GRS Stone Supplies Limited

Inert Landfill
Lower Hare Farm

Environmental Setting and Site Design Report

Job No 213189

April 2022

Environmental Consultants

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Document Control

Report for
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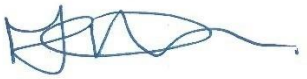

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Issue Date	Issue
April 2022	Final

Document Reference

213189/ESSD

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1.0 SITE DETAILS AND ENVIRONMENTAL CONTEXT

Site land use and other application details

1.1 The site is located 800 m west of Whitestone village, at Lower Hare Farm, Hare Lane, EX4 2HW. The site is centred at National Grid Reference SX 85762 93431. The site location is shown in drawing 213189/D/001. The site is circa 8 km west of Exeter.

1.2 The whole site comprises of approximately 11.5 hectares of land that is predominantly in use for agriculture and is bound by agricultural land on all sides, including agricultural land that is under the Landowner's ownership. There is priority deciduous woodland and a small, unnamed tributary stream of the Alphin brook situated along the western boundary of the site. The stream meets another tributary stream to the south west, which ultimately drains to the Alphin Brook.

1.3 The nearest residential properties to the site are Lower Hare Farm which is circa 210 m west (although the resident is the landowner); and Oak Ridge and Lower Hare bungalow circa 240 m south of the site. There is natural screening provided by the existing ground contours to the south. The village of Whitestone is located circa 1.1 km east of the site. There is a Public Right of Way (PRoW) along the south western boundary of the main operational area, running north to south through the internal haul route. There is a pond located on the site. Historical maps and anecdotal information show that the pond is a man-made structure. It was constructed to reduce surface water runoff rates on the steep hill slopes. These surface water courses are shown in drawing 213189/D/003A.

1.4 Detailed information about the site's environmental setting, the natural and cultural heritage and the surrounding receptors are shown in drawings 213189/D/002, 3A, 3B and 3C.

Historical Development

1.5 The operational site area, Yonder Hare Down, was historically used as agricultural land but also comprised of a mixture of rough grasslands, heath, and deciduous trees. In the 1970's, all rough grassland and heath was removed, with the site fundamentally operating as agricultural land. Previously located deciduous woodland within the western perimeter of the site was also removed, leaving Dinney Copse and Raddy Cleave Copse. Between 1905 and 1971, Lower Hare Bungalow, located south of the site, was constructed, and more recently an agricultural barn adjacent to the site was constructed under planning permission (Ref: 16/00001/AGR) granted by the Teignbridge District Council.

1.6 Planning permission (ref. 19/00207/DCC) was granted in June 2021 for the 'importation of 350,000 m^3 of inert soils and topsoil for the land raising of previously disturbed land that is not capable of sustaining commercial agriculture at Lower Hare Farm, Lane from Higher Hare towards Alderbed Copse, Whitestone, EX4 2HW.

1.7 The central southern point of the operation site is believed to have been previously utilised for tipping inert waste during the early 2000s, in which there is unfinished and non-consolidated material. This is noted on site, which shows undulating landforms not consistent with the natural valley contours.

1.8 There was a minor pollution incident to controlled waters recorded circa 230 m north west of the operational site on 18th March 1993, concerning animal waste/slurry. Additionally, there was a minor pollution incident to controlled waters recorded circa 470 m south west from the site on 25th June 1991, concerning sewage pollutants. There have been 10 more pollution incidents recorded within 1 km; however, these are all located down hydrogeological gradient of the site.

Proposed Development

1.9 It is proposed that the site is developed into an inert landfill, measuring to an area circa of 6.45 hectares. There will be the approved disposal of 350,000 m^3 of inert waste soil and topsoil, to address land that has been previously disturbed and not consolidated, raising the land for future agricultural use.

1.10 The landfilling will be undertaken in a series of phases allowing progressive restoration of land working north to south west. The phasing will be carefully constructed whilst maintaining temporary surface water drainage management. As phases become restored, there will be a proactive attempt to connect areas to the approved permanent drainage arrangement.

1.11 Acceptable inert wastes will be imported, placed, and compacted under the Environmental Permit. The imported waste material will only be accepted following the principles and checks set out in an Importation Protocol (213189/IP) that details the waste acceptance criteria. The importation protocol is based upon the assessment and standards in the McDonnell Cole Hydrogeological Risk Assessment (HRA).

1.12 The proposed final landform is shown on drawing 213189/PL/D/007.

Site General

1.13 The site is accessible via a track off the Five Mile Hill public highway, which is situated circa 300 metres to the south. The 300 m long internal access track provides good mud on road management. The PRoW crosses the internal haul route near the entrance to the main site. Safety provisions and mitigation measures will be implemented to protect both the bridleway and its users.

1.14 The site will be secured by the gate to and from Five Mile Hill and will then be secured by heras panels and heras gate at the main site entrance. Both gates will be locked out of hours. The site is also naturally secured by thick perimeter vegetation, which will not be disturbed during landfilling.

1.15 Temporary surface water management will be undertaken by a series of temporary lined ditches draining to a series of surface water lagoons in the south west of the site. Surface water management will be undertaken in accordance with the site's (appended in the Operational Plan).

1.16 The access internal haul road to the site will be surfaced with permeable hardstanding and suitable running load bearing layer for safe passing of HGV's.

1.17 Storage of fuels, oils and lubricants will be stored in the site compound area. Fuel oil will be stored in a mobile self-bunded fuel bowser. Other oils and lubricants will be stored within their own sealed containers and will be kept within lockable units inside the site cabin.

1.18 The Importation Protocol (213189/IP) details the site acceptance procedures. Any non-conforming waste will be placed in a demarcated dedicated quarantine area. In the event there is non-conforming waste, waste will be removed by the producer or transferred to a suitably licenced facility.

Basal and Side Slope Engineering

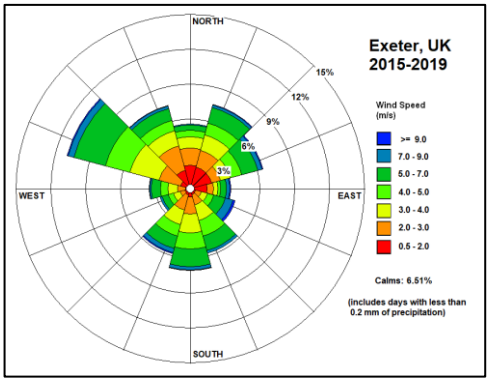
1.19 The site will be lined with a 1 m thick Geological Separation (GSL) layer over the existing underlying mudstone. Given the existing profile of the site, the GSL will require benching in to the existing slope to ensure suitable stability during construction. A Stability Risk Assessment is provided within the application.

Restoration Soils

1.20 All topsoil will be retained on site for re-use at the end of the project. In the event there is a shortfall, topsoil will be imported on to site and will meet the top 0.5 m specification within the Importation Protocol (213189/IP).

Air Quality / Climate

1.21 Meteorological wind data for 2015-2019, has been acquired from ADM Limited. The wind data has been taken from the Met Office Station in Exeter, which is approximately 14 km east of the site and is considered to be most representative of the conditions at the site. The prevailing wind is from the north west.



1.22 DEFRA Air Quality Management Areas (AQMAs) maps indicate that the site is not located within an AQMA. The nearest AQMA is located circa 4.9 km east of the site in Exeter and declares the annual average for Nitrogen Dioxide (NO_2). Additionally, a further AQMA is located circa 5.9 km north of the site in Crediton, declaring the annual average for NO_2 and Particulate Matter PM_{10}.

Geology and Hydrogeology

1.23 The existing site topography is bowl shaped, with the main direction of fall from the highest at 169 m AOD in the north east falling to circa 90 m AOD in the south west. This is the main direction of drainage towards the stream to the south west. The site does have a distinct valley shape with the trough of the valley running parallel to the southern end of the site. The current topography at the site is show in the drawing 213189/D/004A.

1.24 The BGS records identify that there are head deposits of sand with clay and gravel that run along the western boundary of the site; however, there are no other superficial deposits on site. The superficial follows the line of the stream. Bedrock geology of the site records Ashton Mudstone Member – Mudstone throughout the whole site. The geology is shown in the Envirocheck maps. The bedrock and superficial geology are designated as a Secondary A Aquifer. The geologic and hydrogeology is also discussed in the Hydrogeological Risk Assessment.

1.25 Soilscape[1] identifies the soils in the majority of the site as 'freely draining slightly acid loamy soils', and as 'slightly acid loamy and clayey soils with impeded drainage' within the superficial geological area along the west of the operational site.

1.26 The site is not located within a Groundwater Source Protection Zone, and there are no Groundwater Source Protection Zones within 1 km of the site.

1.27 There are no historic BGS borehole records on site. The nearest BGS Borehole record is SX89SE11 at Exeter Okehampton Trunk Road circa 300 m south west of the site at circa 80 m AOD. It records 'weathered grey-brown shale' underlain by 'grey shale/shale mudstone' and 'dark grey shale & silty mudstone'.

Previous Site Investigation (AAe, September 2021)

1.28 In September 2021, a total of 4 boreholes (BH101, BH102, BH103 and BH104) were constructed for gas and groundwater monitoring were constructed along the perimeter of the site. The borehole logs are shown in Appendix C.

1.29 An assessment of the groundwater quality and groundwater level is detailed in the HRA. The general groundwater direction is shown in drawing 213189/D/003C.

1.30 In February 2022, 13 trial pits were undertaken in areas of previous farmer disturbance (associated with the haul road construction in to the site). The soils data show that the materials are non-hazardous. The hardcore and topsoil materials will be removed prior to GSL construction. The

[1] https://magic.defra.gov.uk/MagicMap.aspx, accessed 05/11/2021

investigation details are shown in Appendix F. Further hand pits were undertaken in June 2022 to determine baseline leachate levels within the subsoils and topsoil on site. This is shown in Appendix G.

Groundwater Abstractions

1.31 There are 8 licenced groundwater abstractions within a 1 km radius of the site shown in Table 1 below.

Table 1. Licenced groundwater abstractions within 1 km radius of Lower Hare Farm

Operator	Abstraction	Distance from Site (m)
Mrs G Furneaux	General Agriculture	503 m north west
Mrs O E Harris	General Agriculture	567 m south
Mr S A E Snow	General Agriculture	576 m north east
Mr F F Osgood	Agriculture	748 m north west
Lt Col B R Turner	General Agriculture	910 m north west
R D Rimmer	Other Industrial / Commercial / Public Services – Process Water	942 m south west
Brookside Garage	Other Industrial / Commercial / Public Services – Process Water	942 m south west
Mrs G Furneaux	General Agriculture	967 m north west

1.32 There are no local private water supplies that are within a 1 km radius that have been reported as being present.

1.33 There are no active discharge consents at the site. The nearest discharge consent is circa 540 m north west of the site registered to Mr & Mrs A C W King (ref: NRA-SW-1992) for sewage discharges to land.

Hydrology

1.34 The site is situated in the Creedy & West Exe operational catchment. The nearest main surface water course is Alphin Brook which is located circa 290 m south of the site, which flows from west to east. Two tributaries to the Alphin Brook run west and south west of the site. The streams are small but fast flowing given the gradient on the slopes. This takes the surface water off the hill side.

1.35 There is a pond located in the south west corner of the site. The pond is a man-made feature, constructed by the previous Landowner in the early 2000s, to promote surface water attenuation and prevent risk of surface water flooding.

1.36 The site is within Flood Zone 1 and is at a low probability of flooding.

1.37 AAe have undertaken surface water quality testing in October 2021 to May 2022. This included the existing pond, up and downstream of the tributary stream to the west and upstream of the south western tributary. The locations are shown in the monitoring plan drawing 213189/D/008. The surface water results are assessed in the HRA.

Noise

1.38 The site is set within a predominantly rural and agricultural setting; however, the background noise levels were measured by LF Acoustics Ltd in September 2018. The daytime background noise level was measured at 54 dB $_{LA90}$ and an ambient day time noise level of 57 dB $_{LAeq}$. This was attributed to the A30 road traffic noise. The assessment is provided for information only. This is not for assessment by the EA's noise team. This is an approved document under the Planning Permission and concludes no adverse noise impacts will result from the activity.

Environmental Setting & Cultural and Natural Heritage

1.39 There are no statutory designated sites within 1 km of the site. The nearest priority habitats are situated along the north western boundary of the operational site, namely Dinney Copse and Raddy Cleave Copse, which are both priority deciduous woodlands. Both habitats will not be disturbed

during the works. There is a priority traditional orchard located approximately 210 m south of the operational site.

1.40 The table below details the priority habitats found within 500 m of the site, which is also detailed on drawing 213189/D/002.

Table 2. Priority habitats within 500 m of the main operational site	
Priority Deciduous Woodland Name	**Distance from site**
Dinney Copse	0 m east
Raddy Cleave Copse	0 m south
Bottom Land Copse	65 m west
Gratton Copse	80 m north
Lendon Down Copse	200 m north east
Furze Park Copse	340 m south
Little Beer Copse	470 m south west
Alderbed Copse	575 m west
Fore Close Copse	590 m east
Corsemeadow Copse	755 m west

1.41 In support of the planning application, an ecological assessment was undertaken in 2018. A population of common lizards was found in the centre of the site within the taller grass habitat. The majority of the site has very little ecological value. The surrounding hedgerows will remain undisturbed during the infilling.

1.42 The nearest listed buildings (Grade II) are Lower Hare Farm house, located approximately 210 m west of the site, whilst West Town Farm house is located approximately 220 m south of the site. Furthermore, Whitestone House is located approximately 620 m to the east of the main operational site. For detailed information please refer to the Natural and Cultural Heritage plan (drawing reference: 213189/D/003B).

1.43 The nearest scheduled monument is Tithe Barn at Glebe House, circa 1.2 km northeast of the site.

1.44 There are no schools within 1 km of the site. There are no medical practices within 1 km of the site.

Surface Water Management

1.45 Surface water will be managed in accordance with a series of temporary and permanent swale receiving the site's surface water runoff. The swales will discharge to a series of temporary surface water lagoons in the south western corner of the site. As phases become restored, the permanent drainage arrangement will be constructed to promote clean water runoff and bypass upgradient areas of the site from entering the active infilling areas.

Gas Monitoring

1.46 Gas monitoring will be in accordance with the Gas Risk Assessment. This is shown in Appendix E.

3.0 SOURCE PATHWAY LINKAGES AND CONCEPTUAL MODEL

3.1 Human Health / Loss of Amenity – Noise and Vibration. The works involve the importation and placement of suitable material consisting of inert construction and demolition subsoil arisings, which will involve the following plant: tipper lorries, one bulldozer, and one excavator. The majority of the site works will occur within a natural "bowl" with natural screening provided on all sides apart from the south western corner. The nearest sensitive receptor is Lower Hare Farm residents (also the Landowner in favour of the development), and users of the public right of ways in the locality. No activities will take place outside of normal working hours. The operations have been assessed under an approved (by the local Authority) noise assessment and no further requirements are necessary.

3.2 Human Health / Natural Heritage / Loss of Amenity – Dust and mud. The works involve the importation and placement of suitable material, which will involve tipper lorries, one bulldozer, and one excavator. The nearest sensitive receptor is Lower Hare Farm residents (also the Landowner in favour of the development), and users of the public right of ways in the locality. Without suitable working controls the works may potentially cause fugitive dust emissions, mud deposition on the road and a loss of amenity and potential nuisance to surrounding sensitive receptors. The site will maintain a 200 m long internal haul route, and wheel wash at the site. A Dust Emissions Management Plan sets out the dust controls.

3.3 Cultural Heritage and Natural Heritage – Direct and Indirect impact: Given the distance and type of operations, there is a very low risk of direct or indirect impact on the Listed Structures or any Schedule Ancient Monuments. A previous ecological survey was carried out by South West Ecology Limited in 2018. Habitats recorded included arable grassland, species-poor semi-improved grassland, tall ruderal/grassland and species-rich hedgerows. A 'good' population of common lizard was recorded on the site, with no evidence of other protected species recorded. There are no ecologically statutory designated sites located on or adjacent to the site, or within the 2 km study area. Mitigation and ongoing controls will be managed under the Planning Permission conditions.

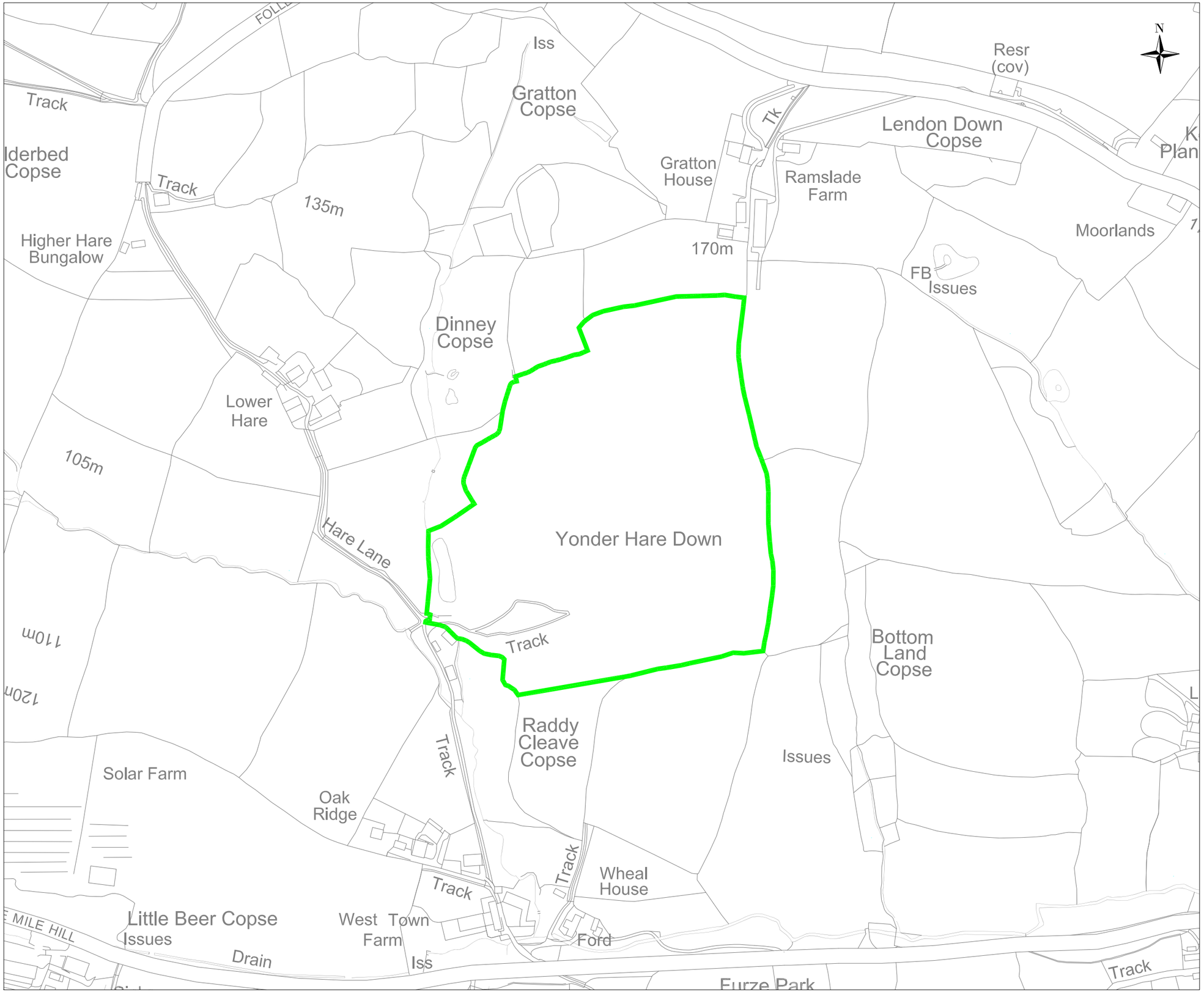
3.4 Controlled Waters – Pollution: - The import of potentially contaminated materials or spillages of oils and hydrocarbons creates a risk of potential pollutants entering the surface water. A spill response and accident prevention plan will form part of the site's specific Environmental Management Systems (EMS). The implementation of the Importation Protocol (213189/IP) will ensure only acceptable fill material is imported. The Hydrogeological Risk Assessment (HRA) assesses the inert criteria for reuse of materials. The importation criteria will use the appropriate inert landfill, human health criteria and leachable criteria (in accordance with the site-specific HRA). The surface water management will be managed in accordance with construction best practice; with emphasis on restoring areas and vegetating as quickly as possible to promote natural attenuation.

3.5 Ground Gas – Following the restoration, the site will be returned to agricultural land uses. The restoration works at the site will only import inert material, with a low organic content and re-use of site won topsoil material. The risk of ground gas generation from inert material is not considered significant. The gas risk and monitoring are detailed in the Gas Risk Assessment shown in Appendix E.

3.6 Stability - The final land use is not at risk of the impacts of stability. Given the accepted waste types are limited to mineral / aggregate only, the risk of instability is not considered significant. The works will be in accordance with an approved design. The Operator will use well known earthworks compaction techniques to ensure material is suitably compacted during landfilling. During construction, earthworks will be kept at safe angles of repose. No further stability risk assessment is considered necessary.

3.7 A Site Condition Report detailing the current baseline conditions is submitted with the application.

DRAWINGS



Key:

Permit Site Boundary

Rev.	Details	Drawn / Chkd.	Date

Project

213189
Lower Hare Farm

Title

Permit Boundary Plan

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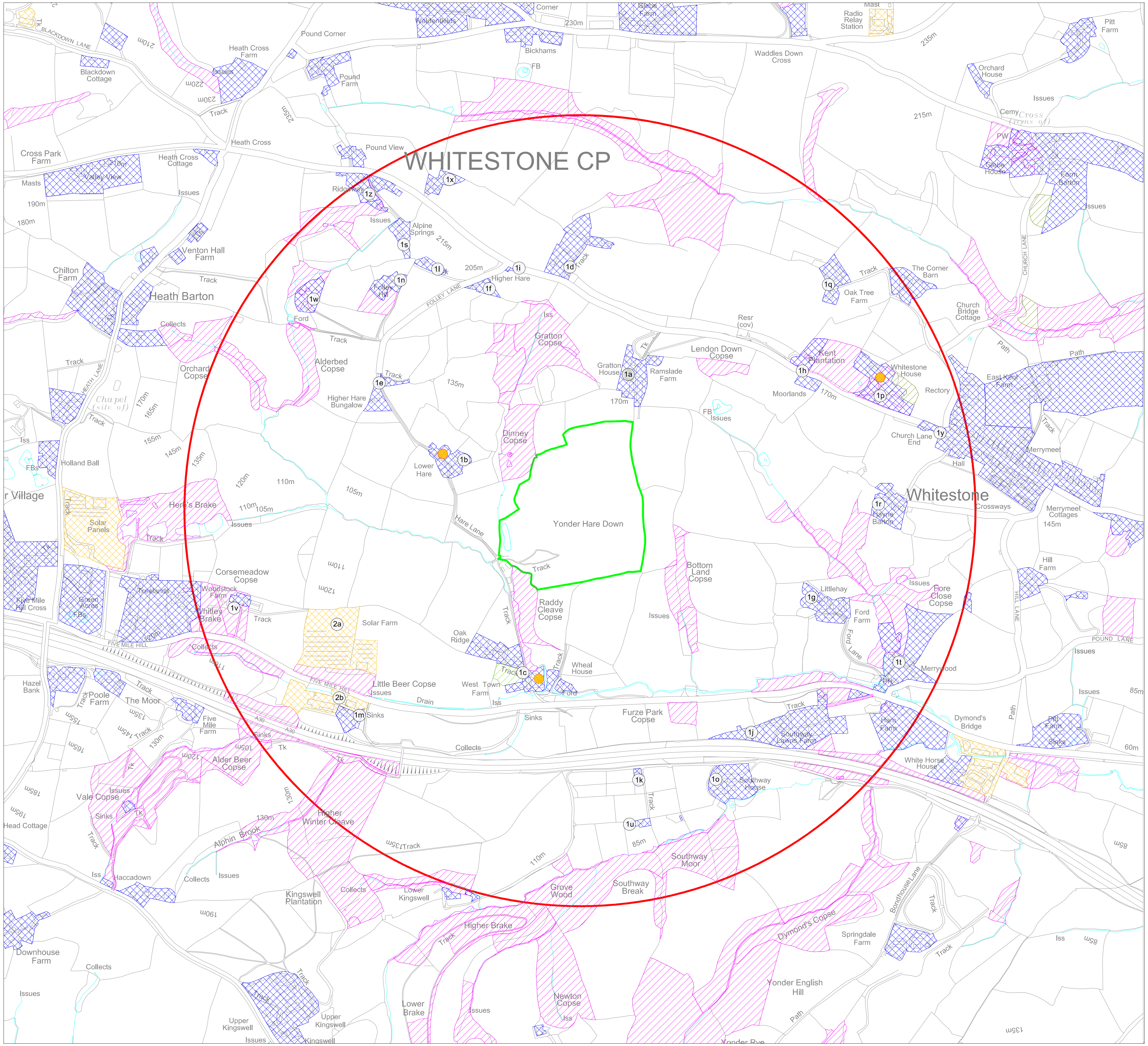
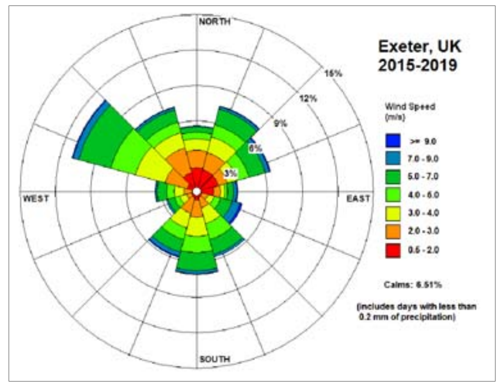


N

Key:

- Permit Site Boundary
- 1km Radius
- Listed Buildings
- Commercial/Industrial Receptors
- Residential Receptors
- Priority Habitat - Deciduous Woodland
- Priority Habitat - Traditional Orchard
- Surface Water Course Receptors



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Title

Site Receptor Plan

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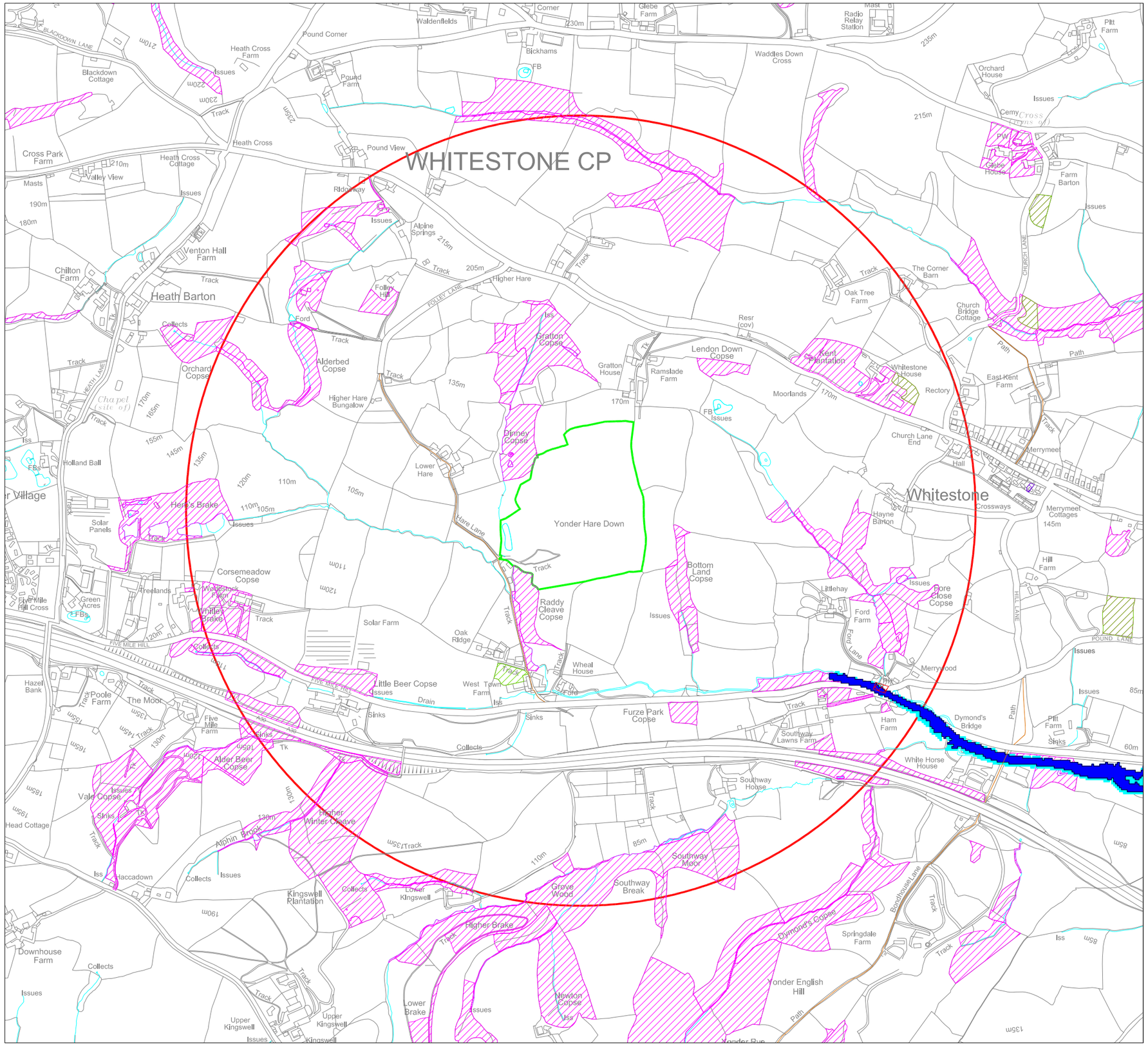

