

In addition the property is in an area where the Coal Authority believe there is coal at or close to the surface. This coal may have been worked at some time in the past. The potential presence of coal workings at or close to the surface should be considered prior to any site works or future development activity. Your attention is drawn to the Comments on the Coal Authority information section of the report.

2. Present underground coal mining

The property is not within a surface area that could be affected by present underground mining.

3. Future underground coal mining

The property is not in an area where the Coal Authority has plans to grant a licence to remove coal using underground methods.

The property is not in an area where a licence has been granted to remove or otherwise work coal using underground methods.

The property is not in an area likely to be affected from any planned future underground coal mining.

However, reserves of coal exist in the local area which could be worked at some time in the future.

No notices have been given, under section 46 of the Coal Mining Subsidence Act 1991, stating that the land is at risk of subsidence.

4. Mine entries

There are no known coal mine entries within, or within 20 metres of, the boundary of the property.

There may however be mine entries/additional mine entries in the local area which the Coal Authority has no knowledge of.

5. Coal mining geology

The Coal Authority is not aware of any damage due to geological faults or other lines of weakness that have been affected by coal mining.

6. Past opencast coal mining

The property is not within the boundary of an opencast site from which coal has been removed by opencast methods.

7. Present opencast coal mining

The property does not lie within 200 metres of the boundary of an opencast site from which coal is being removed by opencast methods.

8. Future opencast coal mining

There are no licence requests outstanding to remove coal by opencast methods within 800 metres of the boundary.

The property is not within 800 metres of the boundary of an opencast site for which a licence to remove coal by opencast methods has been granted.

9. Coal mining subsidence

The Coal Authority has not received a damage notice or claim for the subject property, or any property within 50 metres, since 31st October 1994.

There is no current Stop Notice delaying the start of remedial works or repairs to the property.

The Coal Authority is not aware of any request having been made to carry out preventive works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991.

10. Mine gas

The Coal Authority has no record of a mine gas emission requiring action.

11. Hazards related to coal mining

The property has not been subject to remedial works, by or on behalf of the Authority, under its Emergency Surface Hazard Call Out procedures.

12. Withdrawal of support

The property is not in an area where a notice to withdraw support has been given.

The property is not in an area where a notice has been given under section 41 of the Coal Industry Act 1994, cancelling the entitlement to withdraw support.

13. Working facilities order

The property is not in an area where an order has been made, under the provisions of the Mines (Working Facilities and Support) Acts 1923 and 1966 or any statutory modification or amendment thereof.

14. Payments to owners of former copyhold land

The property is not in an area where a relevant notice has been published under the Coal Industry Act 1975/Coal Industry Act 1994.

15. Information from the Cheshire Brine Subsidence Compensation Board

The property lies outside the Cheshire Brine Compensation District.

Comments on the Coal Authority information

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In view of the mining circumstances a prudent developer would seek appropriate technical advice before any works are undertaken.

Therefore if development proposals are being considered, technical advice relating to both the investigation of coal and former coal mines and their treatment should be obtained before beginning work on site. All proposals should apply good engineering practice developed for mining areas. No development should be undertaken that intersects, disturbs or interferes with any coal or mines of coal without the permission of the Coal Authority. Developers should be aware that the investigation of coal seams/former mines of coal may have the potential to generate and/or displace underground gases and these risks both under and adjacent to the development should be fully considered in developing any proposals. The need for effective measures to prevent gases entering into public properties either during investigation or after development also needs to be assessed and properly addressed. This is necessary due to the public safety implications of any development in these circumstances.

Additional remarks

Information provided by the Coal Authority in this report is compiled in response to the Law Society's Con29M Coal Mining and Brine Subsidence Claim enquiries. The said enquiries are protected by copyright owned by the Law Society of 113 Chancery Lane, London WC2A 1PL. Please note that Brine Subsidence Claim enquiries are only relevant for England and Wales. This report is prepared in accordance with the Law Society's Guidance Notes 2006, the User Guide 2006 and the Coal Authority and Cheshire Brine Board's Terms and Conditions applicable at the time the report was produced.

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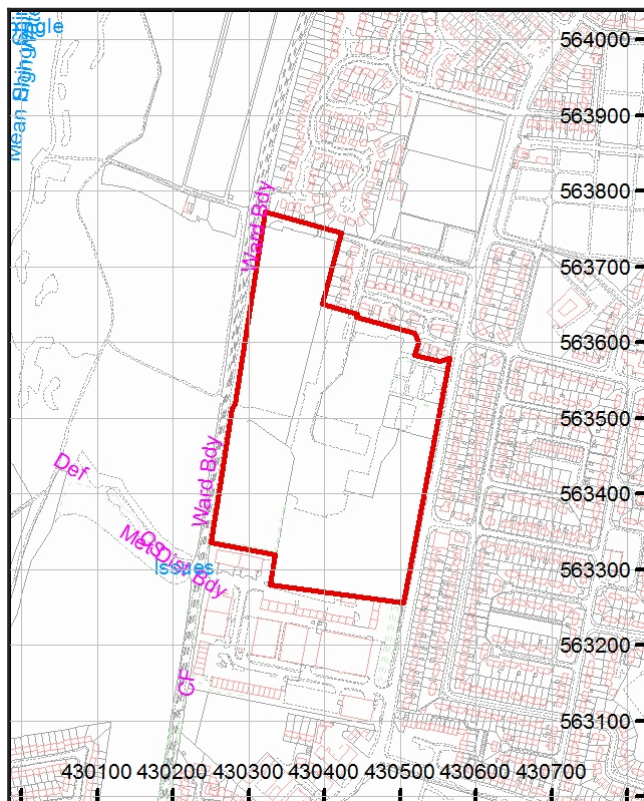
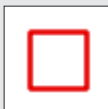
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Enquiry boundary

Key

Approximate position of enquiry boundary shown




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APPENDIX D

EXPLORATORY HOLE LOGS



BOREHOLE RECORD

BH No. **BH101**
Sheet 1 of 2

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Dates:
23/06/2016 - 23/06/2016

Method: Cable percussion drilling using 150mm tools

Scale: 1:50

SAMPLE DETAILS

STRATA RECORD

Logged By: RCS Checked By: CR

Driller: RD Drilling Ltd

Type	Depth From - To(m)	N, {Cu}, [Cu peak]	Ground -water	Description	Depth (m)	Level (m AOD)	Legend	Well
B	0.50 - 1.00			MADE GROUND: Grass over dark brown topsoil with brick fragments (Driller's description).	0.20			
B	1.50 - 2.00			MADE GROUND: Dark brown slightly gravelly slightly sandy clay. Gravel is fine to coarse subrounded mixed lithologies including isolated fragments of brick. Laminations of light brown medium sand (Reworked clay).				
B	2.50 - 3.00							
B	3.50 - 4.00			MADE GROUND: Dark brown and grey slightly gravelly slightly sandy clay. Gravel is fine to coarse subangular to subrounded mixed lithologies including coal and isolated fragments of brick and glazed pottery. Laminations of light brown medium sand (Reworked clay).	3.40			
B	4.50 - 5.00							
B	5.50 - 6.00							
B	6.50 - 7.00							
B	7.50 - 8.00							
B	8.40				8.40			
U	9.00 - 9.45			Stiff and very stiff very high strength light brown brown and dark brown mottled grey, slightly gravelly slightly sandy CLAY. Gravel is fine to coarse subrounded to subangular mixed lithologies. Laminations of brown medium sand.				
D	9.50							
B D	10.00 - 10.45 10.00 - 10.50	N=32 (4,5/7,7,9,9)						

Continued next sheet

Remarks:
1. No groundwater encountered.

GL (mAOD)

Easting:

Northing:

Fig No.

BH101



BOREHOLE RECORD

BH No. **BH101**
Sheet 2 of 2

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Dates:
23/06/2016 - 23/06/2016

Method: Cable percussion drilling using 150mm tools

Scale: 1:50

SAMPLE DETAILS

STRATA RECORD

Logged By: RCS Checked By: CR

Driller: RD Drilling Ltd

Type	Depth From - To(m)	N, {Cu}, [Cu peak]	Ground -water	Description	Depth (m)	Level (m AOD)	Legend	Well
B	11.00 - 13.00	50 (25,20/50 for 75mm)	11					
B	13.00 - 13.50	0 (50 for 0mm/0 for 0mm) 50 (9,15/50 for 150mm)	13					
			14	End of Borehole at 13.50m	13.50			
			15					
			16					
			17					
			18					
			19					
			20					

Remarks:
1. No groundwater encountered.

GL (mAOD)

Easting:

Northing:

Fig No.

BH101



BOREHOLE RECORD

BH No. **BH102**
Sheet 1 of 2

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Dates:
23/06/2016 - 23/06/2016

Method: Cable percussion drilling using 150mm tools

Scale: 1:50

SAMPLE DETAILS

STRATA RECORD

Logged By: RCS Checked By: CR

Driller: RD Drilling Ltd

Type	Depth From - To(m)	N, {Cu}, [Cu peak]	Ground -water	Description	Depth (m)	Level (m AOD)	Legend	Well
B	0.50 - 1.00			<p>MADE GROUND: Dark brown and brown slightly gravelly slightly sandy clay. Gravel is fine to coarse subangular to subrounded mixed lithologies including sandstone and isolated fragments of brick and glazed pottery. Laminations of brown medium sand (Reworked clay).</p>				
B	1.50 - 2.00		1					
B	2.50 - 3.00		2					
B	3.50 - 4.00		3					
B	4.50 - 5.00		4					
B	5.50 - 6.00		5					
B	6.50 - 7.00		6	<p>Stiff and very stiff very high strength brown mottled grey slightly gravelly slightly sandy CLAY. Gravel is fine to medium subrounded to subangular mixed lithologies. Laminations of brown medium sand.</p>	6.35			
B	7.50 - 7.95		7					
U	7.50 - 7.95		8					
D	8.00		9					
B	8.50 - 8.95	N=34						
D	8.50 - 9.00	(4,7/8,8,9,9)						
B	10.00 - 10.45	N=39						
D	10.00 - 10.50	(4,8/9,9,10,11)						
				Continued next sheet				

Remarks:

1. Obstruction encountered at 2.7m. Borehole redrilled 1m away. 2. No groundwater encountered.

GL (mAOD)

Eastings:

Northings:

Fig No.

BH102



BOREHOLE RECORD

BH No. **BH102**
Sheet 2 of 2

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Dates:
23/06/2016 - 23/06/2016

Method: Cable percussion drilling using 150mm tools

Scale: 1:50

SAMPLE DETAILS

STRATA RECORD

Logged By: RCS Checked By: CR

Driller: RD Drilling Ltd

Type	Depth From - To(m)	N, {Cu}, [Cu peak]	Ground -water	Description	Depth (m)	Level (m AOD)	Legend	Well
D	11.50		11 12 13 14 15 16 17 18 19 20	End of Borehole at 11.50m	11.50			

Remarks:
1. Obstruction encountered at 2.7m. Borehole redrilled 1m away. 2. No groundwater encountered.

GL (mAOD)

Eastings:

Northings:

Fig No.

BH102



TRIAL PIT RECORD

TP No. **TP101**
Sheet 1 of 1

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Date: 20/06/2016

Method: Excavated using a 360 tracked excavator with a 1m wide toothed bucket

Scale: 1:25

SAMPLE DETAILS

STRATA RECORD

Logged By: RCS Checked By: CR

Type	Depth From - To(m)	Vane Results kN/m ² {PID}	Ground -water	Description	Depth (m)	Level (m AOD) PID (ppm)	Legend	Backfill
				MADE GROUND: Concrete. Minor reinforcement.				
ES	0.50 - 1.00			MADE GROUND: Dark grey-brown sandy gravel of fine to coarse brick and concrete. Suspected concrete slab at 1.7m. <i>Concrete walls in eastern and southern faces. Concrete structure to south.</i>	0.20			
					1.10			
ES	1.50 - 2.00			Firm to stiff dark brown mottled grey slightly gravelly slightly sandy CLAY. Gravel is fine angular to subrounded of shale and mudstone. Sand is medium. <u>Suspected base.</u>				
				End of trial pit at 2.00m	2.00			
					3			
					4			
					5			

Remarks and Groundwater Observations
1. Strong seepage from land drain (?) at 1.0m in southwest corner. 2. Concrete walls in eastern and southern faces at 0.4 to 1.7m. Suspected base at 1.7m. Trial pit extended to east. Concrete structure to south.

GL (m AOD)	Fig No. TP101
Easting:	
Northing:	



TRIAL PIT RECORD

TP No. **TP102**
Sheet 1 of 1

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Date:
20/06/2016

Method: Excavated using a 360 tracked excavator with a 1m wide toothed bucket

Scale: 1:25

SAMPLE DETAILS

STRATA RECORD

Logged By: RCS Checked By: CR

Type	Depth From - To(m)	Vane Results kN/m ² {PID}	Ground -water	Description	Depth (m)	Level (m AOD) PID (ppm)	Legend	Backfill
ES	0.70 - 1.00			MADE GROUND: Concrete. Minor reinforcement. <i>Foundation (?) comprising brick on concrete in eastern face, stepping out 0.2m at 0.6m.</i>	0.20			
				MADE GROUND: Dark brown-grey sandy gravel of fine to coarse brick.	0.50			
				Stiff initially brown becoming dark brown mottled grey, slightly gravelly slightly sandy CLAY. Gravel is fine angular to subrounded of shale and mudstone. Sand is medium.	1.60			
				End of trial pit at 1.60m				

Remarks and Groundwater Observations
 1. Slight seepage at 0.5m. 2. Sidewalls relatively stable. 3. Foundation (?) comprising brick on concrete encountered to 0.9m in eastern face, stepping out 0.2m at 0.6m.

GL (m AOD)	Fig No. TP102
Easting:	
Northing:	



TRIAL PIT RECORD

TP No. **TP103**
Sheet 1 of 1

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Date:
20/06/2016

Method: Excavated using a 360 tracked excavator with a 1m wide toothed bucket

Scale: 1:25

SAMPLE DETAILS

STRATA RECORD

Logged By: RCS

Checked By: CR

Type	Depth From - To(m)	Vane Results kN/m ² {PID}	Ground -water	Description	Depth (m)	Level (m AOD) PID (ppm)	Legend	Backfill
ES	0.00 - 0.30			<p>MADE GROUND: Brown sandy gravel of fine to coarse brick and concrete (Recycled crushed aggregate). <i>Concrete walls on all four sides. Base at 3.7m. Dimensions are 3.6m x 1.5m. Suspected infilled tank.</i></p>	0.40			
				<p>MADE GROUND: Demolition rubble comprising abundant brick and concrete with occasional metal rails, metal pipework, timber, plastic, and electrical apparatus.</p>				
			<p>▼ 1</p>	<p><i>At 1m: Standing water level inside structure.</i></p>				
			2					
			3					
ES	3.00							
			4	<p>MADE GROUND: Concrete. <i>End of trial pit at 3.70m</i></p>	3.70 3.70			
			5					

Remarks and Groundwater Observations
 1. Concrete walls encountered on all four sides. Base at 3.7m. Dimensions are 3.6m x 1.5m. Suspected infilled tank.

GL (m AOD)

Easting:

Northing:

Fig No.

TP103



TRIAL PIT RECORD

TP No. **TP104**
Sheet 1 of 1

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Date:
20/06/2016

Method: Excavated using a 360 tracked excavator with a 1m wide toothed bucket

Scale: 1:25

Logged By: RCS Checked By: CR

SAMPLE DETAILS

STRATA RECORD

Type	Depth From - To(m)	Vane Results kN/m ² {PID}	Ground -water	Description	Depth (m)	Level (m AOD) PID (ppm)	Legend	Backfill
D	0.00 - 1.00			MADE GROUND: Concrete. Minor reinforcement.				
ES	0.20 - 0.70			MADE GROUND: Grey sandy gravel of fine to coarse brick and concrete.	0.20			
ES	1.00 - 1.50		1	Stiff and very stiff initially brown becoming dark brown mottled grey slightly gravelly slightly sandy CLAY of intermediate. Gravel is fine angular to subrounded of shale and mudstone. Sand is medium.	0.70			
				End of trial pit at 1.70m	1.70			
			2					
			3					
			4					
			5					

Remarks and Groundwater Observations
1. No groundwater encountered. 2. Sidewalls relatively stable. 3. Trial pit located in area of stained concrete.

GL (m AOD)

Easting:

Northing:

Fig No.

TP104



TRIAL PIT RECORD

TP No. **TP105**
Sheet 1 of 1

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Date: 20/06/2016

Method: Excavated using a 360 tracked excavator with a 1m wide toothed bucket

Scale: 1:25

SAMPLE DETAILS

STRATA RECORD

Logged By: RCS Checked By: CR

Type	Depth From - To(m)	Vane Results kN/m ² {PID}	Ground -water	Description	Depth (m)	Level (m AOD) PID (ppm)	Legend	Backfill
ES	0.20 - 0.80			MADE GROUND: Concrete. Minor reinforcement. <i>Concrete foundation (?) at western end of trial pit, 0.3m wide.</i>	0.20			
				MADE GROUND: Grey sandy gravel of fine to coarse brick and concrete. Faint aromatic odour.				
ES	1.00 - 1.50		1	Stiff and very stiff initially brown becoming dark brown mottled grey slightly gravelly slightly sandy CLAY. Gravel is fine angular to subrounded of shale and mudstone. Sand is medium.	0.80			
				End of trial pit at 1.80m	1.80			
			2					
			3					
			4					
			5					

Remarks and Groundwater Observations
 1. No groundwater encountered. 2. Sidewalls relatively stable. 3. Concrete foundation (?) encountered to 1.5m at western end of trial pit, 0.3m wide.

GL (m AOD)
 Easting:
 Northing:

Fig No.

TP105



TRIAL PIT RECORD

TP No. **TP106**
Sheet 1 of 1

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Date:
20/06/2016

Method: Excavated using a 360 tracked excavator with a 1m wide toothed bucket

Scale: 1:25

Logged By: RCS Checked By: CR

SAMPLE DETAILS

STRATA RECORD

Type	Depth From - To(m)	Vane Results kN/m ² {PID}	Ground -water	Description	Depth (m)	Level (m AOD) PID (ppm)	Legend	Backfill
ES	0.20 - 0.60		▼	MADE GROUND: Concrete. Minor reinforcement.	0.20			
				MADE GROUND: Brown-grey sandy gravel of fine to coarse brick and concrete. Faint hydrocarbon odour.				
ES	1.00 - 1.50		1	Stiff and very stiff initially brown becoming dark brown mottled grey slightly gravelly slightly sandy CLAY. Gravel is fine angular to subrounded of shale and mudstone. Sand is medium.	0.60			
				End of trial pit at 1.60m	1.60			
			2					
			3					
			4					
			5					

Remarks and Groundwater Observations
 1. Slight oily seepage at 0.6m. 2. Sidewalls relatively stable. 3. Trial pit located in area of stained concrete.

GL (m AOD)
 Easting:
 Northing:

Fig No.

 TP106



TRIAL PIT RECORD

TP No. **TP107**
Sheet 1 of 1

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Date:
21/06/2016

Method: Excavated using a 360 tracked excavator with a 1m wide toothed bucket

Scale: 1:25

SAMPLE DETAILS

STRATA RECORD

Logged By: RCS Checked By: CR

Type	Depth From - To(m)	Vane Results kN/m ² {PID}	Ground -water	Description	Depth (m)	Level (m AOD) PID (ppm)	Legend	Backfill
ES	0.20 - 0.70			MADE GROUND: Reinforced concrete.	0.20			
				MADE GROUND: Red, locally grey, burnt shale.				
B ES	1.00 - 1.70 1.00 - 1.50		1	Stiff and very stiff dark brown mottled grey slightly gravelly slightly sandy CLAY. Gravel is fine angular to subrounded of shale and mudstone. Sand is medium.	0.70			
				End of trial pit at 1.70m	1.70			
			2					
			3					
			4					
			5					

Remarks and Groundwater Observations
 1. No groundwater encountered. 2. Sidewalls stable. 3. Trial pit located in area of historical pond.

GL (m AOD)
 Easting:
 Northing:

Fig No.

TP107



TRIAL PIT RECORD

TP No. **TP108**
Sheet 1 of 1

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Date: 21/06/2016

Method: Excavated using a 360 tracked excavator with a 1m wide toothed bucket

Scale: 1:25

SAMPLE DETAILS

STRATA RECORD

Logged By: RCS Checked By: CR

Type	Depth From - To(m)	Vane Results kN/m ² {PID}	Ground -water	Description	Depth (m)	Level (m AOD) PID (ppm)	Legend	Backfill
ES	0.00 - 0.40			TOPSOIL: Dark brown organic silty CLAY.				
ES	0.40 - 0.80			Firm and stiff brown mottled grey slightly gravelly slightly sandy CLAY. Gravel is fine to medium subangular to rounded shale, mudstone and sandstone. Sand is medium. <i>Land drain (?) in northeast corner of trial pit, trending north-south.</i>	0.40 0.80			
				End of trial pit at 0.80m				

Remarks and Groundwater Observations
 1. No groundwater encountered. 2. Sidewalls stable. 3. Land drain (?) encountered at 0.7m in northeast corner of trial pit, trending north-south.

GL (m AOD)	Fig No. TP108
Easting:	
Northing:	



TRIAL PIT RECORD

TP No. **TP109**
Sheet 1 of 1

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Date:
21/06/2016

Method: Excavated using a 360 tracked excavator with a 1m wide toothed bucket

Scale: 1:25

SAMPLE DETAILS

STRATA RECORD

Logged By: RCS Checked By: CR

Type	Depth From - To(m)	Vane Results kN/m ² {PID}	Ground -water	Description	Depth (m)	Level (m AOD) PID (ppm)	Legend	Backfill
ES	0.00 - 0.30			TOPSOIL: Dark brown organic silty CLAY.	0.30			
ES	0.50 - 1.00			Firm and stiff becoming very stiff dark brown mottled grey slightly gravelly slightly sandy CLAY of intermediate plasticity. Gravel is fine to medium subangular to rounded shale, mudstone and sandstone. Sand is medium.	1.30			
				End of trial pit at 1.30m				

Remarks and Groundwater Observations
1. No groundwater encountered. 2. Sidewalls stable.

GL (m AOD)

Easting:

Northing:

Fig No.

TP109



TRIAL PIT RECORD

TP No. **TP110**
Sheet 1 of 1

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Date:
21/06/2016

Method: Excavated using a 360 tracked excavator with a 1m wide toothed bucket

Scale: 1:25

SAMPLE DETAILS

STRATA RECORD

Logged By: RCS Checked By: CR

Type	Depth From - To(m)	Vane Results kN/m ² {PID}	Ground -water	Description	Depth (m)	Level (m AOD) PID (ppm)	Legend	Backfill
ES	0.00 - 0.30			TOPSOIL: Dark brown organic silty CLAY.	0.30			
ES	0.50 - 1.00			Firm and stiff becoming very stiff dark brown mottled grey slightly gravelly slightly sandy CLAY. Gravel is fine subangular shale and mudstone. Sand is medium.				
				1				
				2				
				3				
				4				
				5				
End of trial pit at 1.30m					1.30			

Remarks and Groundwater Observations
1. No groundwater encountered. 2. Sidewalls stable.

GL (m AOD)	Fig No. TP110
Easting:	
Northing:	



TRIAL PIT RECORD

TP No. **TP111**
Sheet 1 of 1

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Date:
21/06/2016

Method: Excavated using a 360 tracked excavator with a 1m wide toothed bucket

Scale: 1:25

SAMPLE DETAILS

STRATA RECORD

Logged By: RCS Checked By: CR

Type	Depth From - To(m)	Vane Results kN/m ² {PID}	Ground -water	Description	Depth (m)	Level (m AOD) PID (ppm)	Legend	Backfill
ES	0.00 - 0.30			TOPSOIL: Dark brown organic silty CLAY.	0.30			
ES	0.50 - 1.00			Firm and stiff becoming very stiff dark brown mottled grey slightly gravelly slightly sandy CLAY of intermediate plasticity. Gravel is fine to medium angular to subangular shale and mudstone. Sand is medium.				
ES	1.40 - 1.60			End of trial pit at 1.70m				
				End of trial pit at 1.70m				

Remarks and Groundwater Observations
 1. No groundwater encountered. 2. Sidewalls stable.

GL (m AOD)	Fig No. TP111
Easting:	
Northing:	



TRIAL PIT RECORD

TP No. **TP112**
Sheet 1 of 1

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Date:
21/06/2016

Method: Excavated using a 360 tracked excavator with a 1m wide toothed bucket

Scale: 1:25

SAMPLE DETAILS

STRATA RECORD

Logged By: RCS Checked By: CR

Type	Depth From - To(m)	Vane Results kN/m ² {PID}	Ground -water	Description	Depth (m)	Level (m AOD) PID (ppm)	Legend	Backfill
ES	0.00 - 0.20			MADE GROUND: Dark brown silty sandy clay (Reworked Topsoil).	0.20			
				MADE GROUND: Firm locally stiff dark brown and grey gravelly slightly sandy clay. Gravel is brick and concrete, and with isolated metal ribbon. Boulder sized concrete (1.25m x 0.45m x 0.25m).				
B ES	1.00 1.00		1					
B ES	2.00 2.00		2	MADE GROUND: Stiff dark brown slightly gravelly clay. Gravel is isolated brick fragments.	1.70			
B ES	3.00 3.00		3					
B ES	4.00 4.00		4					
ES	4.50			End of trial pit at 4.50m	4.50			
			5					

Remarks and Groundwater Observations
 1. No groundwater encountered. 2. Sidewalls stable. 3. Trial pit located at top of raised area.

GL (m AOD)	Fig No. TP112
Easting:	
Northing:	



TRIAL PIT RECORD

TP No. **TP113**
Sheet 1 of 1

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Date: 21/06/2016

Method: Excavated using a 360 tracked excavator with a 1m wide toothed bucket

Scale: 1:25

Logged By: RCS Checked By: CR

SAMPLE DETAILS

STRATA RECORD

Type	Depth From - To(m)	Vane Results kN/m ² {PID}	Ground -water	Description	Depth (m)	Level (m AOD) PID (ppm)	Legend	Backfill
ES	0.00 - 0.30			TOPSOIL: Dark brown organic silty CLAY.	0.30			
ES	0.50 - 1.00			Firm orange-brown, becoming a stiff and very stiff dark brown, mottled grey, slightly gravelly slightly sandy CLAY. Gravel is fine subangular shale and mudstone.	1.50			
				End of trial pit at 1.50m				

Remarks and Groundwater Observations
1. No groundwater encountered. 2. Sidewalls stable.

GL (m AOD)

Easting:

Northing:

Fig No.

TP113



TRIAL PIT RECORD

TP No. **TP114**
Sheet 1 of 1

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Date: 21/06/2016

Method: Excavated using a 360 tracked excavator with a 1m wide toothed bucket

Scale: 1:25

SAMPLE DETAILS

STRATA RECORD

Logged By: RCS Checked By: CR

Type	Depth From - To(m)	Vane Results kN/m ² {PID}	Ground -water	Description	Depth (m)	Level (m AOD) PID (ppm)	Legend	Backfill
ES	0.00 - 0.25			MADE GROUND: Dark brown and grey slightly ashy gravelly sand. Gravel is brick, and isolated metalwork. (Reworked Topsoil)	0.25			
ES	0.60 - 1.00			Firm and stiff brown becoming a very stiff dark brown mottled grey slightly gravelly slightly sandy CLAY. Gravel is fine to coarse angular to rounded mixed lithologies.				
ES	1.60 - 2.00			End of trial pit at 2.00m	2.00			

Remarks and Groundwater Observations
 1. No groundwater encountered. 2. Sidewalls stable. 3. Trial pit located in area of historical pond.

GL (m AOD)	Fig No. TP114
Easting:	
Northing:	



TRIAL PIT RECORD

TP No. **TP115**
Sheet 1 of 1

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Date:
21/06/2016

Method: Excavated using a 360 tracked excavator with a 1m wide toothed bucket

Scale: 1:25

SAMPLE DETAILS

STRATA RECORD

Logged By: RCS Checked By: CR

Type	Depth From - To(m)	Vane Results kN/m ² {PID}	Ground -water	Description	Depth (m)	Level (m AOD) PID (ppm)	Legend	Backfill
ES	0.00 - 0.25			MADE GROUND: Dark brown silty sand (Reworked Topsoil).				
ES	0.25 - 1.00			MADE GROUND: Grey-brown sandy gravel. Gravel is fine to coarse brick.	0.25			
ES	1.00 - 1.30		1	Firm brown-grey becoming a stiff dark brown mottled grey slightly gravelly slightly sandy CLAY of intermediate plasticity. Gravel is fine to coarse angular to rounded mixed lithologies. <u>Cast iron land drain (?), trending north-south.</u>	1.00			
ES	2.00 - 2.30		2	End of trial pit at 2.30m	2.30			
			3					
			4					
			5					

Remarks and Groundwater Observations
 1. No groundwater encountered. 2. Sidewalls stable. 3. Cast iron land drain (?) encountered at 1.0m, trending north-south. 4. Trial pit located in area of historical pond.

GL (m AOD)	Fig No. TP115
Easting:	
Northing:	



TRIAL PIT RECORD

TP No. **TP116**
Sheet 1 of 1

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Date:
21/06/2016

Method: Excavated using a 360 tracked excavator with a 1m wide toothed bucket

Scale: 1:25

SAMPLE DETAILS

STRATA RECORD

Logged By: RCS Checked By: CR

Type	Depth From - To(m)	Vane Results kN/m ² {PID}	Ground -water	Description	Depth (m)	Level (m AOD) PID (ppm)	Legend	Backfill
ES	0.00 - 0.30			MADE GROUND: Dark brown silty sandy clay (Reworked Topsoil).	0.30			
				MADE GROUND: Firm dark brown gravelly sandy clay. Gravel is isolated brick.				
				MADE GROUND: Stiff dark brown slightly gravelly clay. Gravel is isolated brick fragments. Lenses of dark grey slightly organic clay.				
B ES	1.00 1.00		1					
B ES	2.00 2.00		2					
B ES	3.00 3.00		3	End of trial pit at 3.00m	3.00			
			4					
			5					

Remarks and Groundwater Observations
 1. No groundwater encountered. 2. Sidewalls stable. 3. Trial pit located at top of raised area.

GL (m AOD)
 Easting:
 Northing:

Fig No.

 TP116



TRIAL PIT RECORD

TP No. **TP117**
Sheet 1 of 1

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Date:
21/06/2016

Method: Excavated using a 360 tracked excavator with a 1m wide toothed bucket

Scale: 1:25

SAMPLE DETAILS

STRATA RECORD

Logged By: RCS Checked By: CR

Type	Depth From - To(m)	Vane Results kN/m ² {PID}	Ground -water	Description	Depth (m)	Level (m AOD) PID (ppm)	Legend	Backfill
ES	0.30 - 0.80			MADE GROUND: Reinforced concrete.	0.24			
				MADE GROUND: Brown and dark brown sandy gravel. Gravel is fine to coarse brick.				
B ES	1.10 - 1.40 1.10 - 1.40		1	Firm, becoming stiff dark brown mottled grey slightly gravelly slightly sandy CLAY. Gravel is fine to medium subangular shale, mudstone and coal.	1.10			
ES	1.80 - 2.10		2	End of trial pit at 2.10m	2.10			
			3					
			4					
			5					

Remarks and Groundwater Observations
1. No groundwater encountered. 2. Sidewalls stable.

GL (m AOD)
Easting:
Northing:

Fig No.

TP117



TRIAL PIT RECORD

TP No. **TP118**
Sheet 1 of 1

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Date:
21/06/2016

Method: Excavated using a 360 tracked excavator with a 1m wide toothed bucket

Scale: 1:25

Logged By: RCS Checked By: CR

SAMPLE DETAILS

STRATA RECORD

Type	Depth From - To(m)	Vane Results kN/m ² {PID}	Ground -water	Description	Depth (m)	Level (m AOD) PID (ppm)	Legend	Backfill
ES	0.30 - 0.80			MADE GROUND: Reinforced concrete.	0.21			
				MADE GROUND: Dark brown and dark grey sandy gravel. Gravel is fine to coarse brick. Hydrocarbon odour and dark grey staining at 0.9m.				
ES	0.90 - 1.30		1					
B	1.50 - 2.00			Stiff brown mottled grey slightly sandy CLAY.	1.30			
ES	1.50 - 2.00			<u>Concrete-encased drain (?), trending north-south.</u>				
			2	End of trial pit at 2.10m	2.10			
			3					
			4					
			5					

Remarks and Groundwater Observations
 1. No groundwater encountered. 2. Sidewalls stable. 3. Concrete-encased drain (?) encountered at 1.5m, trending north-south.