Key:

- Permit Site Boundary
- 1km Radius
- Priority Habitat - Deciduous Woodland
- Priority Habitat - Traditional Orchard
- Recreational Areas
- Educational Areas
- Surface Water Course
- Flood Zone 2
- Flood Zone 3
- Public Right of Way

Rev.	Details	Drawn / Chkd.	Date

Project

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Lower Hare Farm

Title

Environmental Setting Plan

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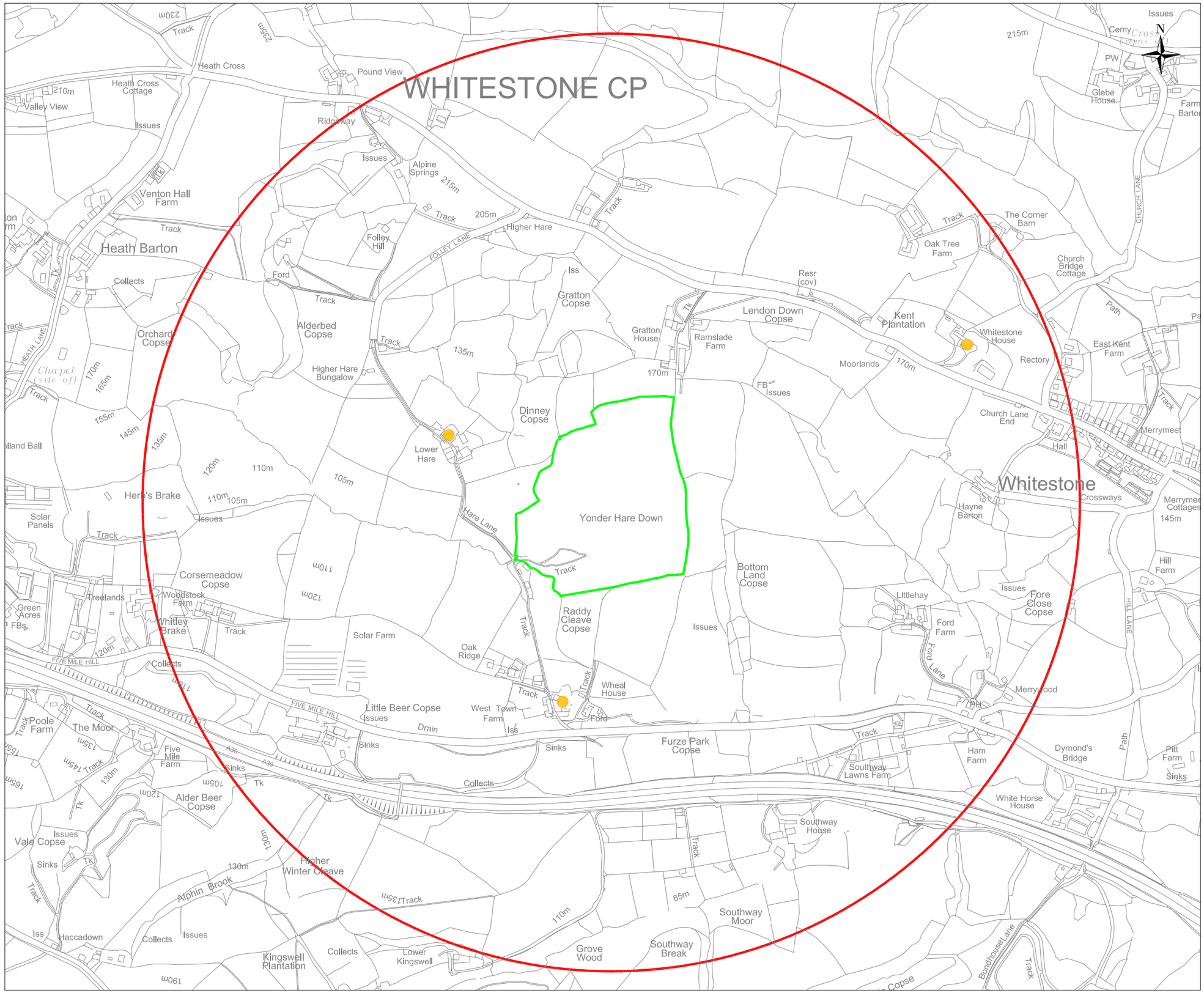

Key:

- Permit Site Boundary
- 1km Radius
- Listed Buildings

Notes:

1. There are no SSSI's or Historic Landfills within 1 km of the site.

Rev.	Details	Drawn / Chkd.	Date

Project

213189
Lower Hare Farm

Title

Cultural & Natural Heritage Plan

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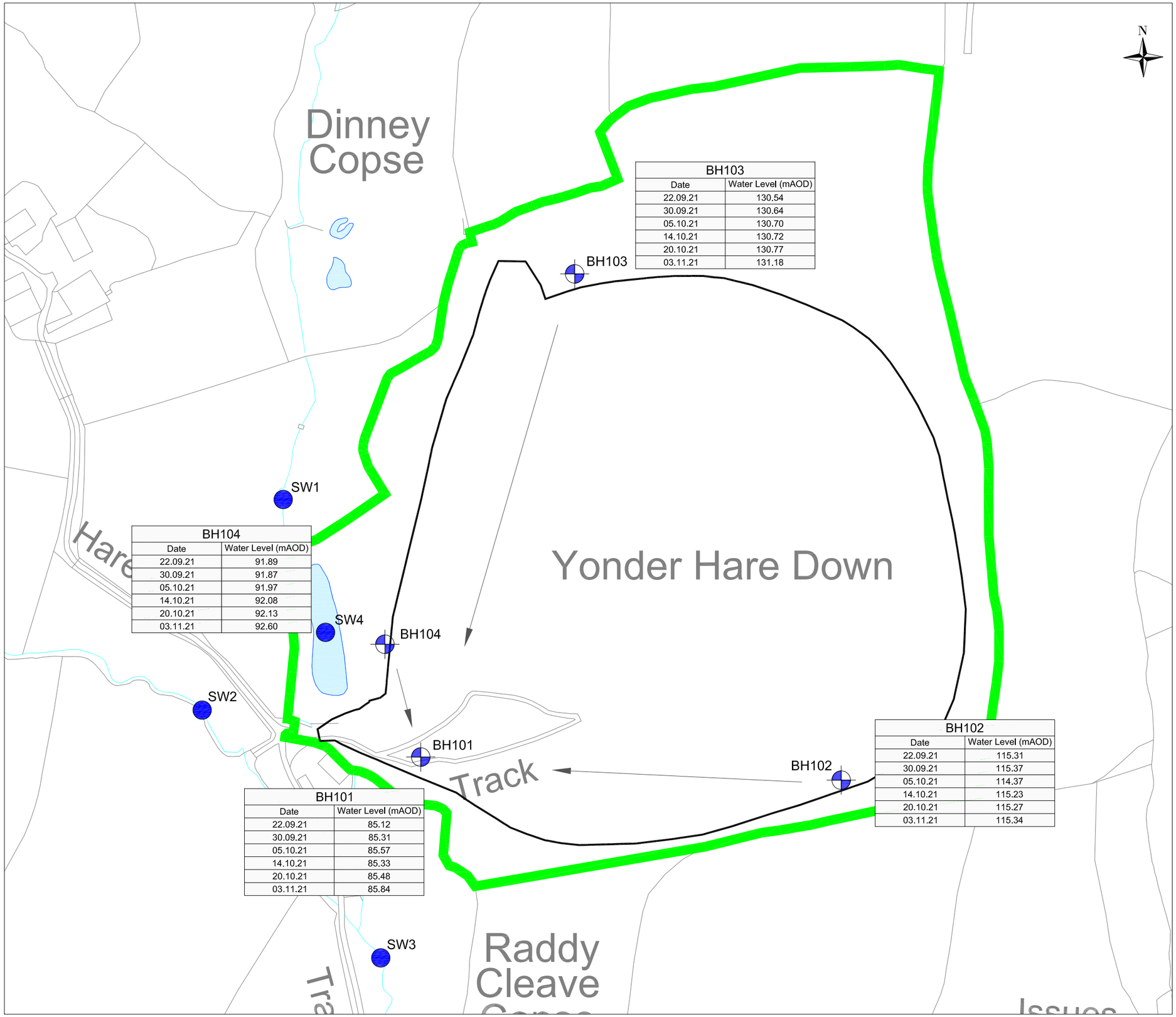

Key:

- Permit Site Boundary
- Extent of Earthworks
- Groundwater Monitoring Boreholes
- Surface Water Monitoring Location
- Surface Water Pond
- Surface Water Course
- Expected Groundwater Flow

Rev.	Details	Drawn / Chkd.	Date

Project

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Lower Hare Farm

Title

Local Hydrogeology and Hydrology

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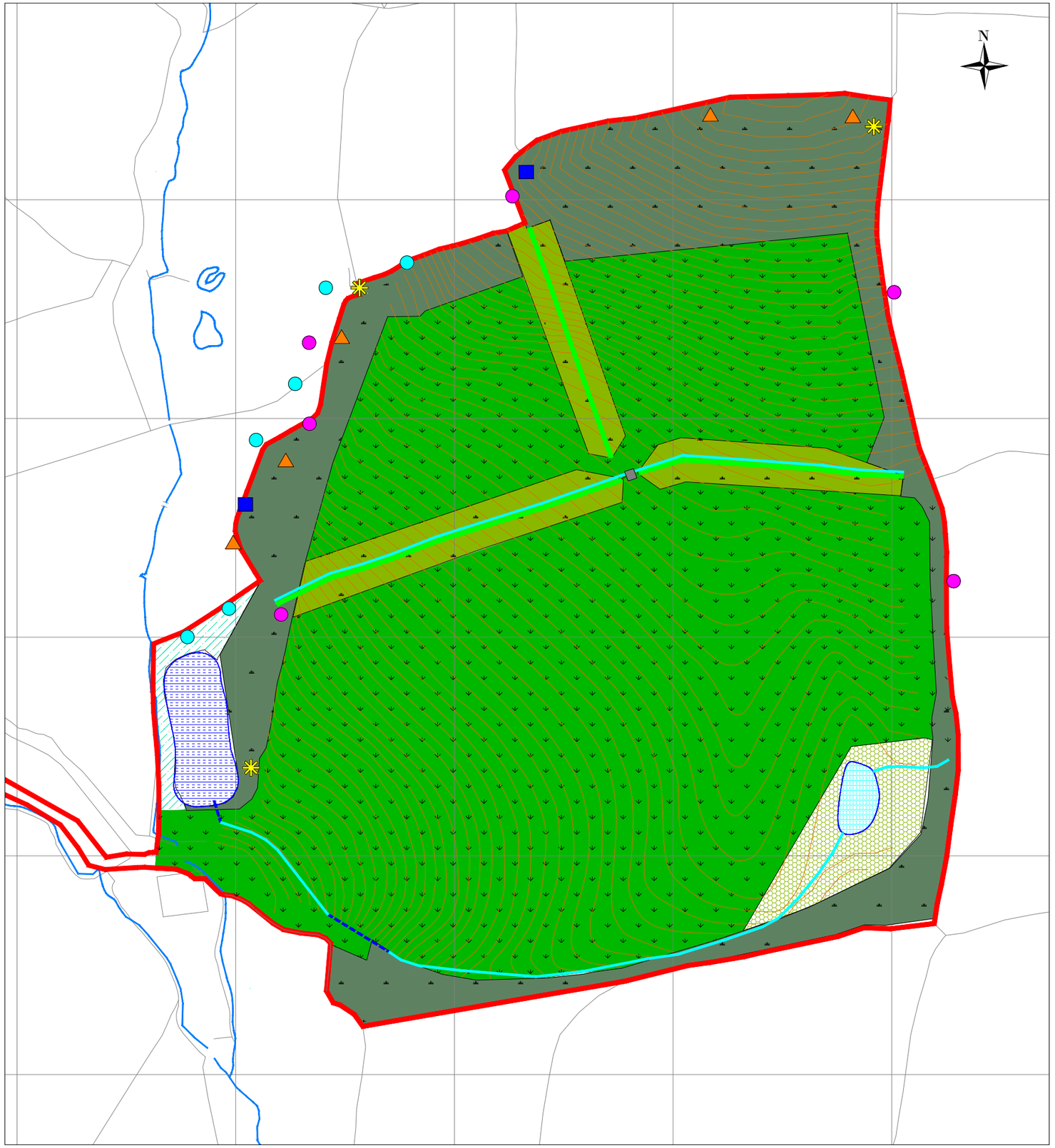

Key:

- Site Boundary
- Ground Level Contours
- Headland (Lowland Meadow Habitat) Buffer Zone
- Headland (Neutral Grassland Habitat) Buffer Zone
- Restored Agricultural Fields
- Lowland Meadow Habitat Buffer Zone (available from end of Phase 3)
- Retained existing trees
- Devon Hedgebank
- Permanent Drainage Swale
- Piped drainage section
- Ecological Pond
- Attenuation Pond
- Culvert
- Indicative Bat Box Location
- Indicative Bird Box Location
- Indicative Hibernacula Location
- Indicative Log Piles Location
- Indicative Insect Hotel Location

Rev.	Details	Drawn / Chkd.	Date

Project

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Restoration Plan

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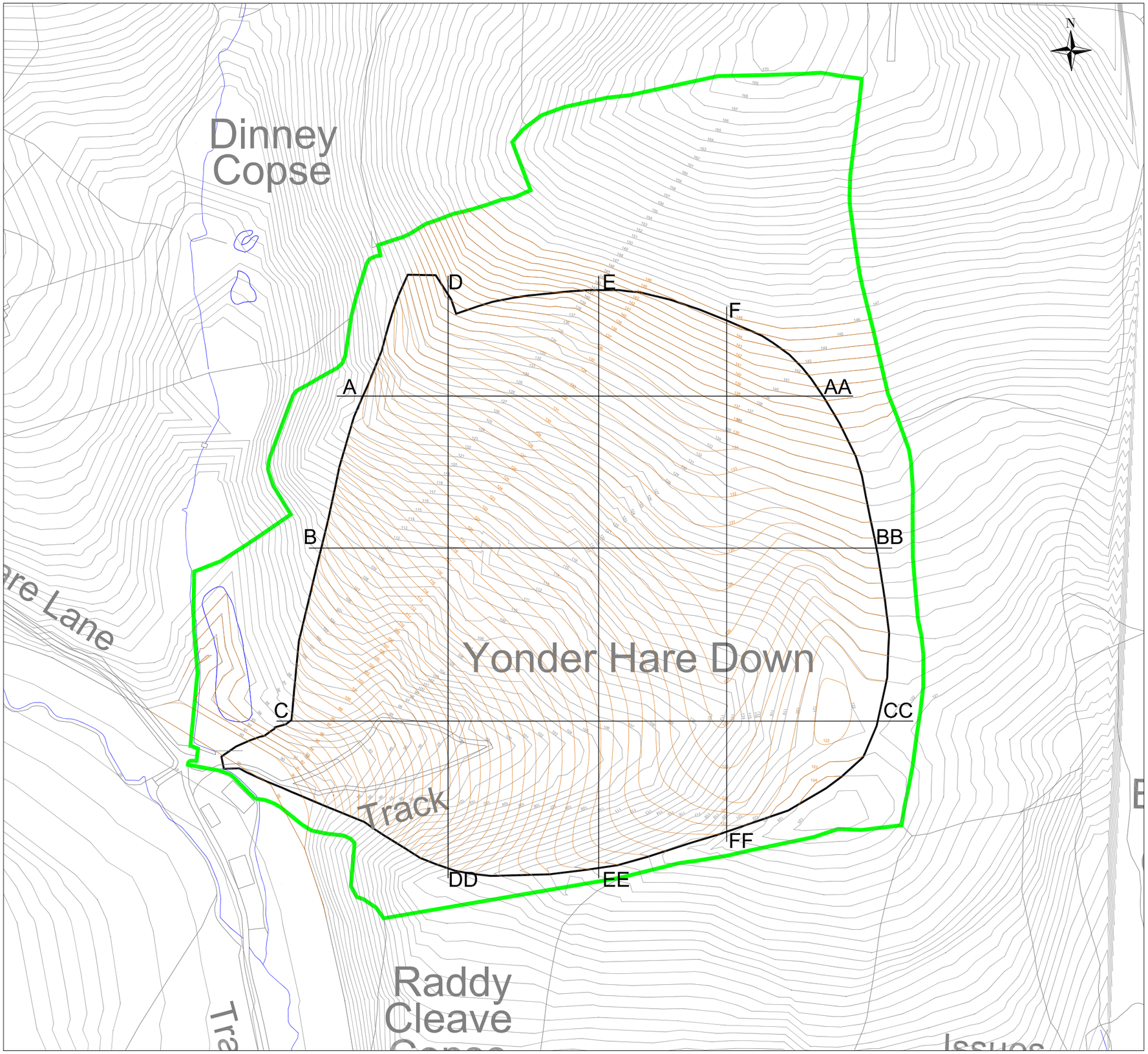

Key:

- Site Boundary
- 100 Existing Ground Level (m AOD)
- 100 Proposed Ground Level (m AOD)
- Area of Earthworks
- A AA Cross Section

Notes:

1. Cross section diagrams A-AA and B-BB are presented in drawing 213189/D/004B.
2. Cross section diagrams C-CC and D-DD are presented in drawing 213189/D/004C.
3. Cross section diagrams E-EE and F-FF are presented in drawing 213189/D/004D.

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Cross Section Location Plan

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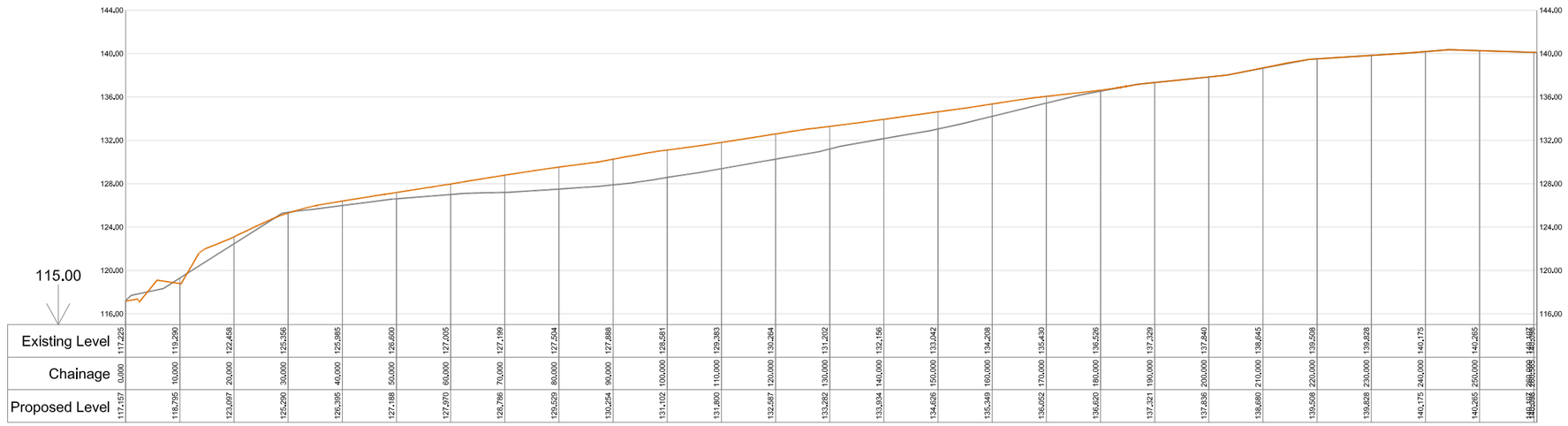

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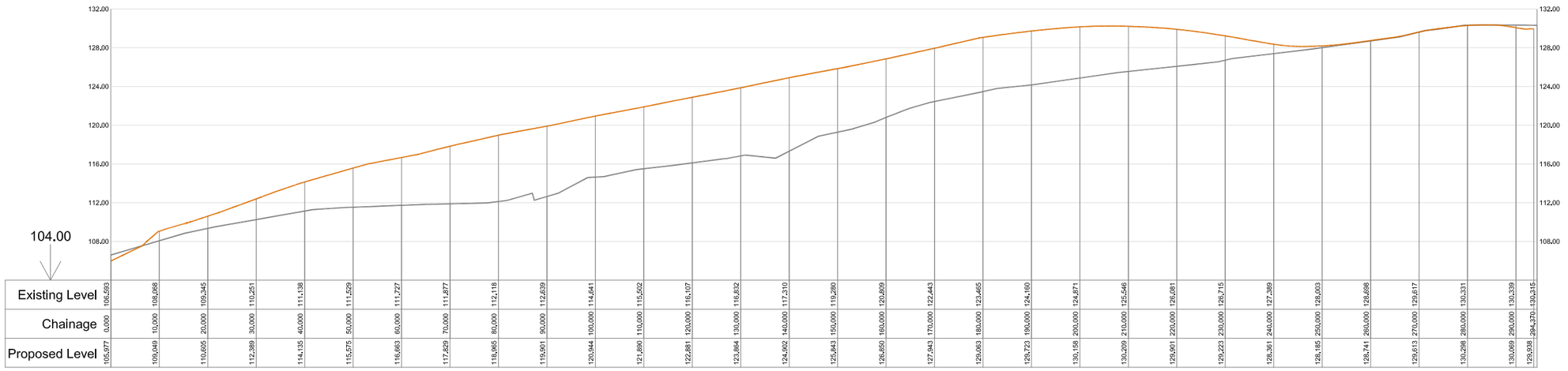
Horiz. 1:500
Vert. 1:250



B-BB
Horiz. 1:500
Vert. 1:250

Key:

Existing Ground Level (m AOD)

Proposed Ground Level (m AOD)

Notes:
1. The horizontal and vertical exaggeration for each of the cross section diagrams is 1:1 and 2:1, respectively.

Rev.	Details	Drawn / Chkd.	Date

Project
213189
Lower Hare Farm

Title
Cross Section Diagrams A-AA and B-BB

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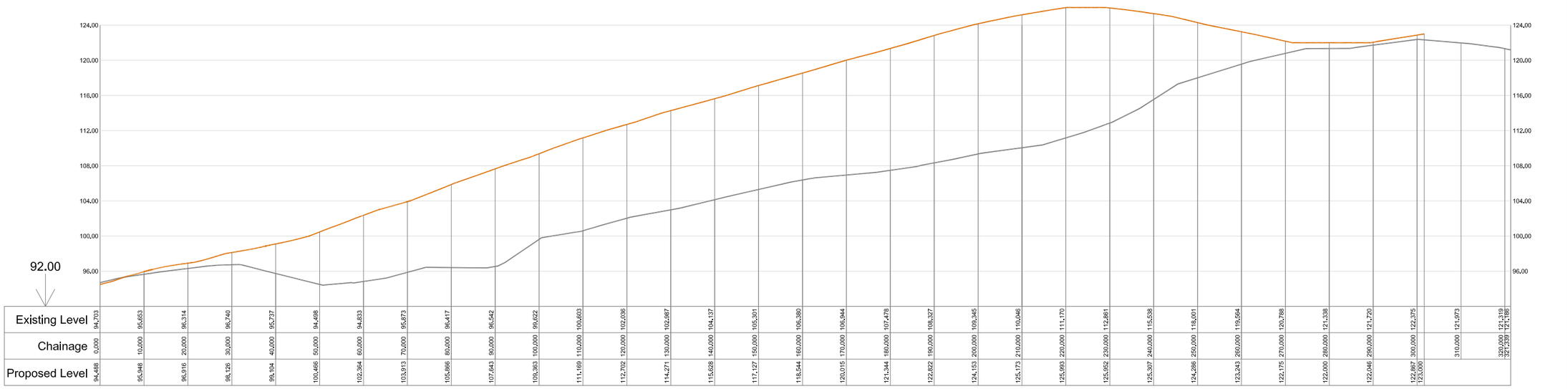
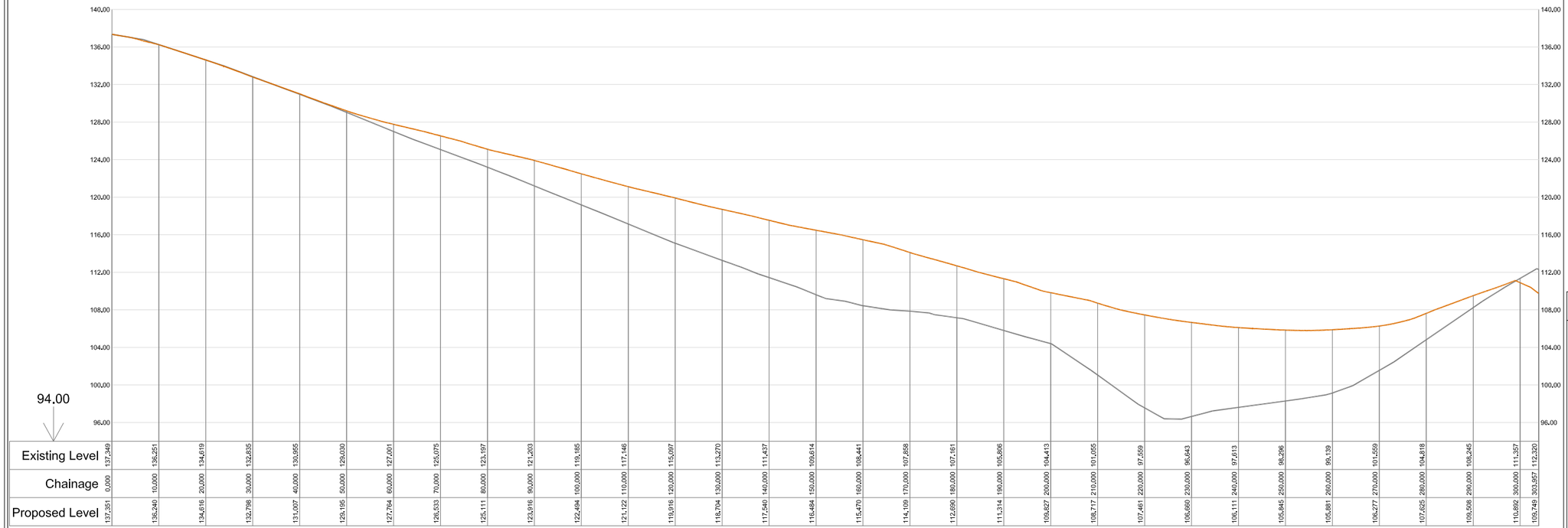
Scale	Date	Drawn	Chkd.	Drg. No.	Rev.
1:1,000@A3	Aug '21	JM	ML	213189/D/004B	



C-CC

Horiz. 1:500
Vert. 1:250



D-DD

Horiz. 1:500
Vert. 1:250

Key:

Existing Ground Level (m AOD)

Proposed Ground Level (m AOD)

Notes:

1. The horizontal and vertical exaggeration for each of the cross section diagrams is 1:1 and 2:1, respectively.

Rev.	Details	Drawn / Chkd.	Date

Project

213189
Lower Hare Farm

Title

Cross Section Diagrams C-CC and D-DD

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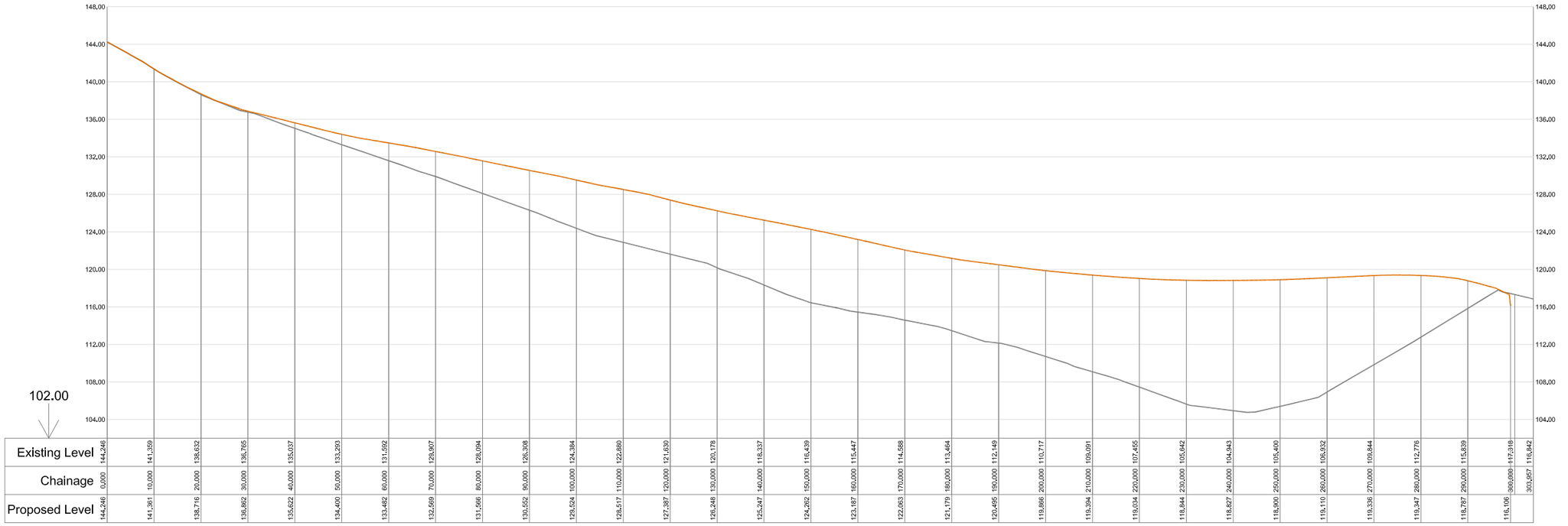
Scale	Date	Drg. No.	Rev.
1:1,000@A3	Aug '21	213189/D/004C	
	Drawn: JM / Chkd.: ML		



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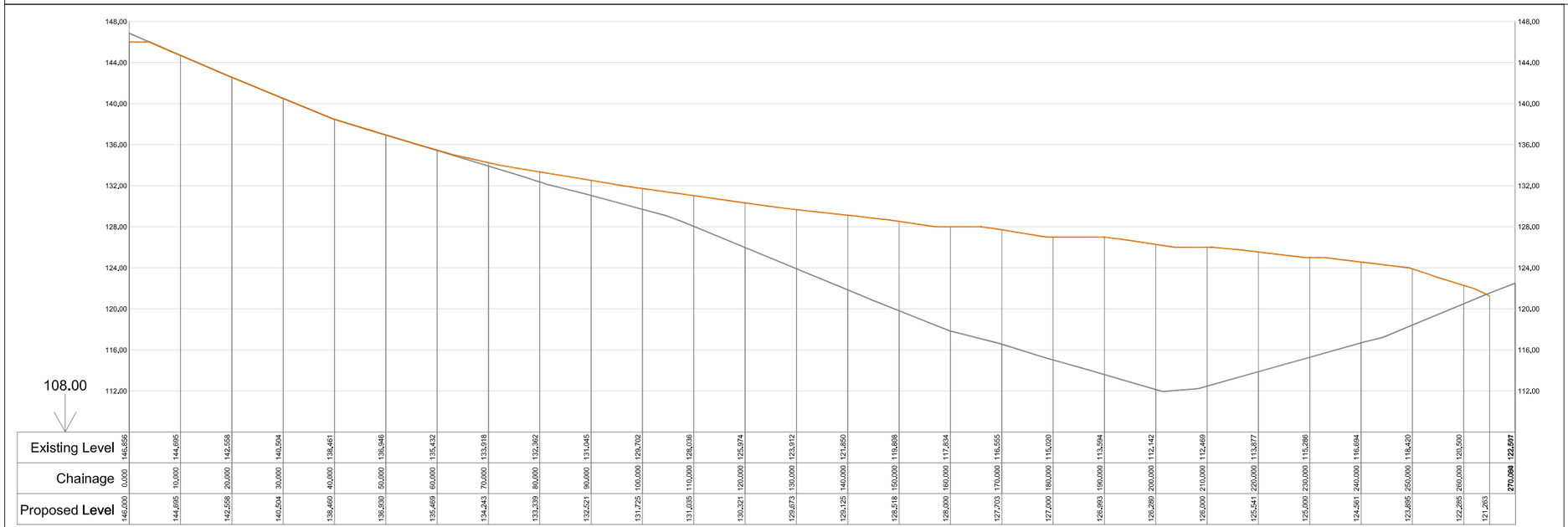
Vert. 1:250



F-FF
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Vert. 1:250

Key:

Existing Ground Level (m AOD)

Proposed Ground Level (m AOD)

Notes:

1. The horizontal and vertical exaggeration for each of the cross section diagrams is 1:1 and 2:1, respectively.

Rev.	Details	Drawn / Chkd.	Date

Project

213189
Lower Hare Farm

Title

Cross Section Diagrams E-EE and F-FF

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Environmental Consultants

Scale	Date	Drg. No.	Rev.
1:1,000@A3	Aug '21	213189/D/004D	
	Drawn: JM / Chkd.: ML		

Appendix A
H1 Risk Assessment

Table 1. Assessment of odour risks

Hazard	Receptors	Harm	Pathway	Probability of Exposure	Consequence	Magnitude	Justification	Risk Management	Residual Risk
Odour from suitable soil wastes. Fugitive emissions from: • Storage activities • Placement of waste • Transfer and delivery activities	Residential dwellings (Gratton House & Ramslade Farm) < 150 m north of the site. Residential dwellings along Hare Lane, including Lower Hare Farm (owned by the Landowner), Oak Ridge, West Town Farm, and Wheale House. Agricultural land adjacent to the site. Surrounding Public Right of Way footpath to the south west of the site. Temporary construction workers due to work on site. Flora and fauna surrounding the site, including the priority deciduous woodlands adjacent to the site.	Nuisance, harm to health and loss of amenity value.	Atmospheric (fugitive). Air transport then inhalation.	Low	Medium	Low	Waste types being imported will predominantly be from construction and demolition sites and will not include odour generating wastes (putrescible waste).	Strict waste acceptance procedures and controls on the type of waste streams accepted, as stated in the Waste Importation plan. No other permitted waste types are to be accepted, therefore will not biodegrade to produce offensive odours. Recording any complaints and implementing controls, as outlined in the Operational Working Plan (OP).	Low

Table 2. Assessment of noise and vibration risks

Hazard	Receptors	Harm	Pathway	Probability of Exposure	Consequence	Magnitude	Justification	Risk Management	Residual Risk
Noise and vibration emissions mobile plant, delivery lorries, unloading and placement activities.	Residential dwellings (Gratton House & Ramslade Farm) < 150 m north of the site. Residential dwellings along Hare Lane, including Lower Hare Farm (owned by the Landowner), Oak Ridge, West Town Farm, and Wheale House. Agricultural land adjacent to the site. Surrounding Public Right of Way footpath to the south west of the site. Temporary construction workers due to work on site. Flora and fauna surrounding the site, including the priority deciduous woodlands adjacent to the site.	Levels of noise that cause loss of amenity and nuisance to users and residents in the locale.	Airborne	Medium	Medium	Low	Works will adhere to normal operating hours. Although some potential noise risk when near restoration levels, this will be relatively short-term noise. There is no fixed plant and is mobile construction plant only. The ground levels provide natural screening for majority of works.	All operatives inducted on the requirement to reduce noise emissions and adherence to the site's working hours. All plant and vehicles will meet current guidance and will be maintained in line with manufacturer's requirements. All equipment and vehicles, when not in regular use, shall be switched off. Stripped topsoil to be bunded 3 m high to break line of sight, reducing noise emissions to sensitive receptors.	Low

Table 3. Assessment of fugitive emissions (other than odour, noise and vibration)

Hazard	Receptors	Harm	Pathway	Probability of Exposure	Consequence	Magnitude	Justification	Risk Management	Residual Risk
To Air									
Dust from on and off-site vehicle operations, unloading, placement and handling of waste, and use of internal haul routes.	Residential dwellings (Gratton House & Ramslade Farm) < 150 m north of the site. Residential dwellings along Hare Lane, including Lower Hare Farm (owned by the Landowner), Oak Ridge, West Town Farm, and Wheale House. Agricultural land adjacent to the site. Surrounding Public Right of Way footpaths Temporary construction workers due to work on site. Deciduous Woodland habitats adjacent to the site (namely Dinney Copse and Raddy Cleave Copse) and further Decidious Woodland habitats surrounding the site.	Harm to human health, respiratory irritation, and illness.	Airborne then inhalation.	Low	Medium	Low	Operations have the potential to generate dusts from off-site movements during prolonged dry periods. The risk of dust emissions comes from HGV's, and the movement and placement of waste. Locally, well naturally screened. No resident receptors within 100 m of the site.	Measures to control dust are set out in the DEMP (213189/DEMP)	Low to very low
		Nuisance – deposit on cars, homes, clothing etc.	Airborne then deposit.	Very Low	Low	Very Low			
		Harm to ecosystem – dust deposit of vegetation.	Airborne then inhalation.	Low	Medium	Low			
To Controlled Waters									
Run-off from site surfaces or spillages.	Pond located within the south western boundary of the site.	Passive leaching to ground or existing land drains, from contamination	Land then surface water drainage systems.	Medium	High	Medium	Permitted waste types do not include leachates or liquids.	Controls on types of wastes accepted through the implementation of the Importation Plan (213189/IP)	Low

Hazard	Receptors	Harm	Pathway	Probability of Exposure	Consequence	Magnitude	Justification	Risk Management	Residual Risk
	The Alphin Brook and associated tributaries. Underlying groundwater within strata. Secondary A aquifer in Ashton Mudstone Member – Mudstone.	or spillages on hardstanding surface and directly entering drainage system.					Surface water managed in accordance with OP. Importation protocol supported by site specific Controlled Water Risk Assessment deeming it low risk.	Temporary and permanent swale's will be installed to receive site run-off and discharged into temporary surface water lagoons. All fuel storage areas will be bunded to 110 % capacity. Spill kits will be provided on site. Inspection and management regime as per OP All staff and operatives will be trained as per pollution prevention requirements.	
Run-off and infiltration from site surfaces or spillages.	Potentially isolated and localised groundwater underlying site.	Pollution to aquifer.	Land infiltration through free draining hardstanding.	Medium	High	Medium	Permitted waste types do not include leachates or liquids.	Controls on types of wastes accepted and placed on site. Mobile bunded fuel bowser to be used with pipes and valves protected with spill trays. All staff and operatives will be trained as per pollution prevention requirements.	Low
Mud and litter									
Litter from storage areas and mud from site operation.	Humans (as per odour) and fauna.	Nuisance, loss of amenity and reduced safety.	Air and land.	Low	Medium	Low	Permitted wastes have low litter potential as waste is mainly C&D origin.	All visible litter on site boundaries will be cleared. Internal and external haulage routes will be maintained by mechanical	Low

Hazard	Receptors	Harm	Pathway	Probability of Exposure	Consequence	Magnitude	Justification	Risk Management	Residual Risk
								sweeping to ensure mud is not generated. A wheel wash for tipper lorries will be present and maintained on site. Inspection and corrective action regime will be undertaken in line with site management system.	
Pests and vermin									
Storage of waste attracting pests and vermin.	Human	Can cause increase populations and infestations of rats, mice, flies and other vermin. Result is harm to health, loss of amenity and nuisance.	Air transport and over land.	Low	Low	Low	All of the waste has low to negligible risk of organic / litter content to attract pests and vermin.	Adherence to waste acceptance procedures. Inspection of site by Site Manager on frequent basis. Implementation of controls as required.	Low

Table 4. Foreseeable Accident risk assessment and management

Hazard	Receptors	Harm	Pathway	Probability of Exposure	Consequence	Magnitude	Justification	Risk Management	Residual Risk
Fire (accidental, arson) and smoke.	Humans (as per odour) and environment.	Damage and loss of amenity, nuisance and carcinogenic particulates.	Direct contact, airborne.	Low	Severe	Medium	In the event of a major incident there is a serious health risk. Wastes to be imported or re-used are non-combustible soils only.	No wastes will be burned on site. All storage of waste and plant in accordance with existing EMS. The management of the waste has been developed in line with industry guidance to minimise volumes to manageable sizes. Incidents to be recorded in the Site Diary.	Low
Spillage of fuels, oils, or polluting material.	Soil, surface waters and groundwater.	Pollution and/or contamination.	Land and drainage systems.	Low	High	Medium	Oils and fuels will be locked in a sealed container, when not in use.	The Contingency Plan will incorporate spillage controls. A spill response and accident prevention plan will form part of the site specific Environmental Management System (EMS). All staff will be trained on controls.	Low
Spillage of waste.	Human health (as per odour), surface water drainage, groundwater.	Loss of amenity and nuisance, pollution and/ or contamination.	Land, drain and air.	Low	High	Medium	Uncontrolled release could cause health or pollution issues.	All vehicles accessing the site will be sheeted or fully enclosed. Unloading and loading will be controlled at all times. Incidents recorded in the Site Diary.	Low
Direct physical contact between humans and all wastes, machinery and vehicles.	Human health (site operatives and local population).	Bodily harm.	Direct contact.	Medium	High	Medium	No public access during works. All wastes will adhere to the Importation	Activities to be managed in accordance with site health and safety management system.	Low

Hazard	Receptors	Harm	Pathway	Probability of Exposure	Consequence	Magnitude	Justification	Risk Management	Residual Risk
							Protocol and appropriate human health limits. There is no additional risk from the new proposals from machinery and vehicles. This remains unchanged.	Access to wastes to be restricted to trained and competent personnel. Delineation of activities and personnel.	

Table 5. Assessment of ground gas risks

Hazard	Receptors	Harm	Pathway	Probability of Exposure	Consequence	Magnitude	Justification	Risk Management	Residual Risk
Inhalation of ground gases generated by waste deposit beneath the proposed earthworks. Inhalation of ground gases generated by soils from proposed earthworks Inhalation of volatile vapours with elevated concentrations of determinants. Explosive risk from bio-gas/ground gases. Surcharging of existing Made Ground during capping.	On site land users (agricultural) Temporary construction staff.	Intoxication Explosion Nuisance/loss of amenity	Emissions from existing Made Ground or imported material to air.	Severe	Negligible	Low	The imported waste material will be of mineral / soil content with low organic content. The risk of ground gas generation deposited wate is negligible. There will be no engineered cap, and waste deposit will be surfaced with topsoil. The likely gas migration pathway will dissipate slowly from the top of the waste deposit.	Adherence to importation protocol and construction scheme.	Very Low
	Off-site land users (public right of way) Residential properties circa 150 m north and 240 m west & south of the operational site.	Intoxication Explosion Nuisance/loss of amenity	Emissions from existing Made Ground or imported material to surrounding ground to air.	Severe	Negligible	Low	The imported waste material will be of mineral / soil content with low organic content. The risk of ground gas generation deposited wate is negligible. The surrounding land uses are low risk and no residential properties within 100 m of the inert waste landfill.	Adherence to importation protocol and construction scheme.	Very Low

Table 6. Assessment of Stability Risk

Hazard	Receptors	Harm	Pathway	Probability of Exposure	Consequence	Magnitude	Justification	Risk Management	Residual Risk
Landslides, subsidence, or ground heave from places waste, GSL, or restoration soils.	On site land users (agricultural). Temporary construction staff. Off-site land users (public right of way). Human health (site operatives). Flora and fauna surrounding the site, including the priority Deciduous Woodlands located adjacent to the site (namely, Dinney Copse and Raddy Cleave Copse).	Harm to human health. Harm to infrastructure. Harm to the wider environment.	Land.	Low	High	Medium	The imported waste will be inert and stable material. The land will be filled in phases whereupon it will be compacted to prevent instability. Placement method will adopt benching technique on steeper gradient slopes. Existing site contours are “bowled” and any instability would be contained within the site. Risk to residential receptors is negligible. The surrounding land uses are low risk and no residential properties within 100 m of the inert waste landfill.	Adherence to importation protocol (213189/IP) and construction scheme.	Low

Name: **GRS Stone Supplies Limited**
Catchment: **South West England river basin district**

Potential changing climate variable	Impact	Likelihood	Severity	Risk (Likelihood x Severity)	Mitigation (what will you do to mitigate this risk)	Likelihood (after mitigation)	Severity (after mitigation)	Residual risk
1. Summer daily maximum temperature may be around 7°C higher compared to average summer temperatures now.	• Workplace exposure causing damage to workforce.	2	8	16	• The Operator will ensure the appropriate PPE is worn for all workers; • Updates to internal PPE and working procedures will be undertaken yearly and incorporate any gradual changes including climate changes.	1	1	1
	• Increase in dust potential due to drier weather	3	3	9	• All works will be undertaken in accordance with the Dust Management Plan. Water provision and controls will be reviewed yearly to ensure provision is safeguarded and controls become more frequent (dependent on annual climate review).	1	1	1
	• Decrease in surface and groundwater levels causing lower water provision	3	3	9	• Water provision and controls will be reviewed yearly to ensure provision is safeguarded and controls become more frequent (dependent on annual climate review). • If groundwater abstraction borehole is deemed necessary, a separate permit application will be submitted. • No surface water abstraction necessary.	3	1	3

Potential changing climate variable	Impact	Likelihood	Severity	Risk (Likelihood x Severity)	Mitigation (what will you do to mitigate this risk)	Likelihood (after mitigation)	Severity (after mitigation)	Residual risk
2. Winter daily maximum temperature could be 4°C more than the current average.	• Increase in dust potential due to drier weather	3	3	9	• All works will be undertaken in accordance with the Dust Management Plan. Water provision and controls will be reviewed yearly to ensure provision is safeguarded and controls become more frequent (dependent on annual climate review).	1	1	1
3. The biggest rainfall events are up to 20% more intense than current extremes (peak rainfall intensity) *.	• Overloading of surface water system.	1	2	2	• The proposed drainage system is able to include rainfall volume including 40 % climate change. • The site is situated outside of the flood plain.	N/A	N/A	N/A
	• Mud on road nuisance	1	2	2	• The proposed drainage system is able to include rainfall volume including 40 % climate change. • Controls for mud will be in accordance with Dust Management Plan and Operational Plan.	N/A	N/A	N/A
	• Pollution caused from mobilisation of silts.	1	2	2	• The proposed drainage system is able to include rainfall volume including 40 % climate change.	N/A	N/A	N/A
4. Average winter rainfall may increase by 41% on today's averages.	• Overloading of surface water system.	1	2	2	• The proposed drainage system is able to include rainfall volume including 40% climate change.	N/A	N/A	N/A
	• Mud on road nuisance	1	2	2	• The proposed drainage system is able to include rainfall volume including 40% climate change.	N/A	N/A	N/A
	• Pollution caused from mobilisation of silts.	1	2	2	• The proposed drainage system is able to include rainfall volume including 40% climate change.	N/A	N/A	N/A
5. Sea level could be as much as 0.6m higher compared to today's level *.	• Overloading of surface water system.	1	1	1	• The proposed drainage system is able to include rainfall volume including 40% climate change. • The site is not directly influenced by rises in sea level.	N/A	N/A	N/A

Potential changing climate variable	Impact	Likelihood	Severity	Risk (Likelihood x Severity)	Mitigation (what will you do to mitigate this risk)	Likelihood (after mitigation)	Severity (after mitigation)	Residual risk
	• Mud on road nuisance	1	1	1	• The proposed drainage system is able to include rainfall volume including 40% climate change. • The site is not directly influenced by rises in sea level.	N/A	N/A	N/A
	• Pollution caused from mobilisation of silts.	1	1	1	• The proposed drainage system will include rainfall volume including 40% climate change. • The site is not directly influenced by rises in sea level.	N/A	N/A	N/A
6. Drier summers, potentially up to 45% less rain than now.	• Increased dust - less rainwater to store.	4	2	8	• Increase surface water lagoon storage capacity and misting frequency.	4	1	4
	• Decrease in groundwater and surface water levels causing lower water provision.	4	3	12	• Increase surface water lagoon storage capacity to hold water. • Water provision and controls will be reviewed yearly to ensure provision is safeguarded and controls become more frequent (dependent on annual climate review).	4	1	4
7. At its peak, the flow in watercourses could be 40% more than now, and at its lowest it could be 80% less than now.	• Increased stress on the river and probability of flooding on site.	3	3	9		3	1	3
	• Decrease in groundwater and surface water levels causing lower water provision.	3	1	3	• Water provision and controls will be reviewed yearly to ensure provision is safeguarded and controls become more frequent (dependent on annual climate review). • If groundwater abstraction borehole is deemed necessary, a separate permit application will be submitted.	3	1	3

*Indicates data has come from climate change allowances as part of the spatial planning process. Evidence from your planning submission is acceptable evidence for this worksheet.

Appendix B
Envirocheck and Historic Maps

Geology 1:10,000 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
	SLIP	Landslide Deposit	Clay	Quaternary - Quaternary

Superficial Geology

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	ALV	Alluvium	Clay, Silt and Sand	Flandrian - Pleistocene
	HEAD	Head	Clay, Sand and Gravel	Quaternary - Ryazanian

Bedrock and Faults

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	CKF	Crackington Formation	Mudstone and Sandstone, Interbedded	Langsettian - Arnsbergian
	ANSH	Ashton Mudstone Member	Mudstone	Kinderscoutian - Brigantian
	Fault			

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Geology 1:10,000 Maps

This report contains geological map extracts taken from the BGS Digital Geological map of Great Britain at 1:10,000 scale and is designed for users carrying out preliminary site assessments who require geological maps for the area around a site. This mapping may be more up to date than previously published paper maps.

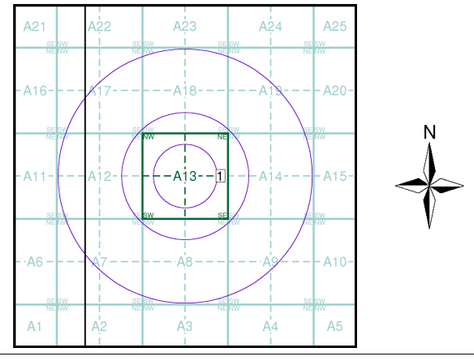
The various geological layers - artificial and landslip deposits, superficial geology and solid (bedrock) geology are displayed in separate maps, but superimposed on the final 'Combined Surface Geology' map. All map legends feature on this page.

Please Note: Not all of the layers have complete nationwide coverage, so availability of data for relevant map sheets is indicated below.

Geology 1:10,000 Maps Coverage

Map ID: 1
Map Name: SX89SE
Map Date: 1991
Bedrock Geology: Available
Superficial Geology: Available
Artificial Geology: Available
Faults: Available
Landslip: Available
Rock Segments: Not Available

Geology 1:10,000 Maps - Slice A



Order Details

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Customer Ref: 213189
National Grid Reference: 285790, 93530
Slice: A
Site Area (Ha): 0.01
Search Buffer (m): 1000

Site Details

Lower Hare Farm, Whitestone, EXETER, EX4 2HW

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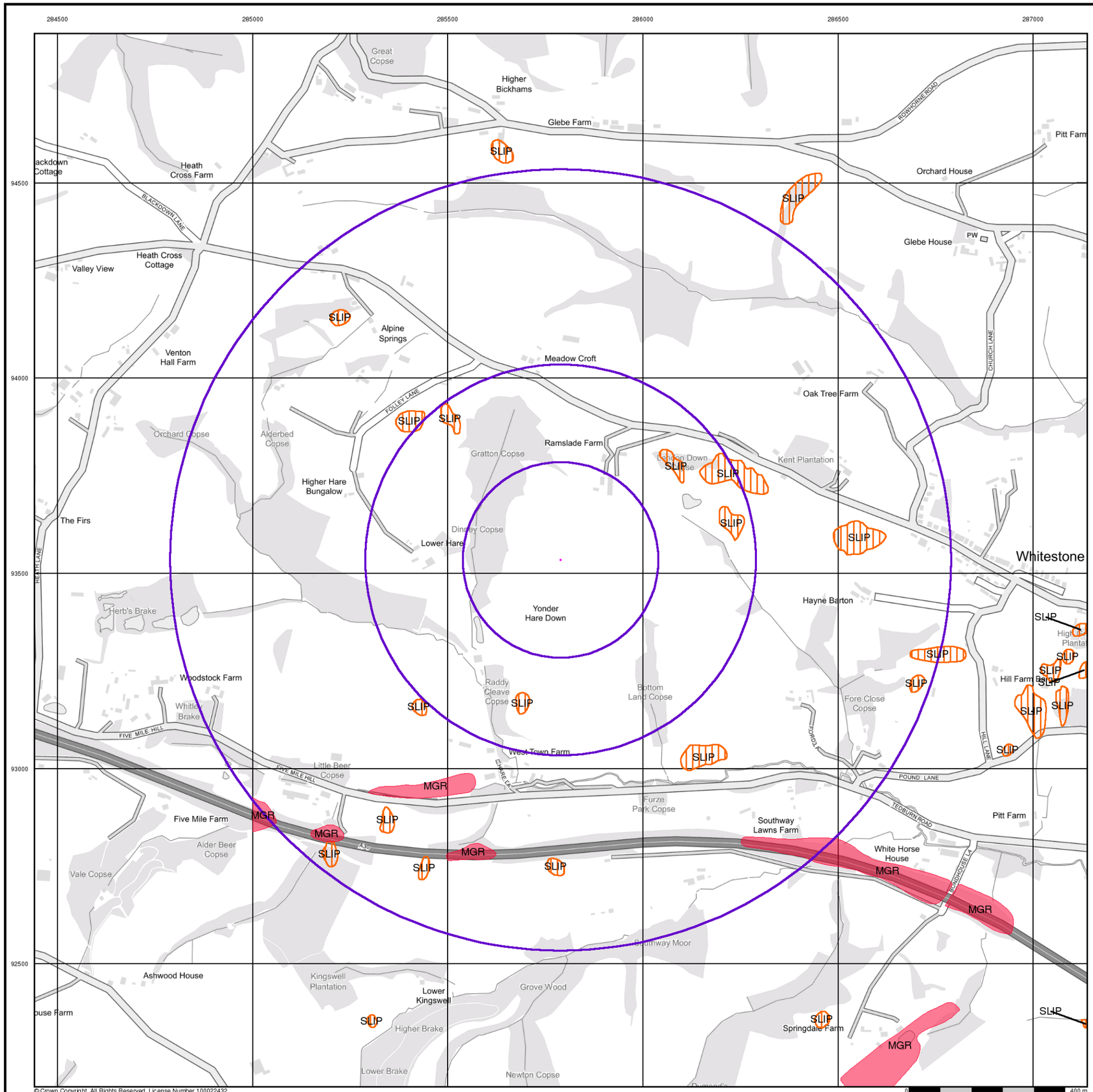

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Artificial Ground and Landslip

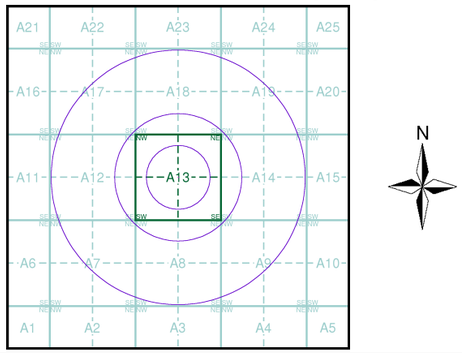
Artificial ground is a term used by BGS for those areas where the ground surface has been significantly modified by human activity. Information about previously developed ground is especially important, as it is often associated with potentially contaminated material, unpredictable engineering conditions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



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Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