GL (m AOD)	Fig No. TP118
Easting:	
Northing:	



TRIAL PIT RECORD

TP No. **TP119**
Sheet 1 of 1

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Date:
21/06/2016

Method: Excavated using a 360 tracked excavator with a 1m wide toothed bucket

Scale: 1:25

Logged By: RCS Checked By: CR

SAMPLE DETAILS

STRATA RECORD

Type	Depth From - To(m)	Vane Results kN/m ² {PID}	Ground -water	Description	Depth (m)	Level (m AOD) PID (ppm)	Legend	Backfill
ES	0.20 - 0.50			MADE GROUND: Reinforced concrete.	0.15			
				MADE GROUND: Dark brown and grey sandy gravel. Gravel is fine to coarse brick.				
B ES	0.80 - 1.60 0.80 - 1.00			Stiff brown slightly gravelly slightly sandy CLAY. Gravel is fine to medium angular to subrounded mixed lithologies.	0.60			
ES	1.40 - 1.60			Concrete foundation (?) at eastern end of trial pit.				
				End of trial pit at 1.70m	1.70			

Remarks and Groundwater Observations
 1. No groundwater encountered. 2. Sidewalls stable. 3. Concrete foundation (?) encountered to 1.3m at eastern end of trial pit.

GL (m AOD)	Fig No. TP119
Easting:	
Northing:	



TRIAL PIT RECORD

TP No. **TP120**
Sheet 1 of 1

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Date:
22/06/2016

Method: Excavated using a 360 tracked excavator with a 1m wide toothed bucket

Scale: 1:25

Logged By: PB Checked By: CR

SAMPLE DETAILS

STRATA RECORD

Type	Depth From - To(m)	Vane Results kN/m ² {PID}	Ground -water	Description	Depth (m)	Level (m AOD) PID (ppm)	Legend	Backfill
D	0.45			<p>MADE GROUND: Brown-grey sandy gravel of brick and concrete and with fragments of timber, plastic, wire, ceramics, glass and some stramit board (Recycled crushed aggregate).</p>				
D	0.90							
			1	<p>MADE GROUND: Concrete. End of trial pit at 1.00m</p>	1.00 1.00			
			2					
			3					
			4					
			5					

Remarks and Groundwater Observations
1. Trial pit excavated through stockpile of crushed recycled aggregate.

GL (m AOD)
Easting:
Northing:

Fig No.

TP120



TRIAL PIT RECORD

TP No. **TP121**
Sheet 1 of 1

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Date: 22/06/2016

Method: Excavated using a 360 tracked excavator with a 1m wide toothed bucket

Scale: 1:25

SAMPLE DETAILS

STRATA RECORD

Logged By: PB Checked By: CR

Type	Depth From - To(m)	Vane Results kN/m ² {PID}	Ground -water	Description	Depth (m)	Level (m AOD) PID (ppm)	Legend	Backfill
D	0.75			<p>MADE GROUND: Brown-grey sandy gravel of brick and concrete, and with fragments of timber, plastic, wire, ceramics, glass and some stramit board. Possible ACMs at 1.0m. (Recycled crushed aggregate).</p>				
D	1.40				1.50	1.50		

Remarks and Groundwater Observations
 1. Trial pit excavated through stockpile of crushed recycled aggregate.

GL (m AOD)
 Easting:
 Northing:

Fig No.

 TP121



TRIAL PIT RECORD

TP No. **TP122**
Sheet 1 of 1

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Date:
22/06/2016

Method: Excavated using a 360 tracked excavator with a 1m wide toothed bucket

Scale: 1:25

SAMPLE DETAILS

STRATA RECORD

Logged By: PB Checked By: CR

Type	Depth From - To(m)	Vane Results kN/m ² {PID}	Ground -water	Description	Depth (m)	Level (m AOD) PID (ppm)	Legend	Backfill
D	0.80			MADE GROUND: Brown-grey sandy gravel of brick and concrete, and with fragments of timber, plastic, wire, ceramics, glass, felt/bitmac and some stramit board. (Recycled crushed aggregate).	0.80			
				MADE GROUND: Concrete. End of trial pit at 0.80m	0.80			
			1					
			2					
			3					
			4					
			5					

Remarks and Groundwater Observations
1. Trial pit excavated through stockpile of crushed recycled aggregate.

GL (m AOD)
Easting:
Northing:

Fig No.

TP122



TRIAL PIT RECORD

TP No. **TP123**
Sheet 1 of 1

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Date: 22/06/2016

Method: Excavated using a 360 tracked excavator with a 1m wide toothed bucket

Scale: 1:25

SAMPLE DETAILS

STRATA RECORD

Logged By: PB Checked By: CR

Type	Depth From - To(m)	Vane Results kN/m ² {PID}	Ground -water	Description	Depth (m)	Level (m AOD) PID (ppm)	Legend	Backfill
D	0.30			MADE GROUND: Brown-grey sandy gravel of brick and concrete, and with fragments of timber, plastic, wire, ceramics, glass, felt/bitmac and some stramit board. Possible ACMs. (Recycled crushed aggregate).	0.80 0.80			
				MADE GROUND: Concrete. End of trial pit at 0.80m				
			1					
			2					
			3					
			4					
			5					

Remarks and Groundwater Observations
1. Trial pit excavated through stockpile of crushed recycled aggregate.

GL (m AOD)
Easting:
Northing:

Fig No.

TP123



TRIAL PIT RECORD

TP No. **TP124**
Sheet 1 of 1

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Date:
22/06/2016

Method: Excavated using a 360 tracked excavator with a 1m wide toothed bucket

Scale: 1:25

SAMPLE DETAILS

STRATA RECORD

Logged By: PB Checked By: CR

Type	Depth From - To(m)	Vane Results kN/m ² {PID}	Ground -water	Description	Depth (m)	Level (m AOD) PID (ppm)	Legend	Backfill
D	0.50			<p>MADE GROUND: Brown-grey sandy gravel of brick and concrete, and with fragments of timber, plastic, wire, ceramics, glass, felt/bitmac and some stramit board. (Recycled crushed aggregate).</p>	0.50			
				<p>1 MADE GROUND: Concrete. End of trial pit at 1.00m</p>	1.00 1.00			
			2					
			3					
			4					
			5					

Remarks and Groundwater Observations
1. Trial pit excavated through stockpile of crushed recycled aggregate.

GL (m AOD)
Easting:
Northing:

Fig No.

TP124



TRIAL PIT RECORD

TP No. **TP125**
Sheet 1 of 1

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Date:
22/06/2016

Method: Excavated using a 360 tracked excavator with a 1m wide toothed bucket

Scale: 1:25

Logged By: PB Checked By: CR

SAMPLE DETAILS

STRATA RECORD

Type	Depth From - To(m)	Vane Results kN/m ² {PID}	Ground -water	Description	Depth (m)	Level (m AOD) PID (ppm)	Legend	Backfill
D	0.20 - 1.00			<p>MADE GROUND: Brown-grey sandy gravel of brick and concrete, and with fragments of timber, plastic, cables, wire, ceramics, glass and insulators. Possible ACMs (paper and board). (Recycled crushed aggregate).</p>	1.30 1.30			

<p>Remarks and Groundwater Observations</p> <p>1. Trial pit excavated through stockpile of crushed recycled aggregate.</p>	<p>GL (m AOD)</p> <hr/> <p>Easting:</p> <hr/> <p>Northing:</p>	<p>Fig No.</p> <p style="text-align: center; font-size: 1.2em;">TP125</p>
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TRIAL PIT RECORD

TP No. **TP126**
Sheet 1 of 1

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Date: 22/06/2016

Method: Excavated using a 360 tracked excavator with a 1m wide toothed bucket

Scale: 1:25

SAMPLE DETAILS

STRATA RECORD

Logged By: PB Checked By: CR

Type	Depth From - To(m)	Vane Results kN/m ² {PID}	Ground -water	Description	Depth (m)	Level (m AOD) PID (ppm)	Legend	Backfill
D	0.20			<p>MADE GROUND: Brown-grey sandy gravel of brick and concrete, and with fragments of metal, plastic, carpets, glass and polystyrene. Possible ACMs (floor tile). (Recycled crushed aggregate - not fully processed).</p>	1.30 1.30			

Remarks and Groundwater Observations
 1. Trial pit excavated through stockpile of crushed recycled aggregate.

GL (m AOD)	Fig No. TP126
Easting:	
Northing:	



TRIAL PIT RECORD

TP No. **TP127**
Sheet 1 of 1

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Date:
22/06/2016

Method:

Scale: 1:25

SAMPLE DETAILS

STRATA RECORD

Logged By: Checked By: CR

Type	Depth From - To(m)	Vane Results kN/m ² {PID}	Ground -water	Description	Depth (m)	Level (m AOD) PID (ppm)	Legend	Backfill
D	0.20		1	MADE GROUND: Brown-grey sandy gravel of brick and concrete, and with fragments of timber, wire, glass, plastic and some stramit board. (Recycled crushed aggregate).	1.00			
				MADE GROUND: Concrete.	1.00			
			2					
			3					
			4					
			5					

Remarks and Groundwater Observations 1. Trial pit excavated through stockpile of crushed recycled aggregate.	GL (m AOD)	Fig No. TP127
	Easting:	
	Northing:	



TRIAL PIT RECORD

TP No. **TP128**
Sheet 1 of 1

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Date:
22/06/2016

Method:

Scale: 1:25

SAMPLE DETAILS

STRATA RECORD

Logged By: Checked By: CR

Type	Depth From - To(m)	Vane Results kN/m ² {PID}	Ground -water	Description	Depth (m)	Level (m AOD) PID (ppm)	Legend	Backfill
D	0.20		1	MADE GROUND: Brown-grey sandy gravel of brick and concrete, and with fragments of timber, wire, glass, plastic and some stramit board. (Recycled crushed aggregate).	1.00			
				MADE GROUND: Concrete.	1.00			
			2					
			3					
			4					
			5					

Remarks and Groundwater Observations 1. Trial pit excavated through stockpile of crushed recycled aggregate.	GL (m AOD)	Fig No. TP128
	Easting:	
	Northing:	



TRIAL PIT RECORD

TP No. **TP129**
Sheet 1 of 1

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Date: 22/06/2016

Method: Excavated using a 360 tracked excavator with a 1m wide toothed bucket

Scale: 1:25

Logged By: PB Checked By: CR

SAMPLE DETAILS

STRATA RECORD

Type	Depth From - To(m)	Vane Results kN/m ² {PID}	Ground -water	Description	Depth (m)	Level (m AOD) PID (ppm)	Legend	Backfill
D	0.10			MADE GROUND: Dark brown silty sandy clay (Reworked Topsoil).	0.15			
				MADE GROUND: Dark brown gravelly very clayey silt. Gravel is brick and concrete, and with isolated plastic fragments (Subsoil).	0.35			
				MADE GROUND: Firm and stiff medium brown and grey slightly sandy gravelly clay. Gravel is brick and concrete. Boulder sized concrete and sandstone (1m x 0.7m x 0.3m).				
D	0.90			MADE GROUND: Stiff dark brown and grey slightly sandy clay. Gravel is fine and medium concrete and brick, and with occasional grey pockets of silt.	2.30			
				End of trial pit at 4.00m	4.00			

Remarks and Groundwater Observations
 1. No groundwater encountered. 2. Sidewalls stable. 3. Trial pit located at top of raised area.

GL (m AOD)	Fig No. TP129
Easting:	
Northing:	



TRIAL PIT RECORD

TP No. **TP130**
Sheet 1 of 1

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Date:
23/06/2016

Method: Excavated using a 360 tracked excavator with a 1m wide toothed bucket

Scale: 1:25

SAMPLE DETAILS

STRATA RECORD

Logged By: RCS Checked By: CR

Type	Depth From - To(m)	Vane Results kN/m ² {PID}	Ground -water	Description	Depth (m)	Level (m AOD) PID (ppm)	Legend	Backfill
D	1.00		1	<p>MADE GROUND: Brown sandy gravel of fine to coarse brick and concrete (Recycled crushed aggregate).</p>				
			2	<p>MADE GROUND: Concrete.</p> <p style="text-align: center;">End of trial pit at 1.90m</p>	1.90 1.90			
			3					
			4					
			5					

Remarks and Groundwater Observations
1. Trial pit excavated through stockpile of crushed recycled aggregate.

GL (m AOD)
Easting:
Northing:

Fig No.

TP130



TRIAL PIT RECORD

TP No. **TP131**
Sheet 1 of 1

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Date:
23/06/2016

Method: Excavated using a 360 tracked excavator with a 1m wide toothed bucket

Scale: 1:25

SAMPLE DETAILS

STRATA RECORD

Logged By: RCS Checked By: CR

Type	Depth From - To(m)	Vane Results kN/m ² {PID}	Ground -water	Description	Depth (m)	Level (m AOD) PID (ppm)	Legend	Backfill
D	1.20		1	MADE GROUND: Brown sandy gravel of fine to coarse brick and concrete (Recycled crushed aggregate).	1.90	1.90		
				MADE GROUND: Concrete. End of trial pit at 1.90m			2	
			3					
			4					
			5					

Remarks and Groundwater Observations
1. Trial pit excavated through stockpile of crushed recycled aggregate.

GL (m AOD)
Easting:
Northing:

Fig No.

TP131



TRIAL PIT RECORD

TP No. **TP132**
Sheet 1 of 1

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Date:
23/06/2016

Method: Excavated using a 360 tracked excavator with a 1m wide toothed bucket

Scale: 1:25

SAMPLE DETAILS

STRATA RECORD

Logged By: RCS Checked By: CR

Type	Depth From - To(m)	Vane Results kN/m ² {PID}	Ground -water	Description	Depth (m)	Level (m AOD) PID (ppm)	Legend	Backfill
D	1.10		1	MADE GROUND: Brown sandy gravel of fine to coarse brick and concrete (Recycled crushed aggregate).	1.80 1.80			
				MADE GROUND: Concrete. End of trial pit at 1.80m			2	
			3					
			4					
			5					

Remarks and Groundwater Observations
1. Trial pit excavated through stockpile of crushed recycled aggregate.

GL (m AOD)
Easting:
Northing:

Fig No.

TP132



TRIAL PIT RECORD

TP No. **TP133**
Sheet 1 of 1

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Date:
23/06/2016

Method: Excavated using a 360 tracked excavator with a 1m wide toothed bucket

Scale: 1:25

SAMPLE DETAILS

STRATA RECORD

Logged By: RCS Checked By: CR

Type	Depth From - To(m)	Vane Results kN/m ² {PID}	Ground -water	Description	Depth (m)	Level (m AOD) PID (ppm)	Legend	Backfill
D	0.50		1	MADE GROUND: Dark brown clayey silt (Reworked Topsoil).	0.15			
				MADE GROUND: Brown sandy gravel of fine to coarse brick and concrete (Recycled crushed aggregate).				
				MADE GROUND: Concrete.	0.90 0.90			
			2	End of trial pit at 0.90m				
			3					
			4					
			5					

Remarks and Groundwater Observations
1. Trial pit excavated through grassed bund at northern end of the site.

GL (m AOD)
Easting:
Northing:

Fig No.

TP133



TRIAL PIT RECORD

TP No. **TP134**
Sheet 1 of 1

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Date:
23/06/2016

Method: Excavated using a 360 tracked excavator with a 1m wide toothed bucket

Scale: 1:25

SAMPLE DETAILS

STRATA RECORD

Logged By: RCS Checked By: CR

Type	Depth From - To(m)	Vane Results kN/m ² {PID}	Ground -water	Description	Depth (m)	Level (m AOD) PID (ppm)	Legend	Backfill
D	0.60			MADE GROUND: Dark brown clayey silt (Reworked Topsoil).	0.15			
				MADE GROUND: Brown sandy gravel of fine to coarse brick and concrete (Recycled crushed aggregate).				
					MADE GROUND: Concrete. End of trial pit at 0.90m	0.90		
			1					
			2					
			3					
			4					
			5					

Remarks and Groundwater Observations
1. Trial pit excavated through grassed bund at northern end of the site.

GL (m AOD)
Easting:
Northing:

Fig No.

TP134



TRIAL PIT RECORD

TP No. **TP135**
Sheet 1 of 1

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Date:
23/06/2016

Method: Excavated using a 360 tracked excavator with a 1m wide toothed bucket

Scale: 1:25

SAMPLE DETAILS

STRATA RECORD

Logged By: RCS Checked By: CR

Type	Depth From - To(m)	Vane Results kN/m ² {PID}	Ground -water	Description	Depth (m)	Level (m AOD) PID (ppm)	Legend	Backfill
ES	0.60			MADE GROUND: Reinforced concrete.				
				MADE GROUND: Brown sandy gravel of fine to coarse brick (Recycled sub-base).	0.30			
				Stiff brown mottled grey slightly sandy CLAY of intermediate plasticity. <i>Concrete foundation (?) at western end of trial pit.</i>	0.45			
ES	1.60			End of trial pit at 1.80m	1.80			

Remarks and Groundwater Observations
 1. No groundwater encountered. 2. Sidewalls stable. 3. Concrete foundation (?) encountered to 0.55m at western end of trial pit.

GL (m AOD)	Fig No. TP135
Easting:	
Northing:	



TRIAL PIT RECORD

TP No. **TP136**
Sheet 1 of 1

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Date:
23/06/2016

Method: Excavated using a 360 tracked excavator with a 1m wide toothed bucket

Scale: 1:25

SAMPLE DETAILS

STRATA RECORD

Logged By: RCS Checked By: CR

Type	Depth From - To(m)	Vane Results kN/m ² {PID}	Ground -water	Description	Depth (m)	Level (m AOD) PID (ppm)	Legend	Backfill
ES	0.70			MADE GROUND: Reinforced concrete.	0.40			
				MADE GROUND: Brown sandy gravel of fine to coarse brick (Recycled sub-base). Stiff brown, mottled grey, slightly sandy CLAY.	0.50			
ES	1.70			End of trial pit at 1.70m	1.70			

Remarks and Groundwater Observations
1. No groundwater encountered. 2. Sidewalls stable.

GL (m AOD)	Fig No. TP136
Easting:	
Northing:	



TRIAL PIT RECORD

TP No. **TP137**
Sheet 1 of 1

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Date:
23/06/2016

Method: Excavated using a 360 tracked excavator with a 1m wide toothed bucket

Scale: 1:25

SAMPLE DETAILS

STRATA RECORD

Logged By: RCS Checked By: CR

Type	Depth From - To(m)	Vane Results kN/m ² {PID}	Ground -water	Description	Depth (m)	Level (m AOD) PID (ppm)	Legend	Backfill
ES	0.90			MADE GROUND: Light brown gravel of fine to coarse limestone (Sub-base).	0.70			
				MADE GROUND: Dark brown sandy clay. Some hydrocarbon staining and odour.				
				1 <u>Concrete foundation (?) at western end of trial pit. Minor reinforcement.</u>	1.10			
ES	1.30			Stiff brown mottled grey slightly sandy CLAY of intermediate plasticity.	1.50			
				End of trial pit at 1.50m				
			2					
			3					
			4					
			5					

Remarks and Groundwater Observations
 1. No groundwater encountered. 2. Sidewalls stable. 3. Concrete foundation (?) encountered to 1.0m at western end of trial pit. Minor reinforcement. 4. Trial pit located at end of concrete service duct.

GL (m AOD)	Fig No. TP137
Easting:	
Northing:	



TRIAL PIT RECORD

TP No. **TP138**
Sheet 1 of 1

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Date:
23/06/2016

Method: Excavated using a 360 tracked excavator with a 1m wide toothed bucket

Scale: 1:25

Logged By: RCS Checked By: CR

SAMPLE DETAILS

STRATA RECORD

Type	Depth From - To(m)	Vane Results kN/m ² {PID}	Ground -water	Description	Depth (m)	Level (m AOD) PID (ppm)	Legend	Backfill
				MADE GROUND: Reinforced concrete.				
ES	0.40			MADE GROUND: Brown sandy gravel of fine to coarse brick and concrete.	0.20			
B	0.60 - 1.30			Stiff dark brown mottled grey slightly gravelly slightly sandy CLAY of intermediate plasticity. Gravel is fine to medium subangular to subrounded shale and mudstone. Sand is medium.	0.60			
ES	1.00		1	<i>Concrete foundation (?), 0.9m wide, trending north-south.</i>				
				End of trial pit at 1.30m	1.30			
			2					
			3					
			4					
			5					

Remarks and Groundwater Observations
 1. No groundwater encountered. 2. Sidewalls relatively stable. 3. Concrete foundation (?) encountered at 0.7m, 0.9m wide, trending north-south. 4. Trial pit located in area of historical pond.

GL (m AOD)

Easting:

Northing:

Fig No.

TP138



TRIAL PIT RECORD

TP No. **TP139**
Sheet 1 of 1

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Date:
23/06/2016

Method: Excavated using a 360 tracked excavator with a 1m wide toothed bucket

Scale: 1:25

Logged By: RCS Checked By: CR

SAMPLE DETAILS

STRATA RECORD

Type	Depth From - To(m)	Vane Results kN/m ² {PID}	Ground -water	Description	Depth (m)	Level (m AOD) PID (ppm)	Legend	Backfill
				MADE GROUND: Reinforced concrete. <i>Concrete foundation (?) at southern end of trial pit.</i>				
ES	0.50		▼	MADE GROUND: Brown and grey sandy gravel of fine to coarse brick and concrete. Faint hydrocarbon odour and minor staining.	0.30			
B	0.70 - 1.30			Stiff dark brown mottled grey slightly gravelly slightly sandy CLAY of intermediate plasticity. Gravel is fine to medium subangular to subrounded sandstone and siltstone. Sand is medium and coarse.	0.70			
ES	1.00		1	End of trial pit at 1.30m	1.30			
			2					
			3					
			4					
			5					

Remarks and Groundwater Observations
 1. Slight seepage at 0.4m. 2. Sidewalls stable. 3. Concrete foundation (?) encountered to 0.8m at southern end of trial pit. 4. Trial pit located in area of stained concrete.

GL (m AOD)	Fig No. TP139
Easting:	
Northing:	



TRIAL PIT RECORD

TP No. **TP140**
Sheet 1 of 1

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Date:
23/06/2016

Method: Excavated using a 360 tracked excavator with a 1m wide toothed bucket

Scale: 1:25

Logged By: RCS Checked By: CR

SAMPLE DETAILS

STRATA RECORD

Type	Depth From - To(m)	Vane Results kN/m ² {PID}	Ground -water	Description	Depth (m)	Level (m AOD) PID (ppm)	Legend	Backfill
ES	0.00 - 0.30			MADE GROUND: Dark brown silty sandy clay (Reworked Topsoil).	0.30			
				MADE GROUND: Firm locally stiff dark brown slightly gravelly clay. Gravel is brick and concrete, and with isolated fragment of glazed clay drain.				
B ES	1.00 1.00		1					
B ES	2.00 2.00		2					
B ES	3.00 3.00		3					
				End of trial pit at 3.50m	3.50			
			4					
			5					

Remarks and Groundwater Observations
1. No groundwater encountered. 2. Sidewalls relatively stable. 3. Trial pit located at top of raised area.

GL (m AOD)

Easting:

Northing:

Fig No.

TP140



TRIAL PIT RECORD

TP No. **TP141**
Sheet 1 of 1

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Date:
24/06/2016

Method: Excavated using a 360 tracked excavator with a 1m wide toothed bucket

Scale: 1:25

SAMPLE DETAILS

STRATA RECORD

Logged By: RCS Checked By: CR

Type	Depth From - To(m)	Vane Results kN/m ² {PID}	Ground -water	Description	Depth (m)	Level (m AOD) PID (ppm)	Legend	Backfill
ES	0.40			MADE GROUND: Reinforced concrete.	0.25			
				MADE GROUND: Dark brown and grey sandy gravel. Gravel is fine to coarse brick and concrete. Sand is medium.				
B ES	1.00 - 1.60 1.10	107.0	1	Stiff high strength initially brown becoming dark brown mottled grey slightly gravelly slightly sandy CLAY of intermediate plasticity. Gravel is fine to medium angular of sandstone and shale. Sand is medium.	0.60			
				End of trial pit at 1.60m	1.60			
			2					
			3					
			4					
			5					

Remarks and Groundwater Observations
1. No groundwater encountered. 2. Sidewalls stable.

GL (m AOD)	Fig No. TP141
Easting:	
Northing:	



TRIAL PIT RECORD

TP No. **TP142**
Sheet 1 of 1

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Date: 24/06/2016

Method: Excavated using a 360 tracked excavator with a 1m wide toothed bucket

Scale: 1:25

SAMPLE DETAILS

STRATA RECORD

Logged By: RCS Checked By: CR

Type	Depth From - To(m)	Vane Results kN/m ² {PID}	Ground -water	Description	Depth (m)	Level (m AOD) PID (ppm)	Legend	Backfill	
ES	0.00 - 0.15	121.0	1	MADE GROUND: Dark brown sandy silty clay (Reworked Topsoil).	0.15				
ES	0.15 - 0.45			MADE GROUND: Brown gravelly sandy clay. Gravel is fine to coarse brick, and with occasional clay tiles and isolated fragments of wire flex.					
ES	0.60 - 0.80			1.80	2				Stiff high strength initially brown becoming dark brown mottled grey slightly gravelly slightly sandy CLAY. Gravel is fine to medium angular of sandstone and shale. Sand is medium.
B	0.70 - 1.30								
ES	1.60 - 1.80			End of trial pit at 1.80m					

Remarks and Groundwater Observations 1. No groundwater encountered. 2. Sidewalls stable.	GL (m AOD)	Fig No. TP142
	Easting:	
	Northing:	



TRIAL PIT RECORD

TP No. **TP143**
Sheet 1 of 1

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Date: 24/06/2016

Method: Excavated using a 360 tracked excavator with a 1m wide toothed bucket

Scale: 1:25

SAMPLE DETAILS

STRATA RECORD

Logged By: RCS Checked By: CR

Type	Depth From - To(m)	Vane Results kN/m ² {PID}	Ground -water	Description	Depth (m)	Level (m AOD) PID (ppm)	Legend	Backfill
ES	0.40 - 0.70			MADE GROUND: Reinforced concrete.	0.25			
				MADE GROUND: Brown and grey sandy gravel of fine to coarse brick.				
				<i>Sandstone structure (?) at northern end of trial pit.</i>				
B	1.50 - 2.00	69.0		Firm locally stiff medium strength dark brown mottled grey slightly gravelly slightly sandy CLAY of intermediate plasticity. Gravel is fine to medium angular to subrounded siltstone, mudstone and sandstone. Sand is medium.	1.00			
ES	1.50 - 2.00							
				End of trial pit at 2.00m	2.00			
					3			
					4			
					5			

Remarks and Groundwater Observations
 1. No groundwater encountered. 2. Sidewalls stable. 3. Sandstone structure (?) encountered at 0.6 to 1.2m at northern end of trial pit.

GL (m AOD)	Fig No. TP143
Easting:	
Northing:	



TRIAL PIT RECORD

TP No. **TP144**
Sheet 1 of 1

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Date:
24/06/2016

Method: Excavated using a 360 tracked excavator with a 1m wide toothed bucket

Scale: 1:25

SAMPLE DETAILS

STRATA RECORD

Logged By: RCS Checked By: CR

Type	Depth From - To(m)	Vane Results kN/m ² {PID}	Ground -water	Description	Depth (m)	Level (m AOD) PID (ppm)	Legend	Backfill
ES	0.00 - 0.15			MADE GROUND: Dark brown sandy silty clay (Reworked Topsoil).	0.15			
ES	0.30 - 0.70			MADE GROUND: Brown slightly sandy gravel of fine to coarse brick and limestone, and with occasional fragments of timber.				
ES B	0.90 - 1.10 1.00 - 1.50	91.0	1	Stiff high strength initially brown becoming dark brown mottled grey slightly gravelly slightly sandy CLAY of intermediate plasticity. Gravel is fine to medium angular to subrounded siltstone, mudstone and sandstone. Sand is medium.	0.80			
ES	1.60 - 1.80	117.0		End of trial pit at 1.80m	1.80			

Remarks and Groundwater Observations
1. No groundwater encountered. 2. Sidewalls stable.

GL (m AOD)

Easting:

Northing:

Fig No.

TP144



TRIAL PIT RECORD

TP No. **TP145**
Sheet 1 of 1

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Date:
24/06/2016

Method: Excavated using a 360 tracked excavator with a 1m wide toothed bucket

Scale: 1:25

SAMPLE DETAILS

STRATA RECORD

Logged By: RCS Checked By: CR

Type	Depth From - To(m)	Vane Results kN/m ² {PID}	Ground -water	Description	Depth (m)	Level (m AOD) PID (ppm)	Legend	Backfill
ES	0.25 - 0.60			MADE GROUND: Concrete.	0.25			
				MADE GROUND: Dark brown sandy gravel. Gravel is fine to coarse brick and concrete.				
ES B	0.90 - 1.10	123.0	1	Stiff high strength dark brown mottled grey slightly gravelly slightly sandy CLAY of intermediate plasticity. Gravel is fine angular to subrounded siltstone and mudstone. Sand is medium.	0.60			
	1.00 - 1.50							
ES	1.60 - 1.80	130.0	2	End of trial pit at 1.80m	1.80			
			3					
			4					
			5					

Remarks and Groundwater Observations
 1. No groundwater encountered. 2. Sidewalls stable.

GL (m AOD)
 Easting:
 Northing:

Fig No.

 TP145



TRIAL PIT RECORD

TP No. **TP146**
Sheet 1 of 1

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Date: 24/06/2016



Method: Excavated using a 360 tracked excavator with a 1m wide toothed bucket

Scale: 1:25

Logged By: RCS Checked By: CR

SAMPLE DETAILS

STRATA RECORD

Type	Depth From - To(m)	Vane Results kN/m ² {PID}	Ground -water	Description	Depth (m)	Level (m AOD) PID (ppm)	Legend	Backfill
ES	0.20 - 0.50	118.0	1	MADE GROUND: Reinforced concrete.	0.20			
ES	0.50 - 0.70			MADE GROUND: Dark brown and grey sandy gravel. Gravel is fine to coarse brick, concrete and limestone.				
B	1.00 - 1.50	126.0	2	Stiff high strength dark brown mottled grey slightly sandy CLAY.	1.70			
ES	1.50 - 1.70			End of trial pit at 1.70m				
			3					
			4					
			5					

Remarks and Groundwater Observations
 1. No groundwater encountered. 2. Sidewalls stable.

GL (m AOD)	Fig No. TP146
Easting:	
Northing:	



TRIAL PIT RECORD

TP No. **TP147**
Sheet 1 of 1

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Date:
24/06/2016

Method: Excavated using a 360 tracked excavator with a 1m wide toothed bucket

Scale: 1:25

SAMPLE DETAILS

STRATA RECORD

Logged By: RCS Checked By: CR

Type	Depth From - To(m)	Vane Results kN/m ² {PID}	Ground -water	Description	Depth (m)	Level (m AOD) PID (ppm)	Legend	Backfill
				<p>MADE GROUND: Reinforced concrete. <i>Reinforced concrete foundation (?) at eastern end of trial pit.</i> <i>Brick manhole chamber (?) in northwest corner of trial pit.</i></p>	0.14			
ES	0.40 - 0.60			<p>MADE GROUND: Brown-grey gravelly clayey sand. Sand is fine to coarse (Sub-base).</p>				
B	1.00 - 1.90		1	<p>Stiff high strength dark brown mottled grey slightly sandy CLAY of intermediate plasticity.</p>	1.00			
ES	1.20 - 1.50	114.0						
			2	End of trial pit at 1.90m	1.90			
			3					
			4					
			5					

Remarks and Groundwater Observations
 1. No groundwater encountered. 2. Sidewalls stable. 3. Reinforced concrete foundation (?) encountered to 1.0m at eastern end of trial pit. Brick manhole chamber (?) encountered to >1.9m in northwest corner of trial pit.

GL (m AOD)	Fig No. TP147
Easting:	
Northing:	



TRIAL PIT RECORD

TP No. **TP148**
Sheet 1 of 1

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Date:
24/06/2016

Method: Excavated using a 360 tracked excavator with a 1m wide toothed bucket

Scale: 1:25

SAMPLE DETAILS

STRATA RECORD

Logged By: RCS Checked By: CR

Type	Depth From - To(m)	Vane Results kN/m ² {PID}	Ground -water	Description	Depth (m)	Level (m AOD) PID (ppm)	Legend	Backfill
				<p>MADE GROUND: Reinforced concrete. <i>Trial pit excavated on a suspected reinforced concrete foundation, trending north-south. Water ingress from adjacent infilled suspected manhole chamber (?).</i></p>	0.90			
			1	End of trial pit at 0.90m				
			2					
			3					
			4					
			5					

Remarks and Groundwater Observations

1. Trial pit excavated on a suspected reinforced concrete foundation to >0.9m, trending north-south. Water ingress from adjacent infilled suspected manhole chamber (?). 2. Trial pit located in area of stained concrete.