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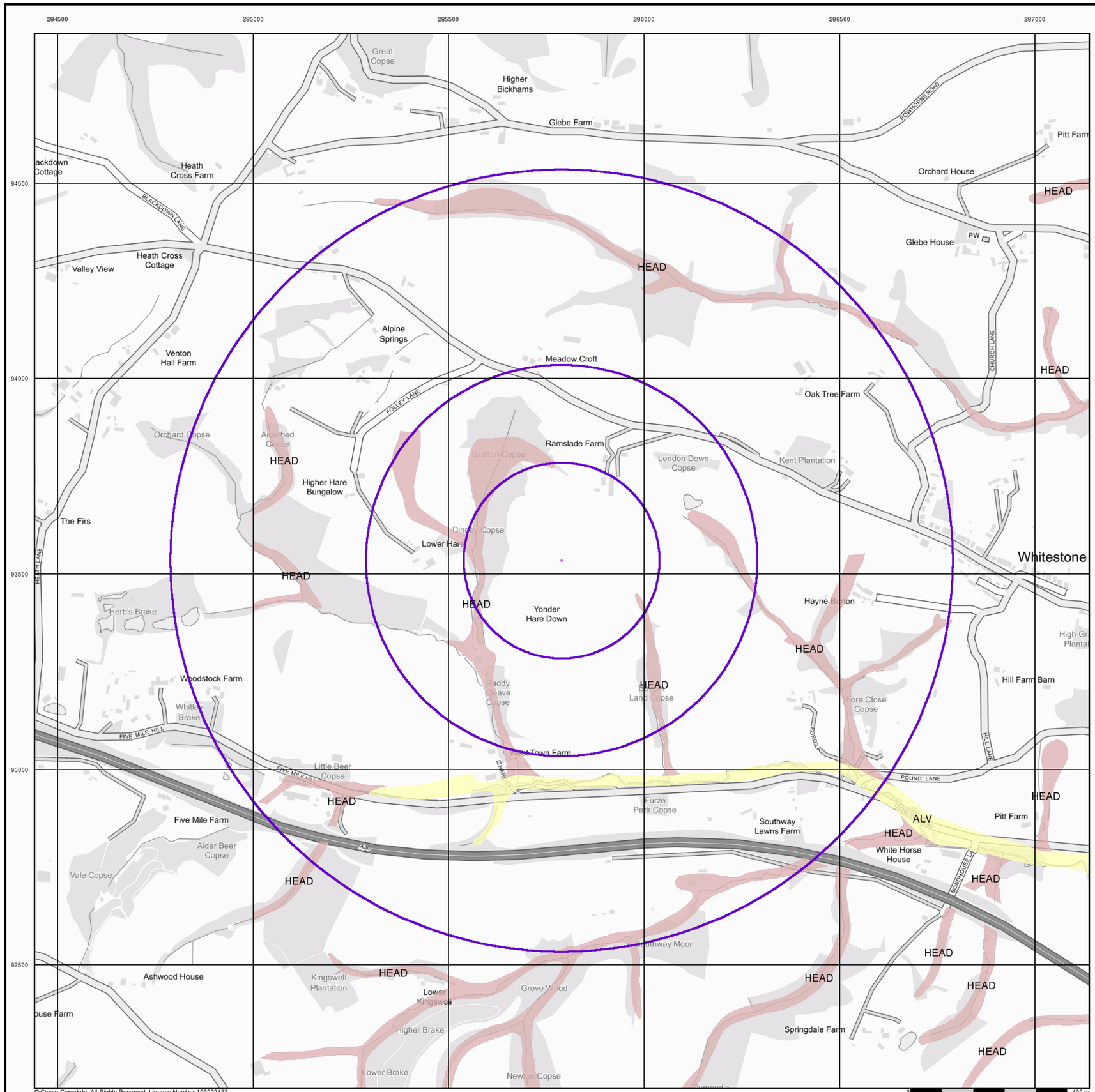

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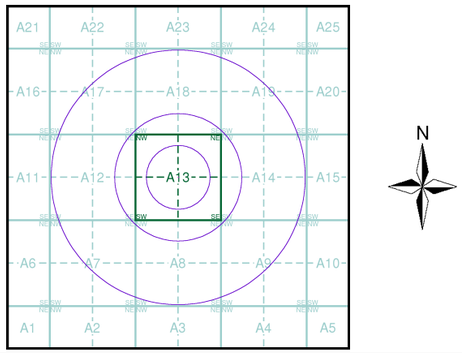
Superficial Geology

BGS 1:10,000 Superficial Deposits are the youngest geological deposits formed during the most recent period of geological time, 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 Ref:	213189
National Grid Reference:	285790, 93530
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

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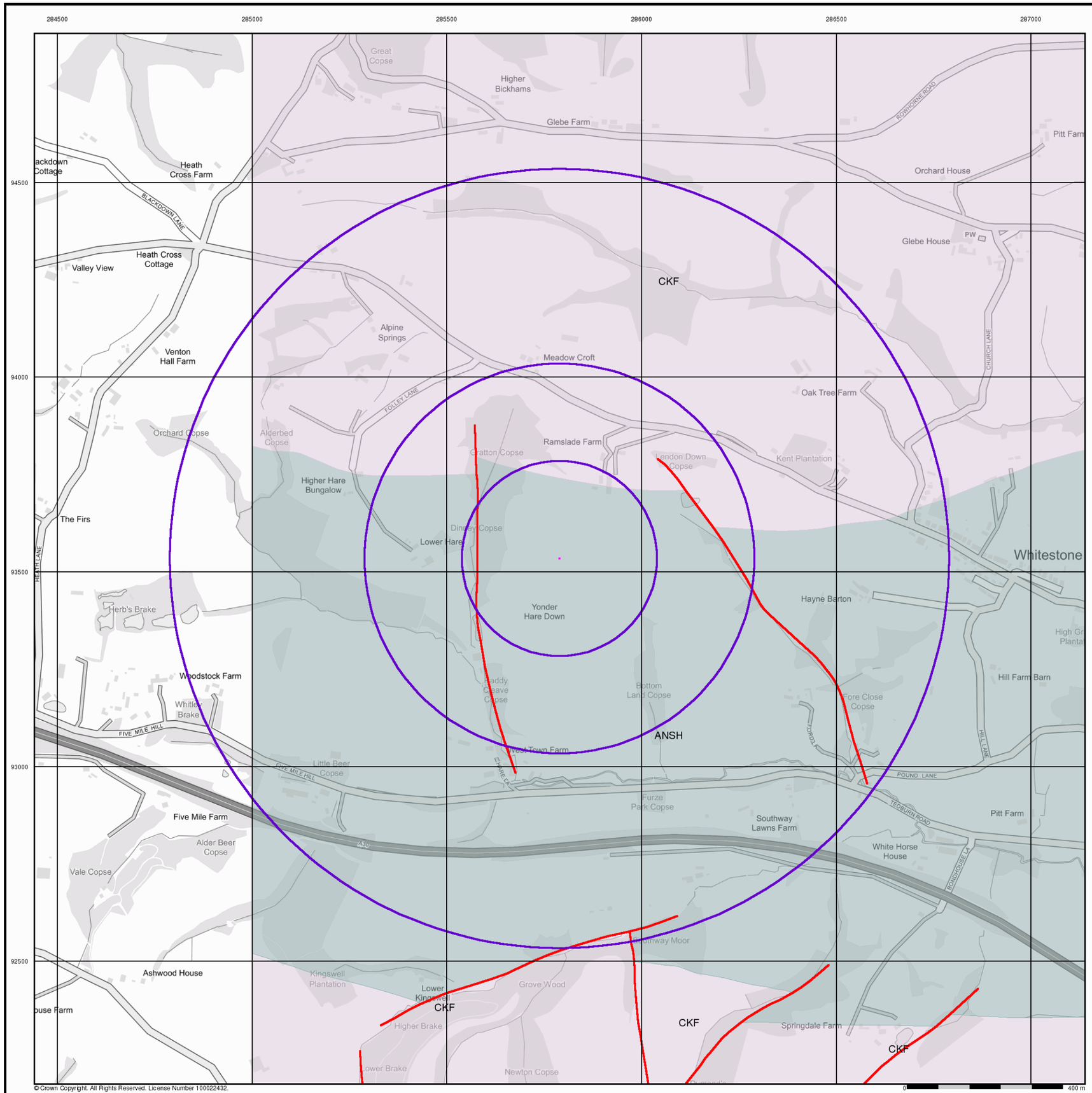

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Bedrock and Faults

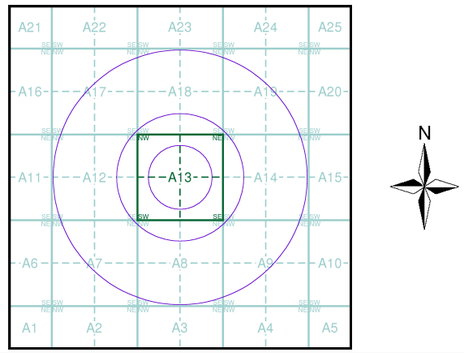
Bedrock geology is a term used for the main mass of rocks forming the Earth and are present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

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 and thin beds mapped as lines such as coal seams and mineral veins. These are not restricted by age and could relate to features of any of the 1:10,000 geology datasets.

Bedrock and Faults Map - Slice A



Order Details

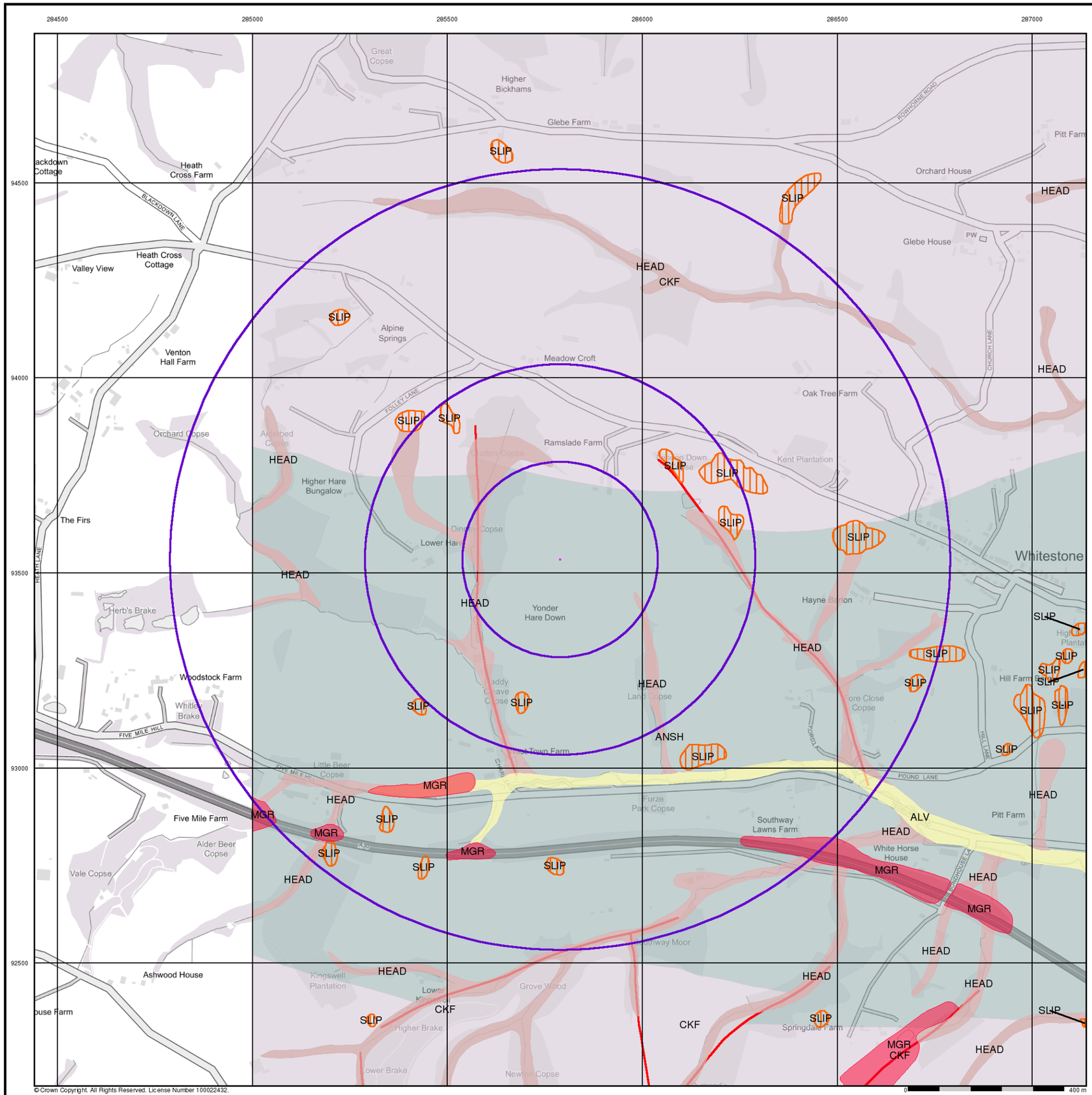
Order Number:	285408085_1_1
Customer Ref:	213189
National Grid Reference:	285790, 93530
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

Lower Hare Farm, Whitestone, EXETER, EX4 2HW

Landmark® INFORMATION GROUP

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



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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.

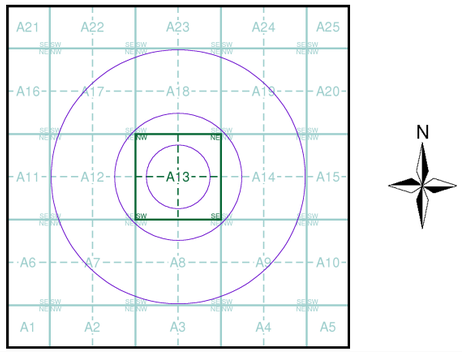
Additional Information

More information on 1:10,000 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

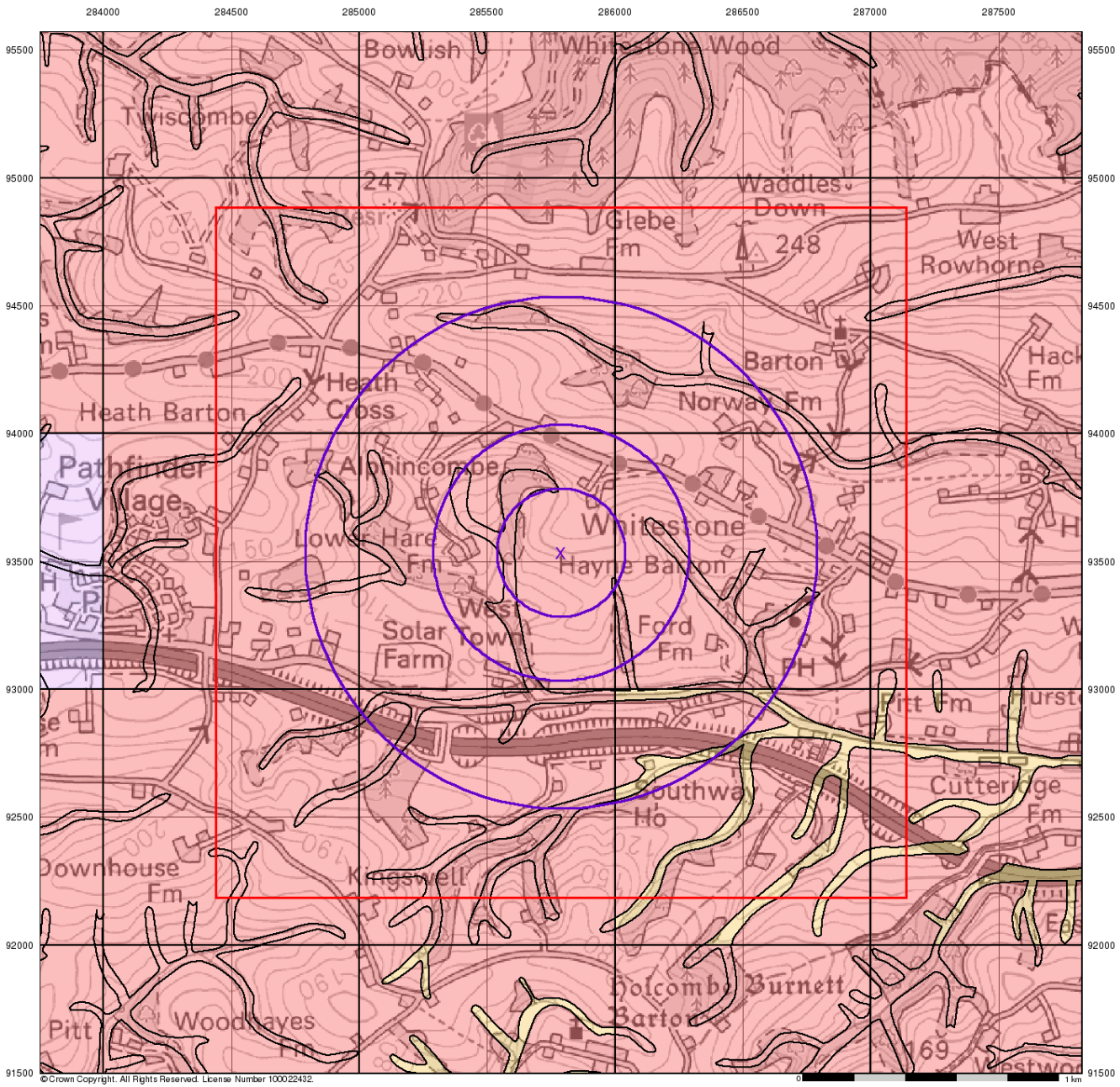


Order Details

Order Number:	285408085_1_1
Customer Ref:	213189
National Grid Reference:	285790, 93530
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

Lower Hare Farm, Whitestone, EXETER, EX4 2HW



Groundwater Vulnerability

General

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

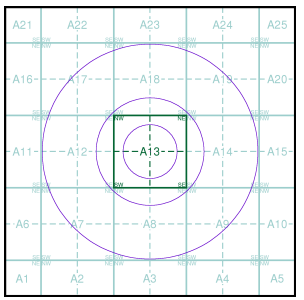
Agency and Hydrological

Bedrock Aquifers	Superficial Aquifers
High Vulnerability, Principal Aquifer	High Vulnerability, Principal Aquifer
High Vulnerability, Secondary Aquifer	High Vulnerability, Secondary Aquifer
Medium Vulnerability, Principal Aquifer	Medium Vulnerability, Principal Aquifer
Medium Vulnerability, Secondary Aquifer	Medium Vulnerability, Secondary Aquifer
Low Vulnerability, Principal Aquifer	Low Vulnerability, Principal Aquifer
Low Vulnerability, Secondary Aquifer	Low Vulnerability, Secondary Aquifer

Unproductive Aquifer

Soluble Rock

Site Sensitivity Context Map - Slice A



Order Details

Order Number:	285408085_1_1
Customer Ref:	213189
National Grid Reference:	285790, 93530
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

Lower Hare Farm, Whitestone, EXETER, EX4 2HW

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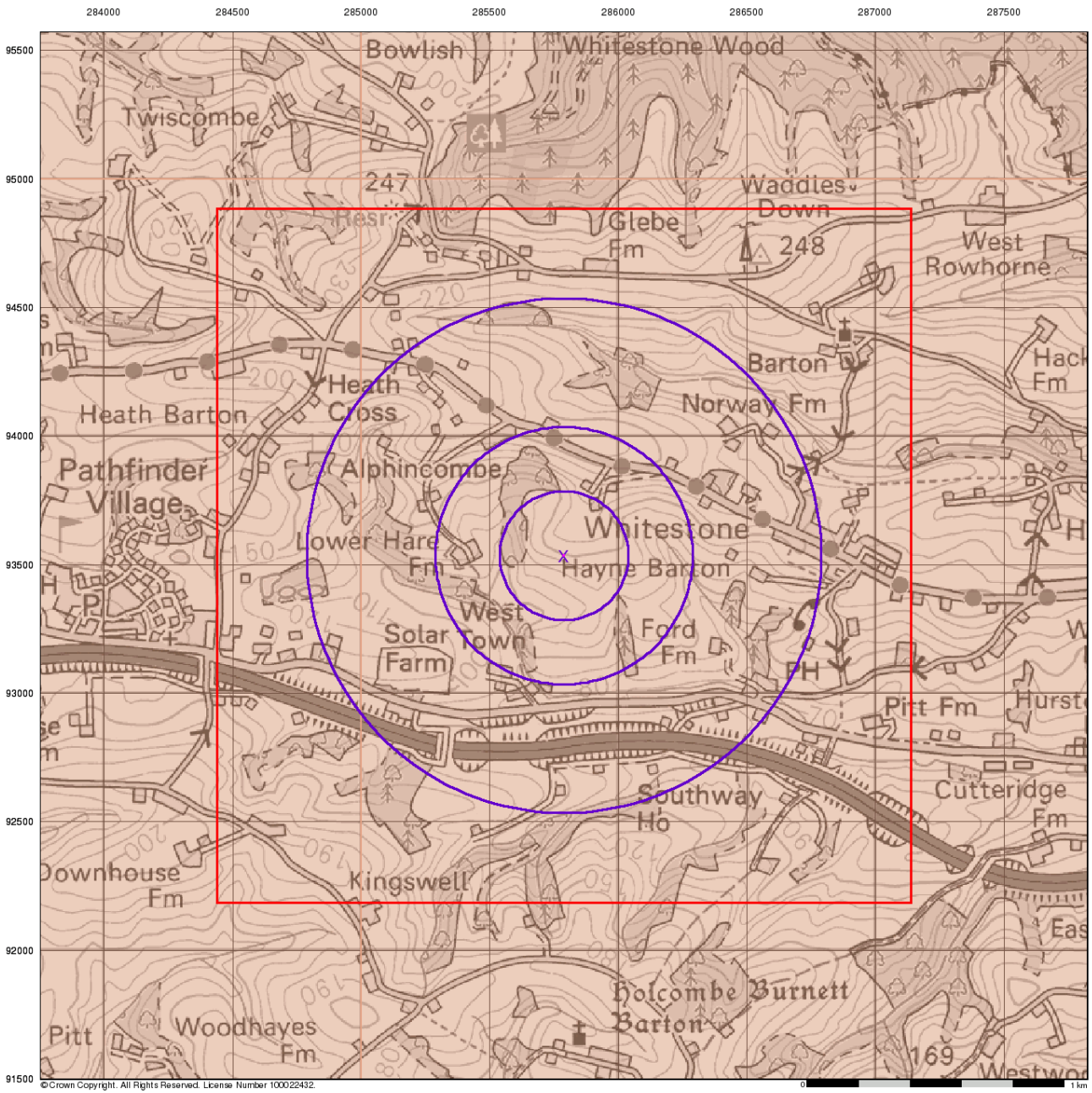
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



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Bedrock Aquifer Designation

General

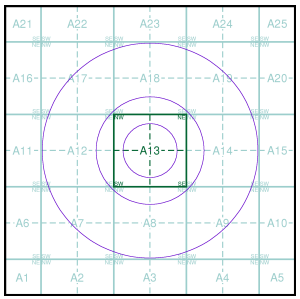
Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

Agency and Hydrological

Geological Classes

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

Site Sensitivity Context Map - Slice A



Order Details

Order Number:	285408085_1_1
Customer Ref:	213189
National Grid Reference:	285790, 93530
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

Lower Hare Farm, Whitestone, EXETER, EX4 2HW

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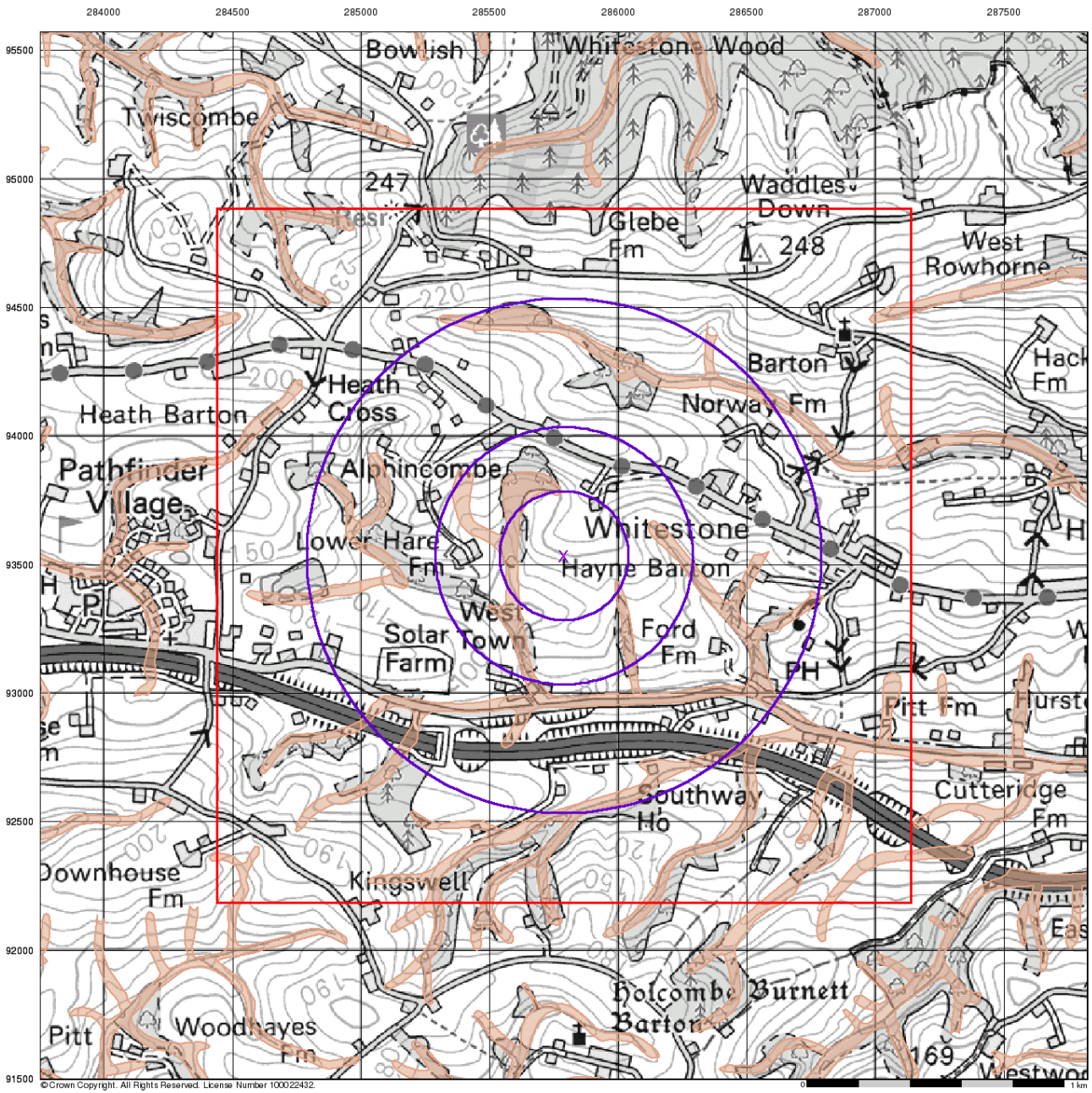

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Superficial Aquifer Designation

General

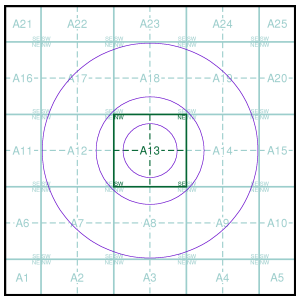
Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

Agency and Hydrological

Geological Classes

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

Site Sensitivity Context Map - Slice A



Order Details

Order Number:	285408085_1_1
Customer Ref:	213189
National Grid Reference:	285790, 93530
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