GL (m AOD)	Fig No. TP148
Easting:	
Northing:	



TRIAL PIT RECORD

TP No. **TP149**
Sheet 1 of 1

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Date:
24/06/2016

Method: Excavated using a 360 tracked excavator with a 1m wide toothed bucket

Scale: 1:25

Logged By: RCS Checked By: CR

SAMPLE DETAILS

STRATA RECORD

Type	Depth From - To(m)	Vane Results kN/m ² {PID}	Ground -water	Description	Depth (m)	Level (m AOD) PID (ppm)	Legend	Backfill
				MADE GROUND: Concrete.				
ES	0.25 - 0.45			MADE GROUND: Brown and grey sandy gravel. Gravel is fine to coarse brick and concrete.	0.25			
				<i>Pair of metal pipes (1' diameter), trending north-south.</i>	0.45			
				<i>Foundation (?) comprising brick on concrete, trending north-south.</i>				
ES	0.60 - 1.00	53.0		Firm light brown and brown slightly gravelly slightly sandy CLAY. Gravel is fine to medium angular of sandstone and shale. Isolated rounded sandstone boulder.				
			1					
B ES	1.10 - 1.50 1.10 - 1.50	107.0		Stiff high strength dark brown mottled grey slightly gravelly slightly sandy CLAY of intermediate plasticity. Gravel is fine to medium angular of sandstone and shale. Sand is medium.	1.10			
				End of trial pit at 1.50m	1.50			
			2					
			3					
			4					
			5					

Remarks and Groundwater Observations
 1. No groundwater encountered. 2. Sidewalls stable. 3. Foundation (?) comprising brick on concrete encountered at 0.3 to 0.75m, trending north-south. Pair of metal pipes (1' diameter) at 0.3m, trending north-south.

GL (m AOD)	Fig No. TP149
Easting:	
Northing:	



TRIAL PIT RECORD

TP No. **TP150**
Sheet 1 of 1

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Date:
24/06/2016

Method: Excavated using a 360 tracked excavator with a 1m wide toothed bucket

Scale: 1:25

SAMPLE DETAILS

STRATA RECORD

Logged By: RCS Checked By: CR

Type	Depth From - To(m)	Vane Results kN/m ² {PID}	Ground -water	Description	Depth (m)	Level (m AOD) PID (ppm)	Legend	Backfill
D	0.00 - 0.50			MADE GROUND: Brown sandy gravel of fine to coarse brick and concrete (Recycled crushed aggregate).	0.50			
				End of trial pit at 0.50m				
			1					
			2					
			3					
			4					
			5					

Remarks and Groundwater Observations
1. Trial pit excavated to sample crushed recycled aggregate used to infill suspected subsurface structure.

GL (m AOD)
Easting:
Northing:

Fig No.
TP150



TRIAL PIT RECORD

TP No. **TP151**
Sheet 1 of 1

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Date: 24/06/2016


Method: Excavated using a 360 tracked excavator with a 1m wide toothed bucket

Scale: 1:25

SAMPLE DETAILS

STRATA RECORD

Logged By: RCS Checked By: CR

Type	Depth From - To(m)	Vane Results kN/m ² {PID}	Ground -water	Description	Depth (m)	Level (m AOD) PID (ppm)	Legend	Backfill
D	0.00 - 0.50			MADE GROUND: Brown sandy gravel of fine to coarse brick and concrete (Recycled crushed aggregate).	0.50			
				End of trial pit at 0.50m				
			1					
			2					
			3					
			4					
			5					

Remarks and Groundwater Observations
1. Trial pit excavated to sample crushed recycled aggregate used to infill suspected subsurface structure.

GL (m AOD)

Easting:

Northing:

Fig No.

TP151



TRIAL PIT RECORD

TP No. **TP152**
Sheet 1 of 1

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Date:
24/06/2016

Method: Excavated using a 360 tracked excavator with a 1m wide toothed bucket

Scale: 1:25

SAMPLE DETAILS

STRATA RECORD

Logged By: RCS

Checked By: CR

Type	Depth From - To(m)	Vane Results kN/m ² {PID}	Ground -water	Description	Depth (m)	Level (m AOD) PID (ppm)	Legend	Backfill
D	0.00 - 0.50			MADE GROUND: Brown sandy gravel of fine to coarse brick and concrete (Recycled crushed aggregate).	0.50			
				End of trial pit at 0.50m				
			1					
			2					
			3					
			4					
			5					

Remarks and Groundwater Observations
1. Trial pit excavated to sample crushed recycled aggregate used to infill suspected subsurface structure.

GL (m AOD)

Easting:

Northing:

Fig No.

TP152



WINDOW SAMPLING RECORD

BH No. **WS101**
Sheet 1 of 1

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Date: 21/06/2016

Method: Tracked window sampling rig

Scale: 1:25

SAMPLE DETAILS

STRATA RECORD

Logged By: GH Checked By: RCS

Driller: RD

Type	Depth From - To(m)	(N) {PID} Shear Vane	Ground-water	Description	Depth (m)	Level (m AOD)	Legend	Well
D	0.20 - 0.30			MADE GROUND: Concrete	0.25 0.30			
				MADE GROUND: Firm friable brown grey sandy gravelly CLAY. Sand is fine to medium. Gravel is fine to coarse sub-angular to angular of brick concrete and sandstone. Rare pieces of ceramic and metal. Firm to stiff brown grey slightly sandy gravelly CLAY of high plasticity (field test). Gravel is fine to coarse sub-angular to sub-rounded of sandstone, mudstone, coal and brick.				
D	1.20 - 1.30		▼	At 1.3m bgl; Oily water strike.	1.50			
				No recovery.				
				Soft grey slightly sandy slightly gravelly CLAY. Gravel is fine to medium sub-angular to sub-rounded of sandstone, mudstone and coal. <i>From 1.8m to 1.9m bgl; Hydrocarbon stained.</i>				
D	2.80 - 3.00	N=8 (2,2/2,2,2,2)		Firm to stiff medium strength brown mottled grey slightly sandy slightly gravelly CLAY of low plasticity (field test). Gravel is fine to coarse sub-angular to sub-rounded of sandstone, mudstone and coal.	1.80 2.00			
				Stiff high strength brown mottled grey slightly sandy slightly gravelly CLAY of low plasticity (field test). Gravel is fine to coarse sub-angular to sub-rounded of sandstone, mudstone and coal.				
D	3.70 - 3.80	N=20 (3,4/4,5,5,6)		End of Borehole at 4.00m	3.00 4.00			

Remarks and Water Observations:
1. Gas and groundwater monitoring well installed to 4m. 2. Groundwater strike at 1.3m.

GL (m AOD)	Fig No. WS101
Eastings:	
Northings:	



WINDOW SAMPLING RECORD

BH No. **WS102**
Sheet 1 of 1

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Date: 21/06/2016

Method: Tracked window sampling rig

Scale: 1:25

SAMPLE DETAILS

STRATA RECORD

Logged By: GH Checked By: RCS

Driller: RD

Type	Depth From - To(m)	(N) {PID} Shear Vane	Ground-water	Description	Depth (m)	Level (m AOD)	Legend	Well
ES	0.10 - 0.20			MADE GROUND: Brown orange clayey slightly gravelly SAND. Sand is fine to medium. Gravel is fine to coarse sub-angular to angular of brick and concrete.				
D	0.60 - 0.80	N=20 (2,3/5,5,5,5)	1	Firm brown grey slightly sandy gravelly CLAY of low plasticity (field test). Gravel is fine to coarse sub-angular to sub-rounded of sandstone, limestone and coal. <i>Below 0.85m bgl; Stiff.</i>	0.60			
D	1.70 - 1.90	N=24 (3,4/5,6,6,7)	2	Very stiff high strength brown mottled grey slightly sandy slightly gravelly silty CLAY of low plasticity (field test). Gravel is fine to coarse sub-angular to sub-rounded of sandstone, limestone and coal.	1.20			
D	2.60 - 2.80	N=30 (4,5/7,7,8,8)	3	Stiff to very stiff very high strength brown orange mottled grey slightly silty slightly sandy gravelly CLAY of low plasticity (field test). Gravel is fine to coarse sub-angular to sub-rounded of sandstone, limestone and coal.	1.70			
D	3.80 - 4.00	N=31 (5,7/7,8,8,8)	4	Stiff to very stiff very high strength brown orange mottled grey slightly silty slightly sandy gravelly CLAY of low plasticity (field test). Gravel is fine to coarse sub-angular to sub-rounded of sandstone, limestone and coal.	3.50			
				End of Borehole at 4.00m	4.00			

Remarks and Water Observations:
1. Gas and groundwater monitoring well installed to 4m. 2. No groundwater encountered.

GL (m AOD)	Fig No. WS102
Easting:	
Northing:	



WINDOW SAMPLING RECORD

BH No. **WS103**
Sheet 1 of 1

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Date: 21/06/2016

Method: Tracked window sampling rig

Scale: 1:25

SAMPLE DETAILS

STRATA RECORD

Logged By: GH Checked By: RCS

Driller: RD

Type	Depth From - To(m)	(N) {PID} Shear Vane	Ground-water	Description	Depth (m)	Level (m AOD)	Legend	Well
D	0.10 - 0.20	N=12 (2,2/3,3,3,3)	1	<p>TOPSOIL: Firm friable brown slightly sandy slightly gravelly silty CLAY with rootlets. Gravel is fine to medium sub-angular to sub-rounded of sandstone and coal.</p> <p>Firm to stiff medium strength brown orange mottled grey slightly sandy slightly gravelly CLAY of low plasticity (field test). Gravel is fine to medium sub-angular to sub-rounded of sandstone and coal.</p>	0.30			
D	0.70 - 0.90							
D	1.70 - 1.90	N=20 (2,3/4,5,5,6)	2	<p>Firm to stiff brown orange mottled grey slightly sandy slightly gravelly CLAY of high plasticity (field test). Gravel is fine to medium sub-angular to sub-rounded of sandstone and coal.</p> <p><u>Below 1.8m bgl; Very stiff.</u></p>	1.50			
D	2.60 - 2.70					2.00		
D	3.80 - 4.00	N=22 (4,4/5,5,6,6)	3					
			4	End of Borehole at 4.00m	4.00			

Remarks and Water Observations:
1. Gas and groundwater monitoring well installed to 4m. 2. No groundwater encountered.

GL (m AOD)	Fig No. WS103
Easting:	
Northing:	



WINDOW SAMPLING RECORD

BH No. **WS104**
Sheet 1 of 1

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Date: 21/06/2016

Method: Tracked window sampling rig

Scale: 1:25

SAMPLE DETAILS

STRATA RECORD

Logged By: GH Checked By: RCS

Driller: RD

Type	Depth From - To(m)	(N) {PID} Shear Vane	Ground-water	Description	Depth (m)	Level (m AOD)	Legend	Well
ES	0.10 - 0.20			MADE GROUND: Stiff brown grey slightly silty slightly sandy gravelly CLAY with rootlets. Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, brick and coal.				
D	0.50 - 0.70			Stiff brown mottled grey slightly sandy slightly gravelly CLAY of low plasticity (field test). Gravel is fine to medium sub-angular to sub-rounded of sandstone and coal.	0.35			
				Firm to stiff, locally very stiff medium strength brown orange mottled grey slightly gravelly sandy silty CLAY of low plasticity (field test). Gravel is fine to coarse sub-angular to sub-rounded of sandstone and coal.	0.50			
		N=11 (2,2/3,2,3,3)		<i>Below 0.5m bgl; Sand content increases with depth.</i>				
D	1.70 - 1.90			<i>From 1.65m to 1.71m bgl; Thin band of fine to medium sand.</i>				
				<i>From 1.8m to 1.85m bgl; Thin band of fine to medium sand.</i>				
		N=15 (2,2/3,4,4,4)		Wet soft brown grey slightly silty sandy CLAY. Sand is fine to medium.	1.95			
				<i>At 2.0m bgl; Water strike.</i>				
				Firm and stiff high strength brown mottled grey slightly sandy slightly gravelly silty CLAY. Gravel is fine to medium sub-angular to sub-rounded of sandstone, limestone and coal.	2.10			
D	2.80 - 3.00			Stiff to very stiff brown mottled grey slightly silty slightly gravelly laminated CLAY. Gravel is fine to medium sub-angular to sub-rounded of sandstone and coal.	2.40			
				<i>From 2.4m to 2.47m bgl; Thin band of fine to medium sand.</i>				
		N=10 (2,2/2,2,3,3)		Firm to stiff locally very stiff medium strength brown mottled grey slightly slightly gravelly laminated silty CLAY. Gravel is fine to medium sub-angular to sub-rounded of sandstone and coal.	3.05			
				<i>From 3.05m to 3.1m bgl; Thin band of fine to medium sand.</i>				
D	3.50 - 3.70			<i>At 3.3m bgl; Water strike.</i>				
				End of Borehole at 4.00m	4.00			

Remarks and Water Observations:

1. Gas and groundwater monitoring well installed to 4m. 2. Groundwater strike at 2m and 3.3m.

GL (m AOD)

Eastings:

Northings:

Fig No.

WS104



WINDOW SAMPLING RECORD

BH No. **WS105**
Sheet 1 of 1

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Date: 21/06/2016

Method: Tracked window sampling rig

Scale: 1:25

SAMPLE DETAILS

STRATA RECORD

Logged By: GH Checked By: RCS

Driller: RD

Type	Depth From - To(m)	(N) {PID} Shear Vane	Ground-water	Description	Depth (m)	Level (m AOD)	Legend	Well
D	0.10 - 0.20	N=17 (2,3/3,4,5,5)		<p>MADE GROUND: Friable brown slightly gravelly sandy CLAY of low plasticity (field test). Gravel is fine to coarse sub-angular of sandstone, coal and brick.</p> <p>Stiff brown orange mottled grey slightly sandy gravelly silty CLAY of low plasticity (field test). Gravel is fine to coarse sub-angular to sub-rounded of sandstone, mudstone and coal.</p>	0.20			
D	0.70 - 0.90			<p><i>Below 0.6m bgl; Very stiff and brown.</i></p>	1			
D	1.60 - 1.70	N=16 (3,3/4,4,4,4)		<p>Firm to stiff, locally very stiff high strength brown orange mottled grey slightly sandy gravelly silty CLAY of low plasticity (field test). Gravel is fine to medium sub-angular to sub-rounded of sandstone, mudstone and coal.</p>	1.00			
D	2.50 - 2.70			<p>2</p>				
D	3.90 - 4.00	N=22 (3,3/4,5,6,7)		<p>Stiff and very stiff high strength brown orange mottled grey slightly sandy gravelly silty CLAY of low plasticity (field test). Gravel is fine to medium sub-angular to sub-rounded of sandstone, mudstone and coal.</p>	3.00			
D				<p>3</p>				
				End of Borehole at 4.00m	4.00			

Remarks and Water Observations:
1. Gas and groundwater monitoring well installed to 4m. 2. No groundwater encountered.

GL (m AOD)	Fig No. WS105
Eastings:	
Northings:	



BOREHOLE RECORD

BH No. **RO101A**
Sheet 1 of 1

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Date: 27/06/2016

Method: Rotary openhole drilling using a Casagrande C6 rig and air flush

Scale: 1:150

SAMPLE DETAILS

STRATA RECORD

Logged By: MD Checked By: RCS

Driller: SDS

Depth From - To(m)	TCR	SCR	RQD	FI	Ground -water	Depth (m)	Level (m AOD)	Legend	Well
					MADE GROUND				
					Dark brown slightly sandy CLAY	0.40			
					Soft ground (assumed superficial deposits)	5.00			
					End of Borehole at 7.00m	7.00			
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									

Remarks and Groundwater Observations:
1. Loss of air flush. No recovery. Borehole terminated.

GL (m AOD)	Fig No. RO101A
Eastings:	
Northings:	



BOREHOLE RECORD

BH No. RO102
Sheet 1 of 1

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Date:
27/06/2016

Method: Rotary openhole drilling using a Casagrande C6 rig and air flush

Scale: 1:150

SAMPLE DETAILS

STRATA RECORD

Logged By: MD Checked By: RCS

Driller: SDS

Depth From - To(m)	TCR	SCR	RQD	FI	Ground -water
					1
					2
					3
					4
					5
					6
					7
					8
					9
					10
					11
					12
					13
					14
					15
					16
					17
					18
					19
					20
					21
					22
					23
					24
					25
					26
					27
					28
					29
					30

MADE GROUND

Light and dark brown sandy gravelly CLAY.

0.40

Soft ground (assumed superficial deposits). No returns.

8.00

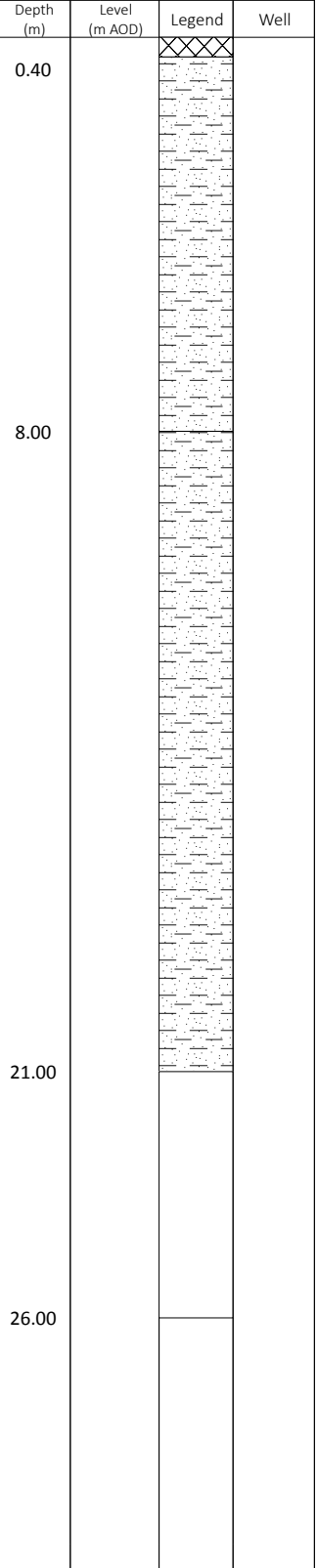
From 18.0m to 21.0m bgl; Soft clay.

Hard ground (possible bedrock)

21.00

End of Borehole at 26.00m

26.00



Remarks and Groundwater Observations:

1. Loss of air flush at 8.0m with no recovery. 2. Borehole terminated at 26m. 3. No reported broken ground or voids. 4. Cased to 13.0m.

GL (m AOD)

Fig No.

Eastings:

Northings:

RO102



BOREHOLE RECORD

BH No. **RO103**
Sheet 1 of 1

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Date:
28/06/2016

Method: Rotary openhole drilling using a Casagrande C6 rig and air flush

Scale: 1:150

SAMPLE DETAILS

STRATA RECORD

Logged By: MD Checked By: RCS

Driller: SDS

Depth From - To(m)	TCR	SCR	RQD	FI	Ground -water	Depth (m)	Level (m AOD)	Legend	Well
						1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30		<div style="border: 1px solid black; width: 100%; height: 100%; background: repeating-linear-gradient(45deg, transparent, transparent 2px, black 2px, black 4px);"></div>	
<p>MADE GROUND MADE GROUND, concrete at 3.9m</p>						0.40			
<p style="text-align: center;">End of Borehole at 3.90m</p>						3.90			

Remarks and Groundwater Observations:
1. Suspected reinforced concrete encountered at 3.9m. Borehole terminated.

GL (m AOD)	Fig No. <h2 style="text-align: center;">RO103</h2>
Eastings:	
Northings:	



BOREHOLE RECORD

BH No. **RO103A**
Sheet 1 of 1

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Date:
28/06/2016

Method: Rotary openhole drilling using a Casagrande C6 rig and airmist flush

Scale: 1:150

SAMPLE DETAILS

STRATA RECORD

Logged By: RCS Checked By: CR

Driller: SDS

Depth From - To(m)	TCR	SCR	RQD	FI	Ground -water	STRATA RECORD	Depth (m)	Level (m AOD)	Legend	Well
						MADE GROUND			XXXX	
						Dark brown sandy CLAY	0.40			
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20						Grey MUDSTONE	19.50			
21										
22										
23						COAL	23.00			
24						Grey MUDSTONE	23.10			
25						COAL	24.20			
26						Grey MUDSTONE	25.30			
27						Brown and grey SANDSTONE	26.00			
28										
29										
30						End of Borehole at 30.00m	30.00			

Remarks and Groundwater Observations:
 1. Gas monitoring well installed as shown. 2. Air flush used gl - 17.0m, air mist thereafter. 3. No returns 15.0 - 17.0m. 4. Cased to 18.0m.

GL (m AOD)	Fig No. RO103A
Eastings:	
Northings:	



BOREHOLE RECORD

BH No. **RO104**
Sheet 1 of 2

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Date:
29/06/2016

Method: Rotary openhole drilling using a Casagrande C6 rig and airmist flush

Scale: 1:150

SAMPLE DETAILS

STRATA RECORD

Logged By: RCS Checked By: CR

Driller: SDS

Depth From - To(m)	TCR	SCR	RQD	FI	Ground -water	STRATA RECORD	Depth (m)	Level (m AOD)	Legend	Well
						MADE GROUND			XXXX	
						Dark brown slightly sandy CLAY	0.40			
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21						Brown SANDSTONE	20.50			
22						MUDSTONE	21.50			
23						Grey MUDSTONE with bands of brown SANDSTONE	23.00			
24										
25										
26										
27										
28										
29						COAL	29.00			
30						COAL-BANDED MUDSTONE	29.70			
						Continued next sheet				

Remarks and Groundwater Observations:
1. Gas monitoring well installed as shown. 2. Cased to 16.0m.

GL (m AOD)	Fig No. RO104
Eastings:	
Northings:	



BOREHOLE RECORD

BH No. **RO104**
Sheet 2 of 2

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Date:
29/06/2016

Method: Rotary openhole drilling using a Casagrande C6 rig and airmist flush

Scale: 1:150

SAMPLE DETAILS

STRATA RECORD

Logged By: RCS Checked By: CR

Driller: SDS

Depth From - To(m)	TCR	SCR	RQD	FI	Ground -water	Depth (m)	Level (m AOD)	Legend	Well
					31	Grey MUDSTONE with bands of brown SANDSTONE	30.70		
				32					
				33					
				34					
				35					
				36					
				37					
				38					
				39					
				40					
					End of Borehole at 35.00m	35.00			
				41					
				42					
				43					
				44					
				45					
				46					
				47					
				48					
				49					
				50					
				51					
				52					
				53					
				54					
				55					
				56					
				57					
				58					
				59					
				60					
				61					

Remarks and Groundwater Observations:
1. Gas monitoring well installed as shown. 2. Cased to 16.0m.

GL (m AOD)	Fig No. RO104
Eastings:	
Northings:	



BOREHOLE RECORD

BH No. **RO105**
Sheet 1 of 2

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Date: 01/07/2016

Method: Rotary openhole drilling using a Casagrande C6 rig and airmist flush

Scale: 1:150

SAMPLE DETAILS

STRATA RECORD

Logged By: RCS Checked By: CR

Driller: SDS

Depth From - To(m)	TCR	SCR	RQD	FI	Ground -water	Depth (m)	Level (m AOD)	Legend	Well
					MADE GROUND				
					Dark brown slightly sandy CLAY	0.40			
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22					Grey MUDSTONE	21.50			
23					COAL	22.70			
24					Grey MUDSTONE with bands of brown SANDSTONE	23.00			
25									
26									
27									
28									
29									
30									
	TCR	SCR	RQD	FI					
Continued next sheet						30.50			

Remarks and Groundwater Observations:
 1. Gas monitoring well installed as shown. 2. Cased to 18.0m.

GL (m AOD)	Fig No. RO105
Eastings:	
Northings:	



BOREHOLE RECORD

BH No. **RO105**
Sheet 2 of 2

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Date:
01/07/2016

Method: Rotary openhole drilling using a Casagrande C6 rig and airmist flush

Scale: 1:150

SAMPLE DETAILS

STRATA RECORD

Logged By: RCS Checked By: CR

Driller: SDS

Depth From - To(m)		TCR	SCR	RQD	FI	Ground -water	Depth (m)	Level (m AOD)	Legend	Well
						31				
						COAL				
						Grey MUDSTONE	30.90			
						32				
						COAL	31.20			
						Grey MUDSTONE	32.00			
						33				
						End of Borehole at 33.00m		33.00		
						34				
						35				
						36				
						37				
						38				
						39				
						40				
						41				
						42				
						43				
						44				
						45				
						46				
						47				
						48				
						49				
						50				
						51				
						52				
						53				
						54				
						55				
						56				
						57				
						58				
						59				
						60				
						61				
TCR	SCR	RQD	FI							

Remarks and Groundwater Observations:

1. Gas monitoring well installed as shown. 2. Cased to 18.0m.

GL (m AOD)	Fig No. RO105
Eastings:	
Northings:	



BOREHOLE RECORD

BH No. **RO106**
Sheet 1 of 2

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Date: 01/07/2016

Method: Rotary openhole drilling using a Casagrande C6 rig and air/airmist flush

Scale: 1:150

SAMPLE DETAILS

STRATA RECORD

Logged By: GA Checked By: RCS

Driller: SDS

Depth From - To(m)	TCR	SCR	RQD	FI	Ground -water
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					

Brown slightly gravelly sandy CLAY

Light grey MUDSTONE with bands of SANDSTONE

COAL
Grey MUDSTONE

COAL
Grey MUDSTONE

COAL
Grey MUDSTONE

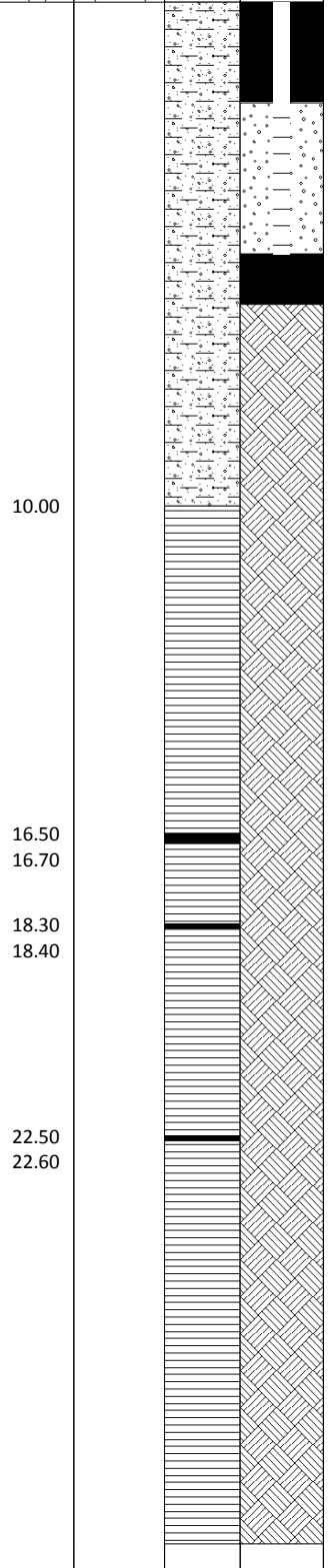
10.00

16.50
16.70

18.30
18.40

22.50
22.60

Continued next sheet



Remarks and Groundwater Observations:
1. Gas monitoring well installed as shown. 2. Ground water encountered at 14.50m. 3. Cased to 7.50m.

GL (m AOD)	Fig No. RO106
Eastings:	
Northings:	



BOREHOLE RECORD

BH No. **RO106**
Sheet 2 of 2

Site: Former Siemens Factory, Hebburn

Contract No: C7074

Client: Miller Homes (NE) Ltd

Date:
01/07/2016

Method: Rotary openhole drilling using a Casagrande C6 rig and air/airmist flush

Scale: 1:150

SAMPLE DETAILS

STRATA RECORD

Logged By: GA Checked By: RCS

Driller: SDS

Depth From - To(m)	TCR	SCR	RQD	FI	Ground -water
					31
					32
					33
					34
					35
					36
					37
					38
					39
					40
					41
					42
					43
					44
					45
					46
					47
					48
					49
					50
					51
					52
					53
					54
					55
					56
					57
					58
					59
					60
					61
	TCR	SCR	RQD	FI	



Depth (m)	Level (m AOD)	Legend	Well
36.00			

Remarks and Groundwater Observations:

1. Gas monitoring well installed as shown. 2. Ground water encountered at 14.50m. 3. Cased to 7.50m.

GL (m AOD)	Fig No. RO106
Eastings:	
Northings:	



APPENDIX E

LABORATORY TEST RESULTS



Certificate of Analysis

Certificate Number 16-71697-1

12-Jul-16

Client Sirius Geotechnical & Environmental
Russel House
Suite 2
Mill Road
Langley Moor
DH7 8HJ

Our Reference 16-71697-1

Client Reference C7074

Order No 13793/C7074

Contract Title Hebburn

Description 56 Soil samples.

Date Received 04-Jul-16

Date Started 04-Jul-16

Date Completed 12-Jul-16

Test Procedures Identified by prefix DETSn (details on request).