Lower Hare Farm, Whitestone, EXETER, EX4 2HW

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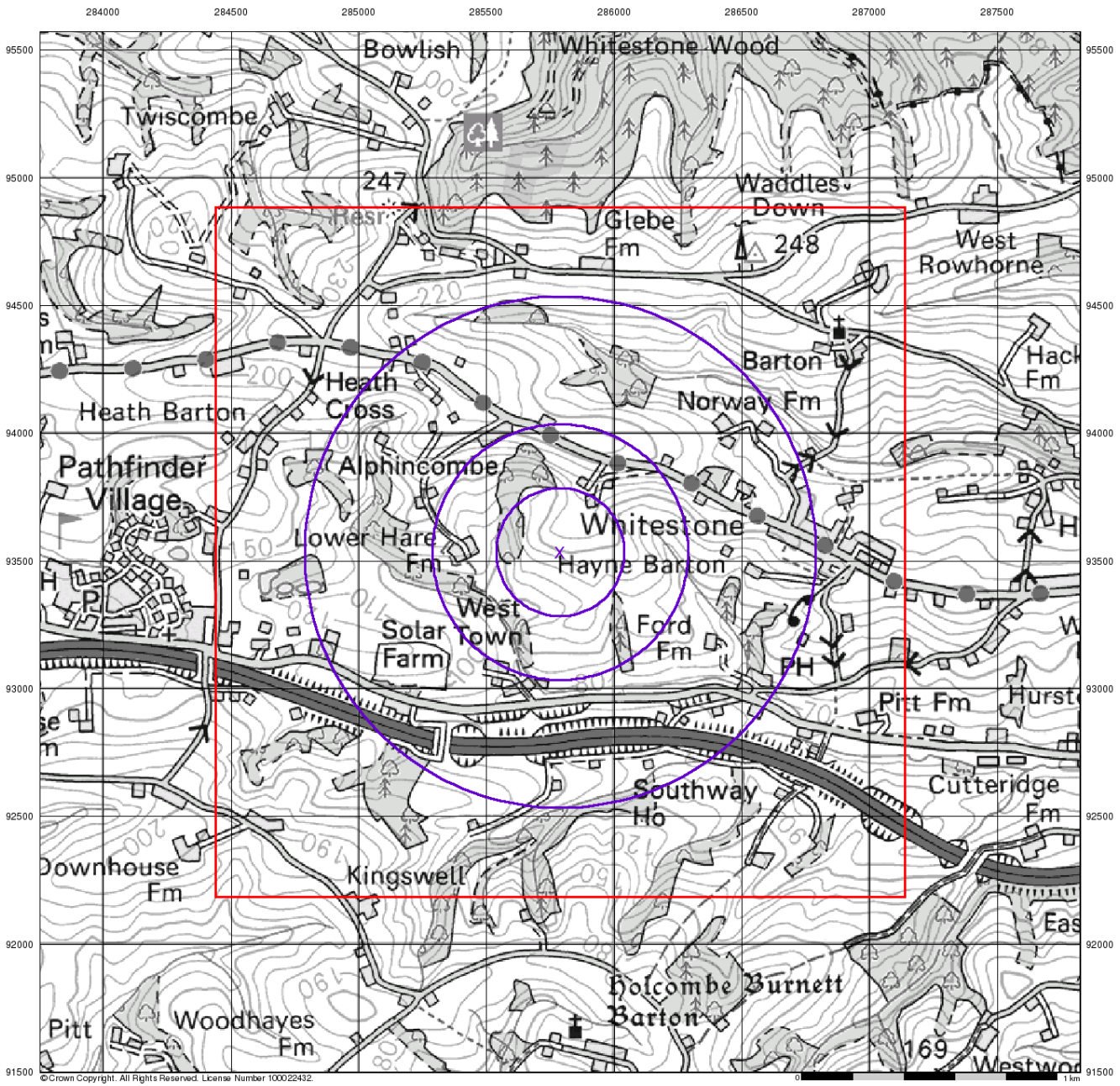

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Source Protection Zones

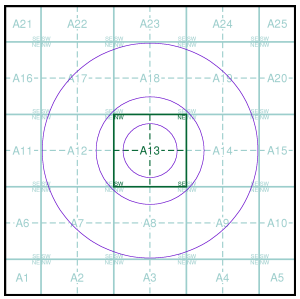
General

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

Agency and Hydrological

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

Site Sensitivity Context Map - Slice A



Order Details

Order Number:	285408085_1_1
Customer Ref:	213189
National Grid Reference:	285790, 93530
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

Lower Hare Farm, Whitestone, EXETER, EX4 2HW

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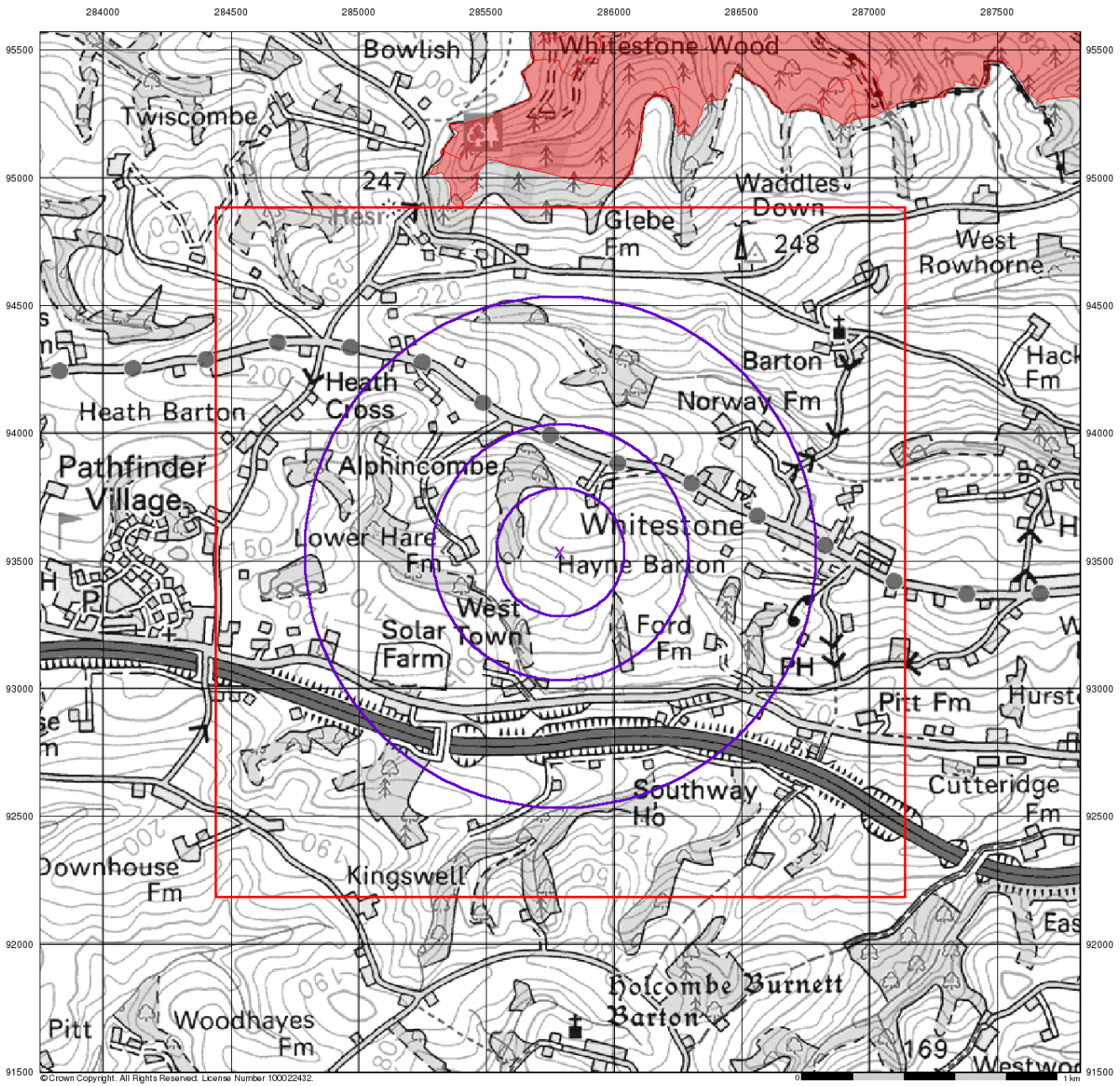

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Sensitive Land Uses

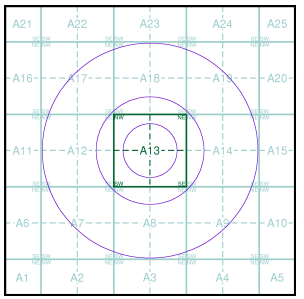
General

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:	285408085_1_1
Customer Ref:	213189
National Grid Reference:	285790, 93530
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

Lower Hare Farm, Whitestone, EXETER, EX4 2HW

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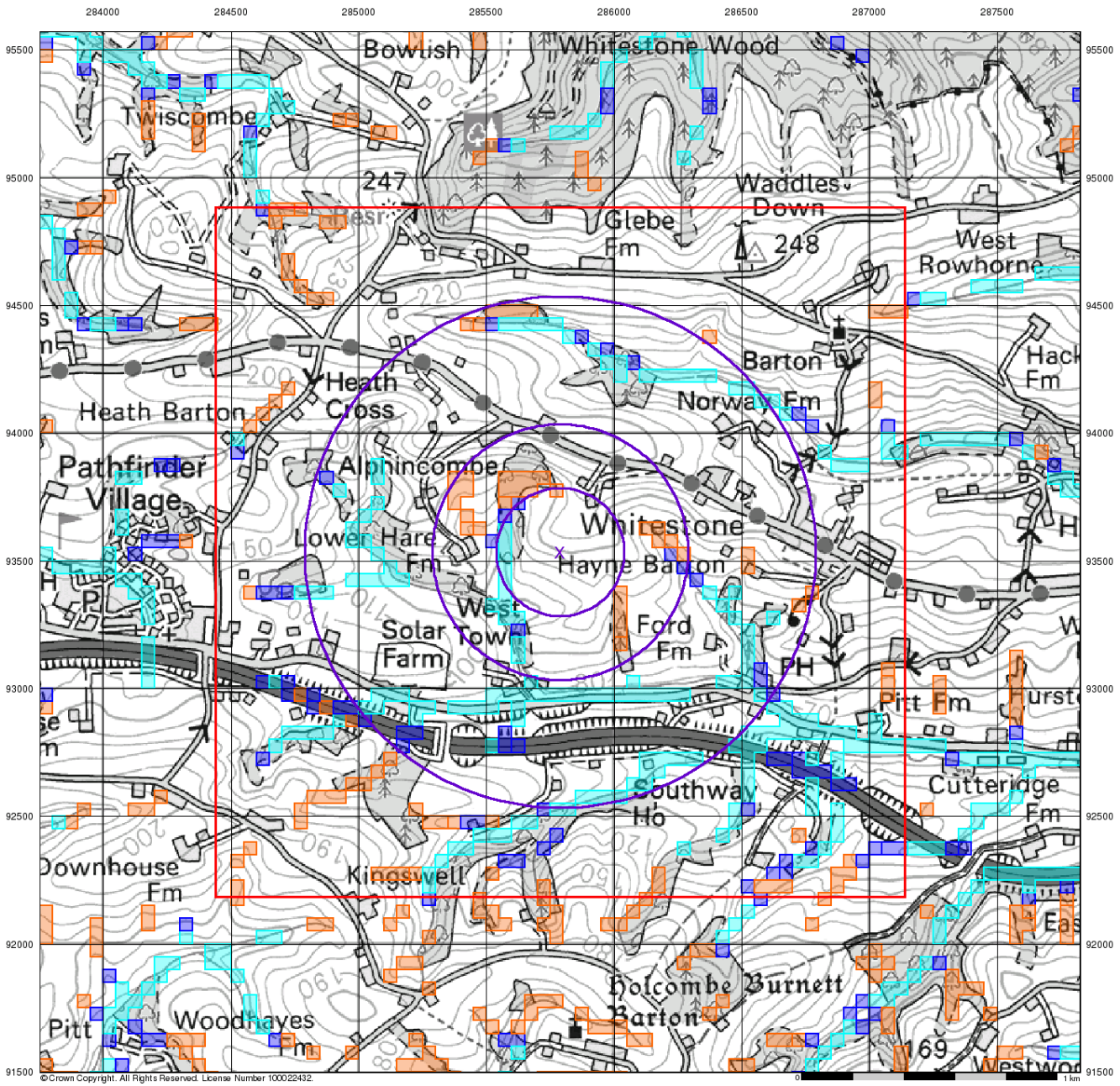

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BGS Flood GFS Data

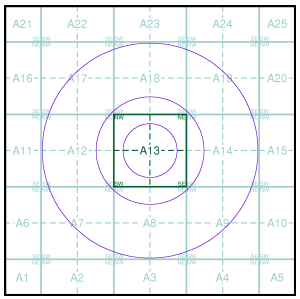
General

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:	285408085_1_1
Customer Ref:	213189
National Grid Reference:	285790, 93530
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

Lower Hare Farm, Whitestone, EXETER, EX4 2HW

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Envirocheck® Report:

Datasheet

Order Details:

Order Number:
285408085_1_1

Customer Reference:
213189

National Grid Reference:
285790, 93530

Slice:
A

Site Area (Ha):
0.01

Search Buffer (m):
1000

Site Details:

Lower Hare Farm, Whitestone
EXETER
EX4 2HW

Client Details:

Miss S Muir
AA Environmental Ltd
4-8 Cholswell Court
Shippon
Abingdon
OX13 6HX

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Contents

Introduction

The Environment Act 1995 has made site sensitivity a key issue, as the legislation pays as much attention to the pathways by which contamination could spread, and to the vulnerable targets of contamination, as it does the potential sources of contamination.
For this reason, Landmark's Site Sensitivity maps and Datasheet(s) place great emphasis on statutory data provided by the Environment Agency/Natural Resources Wales and the Scottish Environment Protection Agency; it also incorporates data from Natural England (and the Scottish and Welsh equivalents) and Local Authorities; and highlights hydrogeological features required by environmental and geotechnical consultants. It does not include any information concerning past uses of land. The datasheet is produced by querying the Landmark database to a distance defined by the client from a site boundary provided by the client.
In this datasheet the National Grid References (NGRs) are rounded to the nearest 10m in accordance with Landmark's agreements with a number of Data Suppliers.

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Radon Potential dataset Copyright Notice

Natural Resources Wales Copyright Notice

Report Version v53.0

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Summary

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				12
Prosecutions Relating to Controlled Waters			n/a	n/a	n/a
Enforcement and Prohibition Notices					
Integrated Pollution Controls					
Integrated Pollution Prevention And Control					
Local Authority Integrated Pollution Prevention And Control					
Local Authority Pollution Prevention and Controls					
Local Authority Pollution Prevention and Control Enforcements					
Nearest Surface Water Feature	pg 4		Yes		
Pollution Incidents to Controlled Waters	pg 5		1	1	10
Prosecutions Relating to Authorised Processes					
Registered Radioactive Substances					
River Quality	pg 7			1	
River Quality Biology Sampling Points					
River Quality Chemistry Sampling Points					
Substantiated Pollution Incident Register					
Water Abstractions	pg 7				8 (*20)
Water Industry Act Referrals					
Groundwater Vulnerability Map	pg 14	Yes	n/a	n/a	n/a
Groundwater Vulnerability - Soluble Rock Risk			n/a	n/a	n/a
Groundwater Vulnerability - Local Information			n/a	n/a	n/a
Bedrock Aquifer Designations	pg 14	Yes	n/a	n/a	n/a
Superficial Aquifer Designations			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
OS Water Network Lines	pg 14		1	13	55

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Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Waste					
BGS Recorded Landfill Sites					
Historical Landfill Sites	pg 23				2
Integrated Pollution Control Registered Waste Sites					
Licensed Waste Management Facilities (Landfill Boundaries)					
Licensed Waste Management Facilities (Locations)	pg 23				2
Local Authority Landfill Coverage	pg 23	2	n/a	n/a	n/a
Local Authority Recorded Landfill Sites					
Potentially Infilled Land (Non-Water)					
Potentially Infilled Land (Water)					
Registered Landfill Sites	pg 24				1
Registered Waste Transfer Sites					
Registered Waste Treatment or Disposal Sites	pg 24				1
Hazardous Substances					
Control of Major Accident Hazards Sites (COMAH)					
Explosive Sites					
Notification of Installations Handling Hazardous Substances (NIHHS)					
Planning Hazardous Substance Consents					
Planning Hazardous Substance Enforcements					

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Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Geological					
BGS 1:625,000 Solid Geology	pg 25	Yes	n/a	n/a	n/a
BGS Estimated Soil Chemistry	pg 25	Yes			Yes
BGS Recorded Mineral Sites					
BGS Urban Soil Chemistry					
BGS Urban Soil Chemistry Averages					
CBSCB Compensation District			n/a	n/a	n/a
Coal Mining Affected Areas			n/a	n/a	n/a
Mining Instability			n/a	n/a	n/a
Man-Made Mining Cavities					
Natural Cavities					
Non Coal Mining Areas of Great Britain	pg 25	Yes	Yes	n/a	n/a
Potential for Collapsible Ground Stability Hazards	pg 25	Yes		n/a	n/a
Potential for Compressible Ground Stability Hazards				n/a	n/a
Potential for Ground Dissolution Stability Hazards				n/a	n/a
Potential for Landslide Ground Stability Hazards	pg 25	Yes	Yes	n/a	n/a
Potential for Running Sand Ground Stability Hazards	pg 26		Yes	n/a	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards	pg 26	Yes		n/a	n/a
Radon Potential - Radon Affected Areas			n/a	n/a	n/a
Radon Potential - Radon Protection Measures			n/a	n/a	n/a
Industrial Land Use					
Contemporary Trade Directory Entries	pg 27				13
Fuel Station Entries					
Points of Interest - Commercial Services	pg 28				10
Points of Interest - Education and Health					
Points of Interest - Manufacturing and Production	pg 28			2	2
Points of Interest - Public Infrastructure					
Points of Interest - Recreational and Environmental	pg 29				1
Gas Pipelines					
Underground Electrical Cables					

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Sensitive Land Use					
Ancient Woodland					
Areas of Adopted Green Belt					
Areas of Unadopted Green Belt					
Areas of Outstanding Natural Beauty					
Environmentally Sensitive Areas					
Forest Parks					
Local Nature Reserves					
Marine Nature Reserves					
National Nature Reserves					
National Parks					
Nitrate Sensitive Areas					
Nitrate Vulnerable Zones					
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 to Occur at Surface	A13NW (W)	190	1	285600 93534
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13NE (N)	216	1	285789 93750
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NW (NW)	217	1	285650 93700
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NW (NW)	222	1	285600 93650
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13NW (N)	234	1	285700 93750
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NW (W)	240	1	285550 93550
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13SE (SE)	251	1	286000 93400
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13NW (NW)	252	1	285600 93700
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13NW (W)	297	1	285500 93600
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13SW (SW)	317	1	285650 93250
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13NE (E)	318	1	286100 93600
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A12NE (W)	346	1	285450 93600
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A12NE (W)	359	1	285450 93650
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A13SW (SW)	363	1	285650 93200
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13SE (SE)	396	1	286000 93200
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A12NE (NW)	402	1	285450 93750
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A14NW (E)	411	1	286200 93534
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A14NW (E)	412	1	286200 93550
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A14NW (E)	461	1	286250 93534
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A14SW (E)	463	1	286250 93500
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A8NW (S)	493	1	285700 93050

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
1	**Discharge Consents** Operator: Mr & Mrs A C W King Property Type: DOMESTIC PROPERTY (SINGLE) (INCL FARM HOUSE) Location: Wheelhouse Barn, West Town Farm, Whitestone, Devon, Ex4 2hh Authority: Environment Agency, South West Region Catchment Area: Upper Teign, Devon Reference: Nra-Sw-1992 Permit Version: 1 Effective Date: 23rd August 1990 Issued Date: 23rd August 1990 Revocation Date: 25th April 2001 Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Land/Soakaway Receiving Water: Soakaway **Status: Revoked: New Consent issued (Water Act 1989, Section 113)** Positional Accuracy: Located by supplier to within 100m	A8NW (S)	542	2	285700 93000
1	**Discharge Consents** Operator: Mrs Carol Carpenter Property Type: DOMESTIC PROPERTY (MULTIPLE) (INCL FARM HOUSES) Location: West Town Farm Tedburn Road, Whitestone, Exeter, Devon, Ex4 2hh Authority: Environment Agency, South West Region Catchment Area: Tidal Exe, Devon Reference: 201981 Permit Version: 1 Effective Date: 1st March 2001 Issued Date: 16th January 2001 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Tributary Of Alphin Brook **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	A8NW (S)	556	2	285680 92990
2	**Discharge Consents** Operator: Mr & Mrs G Hedgecox Property Type: DOMESTIC PROPERTY (SINGLE) (INCL FARM HOUSE) Location: Barn Conversion At West Town Farm, Whitestone, Exeter, Devon Authority: Environment Agency, South West Region Catchment Area: Tidal Exe, Devon Reference: 200097/Sa/01 Permit Version: 1 Effective Date: 1st October 1996 Issued Date: 1st October 1996 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Land/Soakaway Receiving Water: Soakaway **Status: Varied by Application - (Water Resources Act 1991, Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 100m	A8NW (SW)	586	2	285550 93000
3	**Discharge Consents** Operator: Mr & Mrs Andrew King Property Type: DOMESTIC PROPERTY (SINGLE) (INCL FARM HOUSE) Location: Wheal House Tedburn Road, Whitestone, Exeter, Devon, Ex4 2hh Authority: Environment Agency, South West Region Catchment Area: Tidal Exe, Devon Reference: 202037 Permit Version: 1 Effective Date: 25th April 2001 Issued Date: 25th April 2001 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Alphin Brook **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	A8NW (S)	597	2	285740 92940

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
4	**Discharge Consents** Operator: Mr E G & Mrs J M Northcott Property Type: DOMESTIC PROPERTY (SINGLE) (INCL FARM HOUSE) Location: Kent Plantation, Whitestone, Exeter, Devon, Ex4 2jy Authority: Environment Agency, South West Region Catchment Area: Tidal Exe, Devon Reference: 200908 Permit Version: 1 Effective Date: 3rd December 1998 Issued Date: 12th March 1999 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Land/Soakaway Receiving Water: Soakaway **Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A14NW (NE)	634	2	286360 93810
4	**Discharge Consents** Operator: Mr L H Freemantle Property Type: Domestic Property (Single) Location: Kent Plantation, Whitestone, Exeter, Devon Authority: Environment Agency, South West Region Catchment Area: Tidal Exe, Devon Reference: 200908 Permit Version: 1 Effective Date: 3rd December 1998 Issued Date: 12th March 1999 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Land/Soakaway Receiving Water: Soakaway **Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 100m	A14NW (NE)	634	2	286360 93810
5	**Discharge Consents** Operator: R H C Mingo Property Type: DOMESTIC PROPERTY (SINGLE) (INCL FARM HOUSE) Location: Land At Norway Farm, Whitestone, Exeter, Devon Authority: Environment Agency, South West Region Catchment Area: Tidal Exe, Devon Reference: Nra-Sw-5265 Permit Version: 1 Effective Date: 1st April 1993 Issued Date: 21st December 1992 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Land/Soakaway Receiving Water: Soakaway **Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 100m	A19SE (NE)	800	2	286500 93900
6	**Discharge Consents** Operator: Mr R D Rimmer Property Type: DOMESTIC PROPERTY (SINGLE) (INCL FARM HOUSE) Location: A New Dwelling At Brookside Garage, Whitestone, Exeter, Devon, Ex4 2hh Authority: Environment Agency, South West Region Catchment Area: Tidal Exe, Devon Reference: 200691/Pw/01 Permit Version: 1 Effective Date: 6th May 1998 Issued Date: 6th May 1998 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Freshwater Stream/River Receiving Water: A Tributary Of Alphin Brook **Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 100m	A7NE (SW)	817	2	285230 92940

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
6	**Discharge Consents** Operator: Mr R D Rimmer Property Type: SHOP INCL GARDEN CENTRE/RETAIL TRADE(NOT MOTOR VEHICLE) Location: Brookside Garage, Whitestone, Exeter, Devon Authority: Environment Agency, South West Region Catchment Area: Tidal Exe, Devon Reference: Swwa 423 Permit Version: 1 Effective Date: 5th September 1985 Issued Date: 5th September 1985 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Alphin Brook (River Exe) **Status:** **New Consent, by Application, granted by Secretary of State** Positional Accuracy: Located by supplier to within 100m	A7NE (SW)	837	2	285200 92940
7	**Discharge Consents** Operator: Mr Derek Cove Property Type: DOMESTIC PROPERTY (SINGLE) (INCL FARM HOUSE) Location: Alphincombe And Combe Loft, Whitestone, Exeter, Devon, Ex4 2hw Authority: Environment Agency, South West Region Catchment Area: Tidal Exe, Devon Reference: Npswqd005907 Permit Version: 1 Effective Date: 16th December 2008 Issued Date: 16th December 2008 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Trib Of Alphin Brook **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	A17SW (NW)	868	2	285022 93940
8	**Discharge Consents** Operator: Mr & Mrs Robinson & Mr & Mrs O'Farrell Property Type: DOMESTIC PROPERTY (MULTIPLE) (INCL FARM HOUSES) Location: Southway House (Barn Conv+Farm Hs) Whitestone Way, Whitestone, Exeter, Devon, Ex4 2hq Authority: Environment Agency, South West Region Catchment Area: Tidal Exe, Devon Reference: 203210 Permit Version: 1 Effective Date: 1st October 2004 Issued Date: 7th May 2004 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Alphin Brook **Status:** **New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 100m	A9SW (SE)	931	2	286200 92700
9	**Discharge Consents** Operator: Heavitree Brewery Plc Property Type: HOLIDAY ACCOM/CAMP SITE/CARAVAN SITE/HOTEL/HOSTEL Location: Travellers Rest Ph, Whitestone, Exeter, Devon Authority: Environment Agency, South West Region Catchment Area: Tidal Exe, Devon Reference: Swwa 17 Permit Version: 1 Effective Date: 4th December 1974 Issued Date: 4th December 1974 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Alphin Brook **Status:** **New Consent, by Application, granted by Secretary of State** Positional Accuracy: Located by supplier to within 10m	A9NE (SE)	1000	2	286600 92950
	Nearest Surface Water Feature	A13NW (W)	196	-	285594 93535

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
10	**Pollution Incidents to Controlled Waters** Property Type: Cattle (Dairy) Farming: Yards Location: Location Description Not Available Authority: Environment Agency, South West Region Pollutant: Animal Waste/Slurry Note: Poor Operational Practise Incident Date: 18th March 1993 Incident Reference: 62008326 Catchment Area: Tidal Exe, Devon Receiving Water: Freshwater Stream/River Cause of Incident: Leakage Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13NW (W)	231	2	285560 93560
11	**Pollution Incidents to Controlled Waters** Property Type: Septic Tank Location: Location Description Not Available Authority: Environment Agency, South West Region Pollutant: Sewage - Treated Effluent Note: Deliberate Act Incident Date: 25th June 1991 Incident Reference: 62002881 Catchment Area: Tidal Exe, Devon Receiving Water: Freshwater Stream/River Cause of Incident: Effluent Discharge Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A8NW (SW)	474	2	285600 93100
12	**Pollution Incidents to Controlled Waters** Property Type: Cattle Manure (Solids) Store Location: Location Description Not Available Authority: Environment Agency, South West Region Pollutant: Animal Waste/Slurry Note: Poor Operational Practise Incident Date: 5th April 1991 Incident Reference: 62002487 Catchment Area: Tidal Exe, Devon Receiving Water: Freshwater Stream/River Cause of Incident: Leachate Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A8NW (S)	547	2	285700 92995
13	**Pollution Incidents to Controlled Waters** Property Type: Cattle Manure (Solids) Store Location: Location Description Not Available Authority: Environment Agency, South West Region Pollutant: Animal Waste/Slurry Note: Poor Operational Practise Incident Date: 17th May 1994 Incident Reference: 62007382 Catchment Area: Tidal Exe, Devon Receiving Water: Freshwater Stream/River Cause of Incident: Leachate Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A8NW (S)	572	2	285600 92995
14	**Pollution Incidents to Controlled Waters** Property Type: Industrial: Other Location: Location Description Not Available Authority: Environment Agency, South West Region Pollutant: Oils - Waste Oil Note: Accidental Spillage/Leakage Incident Date: 30th July 1991 Incident Reference: 62002889 Catchment Area: Tidal Exe, Devon Receiving Water: Freshwater Stream/River Cause of Incident: Runoff Incident Severity: Category 2 - Significant Incident Positional Accuracy: Located by supplier to within 100m	A8NE (S)	575	2	286000 93000
15	**Pollution Incidents to Controlled Waters** Property Type: Public Highway: Surface Runoff Location: Location Description Not Available Authority: Environment Agency, South West Region Pollutant: Oils - Other Oil Note: Weather Incident Date: 26th February 1993 Incident Reference: 62008758 Catchment Area: Tidal Exe, Devon Receiving Water: Freshwater Stream/River Cause of Incident: Weather Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A8NW (SW)	698	2	285500 92900