Notes **This report supersedes 16-71697, Extra Testing**

Opinions and interpretations are outside the scope of UKAS accreditation. 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. Observations and interpretations are outside the scope of ISO 17025. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Rob Brown
Business Manager



Summary of Chemical Analysis

Matrix Descriptions

Our Ref 16-71697-1

Client Ref C7074

Contract Title Hebburn

Sample ID	Depth	Lab No	Completed	Matrix Description
TP101	0.50-1.00	1017262	11/07/2016	Dark brown very slightly clayey, slightly sandy GRAVEL including odd roots (Made ground - brick) (sample matrix outside MCERTS scope of accreditation)
TP103	3	1017263	11/07/2016	Brown slightly sandy GRAVEL including some roots (Made ground - glass, metal, brick, bitchumin) (sample matrix outside MCERTS scope of accreditation)
TP105	0.20-0.80	1017265	11/07/2016	Grey very slightly clayey, sandy GRAVEL (Made ground - brick) (sample matrix outside MCERTS scope of accreditation)
TP105	1.00-1.50	1017266	11/07/2016	Dark brown very slightly gravelly, very, slightly sandy CLAY (Made ground - brick)
TP106	0.20-0.60	1017267	11/07/2016	Brown slightly clayey, gravelly SAND (Made ground - brick)
TP106	1.00-1.50	1017268	11/07/2016	Dark brown very slightly gravelly, slightly sandy CLAY
TP107	0.20-0.70	1017269	11/07/2016	Red very slightly clayey, gravelly SAND (Made ground - brick) (Possible made ground - slag)
TP108	0.00-0.40	1017270	11/07/2016	Dark brown very slightly gravelly, slightly sandy CLAY including numerous roots
TP109	0.00-0.30	1017271	11/07/2016	Very dark brown very slightly gravelly, slightly sandy CLAY including numerous roots
TP110	0.00-0.30	1017272	11/07/2016	Black very slightly gravelly, slightly sandy CLAY including odd roots
TP111	0.00-0.30	1017273	11/07/2016	Black very slightly gravelly, sandy CLAY including odd roots (Made ground - brick)
TP112	0.00-0.20	1017274	11/07/2016	Dark brown very slightly sandy, slightly gravelly CLAY including numerous roots (Made ground - brick)
TP112	1	1017275	11/07/2016	Dark brown very slightly sandy, very, slightly gravelly CLAY including odd roots (Made ground - brick, charcoal)
TP112	3	1017276	11/07/2016	Dark brown very slightly sandy, very, slightly gravelly CLAY including odd roots (Made ground - brick)
TP113	0.00-0.30	1017277	11/07/2016	Dark brown slightly sandy, slightly gravelly CLAY including numerous roots
TP114	0.00-0.75	1017278	11/07/2016	Black very slightly clayey, slightly gravelly SAND (Possible made ground -glass, brick)
TP115	0.00-0.25	1017279	11/07/2016	Dark brown slightly gravelly, slightly sandy CLAY including numerous roots (Made ground -brick)
TP115	0.25-1.00	1017280	11/07/2016	Brown slightly sandy, slightly clayey GRAVEL including odd roots (Made ground - brick) (sample matrix outside MCERTS scope of accreditation)
TP116	0.00-0.30	1017281	11/07/2016	Dark brown slightly gravelly, slightly sandy CLAY including some roots (Made ground - brick)
TP116	2	1017282	11/07/2016	Dark brown very slightly gravelly, very, slightly sandy CLAY including odd roots (Made ground - brick)
TP118	0.90-1.30	1017283	11/07/2016	Dark brown slightly clayey, slightly sandy GRAVEL including odd roots (Made ground - brick) (sample matrix outside MCERTS scope of accreditation)
TP118	1.30-2.00	1017284	11/07/2016	Dark brown very slightly gravelly CLAY
TP119	0.20-0.50	1017285	11/07/2016	Grey very slightly clayey, gravelly SAND (Made ground - brick)
TP129	0.1	1017294	11/07/2016	Black very slightly gravelly, very, slightly sandy CLAY including much roots
TP129	0.9	1017295	11/07/2016	Dark grey very slightly gravelly, very slightly sandy CLAY (Made ground - brick)
TP137	0.9	1017301	11/07/2016	Dark brown slightly gravelly, sandy CLAY odour hydrocarbons
TP137	1.3	1017302	11/07/2016	Brown very slightly gravelly, slightly sandy CLAY
TP138	0.4	1017303	11/07/2016	Brown slightly sandy GRAVEL (Made ground - brick, concrete) (sample matrix outside MCERTS scope of accreditation)
TP139	0.5	1017304	11/07/2016	Brown very slightly clayey, sandy GRAVEL (Made ground -brick) (sample matrix outside MCERTS scope of accreditation)
TP139	1	1017305	11/07/2016	Dark brown very slightly gravelly CLAY
TP140	0.00-0.30	1017306	11/07/2016	Black slightly gravelly, sandy CLAY including numerous roots
TP140	2	1017307	11/07/2016	Dark brown very slightly gravelly CLAY
TP141	0.4	1017308	11/07/2016	Dark brown very sandy GRAVEL (Made ground -brick) (sample matrix outside MCERTS scope of accreditation)
TP142	0.00-0.15	1017309	11/07/2016	Dark brown slightly gravelly, slightly sandy CLAY including numerous roots (Made ground -brick)
TP143	0.40-0.70	1017310	11/07/2016	Brown very slightly clayey, gravelly SAND (Made ground - brick)
TP144	0.00-0.15	1017311	11/07/2016	Dark brown very slightly clayey, gravelly SAND including numerous roots (Made ground - brick)
TP144	0.30-0.70	1017312	11/07/2016	Dark brown very slightly sandy, slightly gravelly CLAY including some roots

Summary of Chemical Analysis

Matrix Descriptions

Our Ref 16-71697-1

Client Ref C7074

Contract Title Hebburn

Sample ID	Depth	Lab No	Completed	Matrix Description
TP145	0.25-0.60	1017313	11/07/2016	Dark brown very slightly clayey, gravelly SAND including odd roots (Made ground - brick)
TP147	0.40-0.60	1017314	11/07/2016	Light brown slightly sandy, slightly clayey GRAVEL (Made ground - concrete) (sample matrix outside MCERTS scope of accreditation)

Summary of Chemical Analysis

Soil Samples

Our Ref 16-71697-1
 Client Ref C7074
 Contract Title Hebburn

Lab No	1017262	1017263	1017264	1017265	1017266	1017267
Sample ID	TP101	TP103	TP104A	TP105	TP105	TP106
Depth	0.50-1.00	3.00	0.00-1.00	0.20-0.80	1.00-1.50	0.20-0.60
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	20/06/16	20/06/16	20/06/16	20/06/16	20/06/16	20/06/16
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Asbestos Quantification OHR	DETSC 1102	0		Y		Y			
Metals									
Arsenic	DETSC 2301#	0.2	mg/kg	4.1	3.7	9.5	7.6	5.9	
Cadmium	DETSC 2301#	0.1	mg/kg	0.1	0.2	0.6	< 0.1	0.2	
Chromium	DETSC 2301#	0.15	mg/kg	13	12	13	32	15	
Copper	DETSC 2301#	0.2	mg/kg	28	14	22	25	22	
Lead	DETSC 2301#	0.3	mg/kg	31	17	140	23	48	
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	0.10	< 0.05	< 0.05	
Nickel	DETSC 2301#	1	mg/kg	9.0	8.1	11	40	15	
Selenium	DETSC 2301#	0.5	mg/kg	0.6	< 0.5	< 0.5	< 0.5	< 0.5	
Zinc	DETSC 2301#	1	mg/kg	53	54	190	62	110	
Inorganics									
pH	DETSC 2008#			11.6	10.3	12.0	9.7	9.9	
Total Organic Carbon	DETSC 2002	0.1	%	0.7	1.7	1.1	1.1	4.8	
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	290	910	24	48	510	
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.69	0.54	0.31	0.03	0.31	
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	0.01	0.02	< 0.01	< 0.01	< 0.01	
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	420	340	16	160	
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	7.9	1800	2500	120	870	
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	140	1300	1700	92	570	
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	150	3400	4500	230	1600	
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9	
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	3.9	130	160	8.2	66	
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	83	490	1200	57	430	
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	270	470	950	53	300	
Aromatic C5-C35	DETSC 3072*	10	mg/kg	350	1100	2300	120	800	
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	500	4500	6800	350	2400	
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Xylene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
MTBE	DETSC 3321	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	

Summary of Chemical Analysis

Soil Samples

Our Ref 16-71697-1
 Client Ref C7074
 Contract Title Hebburn

Lab No	1017262	1017263	1017264	1017265	1017266	1017267
Sample ID	TP101	TP103	TP104A	TP105	TP105	TP106
Depth	0.50-1.00	3.00	0.00-1.00	0.20-0.80	1.00-1.50	0.20-0.60
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	20/06/16	20/06/16	20/06/16	20/06/16	20/06/16	20/06/16
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
PAHs									
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1		< 0.1	< 0.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	0.4	1.8		2.0	< 0.1	1.8
Acenaphthene	DETSC 3301	0.1	mg/kg	0.5	0.8		1.1	< 0.1	0.6
Fluorene	DETSC 3301	0.1	mg/kg	1.0	0.8		2.1	< 0.1	0.6
Phenanthrene	DETSC 3301	0.1	mg/kg	17	3.9		1.6	< 0.1	1.9
Anthracene	DETSC 3301	0.1	mg/kg	5.7	4.6		0.3	< 0.1	1.9
Fluoranthene	DETSC 3301	0.1	mg/kg	36	1.1		< 0.1	< 0.1	< 0.1
Pyrene	DETSC 3301	0.1	mg/kg	25	0.4		< 0.1	< 0.1	< 0.1
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	17	5.3		< 0.1	< 0.1	< 0.1
Chrysene	DETSC 3301	0.1	mg/kg	17	1.1		< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	11	0.7		< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	6.4	0.8		< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	11	0.9		< 0.1	< 0.1	< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	7.6	< 0.1		< 0.1	< 0.1	< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	1.9	< 0.1		< 0.1	< 0.1	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	6.1	< 0.1		< 0.1	< 0.1	< 0.1
PAH Total	DETSC 3301	1.6	mg/kg	160	22		7.2	< 1.6	6.7
PCBs									
PCB 28 + PCB 31	DETSC 3401#	0.01	mg/kg		< 0.01		< 0.01		< 0.01
PCB 52	DETSC 3401#	0.01	mg/kg		< 0.01		< 0.01		< 0.01
PCB 101	DETSC 3401#	0.01	mg/kg		0.12		0.36		< 0.01
PCB 118	DETSC 3401#	0.01	mg/kg		0.13		0.16		< 0.01
PCB 153	DETSC 3401#	0.01	mg/kg		0.09		0.13		< 0.01
PCB 138	DETSC 3401#	0.01	mg/kg		0.19		0.38		< 0.01
PCB 180	DETSC 3401#	0.01	mg/kg		0.03		0.04		< 0.01
PCB 7 Total	DETSC 3401#	0.01	mg/kg		0.57		1.1		< 0.01
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	1.0	< 0.3		< 0.3	< 0.3	0.5

Summary of Chemical Analysis

Soil Samples

Our Ref 16-71697-1
 Client Ref C7074
 Contract Title Hebburn

Lab No	1017268	1017269	1017270	1017271	1017272	1017273
Sample ID	TP106	TP107	TP108	TP109	TP110	TP111
Depth	1.00-1.50	0.20-0.70	0.00-0.40	0.00-0.30	0.00-0.30	0.00-0.30
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	20/06/16	21/06/16	21/06/16	21/06/16	21/06/16	21/06/16
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Asbestos Quantification OHR	DETSC 1102	0							
Metals									
Arsenic	DETSC 2301#	0.2	mg/kg	7.4	12	21	38	41	34
Cadmium	DETSC 2301#	0.1	mg/kg	< 0.1	0.9	0.7	0.7	0.6	0.4
Chromium	DETSC 2301#	0.15	mg/kg	29	14	29	34	27	26
Copper	DETSC 2301#	0.2	mg/kg	23	28	87	110	150	110
Lead	DETSC 2301#	0.3	mg/kg	19	84	180	330	290	200
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	0.13	0.29	0.32	0.23
Nickel	DETSC 2301#	1	mg/kg	36	20	33	27	29	26
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Zinc	DETSC 2301#	1	mg/kg	64	280	170	160	180	130
Inorganics									
pH	DETSC 2008#			8.2	11.6	7.0	7.0	7.3	7.4
Total Organic Carbon	DETSC 2002	0.1	%	1.0	0.4	4.5	6.0	6.8	9.9
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	110	120	29	47	33	87
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.04	0.22	0.07	0.08	0.10	0.09
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01					
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01					
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01					
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5					
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2					
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5					
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4					
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10					
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01					
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01					
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01					
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9					
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5					
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6					
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4					
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10					
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	< 10					
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01					
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01					
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01					
Xylene	DETSC 3321#	0.01	mg/kg	< 0.01					
MTBE	DETSC 3321	0.01	mg/kg	< 0.01					

Summary of Chemical Analysis

Soil Samples

Our Ref 16-71697-1
 Client Ref C7074
 Contract Title Hebburn

Lab No	1017268	1017269	1017270	1017271	1017272	1017273
Sample ID	TP106	TP107	TP108	TP109	TP110	TP111
Depth	1.00-1.50	0.20-0.70	0.00-0.40	0.00-0.30	0.00-0.30	0.00-0.30
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	20/06/16	21/06/16	21/06/16	21/06/16	21/06/16	21/06/16
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
PAHs									
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	0.3	< 0.1	0.3	0.3
Anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	0.4	< 0.1	0.5	0.5
Pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	0.4	< 0.1	0.5	0.3
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Chrysene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
PAH Total	DETSC 3301	1.6	mg/kg	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6
PCBs									
PCB 28 + PCB 31	DETSC 3401#	0.01	mg/kg						
PCB 52	DETSC 3401#	0.01	mg/kg						
PCB 101	DETSC 3401#	0.01	mg/kg						
PCB 118	DETSC 3401#	0.01	mg/kg						
PCB 153	DETSC 3401#	0.01	mg/kg						
PCB 138	DETSC 3401#	0.01	mg/kg						
PCB 180	DETSC 3401#	0.01	mg/kg						
PCB 7 Total	DETSC 3401#	0.01	mg/kg						
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	0.5	1.1	1.5	0.5

Summary of Chemical Analysis

Soil Samples

Our Ref 16-71697-1
 Client Ref C7074
 Contract Title Hebburn

Lab No	1017274	1017275	1017276	1017277	1017278	1017279
Sample ID	TP112	TP112	TP112	TP113	TP114	TP115
Depth	0.00-0.20	1.00	3.00	0.00-0.30	0.00-0.25	0.00-0.25
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	21/06/16	21/06/16	21/06/16	21/06/16	21/06/16	21/06/16
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Asbestos Quantification OHR	DETSC 1102	0						Y	
Metals									
Arsenic	DETSC 2301#	0.2	mg/kg	15	12	7.2	30	24	15
Cadmium	DETSC 2301#	0.1	mg/kg	0.3	0.2	0.1	0.5	0.7	0.4
Chromium	DETSC 2301#	0.15	mg/kg	24	29	25	32	29	20
Copper	DETSC 2301#	0.2	mg/kg	66	51	28	86	140	91
Lead	DETSC 2301#	0.3	mg/kg	100	78	29	170	360	110
Mercury	DETSC 2325#	0.05	mg/kg	0.10	0.08	< 0.05	0.19	0.68	0.14
Nickel	DETSC 2301#	1	mg/kg	28	32	30	38	36	23
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Zinc	DETSC 2301#	1	mg/kg	110	110	66	150	250	120
Inorganics									
pH	DETSC 2008#			7.3	8.1	8.0	7.4	8.0	7.7
Total Organic Carbon	DETSC 2002	0.1	%	4.0	1.7	1.1	3.6	4.3	3.5
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	22	22	39	130	74	19
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.06	0.04	0.05	0.06	0.11	0.07
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg						
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg						
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg						
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg						
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg						
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg						
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg						
Aliphatic C5-C35	DETSC 3072*	10	mg/kg						
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg						
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg						
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg						
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg						
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg						
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg						
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg						
Aromatic C5-C35	DETSC 3072*	10	mg/kg						
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg						
Benzene	DETSC 3321#	0.01	mg/kg						
Ethylbenzene	DETSC 3321#	0.01	mg/kg						
Toluene	DETSC 3321#	0.01	mg/kg						
Xylene	DETSC 3321#	0.01	mg/kg						
MTBE	DETSC 3321	0.01	mg/kg						

Summary of Chemical Analysis

Soil Samples

Our Ref 16-71697-1
 Client Ref C7074
 Contract Title Hebburn

Lab No	1017274	1017275	1017276	1017277	1017278	1017279
Sample ID	TP112	TP112	TP112	TP113	TP114	TP115
Depth	0.00-0.20	1.00	3.00	0.00-0.30	0.00-0.25	0.00-0.25
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	21/06/16	21/06/16	21/06/16	21/06/16	21/06/16	21/06/16
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
PAHs									
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.2
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.3
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.7
Phenanthrene	DETSC 3301	0.1	mg/kg	0.4	< 0.1	< 0.1	< 0.1	0.9	4.4
Anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	0.2	2.3
Fluoranthene	DETSC 3301	0.1	mg/kg	0.7	< 0.1	< 0.1	< 0.1	1.7	7.0
Pyrene	DETSC 3301	0.1	mg/kg	0.6	< 0.1	< 0.1	< 0.1	1.6	5.2
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	0.3	< 0.1	< 0.1	< 0.1	0.8	3.0
Chrysene	DETSC 3301	0.1	mg/kg	0.3	< 0.1	< 0.1	< 0.1	0.8	2.6
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	0.8	2.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	0.4	1.7
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	1.3	2.4
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	1.1	1.6
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	0.2	0.4
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	1.1	1.5
PAH Total	DETSC 3301	1.6	mg/kg	2.4	< 1.6	< 1.6	< 1.6	11	35
PCBs									
PCB 28 + PCB 31	DETSC 3401#	0.01	mg/kg						
PCB 52	DETSC 3401#	0.01	mg/kg						
PCB 101	DETSC 3401#	0.01	mg/kg						
PCB 118	DETSC 3401#	0.01	mg/kg						
PCB 153	DETSC 3401#	0.01	mg/kg						
PCB 138	DETSC 3401#	0.01	mg/kg						
PCB 180	DETSC 3401#	0.01	mg/kg						
PCB 7 Total	DETSC 3401#	0.01	mg/kg						
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	3.2	< 0.3	< 0.3	< 0.3	< 0.3	0.7

Summary of Chemical Analysis

Soil Samples

Our Ref 16-71697-1
 Client Ref C7074
 Contract Title Hebburn

Lab No	1017280	1017281	1017282	1017283	1017284	1017285
Sample ID	TP115	TP116	TP116	TP118	TP118	TP119
Depth	0.25-1.00	0.00-0.30	2.00	0.90-1.30	1.30-2.00	0.20-0.50
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	21/06/16	21/06/16	21/06/16	21/06/16	21/06/16	21/06/16
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Asbestos Quantification OHR	DETSC 1102	0			Y				
Metals									
Arsenic	DETSC 2301#	0.2	mg/kg	13	20	8.2	9.1	7.3	13
Cadmium	DETSC 2301#	0.1	mg/kg	0.3	0.5	0.2	0.4	< 0.1	0.2
Chromium	DETSC 2301#	0.15	mg/kg	18	29	31	14	27	14
Copper	DETSC 2301#	0.2	mg/kg	54	120	32	350	24	44
Lead	DETSC 2301#	0.3	mg/kg	88	190	28	150	20	260
Mercury	DETSC 2325#	0.05	mg/kg	0.11	0.13	< 0.05	0.21	< 0.05	0.13
Nickel	DETSC 2301#	1	mg/kg	17	37	38	15	33	12
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Zinc	DETSC 2301#	1	mg/kg	75	160	72	510	58	130
Inorganics									
pH	DETSC 2008#			8.1	7.7	8.1	9.5	8.2	10.6
Total Organic Carbon	DETSC 2002	0.1	%	1.6	2.7	1.5	0.7	1.1	0.6
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	27	21	170	240	60	1400
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.12	0.11	0.06	0.03	0.22	0.91
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg				< 0.01	< 0.01	
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg				< 0.01	< 0.01	
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg				0.07	0.09	
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg				3.1	< 1.5	
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg				19	< 1.2	
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg				37	< 1.5	
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg				33	< 3.4	
Aliphatic C5-C35	DETSC 3072*	10	mg/kg				92	< 10	
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg				< 0.01	< 0.01	
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg				< 0.01	< 0.01	
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg				0.03	0.06	
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg				< 0.9	< 0.9	
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg				9.4	< 0.5	
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg				27	< 0.6	
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg				25	< 1.4	
Aromatic C5-C35	DETSC 3072*	10	mg/kg				61	< 10	
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg				150	< 10	
Benzene	DETSC 3321#	0.01	mg/kg				< 0.01	< 0.01	
Ethylbenzene	DETSC 3321#	0.01	mg/kg				< 0.01	< 0.01	
Toluene	DETSC 3321#	0.01	mg/kg				< 0.01	< 0.01	
Xylene	DETSC 3321#	0.01	mg/kg				< 0.01	< 0.01	
MTBE	DETSC 3321	0.01	mg/kg				< 0.01	< 0.01	

Summary of Chemical Analysis

Soil Samples

Our Ref 16-71697-1
 Client Ref C7074
 Contract Title Hebburn

Lab No	1017280	1017281	1017282	1017283	1017284	1017285
Sample ID	TP115	TP116	TP116	TP118	TP118	TP119
Depth	0.25-1.00	0.00-0.30	2.00	0.90-1.30	1.30-2.00	0.20-0.50
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	21/06/16	21/06/16	21/06/16	21/06/16	21/06/16	21/06/16
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
PAHs									
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	0.6	0.3	< 0.1	< 0.1	< 0.1	< 0.1
Anthracene	DETSC 3301	0.1	mg/kg	0.4	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	DETSC 3301	0.1	mg/kg	2.5	0.8	< 0.1	0.4	< 0.1	< 0.1
Pyrene	DETSC 3301	0.1	mg/kg	2.1	0.7	< 0.1	0.3	< 0.1	< 0.1
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	1.4	0.7	< 0.1	< 0.1	< 0.1	< 0.1
Chrysene	DETSC 3301	0.1	mg/kg	1.4	0.5	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	1.3	0.5	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	0.6	0.5	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	1.5	0.4	< 0.1	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	1.3	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	1.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
PAH Total	DETSC 3301	1.6	mg/kg	14	4.4	< 1.6	< 1.6	< 1.6	< 1.6
PCBs									
PCB 28 + PCB 31	DETSC 3401#	0.01	mg/kg						
PCB 52	DETSC 3401#	0.01	mg/kg						
PCB 101	DETSC 3401#	0.01	mg/kg						
PCB 118	DETSC 3401#	0.01	mg/kg						
PCB 153	DETSC 3401#	0.01	mg/kg						
PCB 138	DETSC 3401#	0.01	mg/kg						
PCB 180	DETSC 3401#	0.01	mg/kg						
PCB 7 Total	DETSC 3401#	0.01	mg/kg						
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	0.6	0.7	< 0.3	< 0.3	< 0.3	< 0.3

Summary of Chemical Analysis

Soil Samples

Our Ref 16-71697-1
 Client Ref C7074
 Contract Title Hebburn

Lab No	1017287	1017289	1017294	1017295	1017297	1017299
Sample ID	TP121	TP123	TP129	TP129	TP131	TP133
Depth	1.40	0.30	0.10	0.90	1.20	0.50
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	22/06/16	22/06/16	22/06/16	22/06/16	23/06/16	23/06/16
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Asbestos Quantification OHR	DETSC 1102	0		Y	Y			Y	Y
Metals									
Arsenic	DETSC 2301#	0.2	mg/kg			28	7.8		
Cadmium	DETSC 2301#	0.1	mg/kg			0.5	0.1		
Chromium	DETSC 2301#	0.15	mg/kg			23	28		
Copper	DETSC 2301#	0.2	mg/kg			120	28		
Lead	DETSC 2301#	0.3	mg/kg			200	43		
Mercury	DETSC 2325#	0.05	mg/kg			0.20	0.05		
Nickel	DETSC 2301#	1	mg/kg			26	29		
Selenium	DETSC 2301#	0.5	mg/kg			< 0.5	< 0.5		
Zinc	DETSC 2301#	1	mg/kg			150	60		
Inorganics									
pH	DETSC 2008#					6.3	8.2		
Total Organic Carbon	DETSC 2002	0.1	%			6.1	1.2		
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l			52	69		
Sulphate as SO4, Total	DETSC 2321#	0.01	%			0.10	0.04		
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg						
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg						
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg						
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg						
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg						
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg						
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg						
Aliphatic C5-C35	DETSC 3072*	10	mg/kg						
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg						
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg						
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg						
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg						
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg						
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg						
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg						
Aromatic C5-C35	DETSC 3072*	10	mg/kg						
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg						
Benzene	DETSC 3321#	0.01	mg/kg						
Ethylbenzene	DETSC 3321#	0.01	mg/kg						
Toluene	DETSC 3321#	0.01	mg/kg						
Xylene	DETSC 3321#	0.01	mg/kg						
MTBE	DETSC 3321	0.01	mg/kg						

Summary of Chemical Analysis

Soil Samples

Our Ref 16-71697-1
 Client Ref C7074
 Contract Title Hebburn

Lab No	1017287	1017289	1017294	1017295	1017297	1017299
Sample ID	TP121	TP123	TP129	TP129	TP131	TP133
Depth	1.40	0.30	0.10	0.90	1.20	0.50
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	22/06/16	22/06/16	22/06/16	22/06/16	23/06/16	23/06/16
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
PAHs									
Naphthalene	DETSC 3301	0.1	mg/kg			< 0.1	< 0.1		
Acenaphthylene	DETSC 3301	0.1	mg/kg			< 0.1	< 0.1		
Acenaphthene	DETSC 3301	0.1	mg/kg			< 0.1	< 0.1		
Fluorene	DETSC 3301	0.1	mg/kg			< 0.1	< 0.1		
Phenanthrene	DETSC 3301	0.1	mg/kg			0.4	< 0.1		
Anthracene	DETSC 3301	0.1	mg/kg			< 0.1	< 0.1		
Fluoranthene	DETSC 3301	0.1	mg/kg			0.6	0.3		
Pyrene	DETSC 3301	0.1	mg/kg			0.5	0.2		
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg			< 0.1	< 0.1		
Chrysene	DETSC 3301	0.1	mg/kg			< 0.1	< 0.1		
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg			< 0.1	< 0.1		
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg			< 0.1	< 0.1		
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg			< 0.1	< 0.1		
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg			< 0.1	< 0.1		
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg			< 0.1	< 0.1		
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg			< 0.1	< 0.1		
PAH Total	DETSC 3301	1.6	mg/kg			1.6	< 1.6		
PCBs									
PCB 28 + PCB 31	DETSC 3401#	0.01	mg/kg						
PCB 52	DETSC 3401#	0.01	mg/kg						
PCB 101	DETSC 3401#	0.01	mg/kg						
PCB 118	DETSC 3401#	0.01	mg/kg						
PCB 153	DETSC 3401#	0.01	mg/kg						
PCB 138	DETSC 3401#	0.01	mg/kg						
PCB 180	DETSC 3401#	0.01	mg/kg						
PCB 7 Total	DETSC 3401#	0.01	mg/kg						
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg			1.6	0.5		

Summary of Chemical Analysis

Soil Samples

Our Ref 16-71697-1
 Client Ref C7074
 Contract Title Hebburn

Lab No	1017301	1017302	1017303	1017304	1017305	1017306
Sample ID	TP137	TP137	TP138	TP139	TP139	TP140
Depth	0.90	1.30	0.40	0.50	1.00	0.00-0.30
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	23/06/16	23/06/16	23/06/16	23/06/16	23/06/16	23/06/16
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Asbestos Quantification OHR	DETSC 1102	0							
Metals									
Arsenic	DETSC 2301#	0.2	mg/kg	5.9	6.9	10	8.4	9.0	26
Cadmium	DETSC 2301#	0.1	mg/kg	0.6	0.1	1.7	0.2	0.2	0.5
Chromium	DETSC 2301#	0.15	mg/kg	22	29	130	13	36	20
Copper	DETSC 2301#	0.2	mg/kg	48	21	22	31	30	110
Lead	DETSC 2301#	0.3	mg/kg	95	16	83	63	32	200
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05	0.13	< 0.05	0.18
Nickel	DETSC 2301#	1	mg/kg	24	32	21	13	47	21
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Zinc	DETSC 2301#	1	mg/kg	99	51	480	77	71	140
Inorganics									
pH	DETSC 2008#			9.8	8.4	11.7	12.1	8.0	7.1
Total Organic Carbon	DETSC 2002	0.1	%	1.6	0.9	0.5	0.8	1.0	5.5
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	430	27	280	48	240	52
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.23	0.02	0.54	0.50	0.07	0.11
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01		< 0.01	< 0.01	
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	0.79	< 0.01		< 0.01	< 0.01	
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	5.6	0.58		0.02	0.02	
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	130	120		2.4	< 1.5	
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	620	600		400	< 1.2	
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	2100	2100		1300	< 1.5	
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	1200	1200		480	< 3.4	
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	4100	4000		2100	< 10	
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01		< 0.01	< 0.01	
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	0.14	< 0.01		< 0.01	< 0.01	
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	12	0.36		< 0.01	< 0.01	
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	110	100		< 0.9	< 0.9	
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	480	470		220	< 0.5	
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	1200	1200		760	< 0.6	
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	840	810		280	< 1.4	
Aromatic C5-C35	DETSC 3072*	10	mg/kg	2700	2600		1300	< 10	
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	6800	6500		3400	< 10	
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01		< 0.01	< 0.01	
Ethylbenzene	DETSC 3321#	0.01	mg/kg	0.34	< 0.01		< 0.01	< 0.01	
Toluene	DETSC 3321#	0.01	mg/kg	0.14	< 0.01		< 0.01	< 0.01	
Xylene	DETSC 3321#	0.01	mg/kg	1.4	< 0.01		< 0.01	< 0.01	
MTBE	DETSC 3321	0.01	mg/kg	< 0.01	< 0.01		< 0.01	< 0.01	

Summary of Chemical Analysis

Soil Samples

Our Ref 16-71697-1
 Client Ref C7074
 Contract Title Hebburn

Lab No	1017301	1017302	1017303	1017304	1017305	1017306
Sample ID	TP137	TP137	TP138	TP139	TP139	TP140
Depth	0.90	1.30	0.40	0.50	1.00	0.00-0.30
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	23/06/16	23/06/16	23/06/16	23/06/16	23/06/16	23/06/16
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
PAHs									
Naphthalene	DETSC 3301	0.1	mg/kg	0.5	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	0.5	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	1.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	1.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Anthracene	DETSC 3301	0.1	mg/kg	0.4	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.7
Pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.6
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Chrysene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
PAH Total	DETSC 3301	1.6	mg/kg	3.8	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6
PCBs									
PCB 28 + PCB 31	DETSC 3401#	0.01	mg/kg	< 0.01					
PCB 52	DETSC 3401#	0.01	mg/kg	< 0.01					
PCB 101	DETSC 3401#	0.01	mg/kg	< 0.01					
PCB 118	DETSC 3401#	0.01	mg/kg	< 0.01					
PCB 153	DETSC 3401#	0.01	mg/kg	< 0.01					
PCB 138	DETSC 3401#	0.01	mg/kg	< 0.01					
PCB 180	DETSC 3401#	0.01	mg/kg	< 0.01					
PCB 7 Total	DETSC 3401#	0.01	mg/kg	< 0.01					
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	0.5	< 0.3	< 0.3	< 0.3	< 0.3	1.1

Summary of Chemical Analysis

Soil Samples

Our Ref 16-71697-1
 Client Ref C7074
 Contract Title Hebburn

Lab No	1017307	1017308	1017309	1017310	1017311	1017312
Sample ID	TP140	TP141	TP142	TP143	TP144	TP144
Depth	2.00	0.40	0.00-0.15	0.40-0.70	0.00-0.15	0.30-0.70
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	23/06/16	24/06/16	24/06/16	24/06/16	24/06/16	24/06/16
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Asbestos Quantification OHR	DETSC 1102	0							
Metals									
Arsenic	DETSC 2301#	0.2	mg/kg	13	7.8	16	51	18	13
Cadmium	DETSC 2301#	0.1	mg/kg	0.2	0.2	0.9	0.9	0.5	0.3
Chromium	DETSC 2301#	0.15	mg/kg	31	11	23	25	24	26
Copper	DETSC 2301#	0.2	mg/kg	72	31	130	180	96	58
Lead	DETSC 2301#	0.3	mg/kg	62	42	120	300	140	66
Mercury	DETSC 2325#	0.05	mg/kg	0.07	< 0.05	0.08	0.39	0.18	0.07
Nickel	DETSC 2301#	1	mg/kg	30	13	27	22	27	30
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	0.5	< 0.5
Zinc	DETSC 2301#	1	mg/kg	87	66	230	270	150	150
Inorganics									
pH	DETSC 2008#			9.5	12.5	7.7	10.7	7.0	8.2
Total Organic Carbon	DETSC 2002	0.1	%	1.7	1.0	3.4	1.1	6.0	1.6
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	110	< 10	40	1500	94	130
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.06	0.41	0.10	0.79	0.11	0.09
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg						
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg						
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg						
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg						
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg						
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg						
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg						
Aliphatic C5-C35	DETSC 3072*	10	mg/kg						
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg						
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg						
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg						
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg						
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg						
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg						
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg						
Aromatic C5-C35	DETSC 3072*	10	mg/kg						
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg						
Benzene	DETSC 3321#	0.01	mg/kg						
Ethylbenzene	DETSC 3321#	0.01	mg/kg						
Toluene	DETSC 3321#	0.01	mg/kg						
Xylene	DETSC 3321#	0.01	mg/kg						
MTBE	DETSC 3321	0.01	mg/kg						

Summary of Chemical Analysis

Soil Samples

Our Ref 16-71697-1
 Client Ref C7074
 Contract Title Hebburn

Lab No	1017307	1017308	1017309	1017310	1017311	1017312
Sample ID	TP140	TP141	TP142	TP143	TP144	TP144
Depth	2.00	0.40	0.00-0.15	0.40-0.70	0.00-0.15	0.30-0.70
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	23/06/16	24/06/16	24/06/16	24/06/16	24/06/16	24/06/16
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
PAHs									
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	DETSC 3301	0.1	mg/kg	0.9	< 0.1	< 0.1	< 0.1	1.3	0.7
Pyrene	DETSC 3301	0.1	mg/kg	0.7	< 0.1	< 0.1	< 0.1	1.0	0.7
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Chrysene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
PAH Total	DETSC 3301	1.6	mg/kg	< 1.6	< 1.6	< 1.6	< 1.6	2.3	< 1.6
PCBs									
PCB 28 + PCB 31	DETSC 3401#	0.01	mg/kg						
PCB 52	DETSC 3401#	0.01	mg/kg						
PCB 101	DETSC 3401#	0.01	mg/kg						
PCB 118	DETSC 3401#	0.01	mg/kg						
PCB 153	DETSC 3401#	0.01	mg/kg						
PCB 138	DETSC 3401#	0.01	mg/kg						
PCB 180	DETSC 3401#	0.01	mg/kg						
PCB 7 Total	DETSC 3401#	0.01	mg/kg						
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	0.6	< 0.3	1.2	< 0.3	1.8	0.5

Summary of Chemical Analysis

Soil Samples

Our Ref 16-71697-1
 Client Ref C7074
 Contract Title Hebburn

Lab No	1017313	1017314	1017315	1017317
Sample ID	TP145	TP147	TP150	TP152
Depth	0.25-0.60	0.40-0.60	0.00-0.50	0.00-0.50
Other ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sampling Date	24/06/16	24/06/16	24/06/16	24/06/16
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
Asbestos Quantification OHR	DETSC 1102	0				Y	Y
Metals							
Arsenic	DETSC 2301#	0.2	mg/kg	6.3	6.7		
Cadmium	DETSC 2301#	0.1	mg/kg	0.3	0.2		
Chromium	DETSC 2301#	0.15	mg/kg	13	14		
Copper	DETSC 2301#	0.2	mg/kg	67	17		
Lead	DETSC 2301#	0.3	mg/kg	89	51		
Mercury	DETSC 2325#	0.05	mg/kg	0.06	< 0.05		
Nickel	DETSC 2301#	1	mg/kg	17	14		
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5		
Zinc	DETSC 2301#	1	mg/kg	250	110		
Inorganics							
pH	DETSC 2008#			11.5	12.2		
Total Organic Carbon	DETSC 2002	0.1	%	0.6	0.6		
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	210	18		
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.84	0.36		
Petroleum Hydrocarbons							
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg				
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg				
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg				
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg				
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg				
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg				
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg				
Aliphatic C5-C35	DETSC 3072*	10	mg/kg				
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg				
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg				
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg				
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg				
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg				
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg				
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg				
Aromatic C5-C35	DETSC 3072*	10	mg/kg				
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg				
Benzene	DETSC 3321#	0.01	mg/kg				
Ethylbenzene	DETSC 3321#	0.01	mg/kg				
Toluene	DETSC 3321#	0.01	mg/kg				
Xylene	DETSC 3321#	0.01	mg/kg				
MTBE	DETSC 3321	0.01	mg/kg				

Summary of Chemical Analysis

Soil Samples

Our Ref 16-71697-1
 Client Ref C7074
 Contract Title Hebburn

Lab No	1017313	1017314	1017315	1017317
Sample ID	TP145	TP147	TP150	TP152
Depth	0.25-0.60	0.40-0.60	0.00-0.50	0.00-0.50
Other ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sampling Date	24/06/16	24/06/16	24/06/16	24/06/16
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
PAHs							
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1		
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1		
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1		
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1		
Phenanthrene	DETSC 3301	0.1	mg/kg	1.2	< 0.1		
Anthracene	DETSC 3301	0.1	mg/kg	0.4	< 0.1		
Fluoranthene	DETSC 3301	0.1	mg/kg	1.4	< 0.1		
Pyrene	DETSC 3301	0.1	mg/kg	1.1	< 0.1		
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1		
Chrysene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1		
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1		
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1		
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1		
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1		
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1		
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1		
PAH Total	DETSC 3301	1.6	mg/kg	4.2	< 1.6		
PCBs							
PCB 28 + PCB 31	DETSC 3401#	0.01	mg/kg				
PCB 52	DETSC 3401#	0.01	mg/kg				
PCB 101	DETSC 3401#	0.01	mg/kg				
PCB 118	DETSC 3401#	0.01	mg/kg				
PCB 153	DETSC 3401#	0.01	mg/kg				
PCB 138	DETSC 3401#	0.01	mg/kg				
PCB 180	DETSC 3401#	0.01	mg/kg				
PCB 7 Total	DETSC 3401#	0.01	mg/kg				
Phenols							
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	0.3		

Summary of Asbestos Analysis

Soil Samples

Our Ref 16-71697-1

Client Ref C7074

Contract Title Hebburn

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1017262	TP101 0.50-1.00	SOIL	Amosite Chrysotile	Amosite & Chrysotile present as fibre bundles	Jeff Cruddas
1017263	TP103 3.00	SOIL	NAD	none	Jeff Cruddas
1017264	TP104A 0.00-1.00	SOIL	Chrysotile	Chrysotile present in bitumen fragments & fibre bundles	Jeff Cruddas
1017265	TP105 0.20-0.80	SOIL	NAD	none	Jeff Cruddas
1017267	TP106 0.20-0.60	SOIL	NAD	none	Jeff Cruddas
1017270	TP108 0.00-0.40	SOIL	NAD	none	Jeff Cruddas
1017271	TP109 0.00-0.30	SOIL	NAD	none	Jeff Cruddas
1017272	TP110 0.00-0.30	SOIL	NAD	none	Jeff Cruddas
1017273	TP111 0.00-0.30	SOIL	NAD	none	Jeff Cruddas
1017274	TP112 0.00-0.20	SOIL	NAD	none	Jeff Cruddas
1017275	TP112 1.00	SOIL	NAD	none	Keith Wilson
1017277	TP113 0.00-0.30	SOIL	NAD	none	Jeff Cruddas
1017278	TP114 0.00-0.25	SOIL	Chrysotile	Chrysotile present as small clump & fibre bundles	Jeff Cruddas
1017279	TP115 0.00-0.25	SOIL	NAD	none	Jeff Cruddas
1017280	TP115 0.25-1.00	SOIL	Chrysotile	Chrysotile present as small bundle	Jeff Cruddas
1017281	TP116 0.00-0.30	SOIL	Chrysotile	Chrysotile present as small clump & fibre bundles	Jeff Cruddas
1017282	TP116 2.00	SOIL	NAD	none	Keith Wilson
1017283	TP118 0.90-1.30	SOIL	NAD	none	Jeff Cruddas
1017285	TP119 0.20-0.50	SOIL	NAD	none	Jeff Cruddas
1017286	TP120 0.45	SOIL	Chrysotile	Chrysotile present as fibre bundle	Jeff Cruddas
1017287	TP121 1.40	SOIL	Amosite	Amosite present as fibre bundles	Jeff Cruddas
1017288	TP122 0.80	SOIL	NAD	none	Jeff Cruddas
1017289	TP123 0.30	SOIL	Amosite	Amosite present as fibre bundle	Jeff Cruddas
1017290	TP124 0.50	SOIL	Chrysotile	Chrysotile present in bitumen fragments	Jeff Cruddas
1017291	TP125 0.00-1.30	SOIL	NAD	none	Jeff Cruddas
1017292	TP127 A	SOIL	NAD	none	Keith Wilson
1017293	TP128 B	SOIL	NAD	none	Keith Wilson
1017296	TP130 1.00	SOIL	NAD	none	Keith Wilson
1017297	TP131 1.20	SOIL	Crocidolite Chrysotile	Small bundles of Chrysotile & Crocidolite fibres	Keith Wilson
1017298	TP132 1.10	SOIL	NAD	none	Keith Wilson
1017299	TP133 0.50	SOIL	Amosite	Small bundle of Amosite fibres	Keith Wilson
1017300	TP134 0.60	SOIL	NAD	none	Keith Wilson
1017303	TP138 0.40	SOIL	NAD	none	Keith Wilson
1017306	TP140 0.00-0.30	SOIL	NAD	none	Keith Wilson
1017307	TP140 2.00	SOIL	NAD	none	Keith Wilson
1017308	TP141 0.40	SOIL	NAD	none	Keith Wilson
1017309	TP142 0.00-0.15	SOIL	NAD	none	Keith Wilson
1017310	TP143 0.40-0.70	SOIL	NAD	none	Keith Wilson
1017311	TP144 0.00-0.15	SOIL	NAD	none	Keith Wilson
1017313	TP145 0.25-0.60	SOIL	NAD	none	Keith Wilson
1017315	TP150 0.00-0.50	SOIL	Crocidolite	Small bundle of Crocidolite fibres	Keith Wilson
1017316	TP151 0.00-0.50	SOIL	NAD	none	Keith Wilson
1017317	TP152 0.00-0.50	SOIL	Chrysotile	Small bundle of Chrysotile fibres	Keith Wilson

Summary of Asbestos Analysis

Soil Samples

Our Ref 16-71697-1

Client Ref C7074

Contract Title Hebburn

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
<p>Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.</p>					

Summary of Asbestos Quantification Analysis

Soil Samples

Our Ref 16-71697-1

Client Ref C7074

Contract Title Hebburn

Lab No	1017262	1017264	1017278	1017281
Sample ID	TP101	TP104A	TP114	TP116
Depth	0.50-1.00	0.00-1.00	0.00-0.25	0.00-0.30
Other ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sampling Date	20/06/16	20/06/16	21/06/16	21/06/16
Sampling Time				

Test	Method	Units				
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	0.001	0.057	0.006	0.008
Gravimetric Quantification (a)	DETSC 1102	Mass %	na	0.057	na	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	0.001	<0.001	0.006	0.008
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na	na	na
Breakdown of Gravimetric Analysis (a)						
Mass of Sample		g	502.23	1371.50	379.45	182.94
ACMs present*		type		Bitumen		
Mass of ACM in sample		g		9.70		
% ACM by mass		%		0.71		
% asbestos in ACM		%		8		
% asbestos in sample		%		0.057		
Breakdown of Detailed Gravimetric Analysis (b)						
% Amphibole bundles in sample		Mass %	<0.001	na	na	na
% Chrysotile bundles in sample		Mass %	<0.001	<0.001	0.006	0.008
Breakdown of PCOM Analysis (c)						
% Amphibole fibres in sample		Mass %	na	na	na	na
% Chrysotile fibres in sample		Mass %	na	na	na	na
Breakdown of Potentially Respirable Fibre Analysis (d)						
Amphibole fibres		Fibres/g	na	na	na	na
Chrysotile fibres		Fibres/g	na	na	na	na

* Denotes test or material description outside of UKAS accreditation.
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.
 Recommended sample size for quantification is approximately 1kg
 # denotes deviating sample

Summary of Asbestos Quantification Analysis Soil Samples

Our Ref 16-71697-1

Client Ref C7074

Contract Title Hebburn

Lab No	1017287	1017289	1017297	1017299
Sample ID	TP121	TP123	TP131	TP133
Depth	1.40	0.30	1.20	0.50
Other ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sampling Date	22/06/16	22/06/16	23/06/16	23/06/16
Sampling Time				

Test	Method	Units				
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	< 0.001	< 0.001	< 0.001	< 0.001
Gravimetric Quantification (a)	DETSC 1102	Mass %	na	na	na	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	<0.001	<0.001	<0.001	<0.001
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na	na	na
Breakdown of Gravimetric Analysis (a)						
Mass of Sample		g	1083.29	1204.29	1036.29	1038.35
ACMs present*		type				
Mass of ACM in sample		g				
% ACM by mass		%				
% asbestos in ACM		%				
% asbestos in sample		%				
Breakdown of Detailed Gravimetric Analysis (b)						
% Amphibole bundles in sample		Mass %	<0.001	<0.001	<0.001	<0.001
% Chrysotile bundles in sample		Mass %	na	na	<0.001	na
Breakdown of PCOM Analysis (c)						
% Amphibole fibres in sample		Mass %	na	na	na	na
% Chrysotile fibres in sample		Mass %	na	na	na	na
Breakdown of Potentially Respirable Fibre Analysis (d)						
Amphibole fibres		Fibres/g	na	na	na	na
Chrysotile fibres		Fibres/g	na	na	na	na

* Denotes test or material description outside of UKAS accreditation.
 % asbestos in Asbestos Containing Materials (ACMs) is determined by
 by reference to HSG 264.
 Recommended sample size for quantification is approximately 1kg
 # denotes deviating sample

Summary of Asbestos Quantification Analysis Soil Samples

Our Ref 16-71697-1

Client Ref C7074

Contract Title Hebburn

Lab No	1017315	1017317
Sample ID	TP150	TP152
Depth	0.00-0.50	0.00-0.50
Other ID		
Sample Type	SOIL	SOIL
Sampling Date	24/06/16	24/06/16
Sampling Time		

Test	Method	Units		
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	< 0.001	< 0.001
Gravimetric Quantification (a)	DETSC 1102	Mass %	na	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	<0.001	<0.001
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na

Breakdown of Gravimetric Analysis (a)

Mass of Sample		g	1132.36	944.71
ACMs present*		type		
Mass of ACM in sample		g		
% ACM by mass		%		
% asbestos in ACM		%		
% asbestos in sample		%		

Breakdown of Detailed Gravimetric Analysis (b)

% Amphibole bundles in sample		Mass %	<0.001	na
% Chrysotile bundles in sample		Mass %	na	<0.001

Breakdown of PCOM Analysis (c)

% Amphibole fibres in sample		Mass %	na	na
% Chrysotile fibres in sample		Mass %	na	na

Breakdown of Potentially Respirable Fibre Analysis (d)

Amphibole fibres		Fibres/g	na	na
Chrysotile fibres		Fibres/g	na	na

* Denotes test or material description outside of UKAS accreditation.
 % asbestos in Asbestos Containing Materials (ACMs) is determined by
 by reference to HSG 264.
 Recommended sample size for quantification is approximately 1kg
 # denotes deviating sample

Information in Support of the Analytical Results

Our Ref 16-71697-1
Client Ref C7074
Contract Hebburn

Containers Received & Deviating Samples

Lab No	Sample ID	Date		Holding time exceeded for tests	Inappropriate container for tests
		Sampled	Containers Received		
1017262	TP101 0.50-1.00 SOIL	20/06/16	GJ 250ml, GV, PT 1L	pH + Conductivity (7 days)	
1017263	TP103 3.00 SOIL	20/06/16	GJ 250ml, GV, PT 1L	pH + Conductivity (7 days)	
1017264	TP104A 0.00-1.00 SOIL	20/06/16	GV, PT 1L		
1017265	TP105 0.20-0.80 SOIL	20/06/16	GJ 250ml, GV, PT 1L	pH + Conductivity (7 days)	
1017266	TP105 1.00-1.50 SOIL	20/06/16	GJ 250ml, GV, PT 1L	pH + Conductivity (7 days)	
1017267	TP106 0.20-0.60 SOIL	20/06/16	GJ 250ml, GV, PT 1L	pH + Conductivity (7 days)	
1017268	TP106 1.00-1.50 SOIL	20/06/16	GJ 250ml, GV, PT 1L	pH + Conductivity (7 days)	
1017269	TP107 0.20-0.70 SOIL	21/06/16	GJ 250ml, GV, PT 1L	pH + Conductivity (7 days)	
1017270	TP108 0.00-0.40 SOIL	21/06/16	GJ 250ml, GV, PT 1L	pH + Conductivity (7 days)	
1017271	TP109 0.00-0.30 SOIL	21/06/16	GJ 250ml, GV, PT 1L	pH + Conductivity (7 days)	
1017272	TP110 0.00-0.30 SOIL	21/06/16	GJ 250ml, GV, PT 1L	pH + Conductivity (7 days)	
1017273	TP111 0.00-0.30 SOIL	21/06/16	GJ 250ml, GV, PT 1L	pH + Conductivity (7 days)	
1017274	TP112 0.00-0.20 SOIL	21/06/16	GJ 250ml, GV, PT 1L	pH + Conductivity (7 days)	
1017275	TP112 1.00 SOIL	21/06/16	GJ 250ml, GV, PT 1L	pH + Conductivity (7 days)	
1017276	TP112 3.00 SOIL	21/06/16	GJ 250ml, GV, PT 1L	pH + Conductivity (7 days)	
1017277	TP113 0.00-0.30 SOIL	21/06/16	GJ 250ml, GV, PT 1L	pH + Conductivity (7 days)	
1017278	TP114 0.00-0.25 SOIL	21/06/16	GJ 250ml, GV, PT 1L	pH + Conductivity (7 days)	
1017279	TP115 0.00-0.25 SOIL	21/06/16	GJ 250ml, GV, PT 1L	pH + Conductivity (7 days)	
1017280	TP115 0.25-1.00 SOIL	21/06/16	GJ 250ml, GV, PT 1L	pH + Conductivity (7 days)	
1017281	TP116 0.00-0.30 SOIL	21/06/16	GJ 250ml, GV, PT 1L	pH + Conductivity (7 days)	
1017282	TP116 2.00 SOIL	21/06/16	GJ 250ml, GV, PT 1L	pH + Conductivity (7 days)	
1017283	TP118 0.90-1.30 SOIL	21/06/16	GJ 250ml, GV, PT 1L	pH + Conductivity (7 days)	
1017284	TP118 1.30-2.00 SOIL	21/06/16	GJ 250ml, GV, PT 1L	pH + Conductivity (7 days)	
1017285	TP119 0.20-0.50 SOIL	21/06/16	GJ 250ml, GV, PT 1L	pH + Conductivity (7 days)	
1017286	TP120 0.45 SOIL	22/06/16	GV, PT 1L		
1017287	TP121 1.40 SOIL	22/06/16	GV, PT 1L		
1017288	TP122 0.80 SOIL	22/06/16	GV, PT 1L		
1017289	TP123 0.30 SOIL	22/06/16	GV, PT 1L		
1017290	TP124 0.50 SOIL	22/06/16	GV, PT 1L		
1017291	TP125 0.00-1.30 SOIL	22/06/16	GV, PT 1L		
1017292	TP127 SOIL	22/06/16	GV, PT 1L		
1017293	TP128 SOIL	22/06/16	GV, PT 1L		
1017294	TP129 0.10 SOIL	22/06/16	GV, PT 1L	pH + Conductivity (7 days)	
1017295	TP129 0.90 SOIL	22/06/16	GV, PT 1L	pH + Conductivity (7 days)	
1017296	TP130 1.00 SOIL	23/06/16	GV, PT 1L		
1017297	TP131 1.20 SOIL	23/06/16	GV, PT 1L		
1017298	TP132 1.10 SOIL	23/06/16	GV, PT 1L		
1017299	TP133 0.50 SOIL	23/06/16	GV, PT 1L		
1017300	TP134 0.60 SOIL	23/06/16	GV, PT 1L		
1017301	TP137 0.90 SOIL	23/06/16	GJ 250ml, GV	pH + Conductivity (7 days)	
1017302	TP137 1.30 SOIL	23/06/16	GJ 250ml, GV, PT 1L	pH + Conductivity (7 days)	
1017303	TP138 0.40 SOIL	23/06/16	GV, PT 1L	pH + Conductivity (7 days)	
1017304	TP139 0.50 SOIL	23/06/16	GV, PT 1L	pH + Conductivity (7 days)	
1017305	TP139 1.00 SOIL	23/06/16	GV, PT 1L	pH + Conductivity (7 days)	
1017306	TP140 0.00-0.30 SOIL	23/06/16	GJ 250ml, GV, PT 1L	pH + Conductivity (7 days)	
1017307	TP140 2.00 SOIL	23/06/16	GJ 250ml, GV, PT 1L	pH + Conductivity (7 days)	
1017308	TP141 0.40 SOIL	24/06/16	GJ 250ml, GV, PT 1L	pH + Conductivity (7 days)	
1017309	TP142 0.00-0.15 SOIL	24/06/16	GV, PT 1L	pH + Conductivity (7 days)	
1017310	TP143 0.40-0.70 SOIL	24/06/16	GJ 250ml, GV, PT 1L	pH + Conductivity (7 days)	

Information in Support of the Analytical Results

Our Ref 16-71697-1
Client Ref C7074
Contract Hebburn

Lab No	Sample ID	Date		Holding time exceeded for tests	Inappropriate container for tests
		Sampled	Containers Received		
1017311	TP144 0.00-0.15 SOIL	24/06/16	GJ 250ml, GV, PT 1L	pH + Conductivity (7 days)	
1017312	TP144 0.30-0.70 SOIL	24/06/16	GJ 250ml, GV, PT 1L	pH + Conductivity (7 days)	
1017313	TP145 0.25-0.60 SOIL	24/06/16	GJ 250ml, GV, PT 1L	pH + Conductivity (7 days)	
1017314	TP147 0.40-0.60 SOIL	24/06/16	GJ 250ml, GV, PT 1L	pH + Conductivity (7 days)	
1017315	TP150 0.00-0.50 SOIL	24/06/16	GV, PT 1L		
1017316	TP151 0.00-0.50 SOIL	24/06/16	GV, PT 1L		
1017317	TP152 0.00-0.50 SOIL	24/06/16	GV, PT 1L		

Key: G-Glass P-Plastic J-Jar V-Vial T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETS 2002	Organic matter	%	0.1	Air Dried	No	Yes	Yes
DETS 2003	Loss on ignition	%	0.01	Air Dried	No	Yes	Yes
DETS 2008	pH	pH Units	1	Air Dried	No	Yes	Yes
DETS 2024	Sulphide	mg/kg	10	Air Dried	No	Yes	Yes
DETS 2076	Sulphate Aqueous Extract as SO ₄	mg/l	10	Air Dried	No	Yes	Yes
DETS 2084	Total Carbon	%	0.5	Air Dried	No	Yes	Yes
DETS 2084	Total Organic Carbon	%	0.5	Air Dried	No	Yes	Yes
DETS 2119	Ammoniacal Nitrogen as N	mg/kg	0.5	Air Dried	No	Yes	Yes
DETS 2130	Cyanide free	mg/kg	0.1	Air Dried	No	Yes	Yes
DETS 2130	Cyanide total	mg/kg	0.1	Air Dried	No	Yes	Yes
DETS 2130	Phenol - Monohydric	mg/kg	0.3	Air Dried	No	Yes	Yes
DETS 2130	Thiocyanate	mg/kg	0.6	Air Dried	No	Yes	Yes
DETS 2321	Total Sulphate as SO ₄	%	0.01	Air Dried	No	Yes	Yes
DETS 2325	Mercury	mg/kg	0.05	Air Dried	No	Yes	Yes
DETS 3049	Sulphur (free)	mg/kg	0.75	Air Dried	No	Yes	Yes
DETS 2123	Boron (water soluble)	mg/kg	0.2	Air Dried	No	Yes	Yes
DETS 2301	Arsenic	mg/kg	0.2	Air Dried	No	Yes	Yes
DETS 2301	Barium	mg/kg	1.5	Air Dried	No	Yes	Yes
DETS 2301	Beryllium	mg/kg	0.2	Air Dried	No	Yes	Yes
DETS 2301	Cadmium Available	mg/kg	0.1	Air Dried	No	Yes	Yes
DETS 2301	Cadmium	mg/kg	0.1	Air Dried	No	Yes	Yes
DETS 2301	Cobalt	mg/kg	0.7	Air Dried	No	Yes	Yes
DETS 2301	Chromium	mg/kg	0.15	Air Dried	No	Yes	Yes
DETS 2301	Copper	mg/kg	0.2	Air Dried	No	Yes	Yes
DETS 2301	Manganese	mg/kg	20	Air Dried	No	Yes	Yes
DETS 2301	Molybdenum	mg/kg	0.4	Air Dried	No	Yes	Yes
DETS 2301	Nickel	mg/kg	1	Air Dried	No	Yes	Yes
DETS 2301	Lead	mg/kg	0.3	Air Dried	No	Yes	Yes
DETS 2301	Selenium	mg/kg	0.5	Air Dried	No	Yes	Yes
DETS 2301	Zinc	mg/kg	1	Air Dried	No	Yes	Yes
DETS 3072	Ali/Aro C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETS 3072	Aliphatic C10-C12	mg/kg	1.5	As Received	No	Yes	Yes
DETS 3072	Aliphatic C10-C12	mg/kg	10	As Received	No	Yes	Yes
DETS 3072	Aliphatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETS 3072	Aliphatic C12-C16	mg/kg	1.2	As Received	No	Yes	Yes
DETS 3072	Aliphatic C12-C16	mg/kg	10	As Received	No	Yes	Yes
DETS 3072	Aliphatic C16-C21	mg/kg	1.5	As Received	No	Yes	Yes
DETS 3072	Aliphatic C16-C21	mg/kg	10	As Received	No	Yes	Yes
DETS 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETS 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETS 3072	Aromatic C10-C12	mg/kg	0.9	As Received	No	Yes	Yes
DETS 3072	Aromatic C10-C12	mg/kg	10	As Received	No	Yes	Yes
DETS 3072	Aromatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETS 3072	Aromatic C12-C16	mg/kg	0.5	As Received	No	Yes	Yes
DETS 3072	Aromatic C12-C16	mg/kg	10	As Received	No	Yes	Yes
DETS 3072	Aromatic C16-C21	mg/kg	0.6	As Received	No	Yes	Yes
DETS 3072	Aromatic C16-C21	mg/kg	10	As Received	No	Yes	Yes
DETS 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETS 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETS 062	Benzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Ethylbenzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Toluene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	m+p Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	o Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 3311	C10-C24 Diesel Range Organics (DRO)	mg/kg	10	As Received	No	Yes	Yes
DETS 3311	C24-C40 Lube Oil Range Organics (LORO)	mg/kg	10	As Received	No	Yes	Yes
DETS 3311	EPH (C10-C40)	mg/kg	10	As Received	No	Yes	Yes

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETS 3303	Acenaphthene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Acenaphthylene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Benzo(a)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Benzo(a)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Benzo(b)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Benzo(k)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Benzo(g,h,i)perylene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Dibenzo(a,h)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Indeno(1,2,3-c,d)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Naphthalene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Phenanthrene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3303	Pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETS 3401	PCB 28 + PCB 31	mg/kg	0.01	As Received	No	Yes	Yes
DETS 3401	PCB 52	mg/kg	0.01	As Received	No	Yes	Yes
DETS 3401	PCB 101	mg/kg	0.01	As Received	No	Yes	Yes
DETS 3401	PCB 118	mg/kg	0.01	As Received	No	Yes	Yes
DETS 3401	PCB 153	mg/kg	0.01	As Received	No	Yes	Yes
DETS 3401	PCB 138	mg/kg	0.01	As Received	No	Yes	Yes
DETS 3401	PCB 180	mg/kg	0.01	As Received	No	Yes	Yes
DETS 3401	PCB Total	mg/kg	0.01	As Received	No	Yes	Yes

Method details are shown only for those determinands listed in Annex A of the MCERTS standard. Anything not included on this list falls outside the scope of MCERTS. No Recovery Factors are used in the determination of results. Results reported assume 100% recovery. Full method statements are available on request.



Certificate of Analysis

Certificate Number 16-74411

03-Aug-16

Client Sirius Geotechnical & Environmental
Russel House
Suite 2
Mill Road
Langley Moor
DH7 8HJ

Our Reference 16-74411

Client Reference C7074

Order No 13916/C7074

Contract Title Hebburn

Description 5 Water samples.

Date Received 28-Jul-16

Date Started 28-Jul-16

Date Completed 03-Aug-16

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the scope of UKAS accreditation. 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. Observations and interpretations are outside the scope of ISO 17025. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

A handwritten signature in black ink, appearing to read "Rob Brown".

Rob Brown
Business Manager



Summary of Chemical Analysis

Water Samples

Our Ref 16-74411

Client Ref C7074

Contract Title Hebburn

Lab No	1030752	1030753	1030754	1030755	1030756
Sample ID	WS101	WS102	WS103	WS104	WS104
Depth					
Other ID					
Sample Type	WATER	WATER	WATER	WATER	WATER
Sampling Date	n/s	n/s	n/s	n/s	n/s
Sampling Time	1330	1400	1430	1500	1530

Test	Method	LOD	Units					
Metals								
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	1.5	0.76	0.62	1.1	0.78
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	0.03	< 0.03	0.25	< 0.03	0.27
Chromium, Dissolved	DETSC 2306	0.25	ug/l	11	3.3	3.6	< 0.25	1.2
Copper, Dissolved	DETSC 2306	0.4	ug/l	5.9	2.6	5.8	1	4.3
Lead, Dissolved	DETSC 2306	0.09	ug/l	3.4	< 0.09	0.85	0.35	0.12
Mercury, Dissolved	DETSC 2306	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	6.4	3.4	2.8	2.2	4.3
Selenium, Dissolved	DETSC 2306	0.25	ug/l	0.62	1.4	5.5	< 0.25	1.2
Zinc, Dissolved	DETSC 2306	1.3	ug/l	18	1.9	100	3.7	190
Inorganics								
Conductivity	DETSC 2009	1	uS/cm	630	1090	1440	1410	2010
pH	DETSC 2008			8.4	7.9	7.7	8.2	7.9
Hardness	DETSC 2303	0.1	mg/l	326	486	811	916	1340
Ammoniacal Nitrogen as N	DETSC 2207	0.015	mg/l	< 0.015	< 0.015	< 0.015	< 0.015	< 0.015
Sulphate as SO4	DETSC 2055	0.1	mg/l	130	270	140	430	760
PAHs								
Naphthalene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-c,d)pyrene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenzo(a,h)anthracene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(g,h,i)perylene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PAH Total	DETS 074*	0.2	ug/l	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Phenols								
Phenol	*	0.5	ug/l	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50

Information in Support of the Analytical Results

Our Ref 16-74411
Client Ref C7074
Contract Hebburn

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1030752	WS101 WATER		GJ 250ml, GB 1L	Sample date+time not supplied, Conductivity (28 days), Conductivity (non reportable) (28 days), Hardness (7 days), Anions (30 days), Kone (30 days), pH/Cond/TDS (7 days), Metals (Soluble) ICPMS (30 days), Naphthalene (14 days), Ammoniacal Nitrogen as N (10 days), PAH LC (14 days), Phenols MS (21 days)	
1030753	WS102 WATER		GB 1L	Sample date+time not supplied, Conductivity (28 days), Conductivity (non reportable) (28 days), Hardness (7 days), Anions (30 days), Kone (30 days), pH/Cond/TDS (7 days), Metals (Soluble) ICPMS (30 days), Naphthalene (14 days), Ammoniacal Nitrogen as N (10 days), PAH LC (14 days), Phenols MS (21 days)	
1030754	WS103 WATER		GJ 250ml, GB 1L	Sample date+time not supplied, Conductivity (28 days), Conductivity (non reportable) (28 days), Hardness (7 days), Anions (30 days), Kone (30 days), pH/Cond/TDS (7 days), Metals (Soluble) ICPMS (30 days), Naphthalene (14 days), Ammoniacal Nitrogen as N (10 days), PAH LC (14 days), Phenols MS (21 days)	
1030755	WS104 WATER		GJ 250ml, GB 1L	Sample date+time not supplied, Conductivity (28 days), Conductivity (non reportable) (28 days), Hardness (7 days), Anions (30 days), Kone (30 days), pH/Cond/TDS (7 days), Metals (Soluble) ICPMS (30 days), Naphthalene (14 days), Ammoniacal Nitrogen as N (10 days), PAH LC (14 days), Phenols MS (21 days)	
1030756	WS104 WATER		GB 1L	Sample date+time not supplied, Conductivity (28 days), Conductivity (non reportable) (28 days), Hardness (7 days), Anions (30 days), Kone (30 days), pH/Cond/TDS (7 days), Metals (Soluble) ICPMS (30 days), Naphthalene (14 days), Ammoniacal Nitrogen as N (10 days), PAH LC (14 days), Phenols MS (21 days)	

Key: G-Glass J-Jar B-Bottle

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Information in Support of the Analytical Results

Our Ref 16-74411
Client Ref C7074
Contract Hebburn

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-
Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Asbestos Bulk Analysis Report (PLM)

Date Received:	07/07/2016	Client:	Sirius Geotechnical & Environmental Ltd
Date of Analysis:	08/07/2016		Sirius Geotechnical & Environmental Ltd
Samples Analysed by:	Victoria Edgar		Suite 2 Russel House Mill Road
Samples Taken by:	Sirius Geotechnical & Environmental Ltd		Langley Moor Durham DH7 8HJ
No. of Samples:	4	Site Address:	Hebburn

Franks Portlock Consulting Limited project number: J006314

FPC Ltd ref	Sample Descriptions	Materials	Asbestos identified
BS009698	TP123 Bit A	Bituminous	No Asbestos Detected
BS009699	TP123 Felt A	Bituminous	No Asbestos Detected
BS009700	TP125 Paper 1	Paper	No Asbestos Detected
BS009701	TP125 Cardboard 1	Paper	No Asbestos Detected


Notes:

Sample analysis conducted in accordance with in-house procedure Tech04 and HSG248 using PLM (polarised light microscopy) Where the samples have been taken by persons other than Franks Portlock Consulting Limited staff we cannot accept responsibility for the accuracy of the sampling. Analysis represents the contents of the sample received and may not necessarily be representative of the material from which it originated. Samples will be retained for 6 months prior to disposal unless otherwise stated.

Note: Opinions and interpretations expressed herein are outside the scope of UKAS accreditation



4155

Report Authorised by:	Victoria Edgar	Date:	8 Jul 2016
Signed:		Position:	Bulk Analyst



LABORATORY REPORT



4043

Contract Number: PSL16/3014

Report Date: 19 July 2016
Client's Reference: C7074
Client Name: Sirius Durham
Suite 2, Russel House
Mill Road
Langley Moor
Durham
DH7 8HJ

For the attention of: Rob Schofield

Contract Title: Former Siemen's Factory, Hebburn
Date Received: 29/06/2016
Date Commenced: 29/06/2016
Date Completed: 19/07/2016

Notes: Opinions and Interpretations are outside the UKAS Accreditation

A copy of the Laboratory Schedule of accredited tests as issued by UKAS is attached to this report. 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 in full, without the prior written approval of the laboratory.

Checked and Approved Signatories:

R Gunson
(Director)

D Lambe
(Senior Technician)

A Watkins
(Director)

S Royle
(Senior Technician)



M Beastall
(Laboratory Manager)

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awatkins@prosoils.co.uk

Page 1 of

SUMMARY OF LABORATORY SOIL DESCRIPTIONS

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Description of Sample
TP112		B	2.00		Brown slightly gravelly sandy CLAY.
TP112		B	4.00		Brown slightly gravelly sandy CLAY.
TP116		B	1.00		Brown slightly gravelly sandy CLAY.
TP116		B	3.00		Brown slightly gravelly sandy CLAY.
TP140		B	3.00		Brown slightly gravelly sandy CLAY.
BH101		B	5.50	6.00	Brown slightly gravelly slighty sandy CLAY.
BH101		B	7.50	8.00	Brown slightly gravelly slighty sandy CLAY.
BH102		B	4.50	5.00	Brown slightly gravelly sandy CLAY.
TP104		D	1.00	1.50	Brown slightly gravelly sandy CLAY.
TP109		D	0.50	1.00	Brown slightly gravelly sandy CLAY.
TP111		D	1.40	1.60	Brown slightly gravelly sandy CLAY.
TP115		D	1.00	1.30	Brown slightly gravelly sandy CLAY.
TP135		D	1.60		Brown slightly gravelly sandy CLAY.
TP137		D	1.30		Brown slightly gravelly sandy CLAY.
TP138		D	1.00		Brown slightly gravelly sandy CLAY.
TP139		D	1.00		Brown slightly gravelly sandy CLAY.
TP141		D	1.10		Brown slightly gravelly sandy CLAY.
TP143		D	1.50	2.00	Brown slightly gravelly sandy CLAY.
TP144		D	1.60	1.80	Brown slightly gravelly sandy CLAY.