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
16	**Pollution Incidents to Controlled Waters** Property Type: Industrial: Other Location: Location Description Not Available Authority: Environment Agency, South West Region Pollutant: Oils - Diesel (Including Agricultural) Note: Poor Management Control Incident Date: 27th November 1993 Incident Reference: 62014286 Catchment Area: Lower Exe, Devon Receiving Water: Freshwater Stream/River Cause of Incident: Spillage Incident Severity: Category 2 - Significant Incident Positional Accuracy: Located by supplier to within 100m	A7NE (SW)	796	2	285200 93000
17	**Pollution Incidents to Controlled Waters** Property Type: Transport, Storage, Communications: Road Location: Old Tedburn Road, Redmills Near, WHITESTONE, Devon Authority: Environment Agency, South West Region Pollutant: Organic Chemicals : Diesel Fuels Note: Not Supplied Incident Date: 17th May 1999 Incident Reference: 43982 Catchment Area: Tidal Exe, Devon Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 10m	A14NE (E)	814	2	286600 93600
18	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Location Description Not Available Authority: Environment Agency, South West Region Pollutant: Unknown Note: Not Supplied Incident Date: 4th April 1991 Incident Reference: 62002496 Catchment Area: Tidal Exe, Devon Receiving Water: Freshwater Stream/River Cause of Incident: Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A7SE (SW)	883	2	285300 92800
19	**Pollution Incidents to Controlled Waters** Property Type: Public Highway Location: Location Description Not Available Authority: Environment Agency, South West Region Pollutant: Other Note: Natural Causes Incident Date: 25th February 1992 Incident Reference: 31001915 Catchment Area: Tidal Exe, Devon Receiving Water: Freshwater Stream/River Cause of Incident: Other Cause Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A9SW (SE)	931	2	286200 92700
20	**Pollution Incidents to Controlled Waters** Property Type: Acid Processes Location: Location Description Not Available Authority: Environment Agency, South West Region Pollutant: Oils - Waste Oil Note: Inadequate Design/Capacity Incident Date: 5th April 1991 Incident Reference: 62002488 Catchment Area: Tidal Exe, Devon Receiving Water: Freshwater Stream/River Cause of Incident: Runoff Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A7SE (SW)	946	2	285200 92795
21	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Location Description Not Available Authority: Environment Agency, South West Region Pollutant: Oils - Diesel (Including Agricultural) Note: Not Supplied Incident Date: 27th November 1993 Incident Reference: 62014285 Catchment Area: Lower Exe, Devon Receiving Water: Freshwater Stream/River Cause of Incident: Other Incident/Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A9NE (SE)	972	2	286600 93000

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	River Quality Name: Alphin B GQA Grade: River Quality B Reach: Source-Dymonds Bridge Estimated Distance (km): 2.2 Flow Rate: Flow less than 0.31 cumecs Flow Type: River Year: 2000	A8NW (S)	366	2	285759 93170
22	**Water Abstractions** Operator: Mrs G Furneaux Licence Number: 14/45/002/1127 Permit Version: 100 Location: Higher Hare - Well Authority: Environment Agency, South West Region Abstraction: General Agriculture; General Use (Medium Loss) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Higher Hare Farm, Whitestone, Exeter Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 11th November 1966 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A18SW (N)	503	2	285600 94000
23	**Water Abstractions** Operator: Mrs O E Harris Licence Number: 14/45/002/1125 Permit Version: 100 Location: West Town Farm - Well Authority: Environment Agency, South West Region Abstraction: General Agriculture; General Use (Medium Loss) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: West Town Farm, Whitestone, Exeter Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 11th November 1966 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A8NW (S)	567	2	285600 93000
24	**Water Abstractions** Operator: Mr S A E Snow Licence Number: 14/45/002/1070 Permit Version: 100 Location: Whitestone House - Well Authority: Environment Agency, South West Region Abstraction: General Agriculture; General Use (Medium Loss) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Whitestone House, Whitestone Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 28th October 1966 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A14NW (NE)	576	2	286300 93800
25	**Water Abstractions** Operator: MR F F OSGOOD Licence Number: 14450021129 Permit Version: Not Supplied Location: Alphin Springs, Heath Cross, Whitestone, EXETER, Devon Authority: Environment Agency, South West Region Abstraction: Agriculture (General) Abstraction Type: Not Supplied Source: Well Daily Rate (m3): 2.30 Yearly Rate (m3): 830.00 Details: Depth 6M 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	A17SE (NW)	748	2	285300 94100

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
26	**Water Abstractions** Operator: Lt Col B R Turner Licence Number: 14/45/002/1124 Permit Version: 100 Location: Pound View - Well Authority: Environment Agency, South West Region Abstraction: General Agriculture; General Use (Medium Loss) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Pound View, Whitestone, Exeter Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 11th November 1966 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A17NE (NW)	909	2	285300 94300
27	**Water Abstractions** Operator: R D Rimmer Licence Number: 14/45/002/1765 Permit Version: 101 Location: Brookside Garage - Borehole Authority: Environment Agency, South West Region Abstraction: Other Industrial/Commercial/Public Services: Process Water Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Brookside Garage, Whitestone Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 1st April 2001 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A7SE (SW)	942	2	285200 92800
27	**Water Abstractions** Operator: Brookside Garage Licence Number: 14/45/002/1765 Permit Version: 100 Location: Brookside Garage - Borehole Authority: Environment Agency, South West Region Abstraction: Other Industrial/Commercial/Public Services: Process Water Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Brookside Garage Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 14th July 1967 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A7SE (SW)	942	2	285200 92800
28	**Water Abstractions** Operator: Mrs G Furneaux Licence Number: 14/45/002/1126 Permit Version: 100 Location: Higher Hare - Tapped Spring Authority: Environment Agency, South West Region Abstraction: General Agriculture; General Use (Medium Loss) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Higher Hare Farm, Whitestone, Exeter Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 11th November 1966 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A17NE (NW)	967	2	285200 94300

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: HAS BEEN ALLOCATED FOR Licence Number: 14450021121 Permit Version: Not Supplied Location: Lower Kent Farm , WHITESTONE Authority: Environment Agency, South West Region Abstraction: Agriculture (General) Abstraction Type: Not Supplied Source: Well Daily Rate (m3): 7.40 Yearly Rate (m3): 3591.00 Details: Depth 10M 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	A14NE (E)	1025	2	286800 93700
	Water Abstractions Operator: Messrs L & W Brewer Licence Number: 14/45/002/1476 Permit Version: 100 Location: Glebe, Whitstone Authority: Environment Agency, South West Region Abstraction: General Farming And Domestic Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Glebe, Whitstone Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 27th January 1967 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A23SE (N)	1087	2	286000 94600
	Water Abstractions Operator: HAS BEEN ALLOCATED FOR Licence Number: 14450021123 Permit Version: Not Supplied Location: Pound Farm , WHITESTONE Authority: Environment Agency, South West Region Abstraction: Agriculture (General) Abstraction Type: Not Supplied Source: Well Daily Rate (m3): 4.50 Yearly Rate (m3): 1659.00 Details: Not Supplied 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	A17NE (NW)	1127	2	285200 94495
	Water Abstractions Operator: HAS BEEN ALLOCATED FOR Licence Number: 14450021122 Permit Version: Not Supplied Location: Pound Farm , WHITESTONE Authority: Environment Agency, South West Region Abstraction: Agriculture (General) Abstraction Type: Not Supplied Source: Well Daily Rate (m3): 4.50 Yearly Rate (m3): 1659.00 Details: Not Supplied 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	A17NE (NW)	1132	2	285200 94500

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: HAS BEEN ALLOCATED FOR Licence Number: 14450021776 Permit Version: Not Supplied Location: Waldenfields, WHITESTONE Authority: Environment Agency, South West Region Abstraction: Agriculture (General) Abstraction Type: Not Supplied Source: Borehole Daily Rate (m3): 2.70 Yearly Rate (m3): 995.00 Details: Depth 49M 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	A22SE (NW)	1168	2	285300 94595
	Water Abstractions Operator: HAS BEEN ALLOCATED FOR Licence Number: 14450021776 Permit Version: Not Supplied Location: Waldenfields, WHITESTONE Authority: Environment Agency, South West Region Abstraction: Agricultural Spray Irrigation (Summer) Abstraction Type: Not Supplied Source: Borehole Daily Rate (m3): 13.60 Yearly Rate (m3): 618.00 Details: Depth 49M 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	A22SE (NW)	1173	2	285300 94600
	Water Abstractions Operator: HAS BEEN ALLOCATED FOR Licence Number: 14450021775 Permit Version: Not Supplied Location: Waldenfields, WHITESTONE Authority: Environment Agency, South West Region Abstraction: Agriculture (General) Abstraction Type: Not Supplied Source: Well Daily Rate (m3): 1.40 Yearly Rate (m3): 497.00 Details: Depth 10M 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	A22SE (N)	1229	2	285400 94700
	Water Abstractions Operator: Mr N Randall Licence Number: 14/45/002/2141 Permit Version: 100 Location: Pound Farm - Borehole Authority: Environment Agency, South West Region Abstraction: General Agriculture; General Use (Medium Loss) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Pound Farm, Whitestone, Exeter, Devon Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 11th January 1978 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A17NW (NW)	1248	2	285000 94500

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: HAS BEEN ALLOCATED FOR Licence Number: 14450021831 Permit Version: Not Supplied Location: Location Description Not Available Authority: Environment Agency, South West Region Abstraction: Agriculture (General) Abstraction Type: Not Supplied Source: Borehole Daily Rate (m3): 9.10 Yearly Rate (m3): 3318.00 Details: Not Supplied 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	A17NW (NW)	1248	2	285001 94501
	Water Abstractions Operator: Mr R V Netherway Licence Number: 14/45/002/1040 Permit Version: 100 Location: Farm Barton - Tapped Spring Authority: Environment Agency, South West Region Abstraction: General Agriculture; General Use (Medium Loss) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Farm Barton, Whitestone, Exeter, Devon Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 21st October 1966 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A20SW (NE)	1382	2	287000 94200
	Water Abstractions Operator: Ms E C Lewis Licence Number: 14/45/002/1771 Permit Version: 100 Location: Pitt Farm, Borehole Authority: Environment Agency, South West Region Abstraction: General Agriculture; General Use (Medium Loss) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Pitt Farm, Whitestone Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 7th November 1997 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A25SW (NE)	1540	2	286900 94600
	Water Abstractions Operator: Ms E C Lewis Licence Number: 14/45/002/1771 Permit Version: 100 Location: Pitt Farm, Borehole Authority: Environment Agency, South West Region Abstraction: Household Water Supply: Drinking; Cooking; Sanitary; Washing; (Small Garden) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: The Chalet, Pitt Farm, Whitestone Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 7th November 1997 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A25SW (NE)	1540	2	286900 94600

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Mr & Mrs A Sabine Licence Number: 14/45/002/1010 Permit Version: 100 Location: Springdale Farm - Tapped Spring Authority: Environment Agency, South West Region Abstraction: General Agriculture; General Use (Medium Loss) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Springdale, Whitestone, Exeter, Devon Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 14th October 1966 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A4SW (SE)	1560	2	286400 92100
	Water Abstractions Operator: Mr D M Palfrey Licence Number: 14/45/002/1858 Permit Version: 100 Location: Kingswell Farm Well (Os 1540) Authority: Environment Agency, South West Region Abstraction: General Agriculture; General Use (Medium Loss) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Kingswell Farm, Longdown, Exeter Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 18th October 1968 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A2SW (SW)	1592	2	285100 92100
	Water Abstractions Operator: HAS BEEN ALLOCATED FOR Licence Number: 14450020945 Permit Version: Not Supplied Location: Pitt Farm , NADDERWATER Authority: Environment Agency, South West Region Abstraction: Agriculture (General) Abstraction Type: Not Supplied Source: Spring Daily Rate (m3): 3.60 Yearly Rate (m3): 1327.00 Details: Not Supplied 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	A25SW (NE)	1681	2	287000 94700
	Water Abstractions Operator: Mr K Chard Licence Number: 14/45/002/1161 Permit Version: 100 Location: Beacon Down Farm - Well Authority: Environment Agency, South West Region Abstraction: General Agriculture; General Use (Medium Loss) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Weeks, Beacon Down Farm, Longdown, Exeter Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 18th November 1966 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	(S)	1867	2	285100 91800

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Has Been Allocated For Licence Number: 14450021474 Permit Version: Not Supplied Location: Twiscombe Farm, Whitestone, EXETER, Devon, EX4 2HS Authority: Environment Agency, South West Region Abstraction: Agriculture (General) Abstraction Type: Not Supplied Source: Well Daily Rate (m3): 4.30 Yearly Rate (m3): 900.00 Details: Borehole Depth :10 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	A21NE (NW)	1984	2	284705 95195
	Water Abstractions Operator: Mrs A J Davison Licence Number: 14/45/002/2043 Permit Version: 100 Location: Twiscombe Farm - Well Authority: Environment Agency, South West Region Abstraction: General Agriculture; General Use (Medium Loss) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Twiscombe Farm Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 16th March 1973 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A21NE (NW)	1991	2	284700 95200
	Water Abstractions Operator: Mr & Mrs Davison Licence Number: Unknown Licence Number Permit Version: Not Supplied Location: Location Description Not Available Authority: Environment Agency, South West Region Abstraction: Agriculture (General) Abstraction Type: Not Supplied Source: Well Daily Rate (m3): 20 Yearly Rate (m3): 6541 Details: Not Supplied 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	A21NE (NW)	1991	2	284700 95200
	Water Abstractions Operator: Mr M C Tucker Licence Number: 14/45/002/1499 Permit Version: 100 Location: Ball Oaks Farm Well Authority: Environment Agency, South West Region Abstraction: General Agriculture; General Use (Medium Loss) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Ball Oaks, Tedburn St Mary, Exeter, Devon Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 2nd February 1984 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	(W)	1997	2	283800 93700

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Groundwater Vulnerability Map Combined Classification: Secondary Bedrock Aquifer - High Vulnerability Combined Vulnerability: High Combined Aquifer: Productive Bedrock Aquifer, No Superficial Aquifer Pollutant Speed: High Bedrock Flow: Well Connected Fractures Dilution: 300-550 mm/year Baseflow Index: <40% Superficial Patchiness: <90% Superficial Thickness: <3m Superficial Recharge: No Data	A13NE (NE)	0	3	285789 93534
	Groundwater Vulnerability - Soluble Rock Risk None				
	Bedrock Aquifer Designations Aquifer Designation: Secondary Aquifer - A	A13NE (NE)	0	3	285789 93534
	Superficial Aquifer Designations No Data Available				
	Extreme Flooding from Rivers or Sea without Defences None				
	Flooding from Rivers or Sea without Defences None				
	Areas Benefiting from Flood Defences None				
	Flood Water Storage Areas None				
	Flood Defences None				
29	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 661.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Exe Primacy: 1	A13SW (W)	222	4	285574 93483
30	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 46.5 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Exe Primacy: 1	A13SW (SW)	316	4	285573 93305
31	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 175.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Exe Primacy: 1	A13NE (E)	331	4	286099 93648
32	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 65.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Exe Primacy: 1	A13SW (SW)	335	4	285594 93263

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
33	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 482.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Exe Primacy: 1	A13SW (SW)	349	4	285538 93294
34	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 3.5 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Exe Primacy: 1	A13SW (SW)	351	4	285538 93289
35	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 92.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Exe Primacy: 1	A13SW (SW)	353	4	285539 93286
36	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 5.5 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Exe Primacy: 1	A13SW (SW)	381	4	285587 93212
37	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 11.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Exe Primacy: 1	A13SW (SW)	383	4	285590 93208
38	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 291.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Exe Primacy: 1	A13SW (SW)	387	4	285597 93199
39	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 209.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Exe Primacy: 1	A8NE (SE)	435	4	286020 93166
40	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 451.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Exe Primacy: 1	A14NW (E)	436	4	286225 93535
41	**OS Water Network Lines** Watercourse Form: Lake Watercourse Length: 2.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Exe Primacy: 1	A14NW (E)	436	4	286225 93538

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
42	**OS Water Network Lines** Watercourse Form: Lake Watercourse Length: 32.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Exe Primacy: 1	A14NW (E)	436	4	286225 93538
43	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 354.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Alphin Brook Catchment Name: Exe Primacy: 1	A8NE (S)	561	4	285906 92986
44	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 5.0 Watercourse Level: Underground Permanent: True Watercourse Name: Alphin Brook Catchment Name: Exe Primacy: 1	A8NW (S)	577	4	285694 92965
45	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 15.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Alphin Brook Catchment Name: Exe Primacy: 1	A8NW (S)	579	4	285689 92965
46	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 29.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Alphin Brook Catchment Name: Exe Primacy: 1	A8NW (S)	583	4	285674 92964
47	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 91.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Alphin Brook Catchment Name: Exe Primacy: 1	A8NW (S)	596	4	285625 92962
48	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 10.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Exe Primacy: 1	A8NW (S)	597	4	285647 92955
49	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 38.7 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Exe Primacy: 1	A8NW (S)	607	4	285646 92945
50	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 3.7 Watercourse Level: Underground Permanent: True Watercourse Name: Alphin Brook Catchment Name: Exe Primacy: 1	A8NE (SE)	613	4	286029 92970

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
51	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 33.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Alphin Brook Catchment Name: Exe Primacy: 1	A8NE (SE)	615	4	286032 92970
52	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 66.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Exe Primacy: 1	A17SE (NW)	623	4	285321 93945
53	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 28.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Exe Primacy: 1	A17SE (NW)	624	4	285292 93912
54	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 27.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Exe Primacy: 1	A17SE (NW)	624	4	285313 93936
55	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 28.4 Watercourse Level: Underground Permanent: True Watercourse Name: Alphin Brook Catchment Name: Exe Primacy: 1	A8NW (S)	630	4	285560 92947
56	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 502.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Alphin Brook Catchment Name: Exe Primacy: 1	A8NE (SE)	632	4	286065 92966
57	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 161.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Exe Primacy: 1	A8NW (S)	644	4	285627 92911
58	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 61.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Alphin Brook Catchment Name: Exe Primacy: 1	A8NW (S)	657	4	285542 92926
59	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 294.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Exe Primacy: 1	A12SE (W)	666	4	285127 93463

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
60	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 106.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Exe Primacy: 1	A17SE (NW)	670	4	285451 94112
61	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 262.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Exe Primacy: 1	A12SE (W)	672	4	285125 93431
62	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 7.3 Watercourse Level: Underground Permanent: True Watercourse Name: Alphin Brook Catchment Name: Exe Primacy: 1	A8NW (SW)	687	4	285481 92921
63	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 53.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Alphin Brook Catchment Name: Exe Primacy: 1	A8NW (SW)	690	4	285473 92921
64	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 10.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Alphin Brook Catchment Name: Exe Primacy: 1	A7NE (SW)	715	4	285420 92923
65	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 141.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Alphin Brook Catchment Name: Exe Primacy: 1	A7NE (SW)	720	4	285409 92924
66	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 340.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Exe Primacy: 1	A12NW (W)	736	4	285081 93732
67	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 1945.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Nadder Brook Catchment Name: Exe Primacy: 1	A18NE (NE)	763	4	286116 94223
68	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 5.7 Watercourse Level: Underground Permanent: True Watercourse Name: Alphin Brook Catchment Name: Exe Primacy: 1	A7NE (SW)	785	4	285270 92946

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
69	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 28.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Alphin Brook Catchment Name: Exe Primacy: 1	A7NE (SW)	788	4	285264 92947
70	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 147.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Exe Primacy: 1	A17SE (NW)	791	4	285230 94092
71	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 243.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Exe Primacy: 1	A14SE (SE)	791	4	286507 93203
72	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 73.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Exe Primacy: 1	A14SE (SE)	791	4	286508 93206
73	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 258.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Exe Primacy: 1	A17SE (NW)	799	4	285181 94052
74	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 88.2 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Exe Primacy: 1	A17SE (NW)	801	4	285191 94067
75	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 181.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Alphin Brook Catchment Name: Exe Primacy: 1	A7NE (SW)	804	4	285236 92951
76	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 11.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Exe Primacy: 1	A7NE (SW)	804	4	285236 92951
77	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 37.8 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Exe Primacy: 1	A7NE (SW)	811	4	285225 92952

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
78	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 374.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Exe Primacy: 1	A12NW (W)	828	4	284968 93639
79	**OS Water Network Lines** Watercourse Form: Lake Watercourse Length: 28.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Exe Primacy: 1	A14SE (E)	833	4	286567 93240
80	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 4.2 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Exe Primacy: 1	A17SW (NW)	836	4	285037 93898
81	**OS Water Network Lines** Watercourse Form: Lake Watercourse Length: 16.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Exe Primacy: 1	A17SW (NW)	839	4	285036 93902
82	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 4.9 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Exe Primacy: 1	A7NE (SW)	843	4	285188 92944
83	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 260.6 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Exe Primacy: 1	A7NE (SW)	847	4	285184 92942
84	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 50.1 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Exe Primacy: 1	A7NE (SW)	847	4	285184 92942
85	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 20.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Exe Primacy: 1	A14SE (E)	853	4	286593 93251
86	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 371.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Exe Primacy: 1	A7NE (SW)	869	4	285137 92961

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
87	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 16.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Exe Primacy: 1	A17SE (NW)	886	4	285145 94142
88	**OS Water Network Lines** Watercourse Form: Lake Watercourse Length: 8.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Exe Primacy: 1	A17SE (NW)	900	4	285130 94146
89	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 68.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Alphin Brook Catchment Name: Exe Primacy: 1	A9NE (SE)	915	4	286518 92983
90	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 381.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Exe Primacy: 1	A9SW (SE)	916	4	286149 92693
91	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 180.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Exe Primacy: 1	A8SE (S)	950	4	286118 92643
92	**OS Water Network Lines** Watercourse Form: Lake Watercourse Length: 18.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Nadder Brook Catchment Name: Exe Primacy: 1	A17NE (N)	959	4	285439 94426
93	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 297.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Nadder Brook Catchment Name: Exe Primacy: 1	A17NE (N)	970	4	285422 94431
94	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 1.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Alphin Brook Catchment Name: Exe Primacy: 1	A9NE (SE)	974	4	286570 92953
95	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 179.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Exe Primacy: 1	A8SE (S)	975	4	285953 92573

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
96	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 218.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Alphin Brook Catchment Name: Exe Primacy: 1	A9NE (SE)	975	4	286571 92952
97	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 297.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Alphin Brook Catchment Name: Exe Primacy: 1	A7SE (SW)	978	4	285161 92785

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
98	**Historical Landfill Sites** Licence Holder: Messrs Harris and Company Location: Whitestone, Devon Name: West Town Farm Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD08801 First Input Date: 1st September 1985 Last Input Date: 15th March 1988 Specified Waste Type: Deposited Waste included Inert and Industrial Waste EA Waste Ref: 21878 Regis Ref: EK1/L/HAR007 WRC Ref: 1100/0155 BGS Ref: Not Supplied Other Ref: WD/L/S39	A8NW (SW)	622	2	285537 92967
99	**Historical Landfill Sites** Licence Holder: Not Supplied Location: Tedburn St Mary Name: Greensacres Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD09857 First Input Date: Not Supplied Last Input Date: Not Supplied Specified Waste Type: Not Supplied EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: 1100/0346 BGS Ref: Not Supplied Other Ref: GDO 346	A12SW (W)	913	2	284894 93357
100	**Licensed Waste Management Facilities (Locations)** Licence Number: 21878 Location: Whitestone, Devon, EX4 Operator Name: Harris & Co Operator Location: Not Supplied Authority: Environment Agency - South West Region, Devon and Cornwall Area Site Category: Not Supplied **Licence Status: Surrendered** Issued: 3rd August 1984 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	A7NE (SW)	796	2	285200 93000
101	**Licensed Waste Management Facilities (Locations)** Licence Number: 21773 Location: Brookside Commercials, Five Mile Hill, Whitestone, Exeter, Devon, EX4 2HH Operator Name: Rimmer Richard Operator Location: Not Supplied Authority: Environment Agency - South West Region, Devon and Cornwall Area Site Category: End of Life Vehicles **Licence Status: Revoked** Issued: 24th November 2004 Last Modified: Not Supplied Expires: Not Supplied Suspended: Not Supplied Revoked: 6th February 2015 Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m	A7NE (SW)	866	2	285170 92930
	Local Authority Landfill Coverage Name: Teignbridge District Council - Has supplied landfill data		0	6	285789 93534
	Local Authority Landfill Coverage Name: Devon County Council - Has supplied landfill data		0	5	285789 93534

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
102	**Registered Landfill Sites** Licence Holder: A T Westcott Licence Reference: Lf/S(39) (L/ 7/ 71/84 Site Location: West Town Farm, Whitestone, Exeter, Devon Licence Easting: 285400 Licence Northing: 92950 Operator Location: As Site Address Authority: Environment Agency - South West Region, Devon Area Site Category: Landfill Max Input Rate: Small (Equal to or greater than 10,000 and less than 25,000 tonnes per year) Waste Source Restrictions: No known restriction on source of waste Status: Licence lapsed/cancelled/defunct/not applicable/surrenderedCancelled Dated: 3rd August 1984 Preceded By Licence: Not Given Superseded By Licence: Not Given Positional Accuracy: Manually positioned to the address or location Boundary Accuracy: Not Applicable Authorised Waste: Asbestos Sheet & Pipes Devon Inert Ind.(Demol'N) Waste * Max.Waste Permitted By Licence(Stated) Prohibited Waste: Awkward/Bulky Houshold Waste Biodegradable/Putrescible Waste Household Waste Liquid Wastes Paper/Cardboard Waste Sludge Wastes Wastes Ex Toxic-Contaminated Premises	A7NE (SW)	703	2	285400 92950
103	**Registered Waste Treatment or Disposal Sites** Licence Holder: R D Rimmer Licence Reference: WR/L/SY/S(21) 01.94 Site Location: Brookside Commercials, Five Mile Hill, Whitestone, EXETER, Devon, EX4 2HH Operator Location: Springfield Farm, Cheriton Bishop, Exeter, Devon Authority: Environment Agency - South West Region, Devon Area Site Category: Scrapyard Max Input Rate: Very Small (Less than 10,000 tonnes per year) Waste Source Restrictions: No known restriction on source of waste Licence Status: Site exempt from licenceExempt Dated: 20th January 1994 Preceded By Licence: Not Given Superseded By Licence: Not Given Positional Accuracy: Positioned by the supplier Boundary Quality: Good Authorised Waste: Batteries Engines Machinery Max.Waste Permitted By Licence Motor Vehicles Tyres - Only If Fitted To Veh'S Accept Prohibited Waste: Carcinogens Clinical Wastes Immisc.Flammable Solvents Liquid/Sludges N.O.S. Medical (Misuse Of Drugs Act '71) Percussive/Explosive Waste Special Wastes Sub'S Contr0l. Radioactive Subs Act'60 Transformers/Capacitors Waste Cont. Viable Pathogenic Organ'Ms	A7NE (SW)	875	2	285154 92933

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS 1:625,000 Solid Geology Description: Holsworthy Group	A13NE (NE)	0	1	285789 93534
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 15 - 25 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A13NE (NE)	0	1	285789 93534
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 15 - 25 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 30 - 45 mg/kg	A8NE (S)	575	1	286000 93000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 15 - 25 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 30 - 45 mg/kg	A9SW (SE)	958	1	286212 92676
	BGS Measured Urban Soil Chemistry No data available				
	BGS Urban Soil Chemistry Averages No data available				
	Coal Mining Affected Areas In an area that might not be affected by coal mining				
	Non Coal Mining Areas of Great Britain Risk: Highly Unlikely Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	285789 93534
	Non Coal Mining Areas of Great Britain Risk: Rare Source: British Geological Survey, National Geoscience Information Service	A13NE (N)	212	1	285822 93743
	Potential for Collapsible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	285789 93534
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	285789 93534
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	285789 93534
	Potential for Landslide Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	285789 93534
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13NE (N)	75	1	285791 93609
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (N)	110	1	285830 93637

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SW (W)	181	1	285609 93527
	Potential for Landslide Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	199	1	285937 93666
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SE (SE)	202	1	285893 93362
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SE (SE)	226	1	285992 93435
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13SW (W)	230	1	285563 93494
	Potential for Landslide Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A13SW (W)	236	1	285554 93519
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	285789 93534
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SW (W)	181	1	285609 93527
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SE (SE)	226	1	285992 93435
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	285789 93534
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NW (W)	154	1	285636 93539
	Radon Potential - Radon Affected Areas Affected Area: The property is in a Lower probability radon area (less than 1% of homes are estimated to be at or above the Action Level). Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	285789 93534
	Radon Potential - Radon Protection Measures Protection Measure: No radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	285789 93534