	Checked / Approved		Date	19/07/16	Contract No:
	Former Siemen's Factory, Hebburn				PSL16/3014
					Client Ref:
					C7074

SUMMARY OF LABORATORY SOIL DESCRIPTIONS

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Description of Sample
TP145		D	0.90	1.10	Brown slightly gravelly sandy CLAY.
TP147		D	1.20	1.50	Brown slightly gravelly sandy CLAY.
TP149		D	1.10	1.50	Brown slightly gravelly sandy CLAY.



Checked / Approved		Date	19/07/16	Contract No:
Former Siemen's Factory, Hebburn				PSL16/3014
				Client Ref:
				C7074




SUMMARY OF SOIL CLASSIFICATION TESTS

(BS1377 : PART 2 : 1990)

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Moisture Content % Clause 3.2	Linear Shrinkage % Clause 6.5	Particle Density Mg/m ³ Clause 8.2	Liquid Limit % Clause 4.3/4	Plastic Limit % Clause 5.3	Plasticity Index % Clause 5.4	Passing .425mm %	Remarks
TP112		B	2.00		21							
TP112		B	4.00		19							
TP116		B	1.00		21							
TP116		B	3.00		22							
TP140		B	3.00		26							
BH101		B	5.50	6.00	30							
BH101		B	7.50	8.00	32							
BH102		B	4.50	5.00	25							
TP104		D	1.00	1.50	21		42	21	21	98		Intermediate plasticity CI.
TP109		D	0.50	1.00	25		50	24	26	98		Intermediate plasticity CI.
TP111		D	1.40	1.60	23		48	24	24	98		Intermediate plasticity CI.
TP115		D	1.00	1.30	22		49	23	26	98		Intermediate plasticity CI.
TP135		D	1.60		19		40	20	20	98		Intermediate plasticity CI.
TP137		D	1.30		18		45	22	23	97		Intermediate plasticity CI.
TP138		D	1.00		21		42	21	21	97		Intermediate plasticity CI.
TP139		D	1.00		22		49	23	26	98		Intermediate plasticity CI.
TP141		D	1.10		24		50	24	26	98		Intermediate plasticity CI.
TP143		D	1.50	2.00	20		43	21	22	98		Intermediate plasticity CI.
TP144		D	1.60	1.80	20		40	20	20	98		Intermediate plasticity CI.

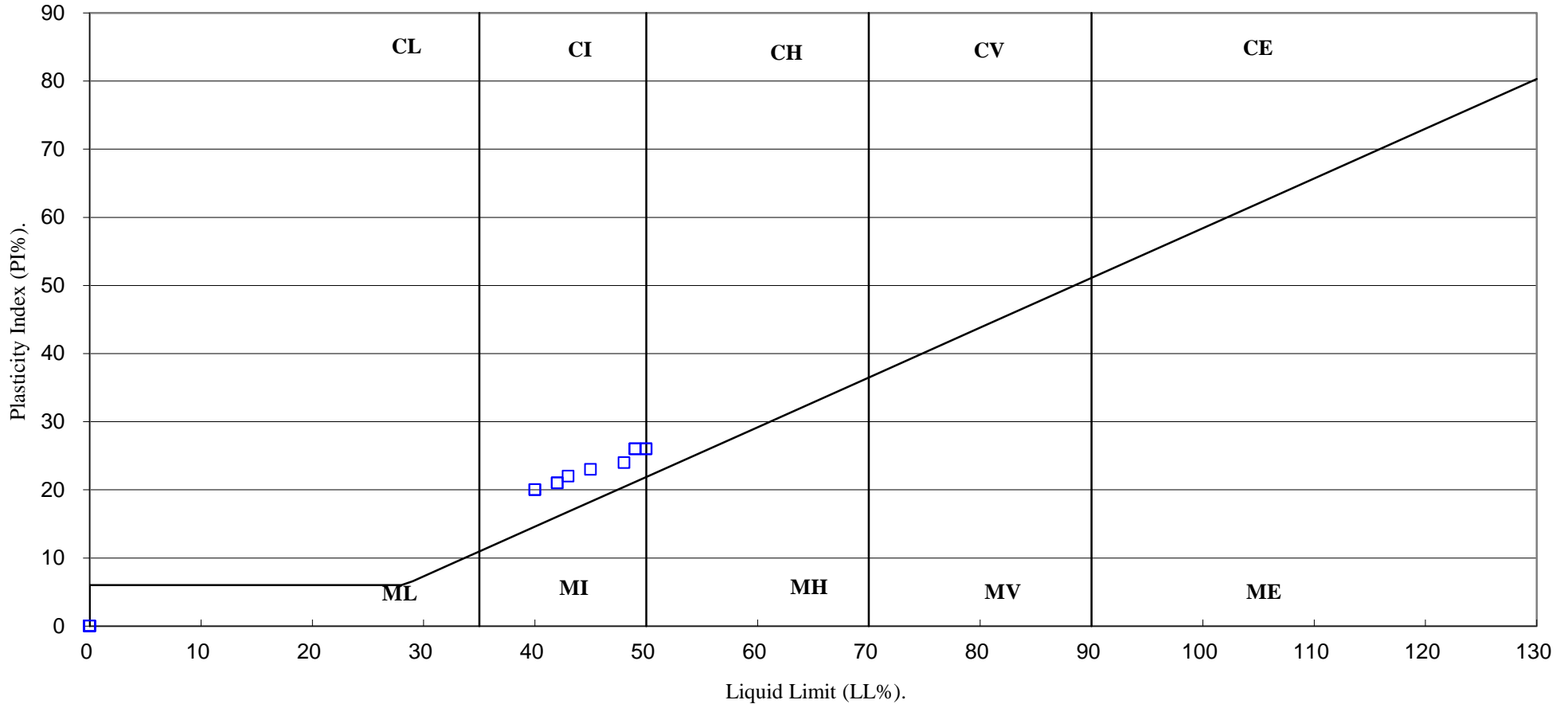
SYMBOLS : NP : Non Plastic

* : Liquid Limit and Plastic Limit Wet Sieved.

		Checked / Approved		Date	19/07/16	Contract No:		
		Former Siemen's Factory, Hebburn						PSL16/3014
								Client Ref:
								C7074

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.

(BS5930 :2015)



PSL
Professional Soils Laboratory

Checked /Approved

Date

19/07/16

Contract No:

PSL16/3014

Client Ref:

C7074

Former Siemen's Factory, Hebburn




SUMMARY OF SOIL CLASSIFICATION TESTS

(BS1377 : PART 2 : 1990)

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Moisture Content % <small>Clause 3.2</small>	Linear Shrinkage % <small>Clause 6.5</small>	Particle Density Mg/m ³ <small>Clause 8.2</small>	Liquid Limit % <small>Clause 4.3/4</small>	Plastic Limit % <small>Clause 5.3</small>	Plasticity Index % <small>Clause 5.4</small>	Passing .425mm %	Remarks
TP145		D	0.90	1.10	18			44	21	23	95	Intermediate plasticity CI.
TP147		D	1.20	1.50	23			50	24	26	98	Intermediate plasticity CI.
TP149		D	1.10	1.50	19			42	20	22	98	Intermediate plasticity CI.

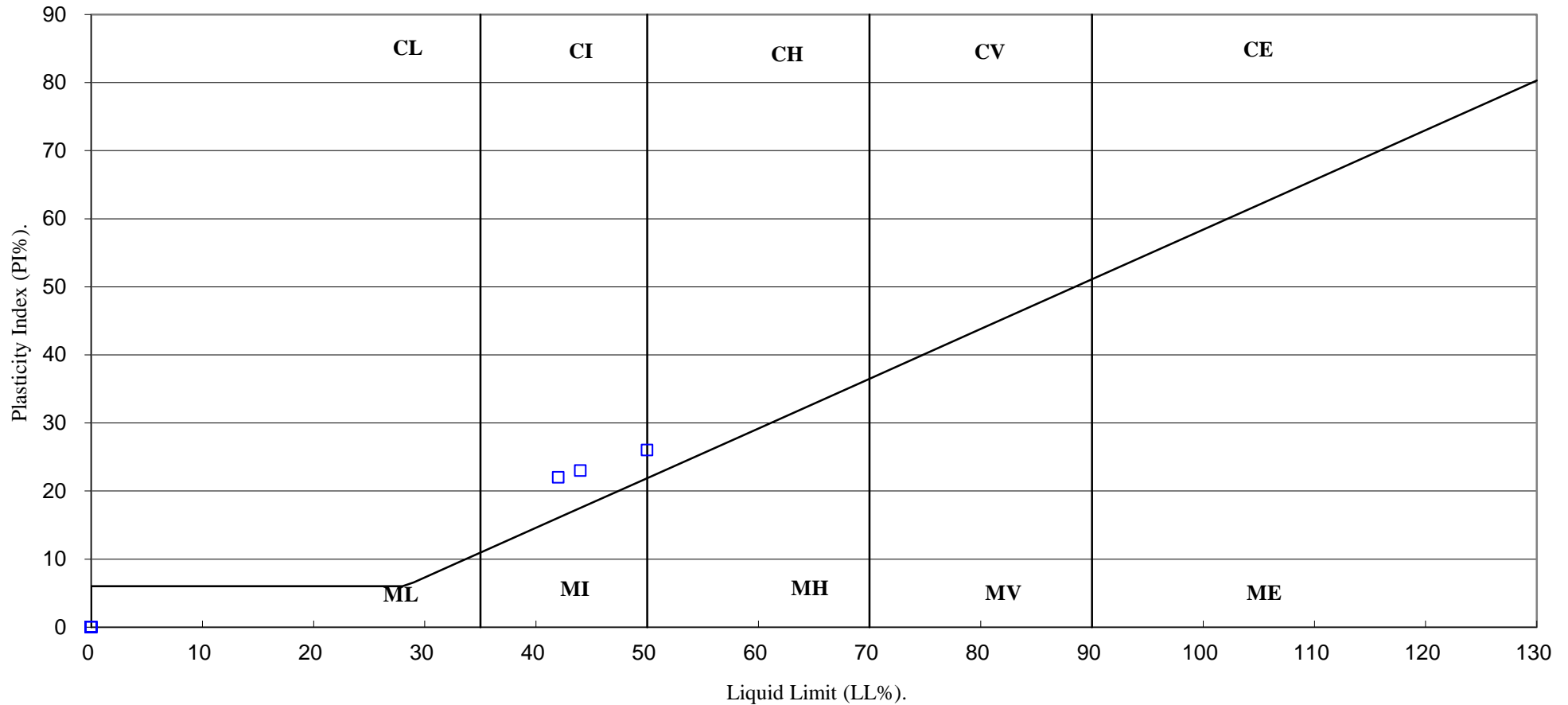
SYMBOLS : NP : Non Plastic

* : Liquid Limit and Plastic Limit Wet Sieved.

		Checked / Approved		Date	19/07/16	Contract No:	
		Former Siemen's Factory, Hebburn					PSL16/3014
							Client Ref:
							C7074

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.

(BS5930 :2015)



Checked /Approved		Date	19/07/16	Contract No:
Former Siemen's Factory, Hebburn				PSL16/3014
				Client Ref:
				C7074

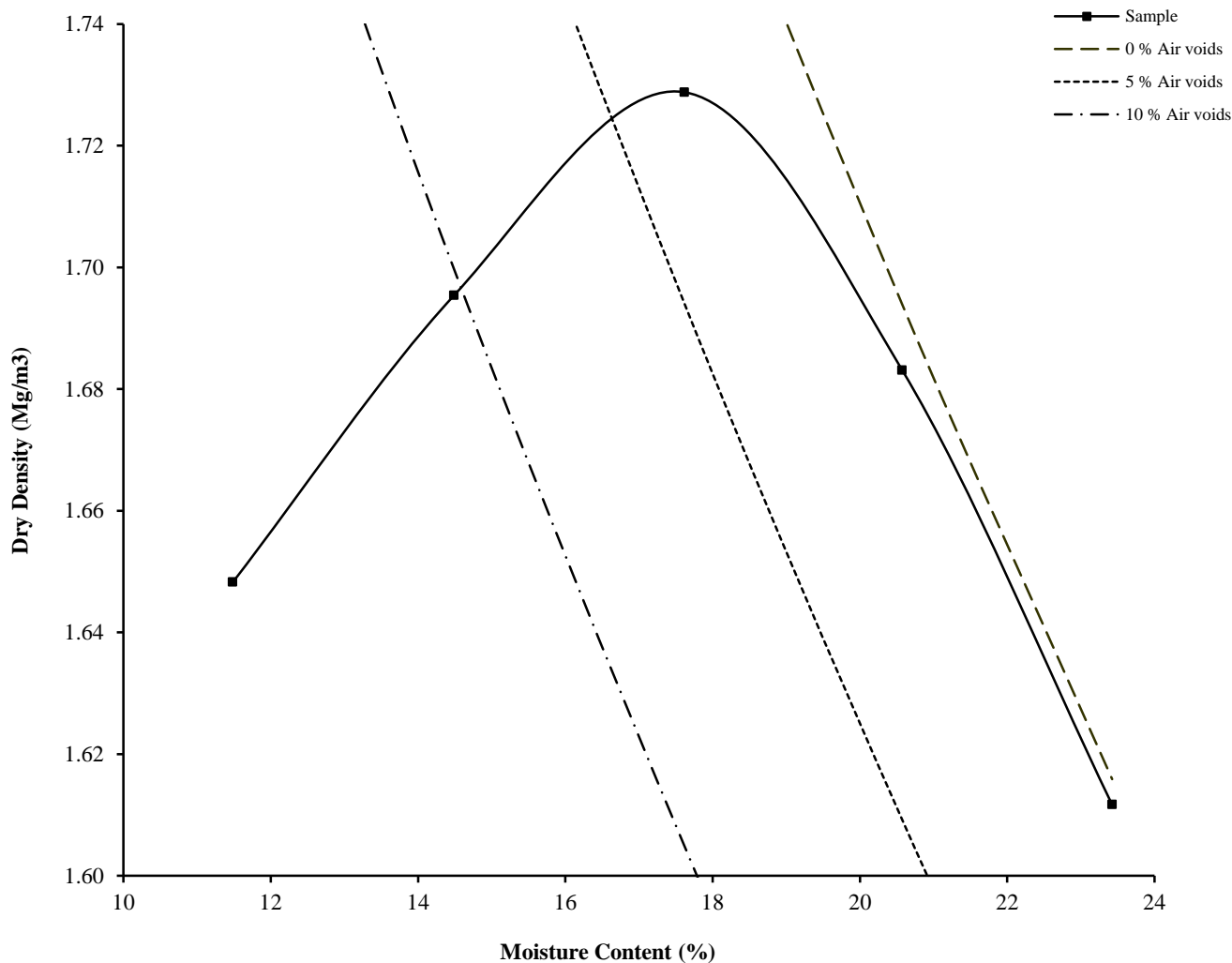
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

BS 1377 : Part 4 : 1990

Hole Number: TP112 Top Depth (m) : 2.00

Sample Number: Base Depth (m) :

Sample Type: B



Initial Moisture Content:	21	Method of Compaction:	2.5Kg Rammer	Separate Samples
Particle Density (Mg/m ³):	2.60	Assumed	Material Retained on 37.5 mm Test Sieve (%):	0
Maximum Dry Density (Mg/m ³):	1.73		Material Retained on 20.0 mm Test Sieve (%):	0
Optimum Moisture Content (%):	18			
Remarks See summary of soil descriptions				

	Checked / Approved		Date	19/07/16	Contract No.
	Former Siemen's Factory, Hebburn				PSL16/3014
					Client Ref
					C7074

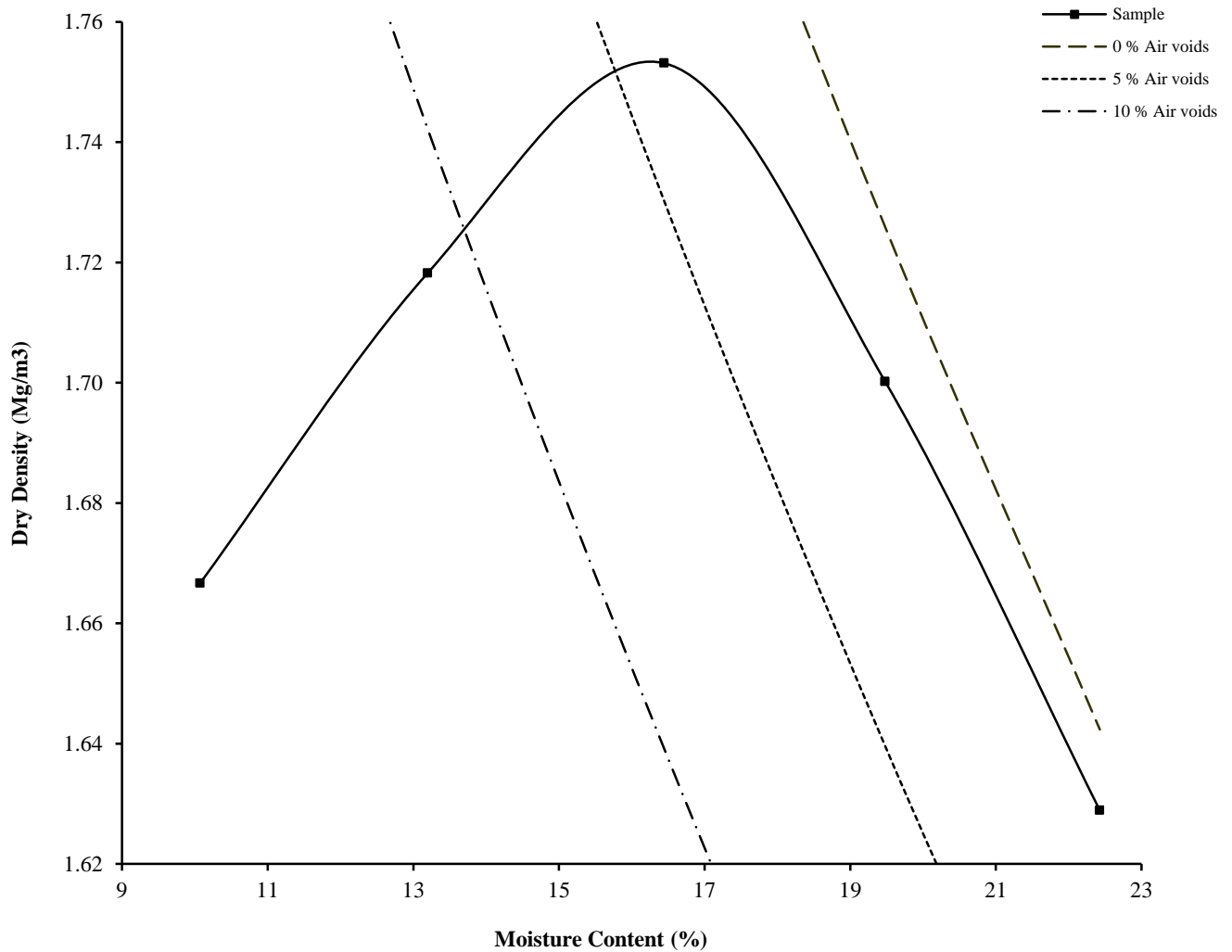
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

BS 1377 : Part 4 : 1990

Hole Number: TP112 Top Depth (m) : 4.00

Sample Number: Base Depth (m) :

Sample Type: B



Initial Moisture Content:	19	Method of Compaction:	2.5Kg Rammer	Separate Samples
Particle Density (Mg/m ³):	2.60	Assumed	Material Retained on 37.5 mm Test Sieve (%):	0
Maximum Dry Density (Mg/m ³):	1.75		Material Retained on 20.0 mm Test Sieve (%):	0
Optimum Moisture Content (%):	16			
Remarks				
See summary of soil descriptions				

	Checked / Approved		Date	19/07/16	Contract No.
	Former Siemen's Factory, Hebburn				PSL16/3014
					Client Ref
					C7074

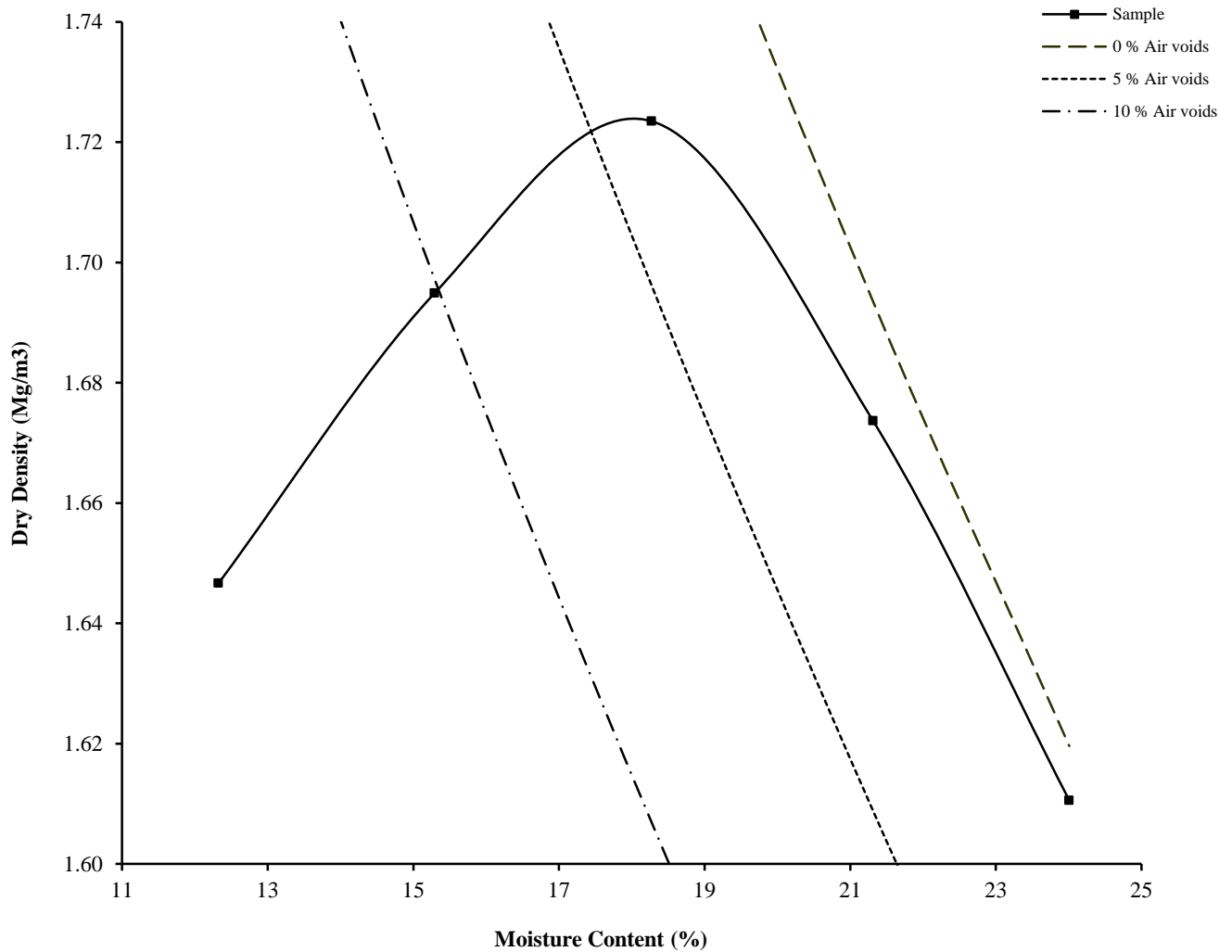
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

BS 1377 : Part 4 : 1990

Hole Number: TP116 Top Depth (m) : 1.00

Sample Number: Base Depth (m) :

Sample Type: B



Initial Moisture Content:	21	Method of Compaction:	2.5Kg Rammer	Separate Samples
Particle Density (Mg/m ³):	2.65	Assumed	Material Retained on 37.5 mm Test Sieve (%):	0
Maximum Dry Density (Mg/m ³):	1.72		Material Retained on 20.0 mm Test Sieve (%):	0
Optimum Moisture Content (%):	18			
Remarks				
See summary of soil descriptions				

		Checked / Approved		Date	19/07/16	Contract No.	PSL16/3014		
		Former Siemen's Factory, Hebburn					Client Ref	C7074	

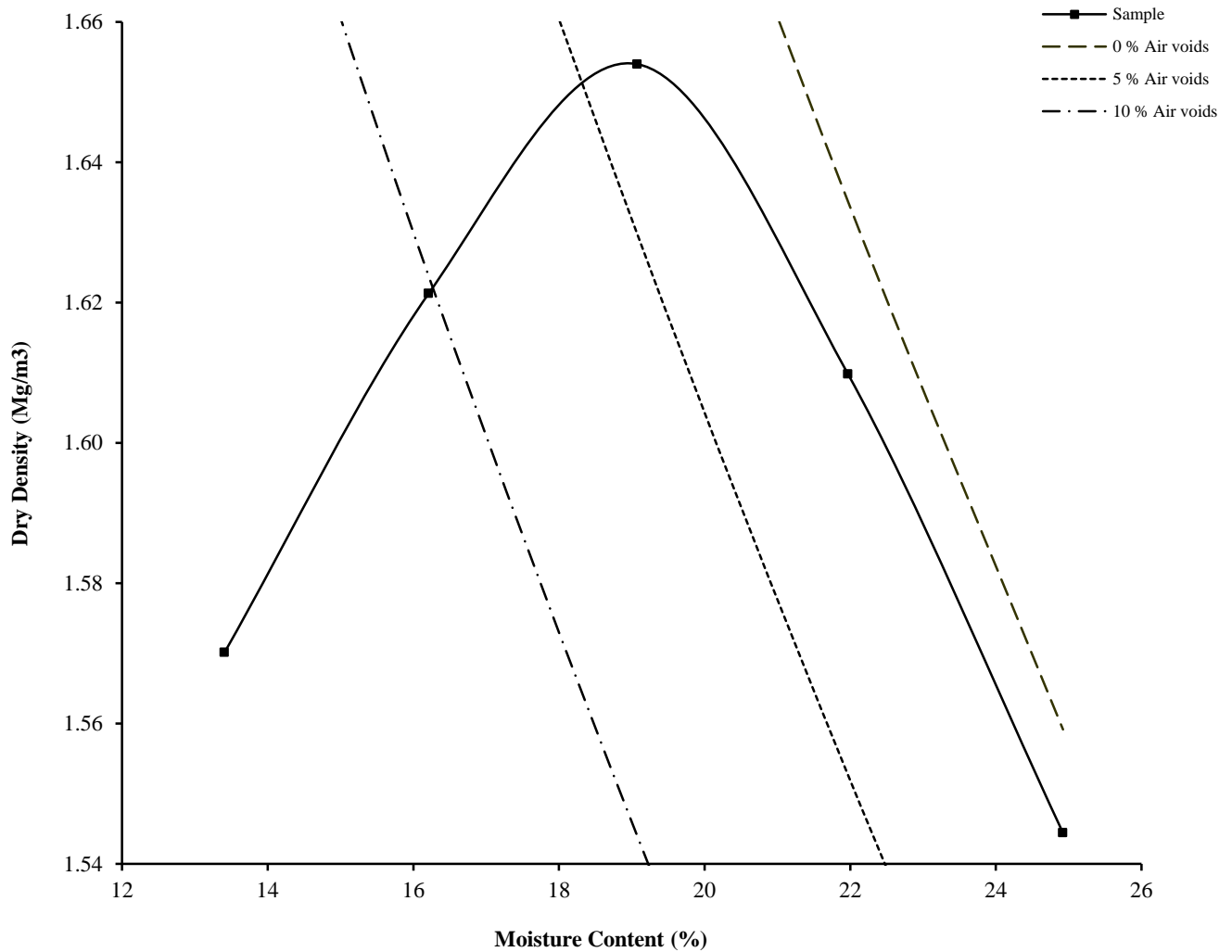
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

BS 1377 : Part 4 : 1990

Hole Number: TP116 Top Depth (m) : 3.00

Sample Number: Base Depth (m) :

Sample Type: B



Initial Moisture Content:	22	Method of Compaction:	2.5Kg Rammer	Separate Samples
Particle Density (Mg/m ³):	2.55	Assumed	Material Retained on 37.5 mm Test Sieve (%):	0
Maximum Dry Density (Mg/m ³):	1.65		Material Retained on 20.0 mm Test Sieve (%):	0
Optimum Moisture Content (%):	19			
Remarks				
See summary of soil descriptions				

	Checked / Approved		Date	19/07/16	Contract No.
	Former Siemen's Factory, Hebburn				PSL16/3014
					Client Ref
					C7074

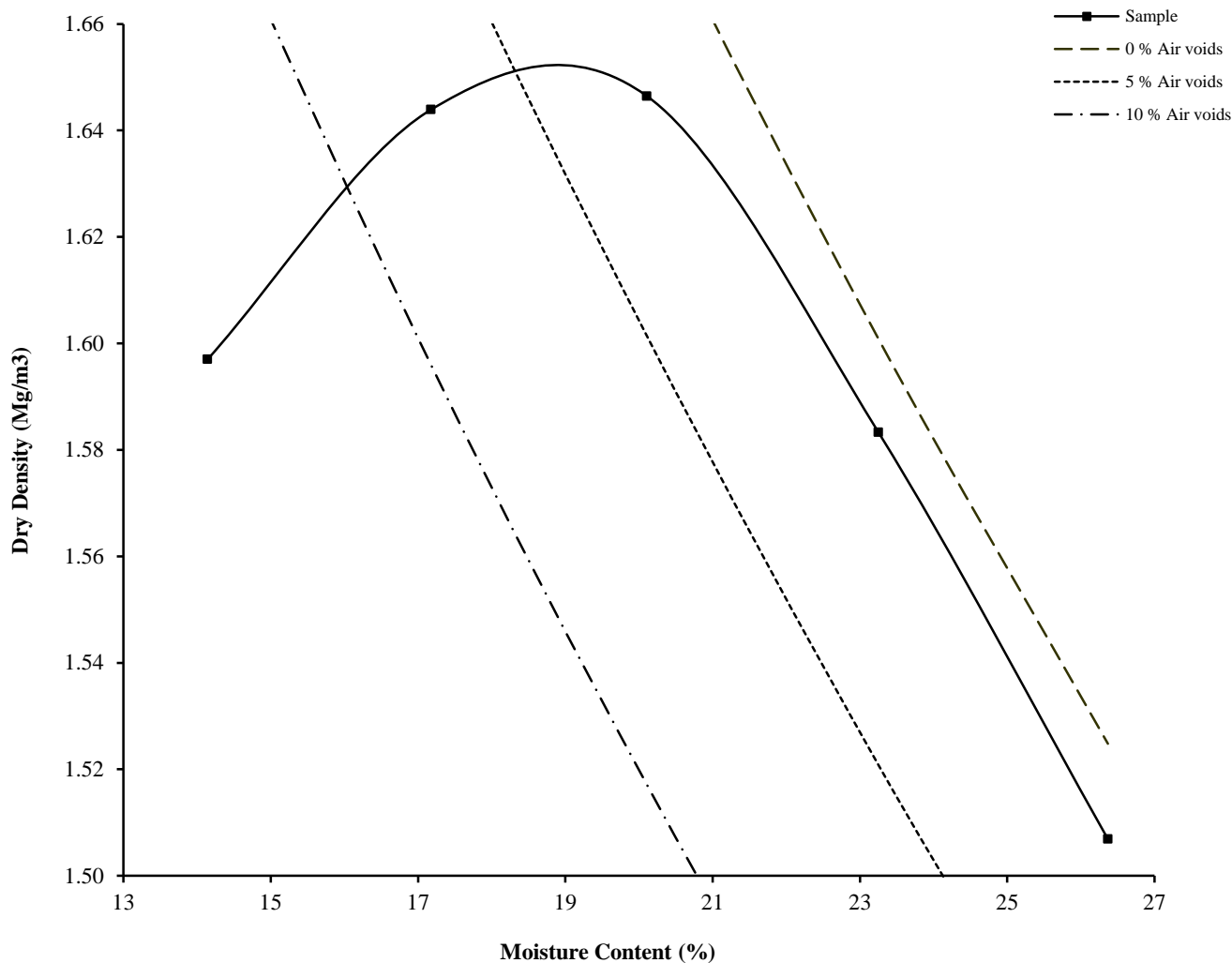
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

BS 1377 : Part 4 : 1990

Hole Number: TP140 Top Depth (m) : 3.00

Sample Number: Base Depth (m) :

Sample Type: B



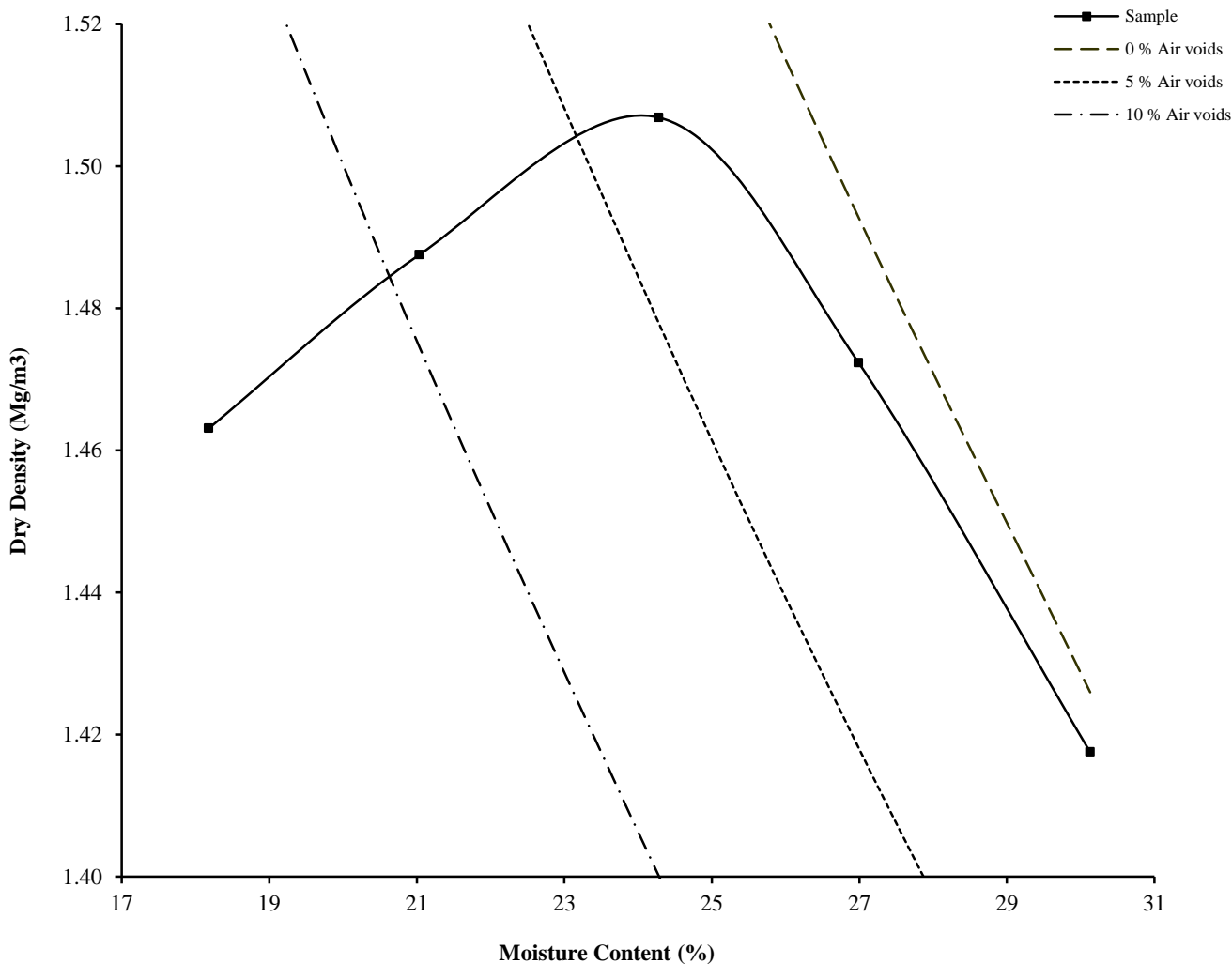
Initial Moisture Content:	26	Method of Compaction:	2.5Kg Rammer	Separate Samples
Particle Density (Mg/m ³):	2.55	Assumed	Material Retained on 37.5 mm Test Sieve (%):	0
Maximum Dry Density (Mg/m ³):	1.65		Material Retained on 20.0 mm Test Sieve (%):	0
Optimum Moisture Content (%):	19			
Remarks				
See summary of soil descriptions				

	Checked / Approved		Date	19/07/16	Contract No.
	Former Siemen's Factory, Hebburn				PSL16/3014
					Client Ref
					C7074

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

BS 1377 : Part 4 : 1990

Hole Number: **BH101** Top Depth (m) : **5.50**
 Sample Number: Base Depth (m) : **6.00**
 Sample Type: **B**



Initial Moisture Content:	30	Method of Compaction:	2.5Kg Rammer	Separate Samples
Particle Density (Mg/m ³):	2.50	Assumed	Material Retained on 37.5 mm Test Sieve (%):	0
Maximum Dry Density (Mg/m ³):	1.51		Material Retained on 20.0 mm Test Sieve (%):	0
Optimum Moisture Content (%):	21			
Remarks				
See summary of soil descriptions				

	Checked / Approved		Date	19/07/16	Contract No.
	Former Siemen's Factory, Hebburn				PSL16/3014
					Client Ref
					C7074

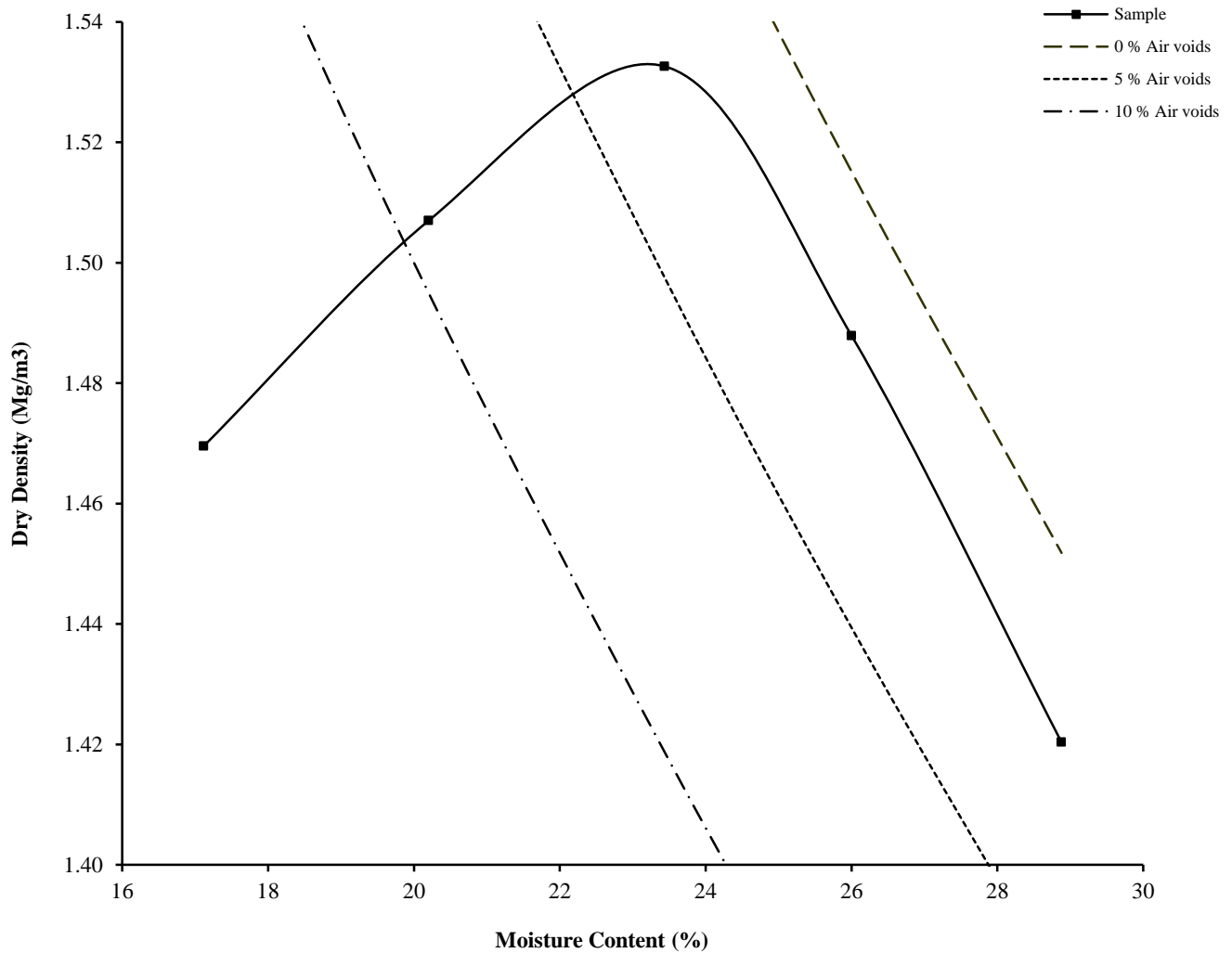
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

BS 1377 : Part 4 : 1990

Hole Number: **BH101** Top Depth (m) : **7.50**

Sample Number: Base Depth (m) : **8.00**

Sample Type: **B**



Initial Moisture Content:	32	Method of Compaction:	2.5Kg Rammer	Separate Samples
Particle Density (Mg/m ³):	2.50	Assumed	Material Retained on 37.5 mm Test Sieve (%):	0
Maximum Dry Density (Mg/m ³):	1.53		Material Retained on 20.0 mm Test Sieve (%):	0
Optimum Moisture Content (%):	24			
Remarks				
See summary of soil descriptions				

		Checked / Approved		Date	19/07/16	Contract No.	PSL16/3014	
		Former Siemen's Factory, Hebburn					Client Ref	C7074

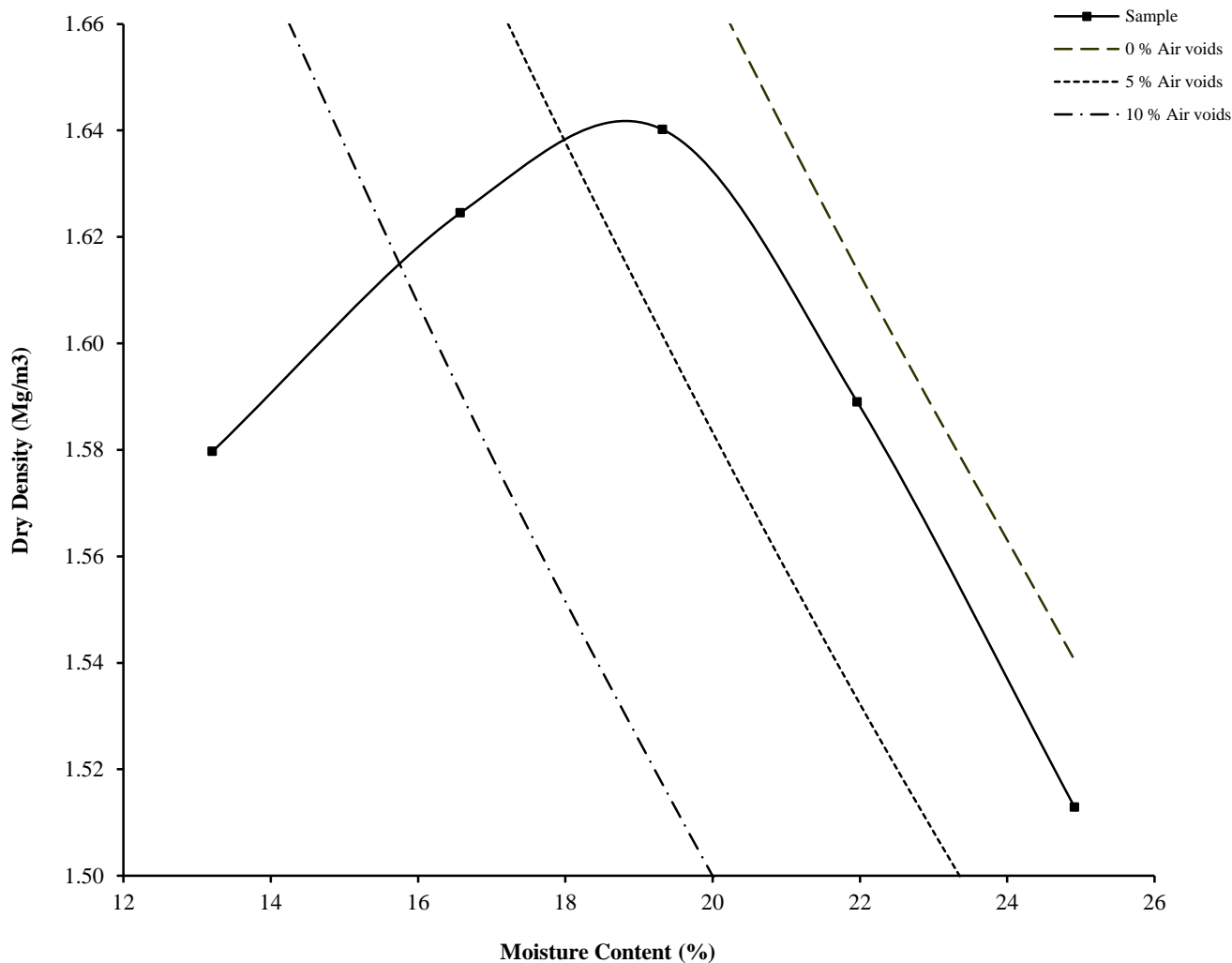
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

BS 1377 : Part 4 : 1990

Hole Number: **BH102** Top Depth (m) : **4.50**

Sample Number: Base Depth (m) : **5.00**

Sample Type: **B**



Initial Moisture Content:	25	Method of Compaction:	2.5Kg Rammer	Separate Samples
Particle Density (Mg/m ³):	2.50	Assumed	Material Retained on 37.5 mm Test Sieve (%):	0
Maximum Dry Density (Mg/m ³):	1.64		Material Retained on 20.0 mm Test Sieve (%):	0
Optimum Moisture Content (%):	19			
Remarks				
See summary of soil descriptions				

	Checked / Approved		Date	19/07/16	Contract No.
	Former Siemen's Factory, Hebburn				PSL16/3014
					Client Ref
					C7074

CALIFORNIA BEARING RATIO TEST

BS 1377 : Part 4 : 1990

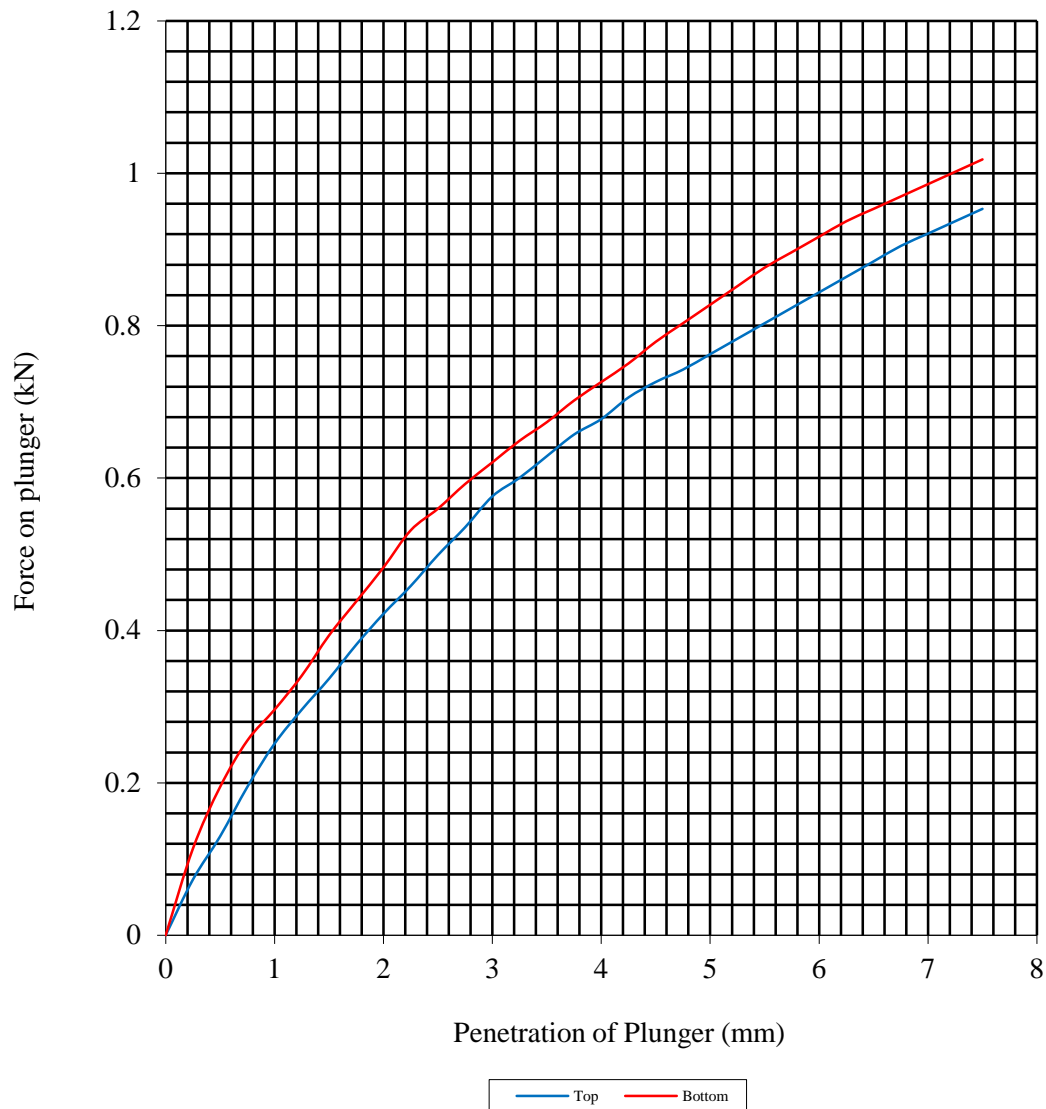
Hole Number: TP112

Top Depth (m): 2.00

Sample Number:

Base Depth (m):

Sample Type: B



Initial Sample Conditions		Sample Preparation		Final Moisture Content %		C.B.R. Value %	
Moisture Content:	21	Surcharge Kg:	4.20	Sample Top	21	Sample Top	3.8
Bulk Density Mg/m ³ :	2.03	Soaking Time hrs	0	Sample Bottom	21	Sample Bottom	4.2
Dry Density Mg/m ³ :	1.68	Swelling mm:	0	Remarks: See summary of soil descriptions.			
Percentage retained on 20mm BS test sieve:			0				
Compaction Conditions		2.5kg Rammer					

		Checked / Approved		Date	18/07/16	Contract No:	
		Former Siemen's Factory, Hebburn					PSL16/3014
							Client Ref:
							C7074

CALIFORNIA BEARING RATIO TEST

BS 1377 : Part 4 : 1990

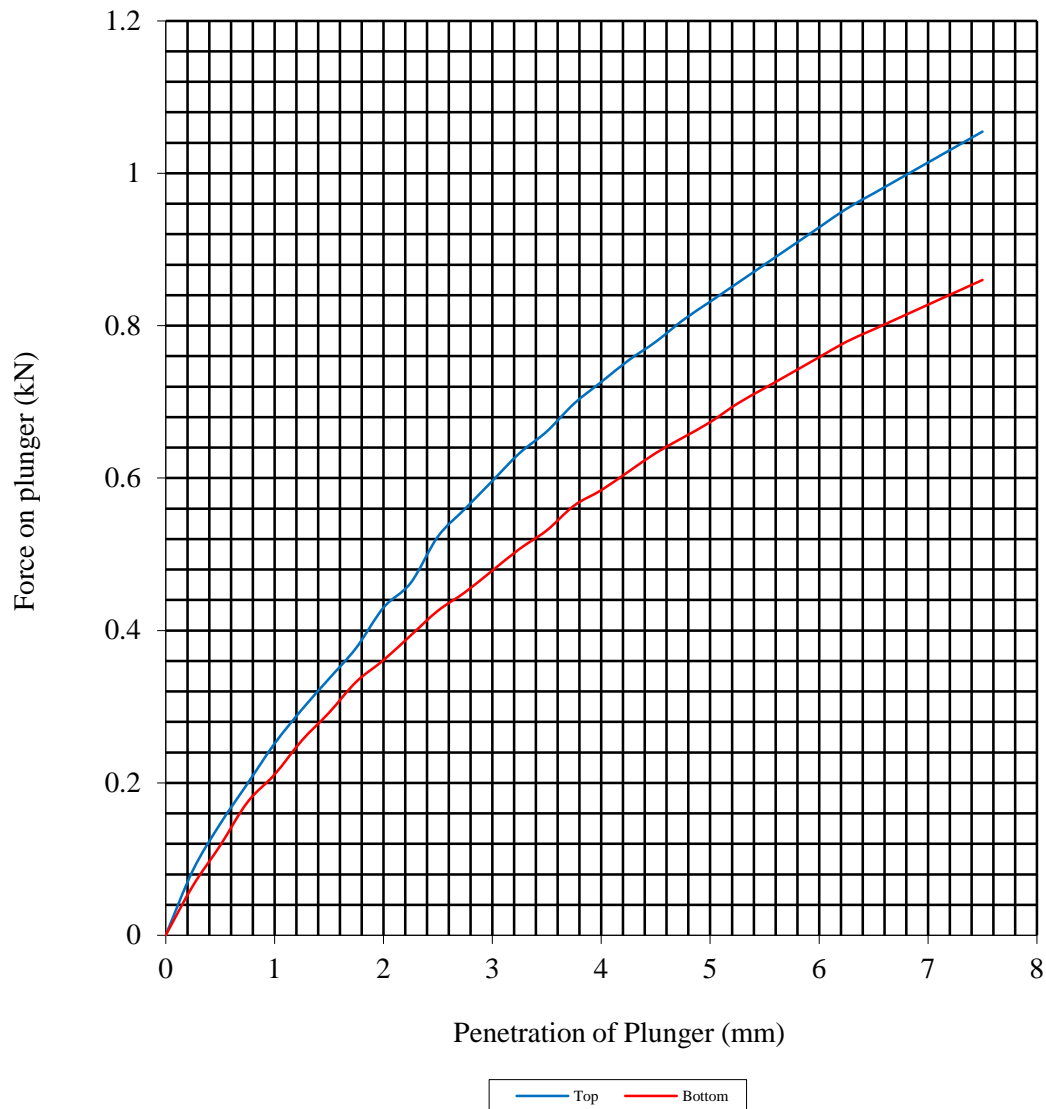
Hole Number: TP116

Top Depth (m): 1.00



Sample Number:

Base Depth (m):

Sample Type: B



Initial Sample Conditions		Sample Preparation		Final Moisture Content %		C.B.R. Value %	
Moisture Content:	21	Surcharge Kg:	4.20	Sample Top	21	Sample Top	4.2
Bulk Density Mg/m ³ :	2.03	Soaking Time hrs	0	Sample Bottom	22	Sample Bottom	3.4
Dry Density Mg/m ³ :	1.67	Swelling mm:	0	Remarks: See summary of soil descriptions.			
Percentage retained on 20mm BS test sieve:			0				
Compaction Conditions		2.5kg Rammer					

 	Checked / Approved		Date	18/07/16	Contract No:
	Former Siemen's Factory, Hebburn				PSL16/3014
					Client Ref:
					C7074

CALIFORNIA BEARING RATIO TEST

BS 1377 : Part 4 : 1990

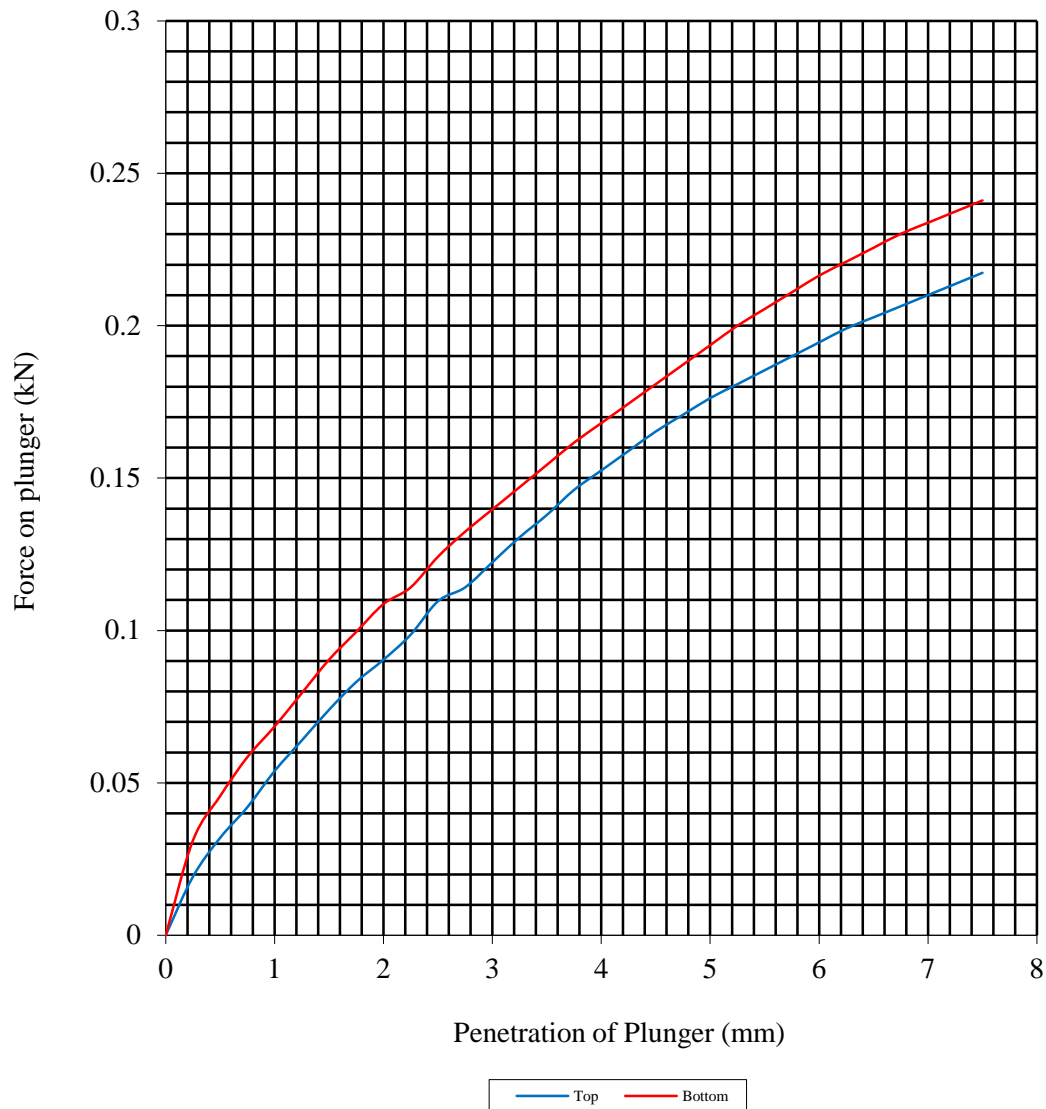
Hole Number: **BH101**

Top Depth (m): **5.50**

Sample Number:

Base Depth (m): **6.00**

Sample Type: **B**



Initial Sample Conditions		Sample Preparation		Final Moisture Content %		C.B.R. Value %	
Moisture Content:	30	Surcharge Kg:	4.20	Sample Top	30	Sample Top	0.9
Bulk Density Mg/m ³ :	1.85	Soaking Time hrs	0	Sample Bottom	30	Sample Bottom	1.0
Dry Density Mg/m ³ :	1.42	Swelling mm:	0	Remarks: See summary of soil descriptions.			
Percentage retained on 20mm BS test sieve:			0				
Compaction Conditions		2.5kg Rammer					

 PSL Professional Soils Laboratory	Checked / Approved		Date	18/07/16	Contract No:
	Former Siemen's Factory, Hebburn				PSL16/3014
					Client Ref:
					C7074

CALIFORNIA BEARING RATIO TEST

BS 1377 : Part 4 : 1990

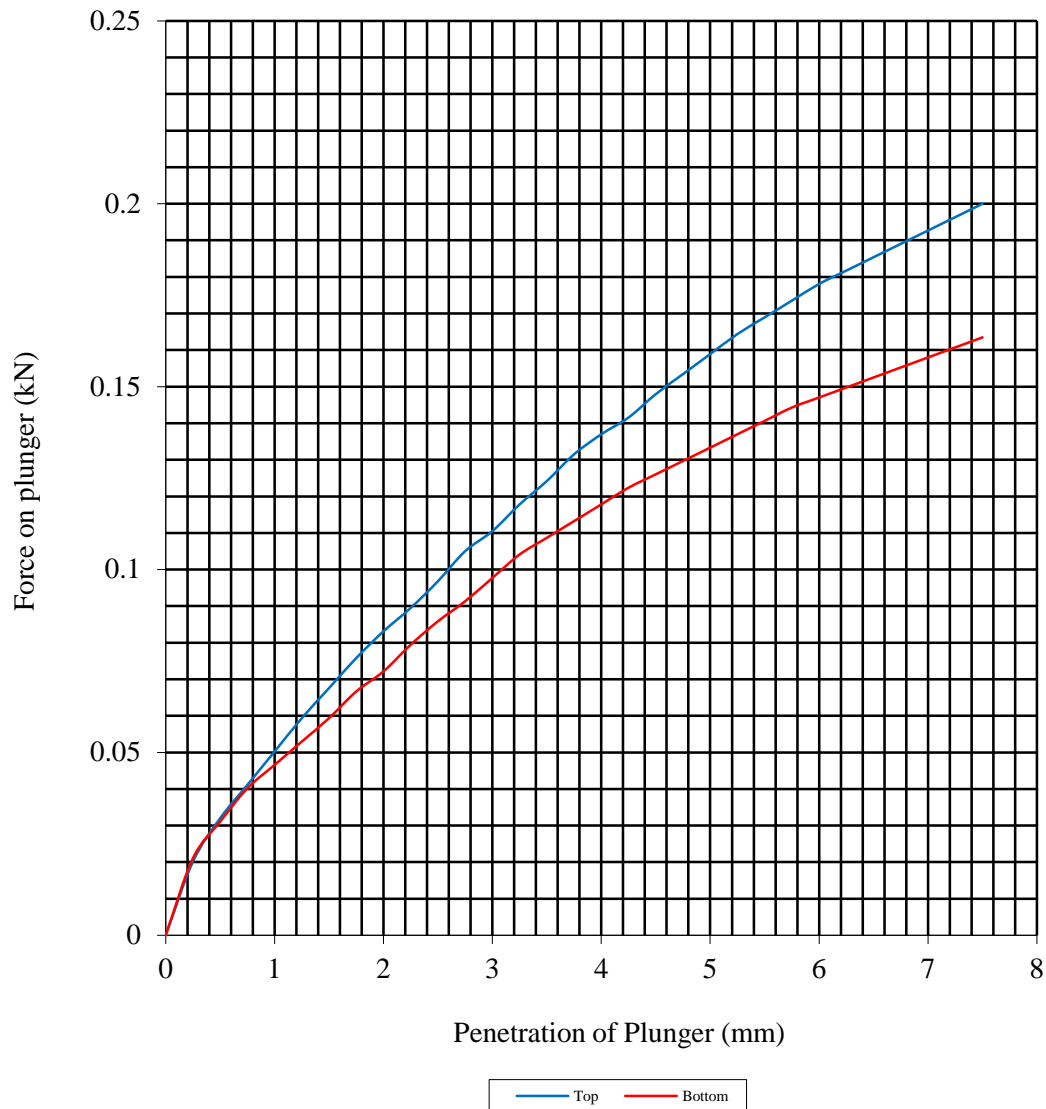
Hole Number: **BH101**

Top Depth (m): **7.50**


Sample Number:

Base Depth (m): **8.00**

Sample Type: **B**



Initial Sample Conditions		Sample Preparation		Final Moisture Content %		C.B.R. Value %	
Moisture Content:	32	Surcharge Kg:	4.20	Sample Top	32	Sample Top	0.8
Bulk Density Mg/m ³ :	1.82	Soaking Time hrs	0	Sample Bottom	32	Sample Bottom	0.7
Dry Density Mg/m ³ :	1.38	Swelling mm:	0	Remarks: See summary of soil descriptions.			
Percentage retained on 20mm BS test sieve:			0				
Compaction Conditions		2.5kg Rammer					

 	Checked / Approved		Date	18/07/16	Contract No:
	Former Siemen's Factory, Hebburn				PSL16/3014
					Client Ref:
					C7074

CALIFORNIA BEARING RATIO TEST

BS 1377 : Part 4 : 1990

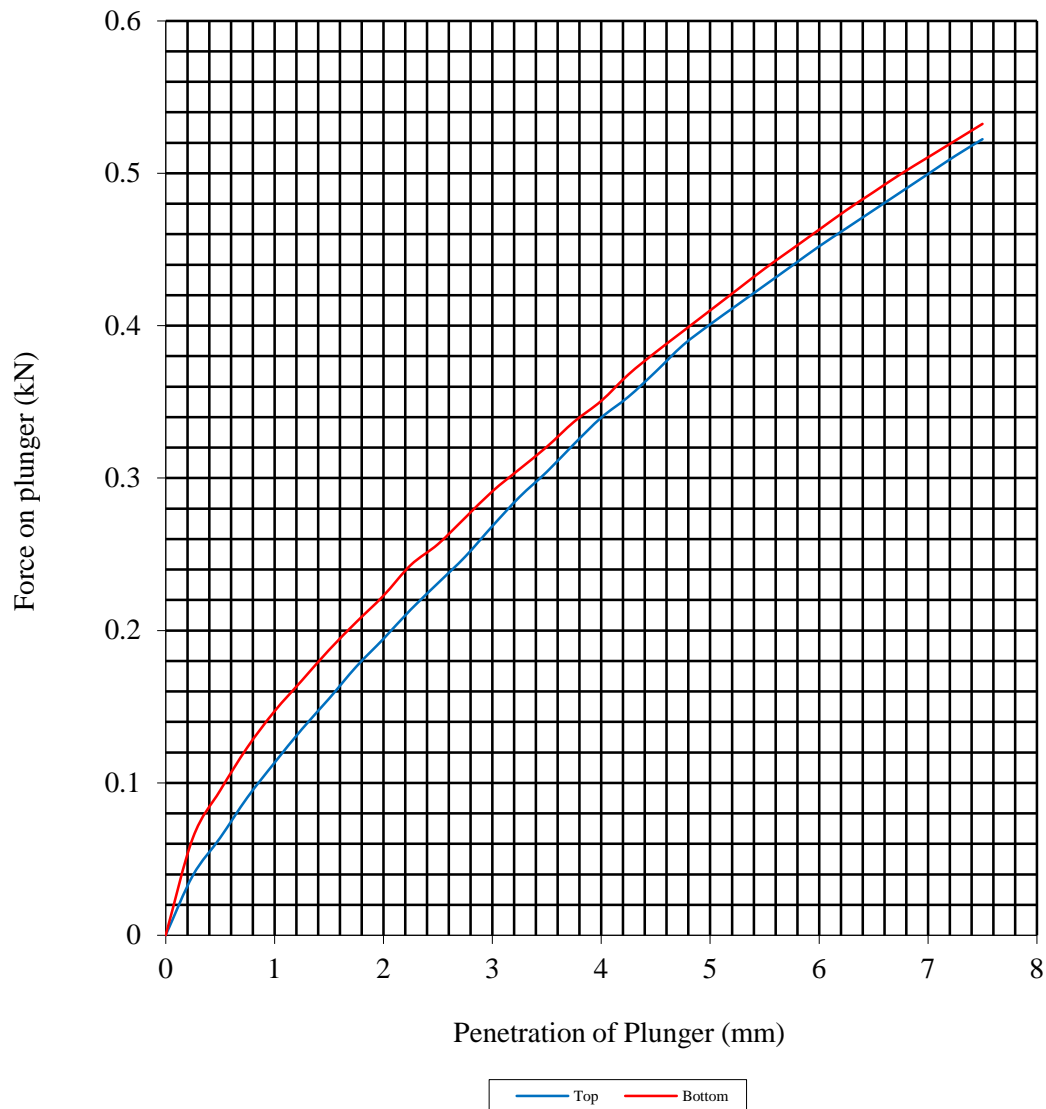
Hole Number: **BH102**

Top Depth (m): **4.50**


Sample Number:

Base Depth (m): **5.00**

Sample Type: **B**



Initial Sample Conditions		Sample Preparation		Final Moisture Content %		C.B.R. Value %	
Moisture Content:	25	Surcharge Kg:	4.20	Sample Top	25	Sample Top	2.0
Bulk Density Mg/m ³ :	1.89	Soaking Time hrs	0	Sample Bottom	25	Sample Bottom	2.1
Dry Density Mg/m ³ :	1.51	Swelling mm:	0	Remarks: See summary of soil descriptions.			
Percentage retained on 20mm BS test sieve:			0				
Compaction Conditions		2.5kg Rammer					

		Checked / Approved		Date	18/07/16	Contract No:	PSL16/3014		
		Former Siemen's Factory, Hebburn						Client Ref:	C7074



Certificate of Analysis

Certificate Number 16-72222

12-Jul-16

Client Professional Soils Laboratory Ltd
5/7 Hexthorpe Road
Hexthorpe
DN4 0AR

Our Reference 16-72222

Client Reference PSL16/3014

Order No (not supplied)

Contract Title Former Siemen's Factory, Hebburn

Description 8 Soil samples.

Date Received 08-Jul-16

Date Started 08-Jul-16

Date Completed 12-Jul-16

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the scope of UKAS accreditation. 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. Observations and interpretations are outside the scope of ISO 17025. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

A handwritten signature in black ink, appearing to read "Rob Brown".

Rob Brown
Business Manager



Summary of Chemical Analysis

Soil Samples

Our Ref 16-72222

Client Ref PSL16/3014

Contract Title Former Siemen's Factory, Hebburn

Lab No	1020124	1020125	1020126	1020127	1020128	1020129	1020130	1020131
Sample ID	TP104	TP109	TP111	TP137	TP138	TP141	TP144	TP145
Depth	1.00-1.50	0.50-1.00	1.40-1.60	1.30	1.00	1.10	1.60-1.80	0.90-1.10
Other ID								
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units								
Inorganics											
pH	DETSC 2008#			7.3	7.8	8.3	8.5	8.6	7.9	8.1	8.2
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	45	170	72	24	180	130	150	140

Information in Support of the Analytical Results

Our Ref 16-72222
 Client Ref PSL16/3014
 Contract Former Siemen's Factory, Hebburn

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1020124	TP104 1.00-1.50 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), pH + Conductivity (7 days)	
1020125	TP109 0.50-1.00 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), pH + Conductivity (7 days)	
1020126	TP111 1.40-1.60 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), pH + Conductivity (7 days)	
1020127	TP137 1.30 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), pH + Conductivity (7 days)	
1020128	TP138 1.00 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), pH + Conductivity (7 days)	
1020129	TP141 1.10 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), pH + Conductivity (7 days)	
1020130	TP144 1.60-1.80 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), pH + Conductivity (7 days)	
1020131	TP145 0.90-1.10 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), pH + Conductivity (7 days)	

Key: P-Plastic T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months



APPENDIX F

SIRIUS GENERIC ASSESSMENT CRITERIA



The Sirius Group

Stage 1 Threshold Concentrations for Clean Cover Material for Use in Gardens of Private Residential Properties

Parameter	Threshold Concentration (mg/kg, unless otherwise stated)			Comment
	1% SOM*	2.5% SOM	5% SOM	
Metals/Metalloids				
Arsenic (inorganic)	37			
Cadmium	11			Soil pH 6-9
Chromium (III)	910			
Copper	200			Based on phytotoxic effect
Lead	200			
Mercury (inorganic)	40			
Nickel	180			
Selenium	250			
Zinc	450			Based on phytotoxic effect
Other Inorganics				
pH	<5 or >9			Must be in range 5-9
Water-Soluble Sulphate	0.5 g/l			
Organics				
PAHs**				
Total 16 PAHs	100	100	100	Professional judgement
Benzo(a)pyrene	2.1	2.1	2.2	Genotoxic surrogate
Naphthalene	1.0	2.3	4.6	
TPH†				
Sum of TPH fractions EC5-35	500	500	500	Professional judgement
Aliphatic EC 5-6	24	41	68	
Aliphatic EC >6-8	53	110	210	
Aliphatic EC >8-10	13	31	61	
Aliphatic EC >10-12	62	150	300	
Aliphatic EC >12-16	510	1200	2300	
Aliphatic EC >16-35	41000	70000	90000	
Aromatic EC >5-7	53	110	200	
Aromatic EC >7-8	100	240	460	
Aromatic EC >8-10	20	48	94	
Aromatic EC >10-12	63	150	290	
Aromatic EC >12-16	140	320	570	
Aromatic EC >16-21	260	540	840	
Aromatic EC >21-35	1100	1500	1700	
TPH Hazard Index (no units)	<1	<1	<1	
BTEX‡				
Benzene	0.063	0.13	0.24	
Miscellaneous Organics				
Phenol	270	440	440	440mg/kg is the skin irritation threshold
Other Parameters				
Asbestos	Fibres present			

Based on sandy soil at a range of soil organic matter contents and assuming a standard residential with gardens land use. Alternative criteria may be specified for other soil types and SOM contents, for soils placed at depth, or for other land uses.

Notes:

* Soil organic matter; %SOM = 1.724 * %TOC.

** Soils must meet the specified criteria for each component **AND** the sum of 16 PAHs. The total is specified to prevent unsuitable materials being placed as cover. Where an individual PAH is not shown, then its criterion is greater than that for the sum or it is a genotoxic PAH assessed by using benzo(a)pyrene as a surrogate marker.

† Soils must meet the specified criteria for each component and the Hazard Index for TPH must be <1.0. The sum of TPH fractions must also be met to prevent unsuitable materials being placed as cover. Where an individual TPH fraction has a criterion greater than that for the sum of TPH fractions, the value is solely provided for the calculation of the Hazard Index.

‡ Components other than benzene are not genotoxic carcinogens and therefore assessed as part of the TPH mixture.

Soils must have no visual or olfactory evidence of contamination.



GAC VALUES FOR CONTROLLED WATERS IN ENGLAND AND WALES

Parameter	GAC (µg/l, unless stated)			Notes
	Inland waters		Coastal and transition waters	
	EQS	DWS	EQS	
Metals and metalloids				
Arsenic	50	10	25	1
Cadmium	See separate table	5	0.2	1, 2
Chromium (total)	4.7	50	N.A.	1, 3
Copper	1.0 (bioavailable)	2000	3.76	1, 4
Lead	1.2 (bioavailable)	10	1.3	1, 4
Mercury	0.07	1.0	0.07	1, 4, 5
Nickel	4.0 (bioavailable)	20	8.6	1, 4
Zinc	10.9 (bioavailable) + background	5000	6.8 + background	1, 4, 6
Misc. inorganics				
Ammonia (total, as N)	See separate table	N.A.	N.A.	7
Ammonia (total, as NH ₄ ⁺)	N.A.	500	N.A.	
Ammonia (un-ionised (NH ₃), as N)	N.A.	N.A.	21	7
Sulphate	400 mg/l	250 mg/l	N.A.	8
Petroleum hydrocarbons and related				
TPH (speciated analysis) <i>per fraction</i>	10	10	10	9, 10
Benzene	10	1.0	8	
Toluene	74	700	74	11
Xylenes (sum)	N.A.	500	N.A.	11
MTBE	2600	200	2600	12, 13
PAHs				
Anthracene	0.1	N.A.	0.1	
Benzo(b)fluoranthene + Benzo(k)fluoranthene (sum)	N.A.	Sum of 4 = 0.1	N.A.	
Benzo(g,h,i)perylene + indeno(1,2,3-c,d)pyrene (sum)	N.A.		N.A.	
Benzo(a)pyrene	1.7E-04	0.01	1.7E-04	
Fluoranthene	0.0063	N.A.	0.0063	
Naphthalene	2.0	N.A.	2.0	
Phenol				
Phenol	7.7	0.5	7.7	
Chlorinated organics				
Dichloromethane	20	N.A.	20	
Trichloromethane (chloroform)	2.5	100	2.5	14
Tetrachloromethane (carbon tetrachloride)	12	3.0	12	
1,2-dichloroethane (1,2-DCA)	10	N.A.	10	
1,1,1-trichloroethane (1,1,1-TCA)	100	N.A.	100	

Cadmium - inland waters EQS	
Hardness (as mg/l CaCO ₃)	EQS (µg/l)
<40	0.08
40-50	0.08
50-100	0.09
100-200	0.15
>=200	0.25

Ammonia - inland waters EQS		
Alkalinity (as mg/l CaCO ₃)	Altitude	EQS (µg/l)
<10	Any	300
10-50	Any	300
50-100	<80m	600
50-100	>80m	300
100-200	<80m	600
100-200	>80m	300
>200	Any	600



Parameter	GAC (µg/l, unless stated)			Notes
	Inland waters		Coastal and transition waters	
	EQS	DWS	EQS	
1,1,1,2-trichloroethane (1,1,2-TCA)	400	N.A.	300	
Trichloroethene (TCE)	10	Sum of 2 = 10	10	
Tetrachloroethene (PCE)	10		10	
Vinyl chloride	N.A.	0.5	N.A.	

Notes referenced in table:

1. Metals and metalloid EQS relate to dissolved contamination only (i.e. analysis of filtered samples).
2. Inland waters EQS for cadmium is dependent upon hardness or alkalinity of the receiving surface water. See separate table.
3. Separate EQS standards exist for Cr III and CrVI in fresh water. The fresh water Cr III has been value adopted as the screening value for total Cr analysis as it is normally the predominant form in solution. Specific EQS for Cr VI (3.4µg/l in freshwater; 0.6µg/l in transition and coastal waters) must be applied where relevant.
4. The bioavailable concentration of copper, nickel and zinc in fresh water is dependent upon the pH, DOC and calcium data for the receiving surface water. These data should be collected whenever possible to calculate an equivalent GAC for total metal concentration using the UKTAG m-BAT spreadsheet model. Although the standard indicates that lead should be assessed on a bioavailable basis, no tool is currently available and this criterion should be applied as-is for screening purposes.
5. The value for mercury is the Maximum Acceptable Concentration (MAC) as no annual average EQS is specified in the legislation.
6. The EQS for zinc may be adjusted for the ambient uncontaminated background concentration in the receiving surface water where data are available.
7. EQS for ammonia in inland waters depends on the hardness and altitude of the receiving water body - see separate table. The criteria given here are based on the attainment of "good" chemical quality in the water body.
8. Inland waters EQS for sulphate is non-statutory (see: <http://evidence.environment-agency.gov.uk/ChemicalStandards/home.aspx>)
9. No concentration-based EQS values currently exist for TPH. In the absence of specific criteria, our recent discussions with the Environment Agency have led us to adopt 10µg/l for each individual fraction determined by speciated TPH (TPHCWG) analysis.
10. No concentration-based DWS exists for TPH. A sum TPH concentration of 200µg/l defines the DW2 Class threshold limit in the Surface Water (Abstraction for Drinking Water) (Classification) Regulations 1996; DW2 waters are generally suitable for abstraction as drinking water supplies, subject to standard filtration and chemical treatment. We therefore consider that the 10µg/l criterion for each fraction provides a reasonable and proportionate basis for the initial assessment of risk posed to off-site groundwater and/or surface water potable abstractions that may be impacted at a downgradient abstraction point by TPH contamination originating from the site.
11. The drinking water-based criteria are from World Health Organisation (WHO) Guidelines for Drinking Water Quality, 2008. Taint may result at lower concentrations.
12. The "EQS" given here for MTBE is the PNEC value for fresh and sea water life given in: EU Risk Assessment Report (2002) MTBE, 3rd Priority List, volume 19.
13. DWS for MTBE is a 5-fold dilution of the USEPA (1997) Drinking Water Advisory value for taint, EPA-822-F-97-009. Toxicological thresholds are significantly higher.
14. Sum trihalomethanes limit for drinking water is 100µg/l but chloroform is only compound of this class normally encountered at contaminated sites.

Sources and general comments

Unless otherwise stated, EQS-based GACs are annual average surface water quality criteria given in Table 1 within Part 3 (Priority Substances) or long-term average criteria given in Table 1 within Part 2 (Specific Pollutants) of The Water Framework Directive (Standards and Classification) Directions (England and Wales), 2015.

Unless otherwise stated, drinking water standard-based GACs are taken from the Water Supply (Water Quality) (Amendment) Regulations 2000, 2001 and 2007 and relate to concentration at the supply point and/or consumers' taps.

This list presents recommended GAC values for commonly monitored analytes but is not exhaustive. A comprehensive list of current statutory criteria is given in the referenced legislation. Some additional criteria can also be found at: <http://evidence.environment-agency.gov.uk/ChemicalStandards/home.aspx>.



The Sirius Group

Generic Assessment Criteria for PAHs in Soils When Surrogate Marker Approach is Invalid

Parameter	Residential (mg/kg)						Commercial / Industrial (mg/kg)			Note
	With Homegrown Produce			Without Homegrown Produce			1% SOM	2.5% SOM	5% SOM	
	1% SOM	2.5% SOM	5% SOM	1% SOM	2.5% SOM	5% SOM				
Acenaphthene	200	490	920	2000	3600	4900	75000	92000	100000	
Acenaphthylene	170	400	760	2000	3600	4900	76000	93000	100000	
Anthracene	2300	5300	9400	30000	34000	36000	520000	540000	540000	
Benzo(a)anthracene	7.5	11	13	12	14	15	170	170	180	
Benzo(a)pyrene	2.2	2.7	2.9	3.2	3.2	3.2	35	35	36	
Benzo(b)fluoranthene	2.6	3.3	3.6	4.0	4.0	4.1	45	45	45	
Benzo(k)fluoranthene	77	93	99	110	110	110	1200	1200	1200	
Benzo(g,h,i)perylene	320	340	350	360	360	360	3900	4000	4000	
Chrysene	15	22	26	30	31	32	350	350	360	
Dibenzo(a,h)anthracene	0.24	0.28	0.30	0.31	0.32	0.32	3.5	3.6	3.6	
Fluoranthene	280	560	820	1500	1600	1600	23000	23000	23000	
Fluorene	170	390	730	2200	3400	4000	60000	67000	70000	
Indeno(1,2,3-c,d)pyrene	27	36	40	45	46	46	510	510	510	
Naphthalene	1.0	2.3	4.6	1.0	2.4	4.7	110	260	510	
Phenanthrene	95	220	380	1300	1400	1500	22000	22000	23000	
Pyrene	620	1200	1900	3700	3800	3800	54000	54000	54000	

All concentration-based criteria are rounded to 2 significant figures.

The criteria assume a sandy soil type, which will be conservative for the great majority of soils (including made ground) encountered on historically contaminated sites.

Criteria have been derived by Sirius using CLEA version 1.06. Parameters for the land use cases are consistent with those given in Environment Agency (2009) "Updated Technical Background to the CLEA Model", report SC050021/SR3 but updated (where relevant) for respiration rate, exposure frequency for dermal contact outdoors, soil adherence factors for children, and plant uptake concentration factors given in CL:AIRE (2014) and Nathanail et al., (2015). No correction has been made for the "Top Two" crop types in the Residential with Homegrown Produce land use and the criteria will therefore be conservative in this regard.

Health Criteria Values (HCVs) and (except where specifically noted) chemical property data were obtained from Nathanail et al. (2015).



APPENDIX G

GAS AND GROUNDWATER MONITORING RESULTS

Ground Gas and Groundwater Monitoring Record Sheet



JOB DETAILS:

Client: Miller Homes (Northeast) Ltd
 Site: Former Siemens Factory, Hebburn
 Date: 14/07/2016

Job No: C7074
 Visit No: 1 of 6
 Operator: DFB Project Manager: RCS

Monitoring Point	GAS CONCENTRATIONS												VOLATILES		FLOW DATA			Worst-credible GSVs		WELL AND WATER DATA					Comments	
	Methane (%v/v)		%LEL		Carbon dioxide (%v/v)		Carbon monoxide (ppmv)		Hydrogen sulphide (ppmv)		Oxygen (%v/v)		PID Peak (ppm)	Product thickness (mm)	Flow rate (l/hr)		Differential borehole Pressure (Pa)	Time for flow to equalise (secs)	Methane (l/hr)	CO2 (l/hr)	Water level (mbgl)	Depth of well (m)	Reduced level (mAOD)	Water level (mAOD)		Response Zone
	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Min.	Steady			Peak	Steady										
WS101	ND	ND	ND	ND	0.0	0.0	ND	ND	ND	ND	20.7	20.7	NR	NR	0.0	0.0			0	0	1.75	4.00				
RO103A	ND	ND	ND	ND	1.3	1.3	ND	ND	ND	ND	9.4	9.4	NR	NR	-34.4	0.0			0.0344	0	2.37	2.75				
WS105	ND	ND	ND	ND	0.9	0.9	ND	ND	ND	ND	19.9	19.9	NR	NR	0.0	0.0			0	0	3.95	4.00				
WS104	ND	ND	ND	ND	0.0	0.0	ND	ND	ND	ND	20.6	20.6	NR	NR	0.0	0.0			0	0	1.10	3.70				
RO106	ND	ND	ND	ND	1.9	1.9	ND	ND	ND	ND	17.5	17.5	NR	NR	0.0	0.0			0	0	Dry	5.00				
WS103	ND	ND	ND	ND	0.8	0.7	ND	ND	ND	ND	19.9	19.9	NR	NR	0.0	0.0			0	0	3.63	3.93				
RO104	0.2	0.2	4.2	4.2	3.8	3.7	ND	ND	ND	ND	2.1	2.1	NR	NR	0.0	0.0			0	0	4.52	5.48				
WS102	ND	ND	ND	ND	0.0	0.0	ND	ND	ND	ND	18.8	18.8	NR	NR	63.7	0.1			0.0637	0	0.64	3.80				Bailed to 3.6m. 8.5l removed
RO105	ND	ND	ND	ND	2.8	2.7	ND	ND	ND	ND	9.7	9.7	NR	NR	-51.9	0.0			0.0519	0	4.73	5.00				
																			0	0						
																			0	0						
																			0	0						
																			0	0						
Max	0.2	0.2	4.2	4.2	3.8	3.7	ND	ND	ND	ND	20.7	20.7	ND	ND	63.7	0.1	ND	NA	0.0637	0.0000	4.73	5.48	NR	NR		
Min	ND	ND	ND	ND	0.0	0.0	ND	ND	ND	ND	2.1	2.1	0.0	0.0	-51.9	0.0	0.0	0	0.0000	0.0000	DRY	2.75	0.00	0.00		

ND - Not detected
 NR - Not recorded
 NA - Non applicable

Worst-possible GSVs	
0.1274	0.0037

MG - Made ground
 NAT - Natural
 C - Cohesive
 G - Granular

NB: Where no flow (ND) recorded, GSVs are calculated using equipment limit of detection (0.1l/hr). Where negative flows recorded, these are converted to positive values for calculation of GSVs.

METEOROLOGICAL AND SITE INFORMATION:

(Select correct box with X or enter data, as applicable)

State of ground: Dry Moist Wet Snow Frozen
 Wind: Calm Light Moderate Strong
 Cloud cover: None Slight Cloudy Overcast
 Precipitation: None Slight Moderate Heavy
 Time monitoring performed: Start End
 Barometric pressure (mbar): 1017 Start 1017 End
 Pressure trend (Daily): Falling Steady Rising
 Source: weather on line.co.uk
 Air Temperature (Deg. C): 17% Before 17% After

INSTRUMENTATION TECHNICAL SPECIFICATIONS:

Ground gas meter: GFM436-12746
 Gas Range: CH₄ 0-100% CO₂ 0-100% O₂ 0-25%
 Gas Flow range:
 Differential Pressure:
 Date of last calibration: 01/07/2016
 Date of next calibration: 01/08/2016
 Ambient air check: CH₄ 0.0% CO₂ 0.0% O₂ 21.0%

PID:
 Calibrated range:
 Calibration gas:
 Response time:
 Accuracy:
 Date of last calibration:
 Date of next calibration:

Ground Gas and Groundwater Monitoring Record Sheet



JOB DETAILS:

Client: Miller Homes (Northeast) Ltd
 Site: Former Siemens Factory, Hebburn
 Date: 27/07/2016

Job No: C7074
 Visit No: 2 of 6
 Operator: DFB Project Manager: RCS

Monitoring Point	GAS CONCENTRATIONS												VOLATILES		FLOW DATA			Worst-credible GSVs		WELL AND WATER DATA					Comments		
	Methane (%v/v)		%LEL		Carbon dioxide (%v/v)		Carbon monoxide (ppmv)		Hydrogen sulphide (ppmv)		Oxygen (%v/v)		PID Peak (ppm)	Product thickness (mm)	Flow rate (l/hr)		Differential borehole Pressure (Pa)	Time for flow to equalise (secs)	Methane (l/hr)	CO2 (l/hr)	Water level (mbgl)	Depth of well (m)	Reduced level (mAOD)	Water level (mAOD)		Response Zone	
	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Min.	Steady			Peak	Steady											
WS101	ND	ND	ND	ND	0.2	0.2	ND	ND	ND	ND	20.3	20.3	NR	NR	0.0	0.0			0	0	1.74	4.00				Groundwater sample collected	
RO103A	ND	ND	ND	ND			ND	ND	ND	ND			NR	NR					0	0		2.75					
WS105	ND	ND	ND	ND	0.9	0.9	ND	ND	ND	ND	20.0	20.0	NR	NR	0.0	0.0			0	0	3.52	4.00				Groundwater sample collected	
WS104	ND	ND	ND	ND	0.9	0.9	ND	ND	ND	ND	20.2	20.2	NR	NR	0.0	0.0			0	0	1.18	3.70				Groundwater sample collected	
RO106	ND	ND	ND	ND	1.5	1.5	ND	ND	ND	ND	18.7	18.7	NR	NR	0.0	0.0			0	0	Dry	5.00					
WS103	ND	ND	ND	ND	1.9	1.9	ND	ND	ND	ND	19.2	19.2	NR	NR	0.0	0.0			0	0	3.19	3.93				Groundwater sample collected	
RO104	ND	ND	ND	ND	5.9	6.0	ND	ND	ND	ND	4.4	4.4	NR	NR	0.0	0.0			0	0	4.07	5.48					
WS102	ND	ND	ND	ND	0.0	0.0	ND	ND	ND	ND	17.1	17.1	NR	NR	64.0	0.0			0.064	0	0.78	3.80				Groundwater sample collected	
RO105	ND	ND	ND	ND	4.8	4.8	ND	ND	ND	ND	-0.3	-0.3	NR	NR	119.7	0.0			0.1197	0	4.54	5.00					
																			0	0							
																			0	0							
																			0	0							
																			0	0							
																			0	0							
Max	ND	ND	ND	ND	5.9	6.0	ND	ND	ND	ND	20.3	20.3	ND	ND	119.7	0.0	ND	NA	0.1197	0.0000	4.54	5.48	NR	NR			
Min	ND	ND	ND	ND	0.0	0.0	ND	ND	ND	ND	-0.3	-0.3	0.0	0.0	0.0	0.0	0.0	0	0.0000	0.0000	DRY	2.75	0.00	0.00			

ND - Not detected
 NR - Not recorded
 NA - Non applicable

Worst-possible GSVs	
0.1197	0

MG - Made ground
 NAT - Natural
 C - Cohesive
 G - Granular

NB: Where no flow (ND) recorded, GSVs are calculated using equipment limit of detection (0.1l/hr). Where negative flows recorded, these are converted to positive values for calculation of GSVs.

METEOROLOGICAL AND SITE INFORMATION:

(Select correct box with X or enter data, as applicable)

State of ground: Dry Moist Wet Snow Frozen
 Wind: Calm Light Moderate Strong
 Cloud cover: None Slight Cloudy Overcast
 Precipitation: None Slight Moderate Heavy
 Time monitoring performed: Start End
 Barometric pressure (mbar): 1007 Start 1007 End
 Pressure trend (Daily): Falling Steady Rising
 Source: weather on line.co.uk
 Air Temperature (Deg. C): 20% Before 20% After

INSTRUMENTATION TECHNICAL SPECIFICATIONS:

Ground gas meter: GFM436-12746
 Gas Range: CH₄ 0-100% CO₂ 0-100% O₂ 0-25%
 Gas Flow range: 0-20l/hr
 Differential Pressure: +/-500mb
 Date of last calibration: 01/07/2016
 Date of next calibration: 01/08/2016
 Ambient air check: CH₄ 0.0% CO₂ 0.0% O₂ 21.0%

PID:
 Calibrated range:
 Calibration gas:
 Response time:
 Accuracy:
 Date of last calibration:
 Date of next calibration:

Ground Gas and Groundwater Monitoring Record Sheet



JOB DETAILS:

Client: Miller Homes (Northeast) Ltd
 Site: Former Siemens Factory, Hebburn
 Date: 09/08/2016

Job No: C7074
 Visit No: 3 of 6
 Operator: DFB Project Manager: RCS

Monitoring Point	GAS CONCENTRATIONS												VOLATILES		FLOW DATA			Worst-credible GSVs		WELL AND WATER DATA					Comments	
	Methane (%v/v)		%LEL		Carbon dioxide (%v/v)		Carbon monoxide (ppmv)		Hydrogen sulphide (ppmv)		Oxygen (%v/v)		PID Peak (ppm)	Product thickness (mm)	Flow rate (l/hr)		Differential borehole Pressure (Pa)	Time for flow to equalise (secs)	Methane (l/hr)	CO2 (l/hr)	Water level (mbgl)	Depth of well (m)	Reduced level (mAOD)	Water level (mAOD)		Response Zone
	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Min.	Steady			Peak	Steady										
WS101	ND	ND	ND	ND	0.1	0.1	ND	ND	ND	ND	20.4	20.4	NR	NR	0.0	0.0			0	0	1.75	4.00				
RO103A	ND	ND	ND	ND	1.7	1.8	ND	ND	ND	ND	7.2	7.2	NR	NR	-3.1	0.0			0.0031	0	2.47	2.75				
WS105	ND	ND	ND	ND	0.9	1.0	ND	ND	ND	ND	19.8	19.8	NR	NR	0.0	0.0			0	0	3.56	4.00				
WS104	ND	ND	ND	ND	1.0	1.0	ND	ND	ND	ND	20.1	20.1	NR	NR	0.0	0.0			0	0	1.26	3.70				
RO106	ND	ND	ND	ND	2.2	2.3	ND	ND	ND	ND	18.1	18.1	NR	NR	0.0	0.0			0	0	DRY	5.00				
WS103	ND	ND	ND	ND	2.1	2.1	ND	ND	ND	ND	18.8	18.8	NR	NR	0.0	0.0			0	0	3.32	3.93				
RO104	ND	ND	ND	ND	7.1	7.2	ND	ND	ND	ND	5.1	5.1	NR	NR	0.0	0.0			0	0	3.87	5.48				
WS102	ND	ND	ND	ND	0.0	0.0	ND	ND	ND	ND	18.4	18.4	NR	NR	74.6	0.1			0.0746	0	0.75	3.80				
RO105	ND	ND	ND	ND	5.4	5.5	ND	ND	ND	ND	-0.4	-0.4	NR	NR	120.0	0.0			0.12	0	4.36	5.00				
																			0	0						
																			0	0						
																			0	0						
																			0	0						
																			0	0						
Max	ND	ND	ND	ND	7.1	7.2	ND	ND	ND	ND	20.4	20.4	ND	ND	120.0	0.1	ND	NA	0.1200	0.0000	4.36	5.48	NR	NR		
Min	ND	ND	ND	ND	0.0	0.0	ND	ND	ND	ND	-0.4	-0.4	0.0	0.0	-3.1	0.0	0.0	0	0.0000	0.0000	DRY	2.75	0.00	0.00		

ND - Not detected
 NR - Not recorded
 NA - Non applicable

Worst-possible GSVs	
0.12	0.0072

MG - Made ground
 NAT - Natural
 C - Cohesive
 G - Granular

NB: Where no flow (ND) recorded, GSVs are calculated using equipment limit of detection (0.1l/hr). Where negative flows recorded, these are converted to positive values for calculation of GSVs.

METEOROLOGICAL AND SITE INFORMATION:

(Select correct box with X or enter data, as applicable)

State of ground: Dry Moist Wet Snow Frozen

Wind: Calm Light Moderate Strong

Cloud cover: None Slight Cloudy Overcast

Precipitation: None Slight Moderate Heavy

Time monitoring performed: Start End

Barometric pressure (mbar): 1018 Start 1018 End

Pressure trend (Daily): Falling Steady Rising

Source: weather on line.co.uk

Air Temperature (Deg. C): 12% Before 12% After

INSTRUMENTATION TECHNICAL SPECIFICATIONS:

Ground gas meter: gfm436-12746

Gas Range: CH₄ 0-100% CO₂ 0-100% O₂ 0-25%

Gas Flow range: 0-20l/hr

Differential Pressure: +/-500mb

Date of last calibration: 01/08/2016

Date of next calibration: 12/09/2016

Ambient air check: CH₄ CO₂ O₂

PID:
 Calibrated range:
 Calibration gas:
 Response time:
 Accuracy:
 Date of last calibration:
 Date of next calibration:

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