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
104	**Contemporary Trade Directory Entries** Name: Motorside Ltd Location: 5 Mile Hill, Whitestone, Exeter, Devon, EX4 2HH Classification: Garage Services **Status: Inactive** Positional Accuracy: Manually positioned within the geographical locality	A8NW (SW)	541	-	285507 93073
105	**Contemporary Trade Directory Entries** Name: Hi-Line Services Location: Brookfield Lodge, Tedburn Road, Whitestone, EX4 2HH Classification: Mechanical Engineers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8NW (S)	584	-	285628 92974
106	**Contemporary Trade Directory Entries** Name: Exeter Van Centre Location: Tedburn Rd, Whitestone, Exeter, Devon, EX4 2HH Classification: Commercial Vehicle Dealers **Status: Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A8NW (S)	600	-	285783 92935
107	**Contemporary Trade Directory Entries** Name: Formatrix Location: Hayne Barton, Whitestone, Exeter, EX4 2JN Classification: Printers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14SE (E)	791	-	286575 93452
108	**Contemporary Trade Directory Entries** Name: Brookside Commercials Location: Tedburn Road, Whitestone, Exeter, EX4 2HH Classification: Commercial Vehicle Dealers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A7NE (SW)	855	-	285179 92936
108	**Contemporary Trade Directory Entries** Name: Swains Family Car Centre Location: Tedburn Road, Whitestone, Exeter, EX4 2HH Classification: Car Dealers - Used **Status: Active** Positional Accuracy: Automatically positioned to the address	A7NE (SW)	855	-	285179 92936
108	**Contemporary Trade Directory Entries** Name: Brookside Garage Location: Tedburn Road, Whitestone, Exeter, EX4 2HH Classification: Mot Testing Centres **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A7NE (SW)	855	-	285179 92936
108	**Contemporary Trade Directory Entries** Name: Brookside Body Repairs Location: Brookside Units, Tedburn Road, Whitestone, Exeter, Devon, EX4 2HH Classification: Car Body Repairs **Status: Active** Positional Accuracy: Manually positioned to the address or location	A7NE (SW)	856	-	285178 92936
109	**Contemporary Trade Directory Entries** Name: Brookside Location: Brookside Units,Tedburn Rd, Whitestone, Exeter, Devon, EX4 2HH Classification: Car Body Repairs **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A7NE (SW)	901	-	285122 92930
109	**Contemporary Trade Directory Entries** Name: Mech-Elec Engineering Sales Location: 4, Brookside Units, Tedburn Road, Whitestone, Exeter, EX4 2HH Classification: Generators - Sales & Service **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A7NE (SW)	903	-	285116 92933
109	**Contemporary Trade Directory Entries** Name: John Sincock Location: 5 Brookside Units, Tedburn Road, Whitestone, Exeter, EX4 2HH Classification: Garage Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A7NW (SW)	906	-	285111 92934
109	**Contemporary Trade Directory Entries** Name: J Sincock Location: 5, Brookside Units, Tedburn Road, Whitestone, Exeter, EX4 2HH Classification: Garage Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A7NW (SW)	906	-	285111 92934

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
110	**Contemporary Trade Directory Entries** Name: J W Bodywork Location: Pound View, Whitestone, Exeter, EX4 2HW Classification: Car Body Repairs **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A17NE (NW)	982	-	285211 94327
111	**Points of Interest - Commercial Services** Name: Brookside Location: Tedburn Road, Whitestone, Exeter, EX4 2HH Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A7NE (SW)	855	7	285179 92936
111	**Points of Interest - Commercial Services** Name: John Sincock Location: 5 Brookside Units, Tedburn Road, Whitestone, Exeter, EX4 2HH Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A7NE (SW)	855	7	285179 92936
111	**Points of Interest - Commercial Services** Name: Brookside Garage & Commercials Location: Tedburn Road, Whitestone, Exeter, EX4 2HH Category: Recycling Services Class Code: Scrap Metal Merchants Positional Accuracy: Positioned to address or location	A7NE (SW)	855	7	285179 92936
111	**Points of Interest - Commercial Services** Name: Brookside Garage Location: Tedburn Road, Whitestone, Exeter, EX4 2HH Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A7NE (SW)	856	7	285179 92935
111	**Points of Interest - Commercial Services** Name: Brookside Body Repairs Location: Brookside Units, Tedburn Road, Whitestone, Exeter, EX4 2HH Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A7NE (SW)	856	7	285178 92936
111	**Points of Interest - Commercial Services** Name: Brookside Location: Brookside Units, Tedburn Rd, Whitestone, Exeter, Devon, EX4 2HH Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A7NE (SW)	901	7	285122 92930
111	**Points of Interest - Commercial Services** Name: Motorside Ltd Location: 5 Mile Hill, Whitestone, Exeter, EX4 2HH Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A7NW (SW)	906	7	285111 92934
111	**Points of Interest - Commercial Services** Name: J Sincock Location: 5 Brookside Units, Tedburn Road, Whitestone, Exeter, EX4 2HH Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A7NW (SW)	906	7	285111 92934
112	**Points of Interest - Commercial Services** Name: Jw Bodyworks Location: Pound View, Whitestone, Exeter, EX4 2HW Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A17NE (NW)	982	7	285211 94327
112	**Points of Interest - Commercial Services** Name: J W Bodywork Location: Pound View, Whitestone, Exeter, EX4 2HW Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A17NE (NW)	982	7	285211 94327
113	**Points of Interest - Manufacturing and Production** Name: V S Christopher Location: Whitestone, Exeter, EX4 2HW Category: Farming Class Code: Livestock Farming Positional Accuracy: Positioned to address or location	A13NE (NE)	316	7	285950 93806

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
113	**Points of Interest - Manufacturing and Production** Name: V S Christopher Location: Ramslade Farm, Whitestone, Exeter, EX4 2HW Category: Farming Class Code: Livestock Farming Positional Accuracy: Positioned to address or location	A13NE (NE)	316	7	285950 93806
114	**Points of Interest - Manufacturing and Production** Name: Solar Farm Location: EX4 Category: Industrial Features Class Code: Energy Production Positional Accuracy: Positioned to an adjacent address or location	A7NE (SW)	696	7	285237 93111
114	**Points of Interest - Manufacturing and Production** Name: Little Beer Copse (DECC) Location: Five Mile Hill, Tedburn St. Mary, Exeter, EX6 6AQ Category: Industrial Features Class Code: Energy Production Positional Accuracy: Positioned to address or location	A7NE (SW)	765	7	285214 93030
115	**Points of Interest - Recreational and Environmental** Name: Play Area Location: EX4 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A14NE (E)	947	7	286736 93538

Agency & Hydrological	Version	Update Cycle
Contaminated Land Register Entries and Notices		
Environment Agency - Head Office	June 2020	Annually
Exeter City Council - Environmental Health Department	October 2014	Annual Rolling Update
Teignbridge District Council - Environmental Health Department	October 2017	Annual Rolling Update
East Devon District Council - Environmental Health Department	September 2017	Annual Rolling Update
Mid Devon District Council - Environmental Health Department	September 2017	Annual Rolling Update
Discharge Consents		
Environment Agency - South West Region	July 2021	Quarterly
Enforcement and Prohibition Notices		
Environment Agency - South West Region	March 2013	
Integrated Pollution Controls		
Environment Agency - South West Region	January 2009	
Integrated Pollution Prevention And Control		
Environment Agency - South West Region	July 2021	Quarterly
Local Authority Integrated Pollution Prevention And Control		
Exeter City Council - Environmental Health Department	April 2014	Variable
Teignbridge District Council - Environmental Health Department	June 2014	Variable
Mid Devon District Council - Environmental Health Department	November 2014	Variable
East Devon District Council - Environmental Health Department	September 2014	Variable
Local Authority Pollution Prevention and Controls		
Exeter City Council - Environmental Health Department	April 2014	Annual Rolling Update
Teignbridge District Council - Environmental Health Department	June 2014	Annual Rolling Update
Mid Devon District Council - Environmental Health Department	November 2014	Annual Rolling Update
East Devon District Council - Environmental Health Department	September 2014	Annual Rolling Update
Local Authority Pollution Prevention and Control Enforcements		
Exeter City Council - Environmental Health Department	April 2014	Variable
Teignbridge District Council - Environmental Health Department	June 2014	Variable
Mid Devon District Council - Environmental Health Department	November 2014	Variable
East Devon District Council - Environmental Health Department	September 2014	Variable
Nearest Surface Water Feature		
Ordnance Survey	March 2021	
Pollution Incidents to Controlled Waters		
Environment Agency - South West Region	September 1999	
Prosecutions Relating to Authorised Processes		
Environment Agency - South West Region	July 2015	
Prosecutions Relating to Controlled Waters		
Environment Agency - South West Region	March 2013	
Registered Radioactive Substances		
Environment Agency - South West Region	June 2016	Annually
River Quality		
Environment Agency - Head Office	November 2001	Not Applicable
River Quality Biology Sampling Points		
Environment Agency - Head Office	April 2012	Annually
River Quality Chemistry Sampling Points		
Environment Agency - Head Office	April 2012	Annually
Substantiated Pollution Incident Register		
Environment Agency - South West Region - Devon Area	July 2021	Quarterly
Environment Agency - South West Region - Devon and Cornwall Area	July 2021	Quarterly
Water Abstractions		
Environment Agency - South West Region	July 2021	Quarterly
Water Industry Act Referrals		
Environment Agency - South West Region	October 2017	Quarterly

Data Currency

Agency & Hydrological	Version	Update Cycle
Groundwater Vulnerability Map Environment Agency - Head Office	June 2018	As notified
Bedrock Aquifer Designations Environment Agency - Head Office	January 2018	Annually
Superficial Aquifer Designations Environment Agency - Head Office	January 2018	Annually
Source Protection Zones Environment Agency - Head Office	May 2021	Bi-Annually
Extreme Flooding from Rivers or Sea without Defences Environment Agency - Head Office	March 2021	Quarterly
Flooding from Rivers or Sea without Defences Environment Agency - Head Office	March 2021	Quarterly
Areas Benefiting from Flood Defences Environment Agency - Head Office	March 2021	Quarterly
Flood Water Storage Areas Environment Agency - Head Office	March 2021	Quarterly
Flood Defences Environment Agency - Head Office	March 2021	Quarterly
OS Water Network Lines Ordnance Survey	July 2021	Quarterly
Surface Water 1 in 30 year Flood Extent Environment Agency - Head Office	May 2018	Annually
Surface Water 1 in 100 year Flood Extent Environment Agency - Head Office	May 2018	Annually
Surface Water 1 in 1000 year Flood Extent Environment Agency - Head Office	May 2018	Annually
Surface Water Suitability Environment Agency - Head Office	February 2016	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	November 2002	Not Applicable
Historical Landfill Sites		
Environment Agency - Head Office	May 2021	Quarterly
Integrated Pollution Control Registered Waste Sites		
Environment Agency - South West Region	January 2009	Not Applicable
Licensed Waste Management Facilities (Landfill Boundaries)		
Environment Agency - South West Region - Devon Area	July 2021	Quarterly
Environment Agency - South West Region - Devon and Cornwall Area	July 2021	Quarterly
Licensed Waste Management Facilities (Locations)		
Environment Agency - South West Region - Devon Area	July 2021	Quarterly
Environment Agency - South West Region - Devon and Cornwall Area	July 2021	Quarterly
Local Authority Landfill Coverage		
Devon County Council	February 2003	Not Applicable
East Devon District Council - Environmental Health Department	February 2003	Not Applicable
Exeter City Council - Environmental Health Department	February 2003	Not Applicable
Mid Devon District Council - Environmental Health Department	February 2003	Not Applicable
Teignbridge District Council - Environmental Health Department	February 2003	Not Applicable
Local Authority Recorded Landfill Sites		
Devon County Council	October 2018	
East Devon District Council - Environmental Health Department	October 2018	
Exeter City Council - Environmental Health Department	October 2018	
Mid Devon District Council - Environmental Health Department	October 2018	
Teignbridge District Council - Environmental Health Department	October 2018	
Potentially Infilled Land (Non-Water)		
Landmark Information Group Limited	December 1999	Not Applicable
Potentially Infilled Land (Water)		
Landmark Information Group Limited	December 1999	
Registered Landfill Sites		
Environment Agency - South West Region - Devon Area	March 2006	Not Applicable
Environment Agency - South West Region - Devon and Cornwall Area	March 2006	Not Applicable
Registered Waste Transfer Sites		
Environment Agency - South West Region - Devon Area	April 2018	
Environment Agency - South West Region - Devon and Cornwall Area	April 2018	
Registered Waste Treatment or Disposal Sites		
Environment Agency - South West Region - Devon Area	June 2015	
Environment Agency - South West Region - Devon and Cornwall Area	June 2015	

Hazardous Substances	Version	Update Cycle
Control of Major Accident Hazards Sites (COMAH)		
Health and Safety Executive	April 2018	Bi-Annually
Explosive Sites		
Health and Safety Executive	March 2017	Annually
Notification of Installations Handling Hazardous Substances (NIHHS)		
Health and Safety Executive	August 2001	
Planning Hazardous Substance Enforcements		
Devon County Council	February 2007	Annual Rolling Update
East Devon District Council - Planning Department	February 2016	Variable
Exeter City Council - Economic & Development Directorate	February 2016	Variable
Teignbridge District Council	February 2016	Variable
Mid Devon District Council - Planning Department	January 2016	Variable
Planning Hazardous Substance Consents		
East Devon District Council - Planning Department	February 2016	Variable
Exeter City Council - Economic & Development Directorate	February 2016	Variable
Teignbridge District Council	February 2016	Variable
Mid Devon District Council - Planning Department	January 2016	Variable
Devon County Council	September 2008	Annual Rolling Update

Geological	Version	Update Cycle
BGS 1:625,000 Solid Geology		
British Geological Survey - National Geoscience Information Service	January 2009	Not Applicable
BGS Estimated Soil Chemistry		
British Geological Survey - National Geoscience Information Service	December 2015	Annually
BGS Recorded Mineral Sites		
British Geological Survey - National Geoscience Information Service	May 2021	Bi-Annually
CBSCB Compensation District		
Cheshire Brine Subsidence Compensation Board (CBSCB)	August 2011	As notified
Coal Mining Affected Areas		
The Coal Authority - Property Searches	March 2014	Annual Rolling Update
Mining Instability		
Ove Arup & Partners	June 1998	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	April 2020	Annually
Potential for Compressible Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Ground Dissolution Stability Hazards		
British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Landslide Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Running Sand Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Shrinking or Swelling Clay Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	January 2019	Annually
Radon Potential - Radon Affected Areas		
British Geological Survey - National Geoscience Information Service	July 2011	Annually
Radon Potential - Radon Protection Measures		
British Geological Survey - National Geoscience Information Service	July 2011	Annually

Data Currency

Industrial Land Use	Version	Update Cycle
Contemporary Trade Directory Entries Thomson Directories	July 2021	Quarterly
Fuel Station Entries Catalist Ltd - Experian	August 2021	Quarterly
Gas Pipelines National Grid	May 2021	Annually
Points of Interest - Commercial Services PointX	September 2021	Quarterly
Points of Interest - Education and Health PointX	September 2021	Quarterly
Points of Interest - Manufacturing and Production PointX	September 2021	Quarterly
Points of Interest - Public Infrastructure PointX	September 2021	Quarterly
Points of Interest - Recreational and Environmental PointX	September 2021	Quarterly
Underground Electrical Cables National Grid	May 2021	Annually

Sensitive Land Use	Version	Update Cycle
Ancient Woodland		
Natural England	February 2021	Bi-Annually
Areas of Adopted Green Belt		
East Devon District Council - Planning Department	October 2020	Quarterly
Exeter City Council	October 2020	Quarterly
Mid Devon District Council	October 2020	Quarterly
Teignbridge District Council	October 2020	Quarterly
Areas of Unadopted Green Belt		
East Devon District Council - Planning Department	October 2020	Quarterly
Exeter City Council	October 2020	Quarterly
Mid Devon District Council	October 2020	Quarterly
Teignbridge District Council	October 2020	Quarterly
Areas of Outstanding Natural Beauty		
Natural England	January 2021	Bi-Annually
Environmentally Sensitive Areas		
Natural England	January 2017	
Forest Parks		
Forestry Commission	April 1997	Not Applicable
Local Nature Reserves		
Natural England	February 2021	Bi-Annually
Marine Nature Reserves		
Natural England	July 2019	Bi-Annually
National Nature Reserves		
Natural England	January 2021	Bi-Annually
National Parks		
Natural England	February 2018	Bi-Annually
Nitrate Sensitive Areas		
Natural England	April 2016	Not Applicable
Nitrate Vulnerable Zones		
Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	April 2016	
Environment Agency - Head Office	June 2017	Bi-Annually
Ramsar Sites		
Natural England	August 2020	Bi-Annually
Sites of Special Scientific Interest		
Natural England	February 2021	Bi-Annually
Special Areas of Conservation		
Natural England	July 2020	Bi-Annually
Special Protection Areas		
Natural England	February 2021	Bi-Annually

Data Suppliers

A selection of organisations who provide data within this report

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

Useful Contacts

Contact	Name and Address	Contact Details
1	**British Geological Survey - Enquiry Service** British Geological Survey, Environmental Science 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	**Environment Agency - Head Office** Rio House, Waterside Drive, Aztec West, Almondsbury, Bristol, Avon, BS32 4UD	Telephone: 01454 624400 Fax: 01454 624409
4	**Ordnance Survey** Adanac Drive, Southampton, Hampshire, SO16 0AS	Telephone: 03456 05 05 05 Email: customerservices@ordnancesurvey.co.uk Website: www.ordnancesurvey.gov.uk
5	**Devon County Council** County Hall, Topsham Road, Exeter, Devon, EX2 4QD	Telephone: 01392 382000 Fax: 01392 382135 Website: www.devon.gov.uk
6	**Teignbridge District Council - Environmental Health Department** Forde House, Brunel Road, Newton Abbot, Devon, TQ12 4XX	Telephone: 01626 361101 Fax: 01626 331874 Email: envc@teignbridge.gov.uk Website: www.teignbridge.gov.uk
7	**PointX** 7 Abbey Court, Eagle Way, Sowton, Exeter, Devon, EX2 7HY	Website: www.pointx.co.uk
8	**Natural England** County Hall, Spetchley Road, Worcester, WR5 2NP	Telephone: 0300 060 3900 Email: enquiries@naturalengland.org.uk Website: www.naturalengland.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.

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	Not Supplied - Holocene
	SLIP	Landslide Deposit	Clay	Not Supplied - Quaternary

Superficial Geology

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	ALV	Alluvium	Clay, Silt, Sand and Gravel	Not Supplied - Holocene
	HEAD	Head	Sand with Clay And Gravel	Not Supplied - Quaternary

Bedrock and Faults

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	CKF	Crackington Formation	Mudstone and Sandstone, Interbedded	Not Supplied - Namurian
	CKF	Crackington Formation	Sandstone	Not Supplied - Namurian
	ANSH	Ashton Mudstone Member	Mudstone	Not Supplied - Visean
		Faults		

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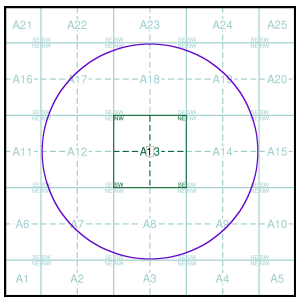
Geology 1:50,000 Maps

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:	**325**
Map Name:	**Exeter**
Map Date:	**1995**
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:	285408085_1_1
Customer Reference:	213189
National Grid Reference:	285790, 93530
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details:

Lower Hare Farm, Whitestone, EXETER, EX4 2HW

Landmark® INFORMATION GROUP

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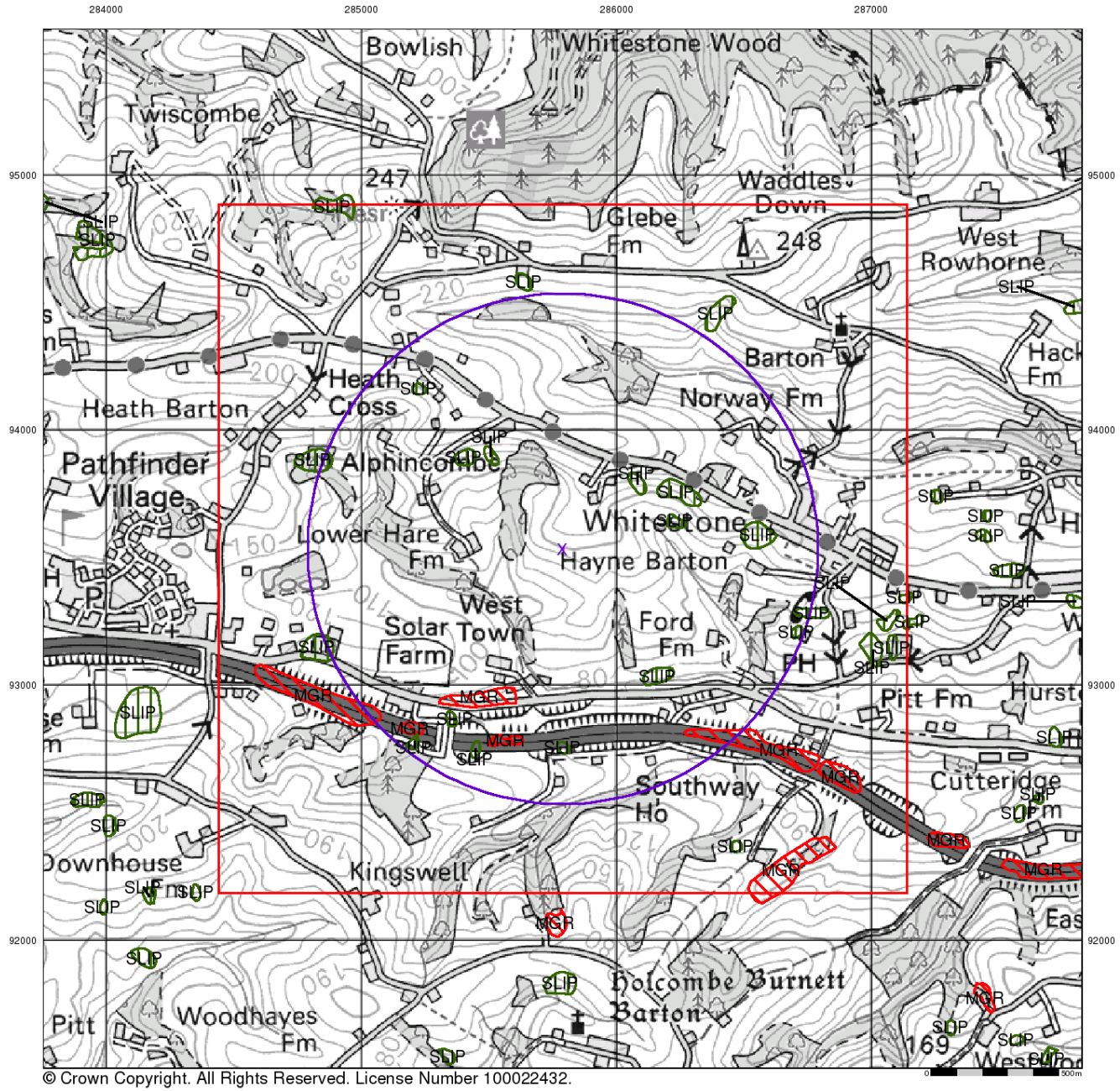
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



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Artificial Ground and Landslip

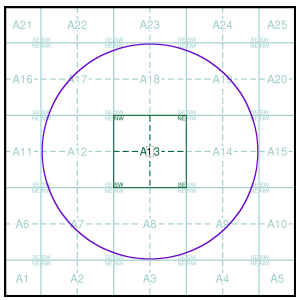
Artificial ground is a term used by BGS for those areas where the ground surface has been significantly modified by human activity. Information about previously developed ground is especially important, as it is often associated with potentially contaminated material, unpredictable engineering conditions 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:	285408085_1_1
Customer Reference:	213189
National Grid Reference:	285790, 93530
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details:

Lower Hare Farm, Whitestone, EXETER, EX4 2HW

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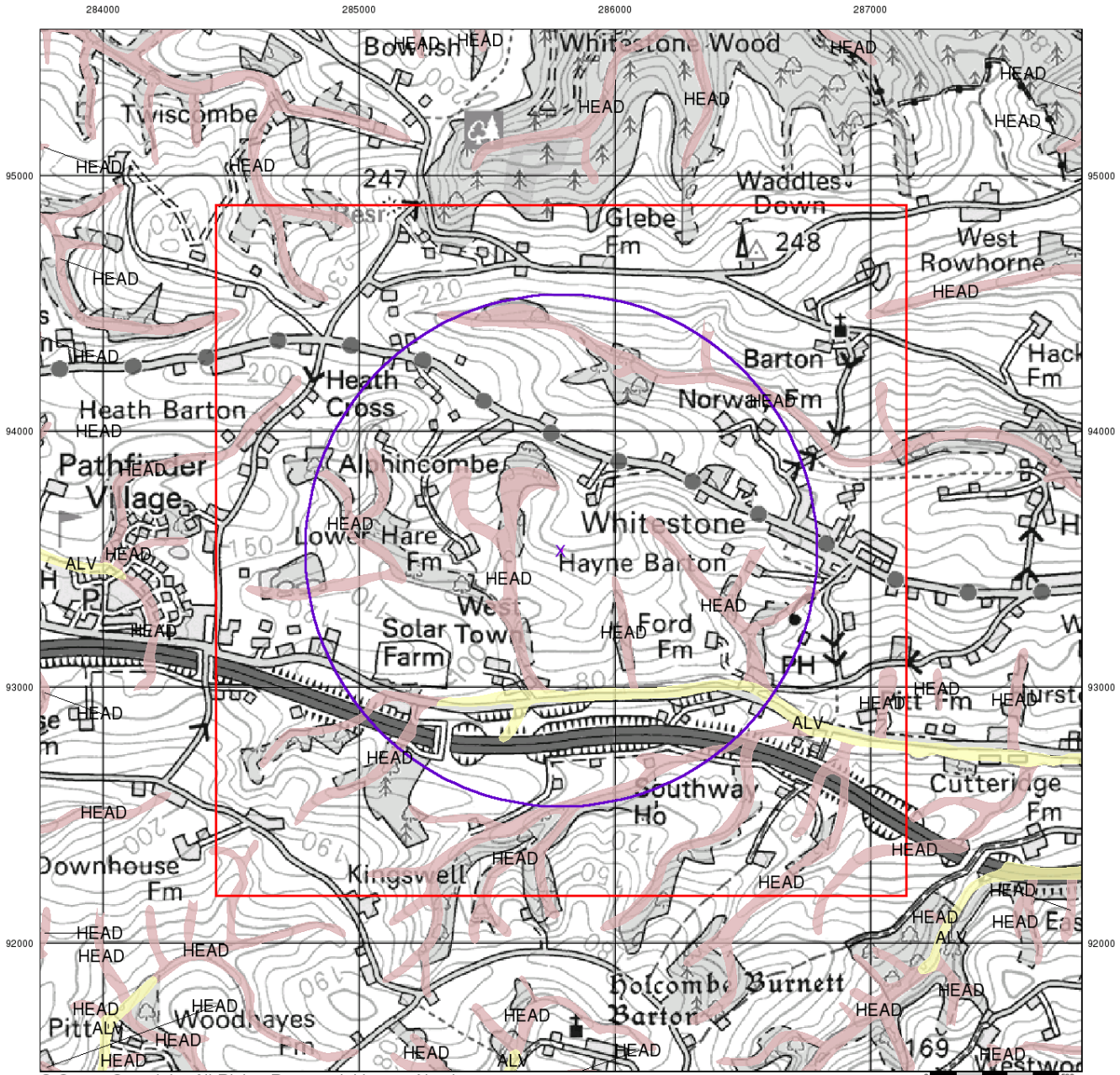
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



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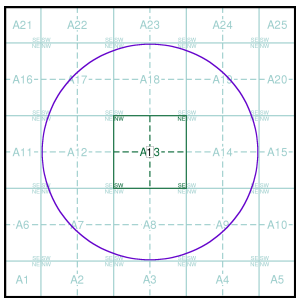
Superficial Geology

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:

Order Number:	285408085_1_1
Customer Reference:	213189
National Grid Reference:	285790, 93530
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details:

Lower Hare Farm, Whitestone, EXETER, EX4 2HW

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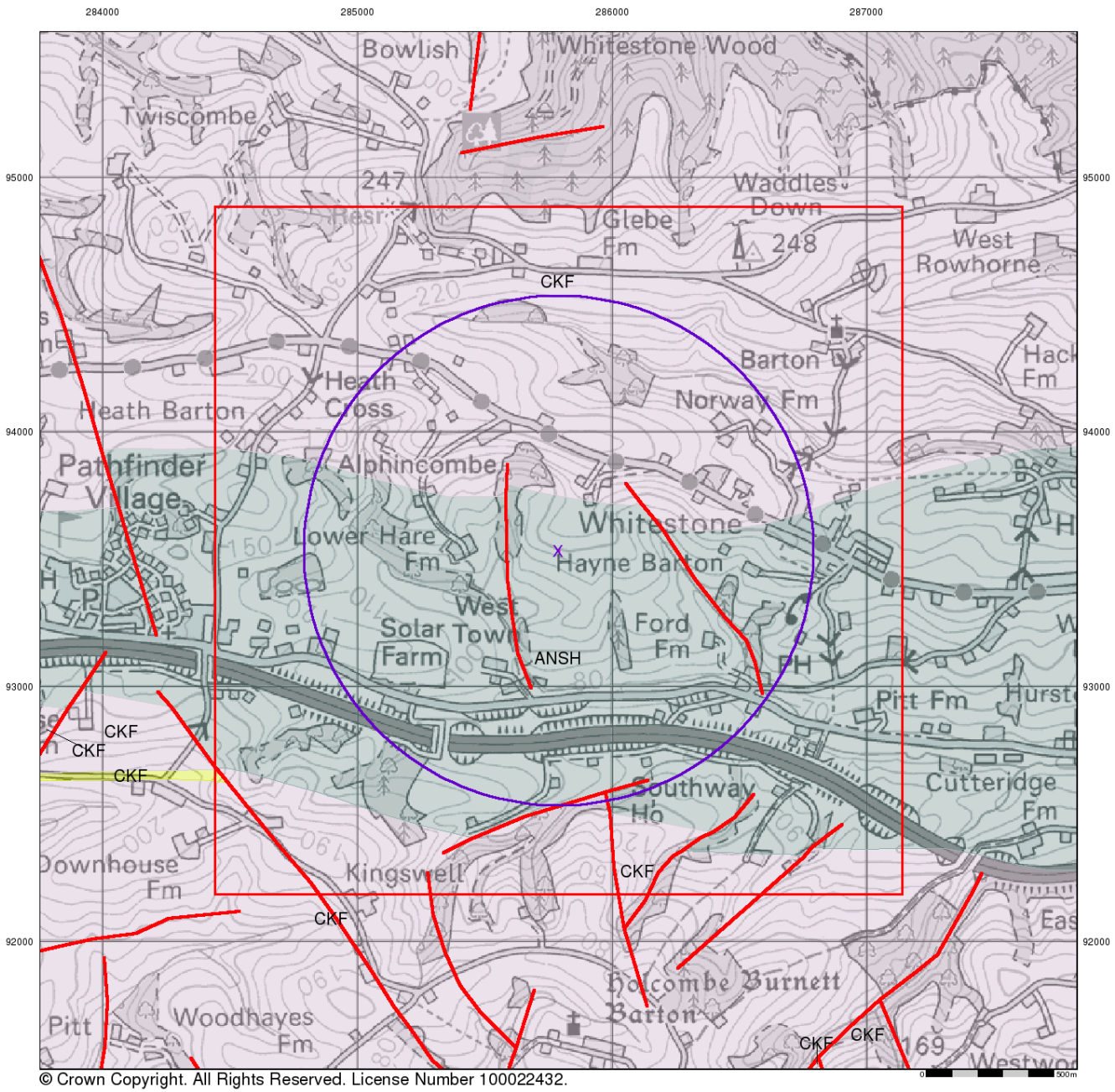

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Bedrock and Faults

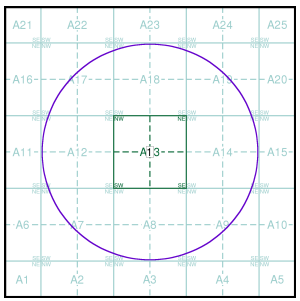
Bedrock geology is a term used for the main mass of rocks forming the Earth and are present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

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



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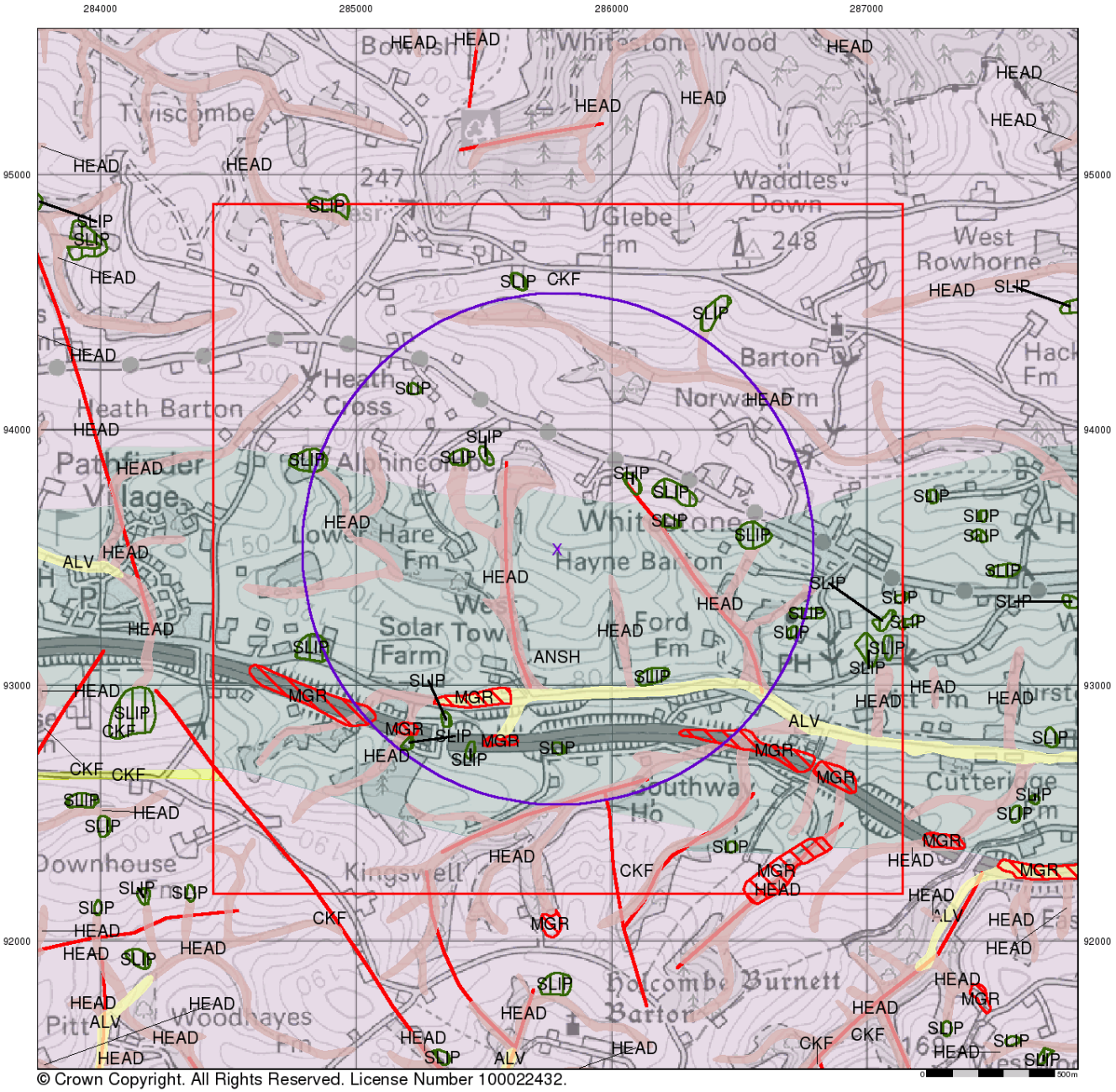

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Combined Surface Geology

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.

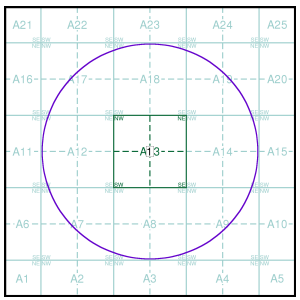
Additional Information

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



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Customer Reference:	213189
National Grid Reference:	285790, 93530
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details:

Lower Hare Farm, Whitestone, EXETER, EX4 2HW

Historical Mapping Legends

Ordnance Survey County Series 1:10,560

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

Ordnance Survey Plan 1:10,000

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

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

1:10,000 Raster Mapping

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

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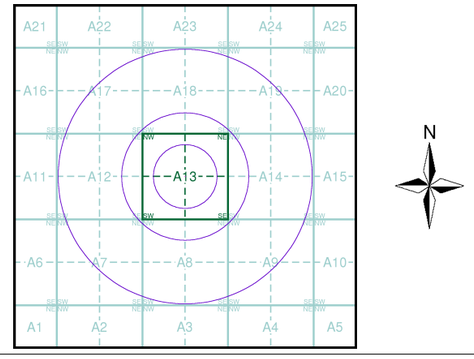
Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Devon	1:10,560	1888	3
Devon	1:10,560	1906	4
Ordnance Survey Plan	1:10,000	1963	5
Ordnance Survey Plan	1:10,000	1970 - 1974	6
Ordnance Survey Plan	1:10,000	1974	7
Exeter	1:10,000	1982	8
Ordnance Survey Plan	1:10,000	1990 - 1992	9
Ordnance Survey Plan	1:10,000	1992	10
10K Raster Mapping	1:10,000	1999	11
10K Raster Mapping	1:10,000	2006	12
VectorMap Local	1:10,000	2021	13

Historical Map - Slice A



Order Details

Order Number: 285408085_1_1
Customer Ref: 213189
National Grid Reference: 285790, 93530
Slice: A
Site Area (Ha): 0.01
Search Buffer (m): 1000

Site Details

Lower Hare Farm, Whitestone, EXETER, EX4 2HW

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Russian Military Mapping Legends

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

a. Not drawn to scale b. Drawn to scale

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

243,8 Values for prominent elevations

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

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

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

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

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

1:25,000 mapping

a. Not drawn to scale b. Drawn to scale

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

Key to Numbers on Mapping

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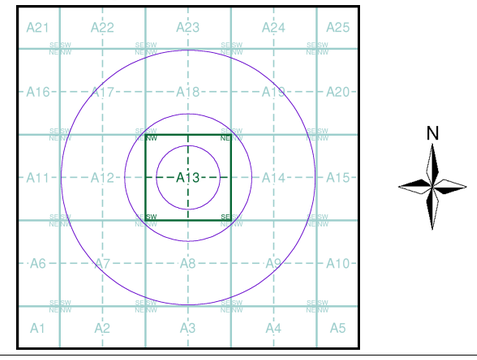
Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Devon	1:10,560	1888	3
Devon	1:10,560	1906	4
Ordnance Survey Plan	1:10,000	1963	5
Ordnance Survey Plan	1:10,000	1970 - 1974	6
Ordnance Survey Plan	1:10,000	1974	7
Exeter	1:10,000	1982	8
Ordnance Survey Plan	1:10,000	1990 - 1992	9
Ordnance Survey Plan	1:10,000	1992	10
10K Raster Mapping	1:10,000	1999	11
10K Raster Mapping	1:10,000	2006	12
VectorMap Local	1:10,000	2021	13

Russian Map - Slice A



Order Details

Order Number:	285408085_1_1
Customer Ref:	213189
National Grid Reference:	285790, 93530
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

Lower Hare Farm, Whitestone, EXETER, EX4 2HW

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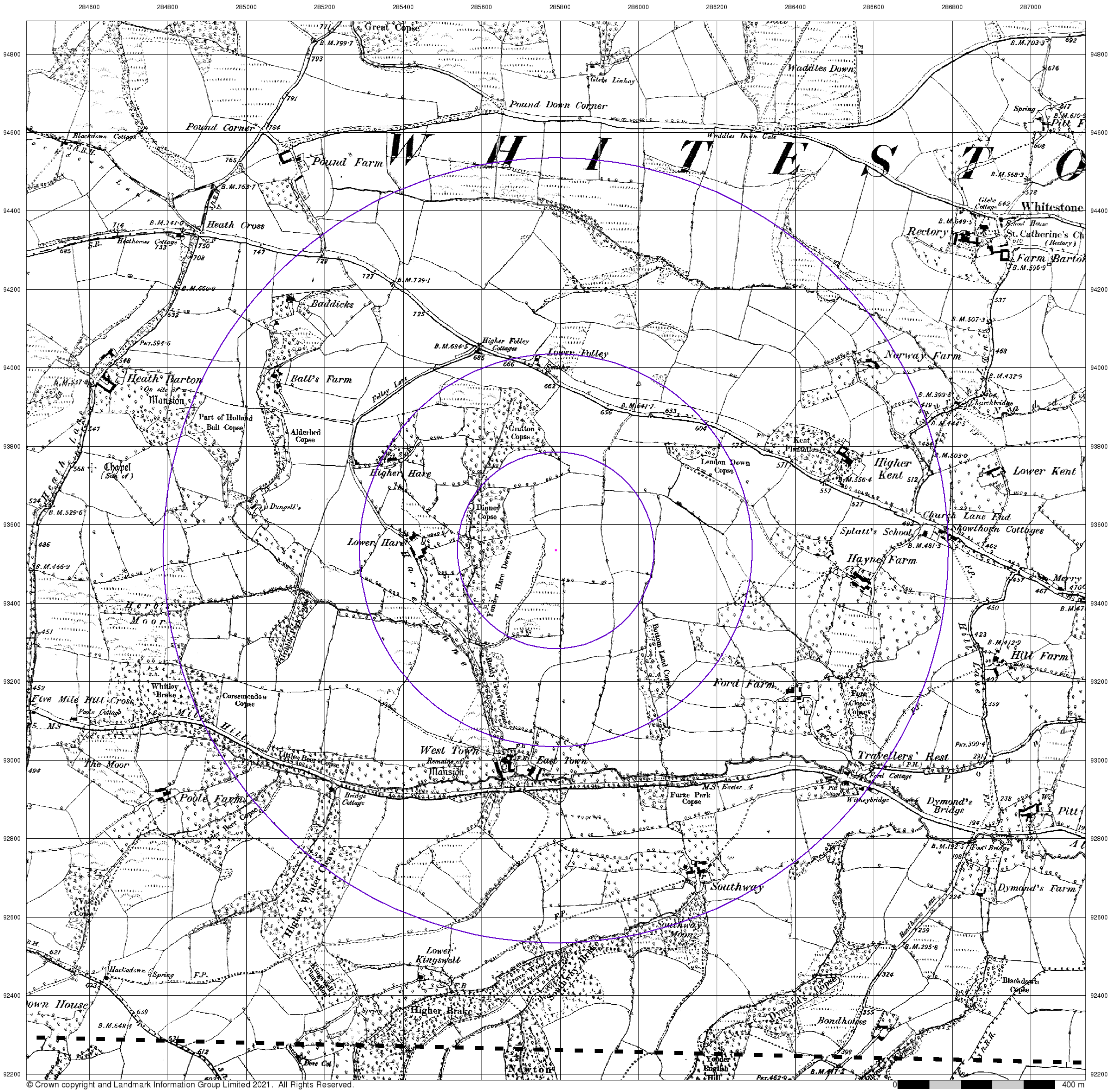

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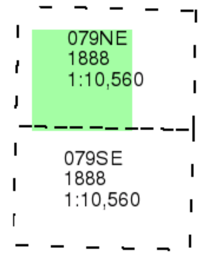
Devon

Published 1888

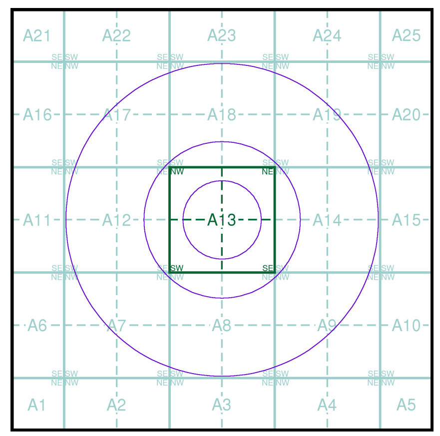
Source map scale - 1:10,560

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



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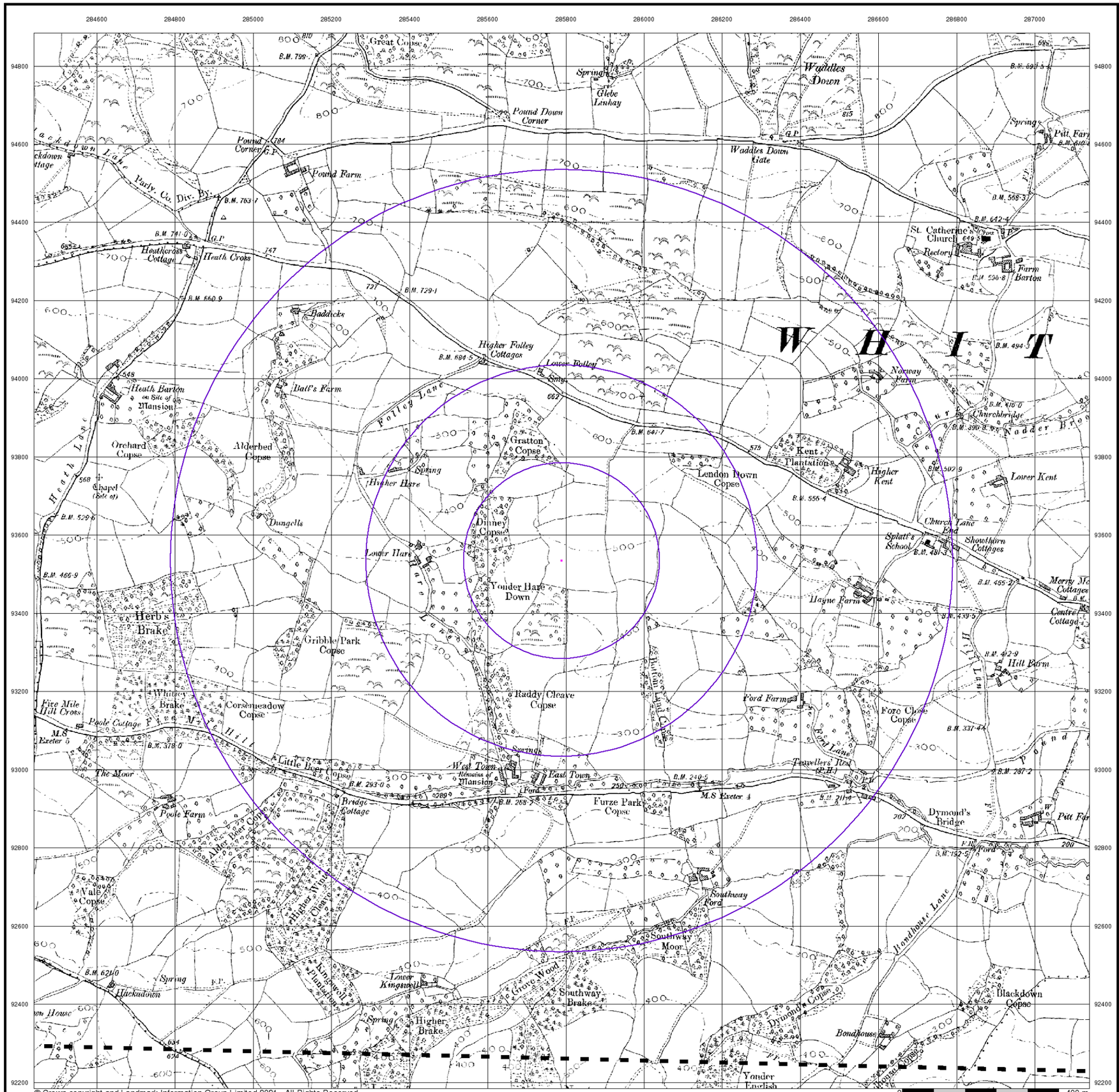
Site Area (Ha): 0.01
Search Buffer (m): 1000

Site Details

Lower Hare Farm, Whitestone, EXETER, EX4 2HW



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Devon

Published 1906

Source map scale - 1:10,560

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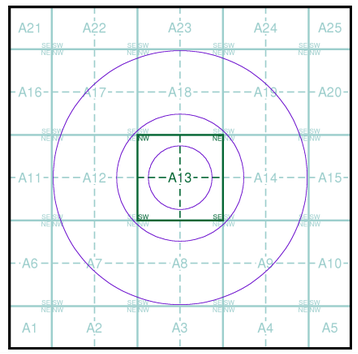
Map Name(s) and Date(s)

079NE
1906
1:10,560

079SE
1906
1:10,560

Historical Map - Slice A



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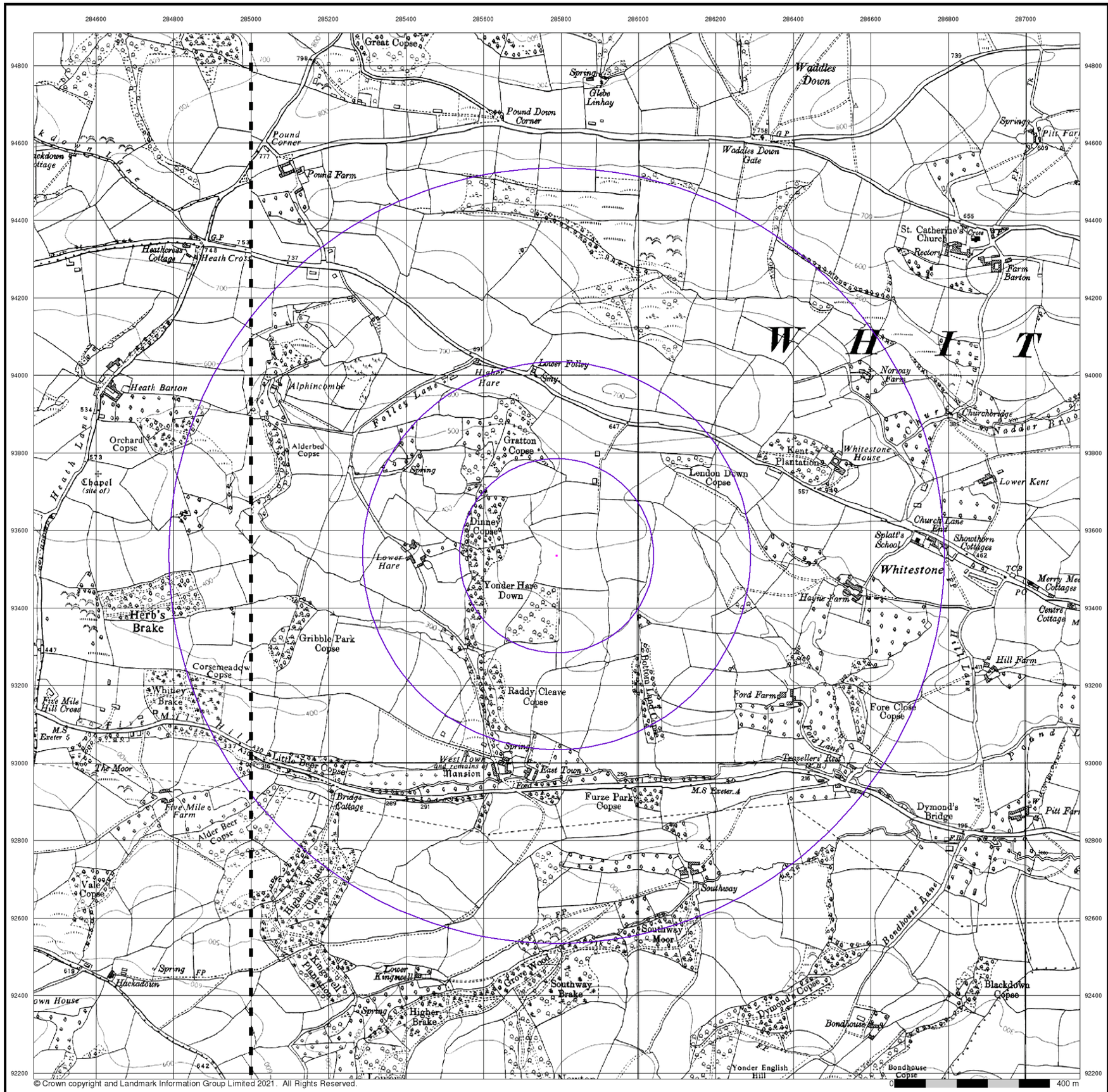

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Ordnance Survey Plan

Published 1963

Source map scale - 1:10,000

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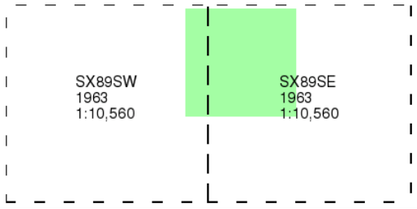
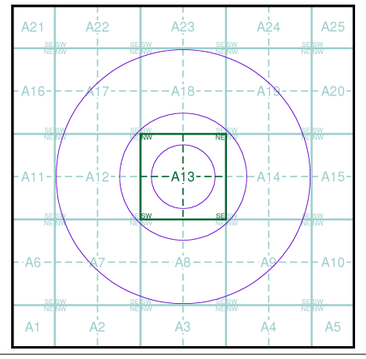
Map Name(s) and Date(s)



Historical Map - Slice A



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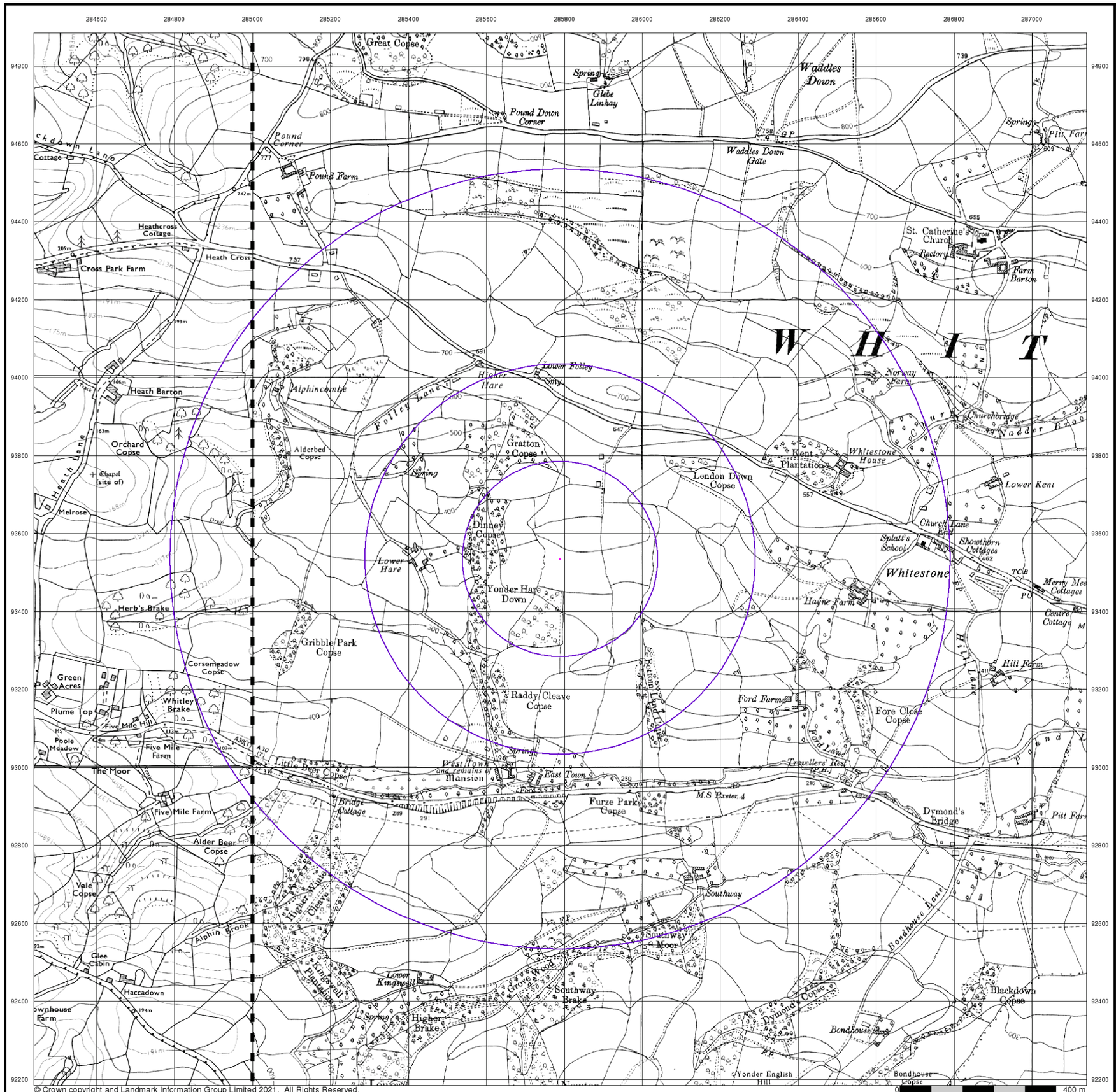

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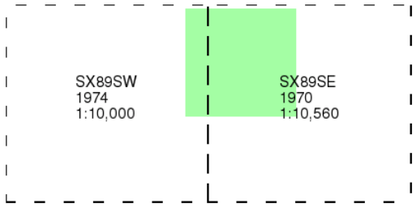
Ordnance Survey Plan

Published 1970 - 1974

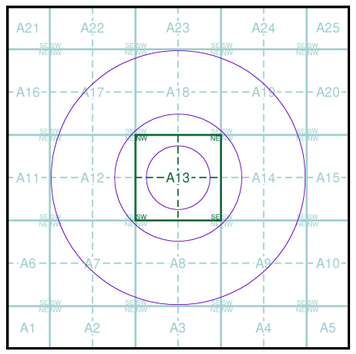
Source map scale - 1:10,000

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

Map Name(s) and Date(s)



Historical Map - Slice A



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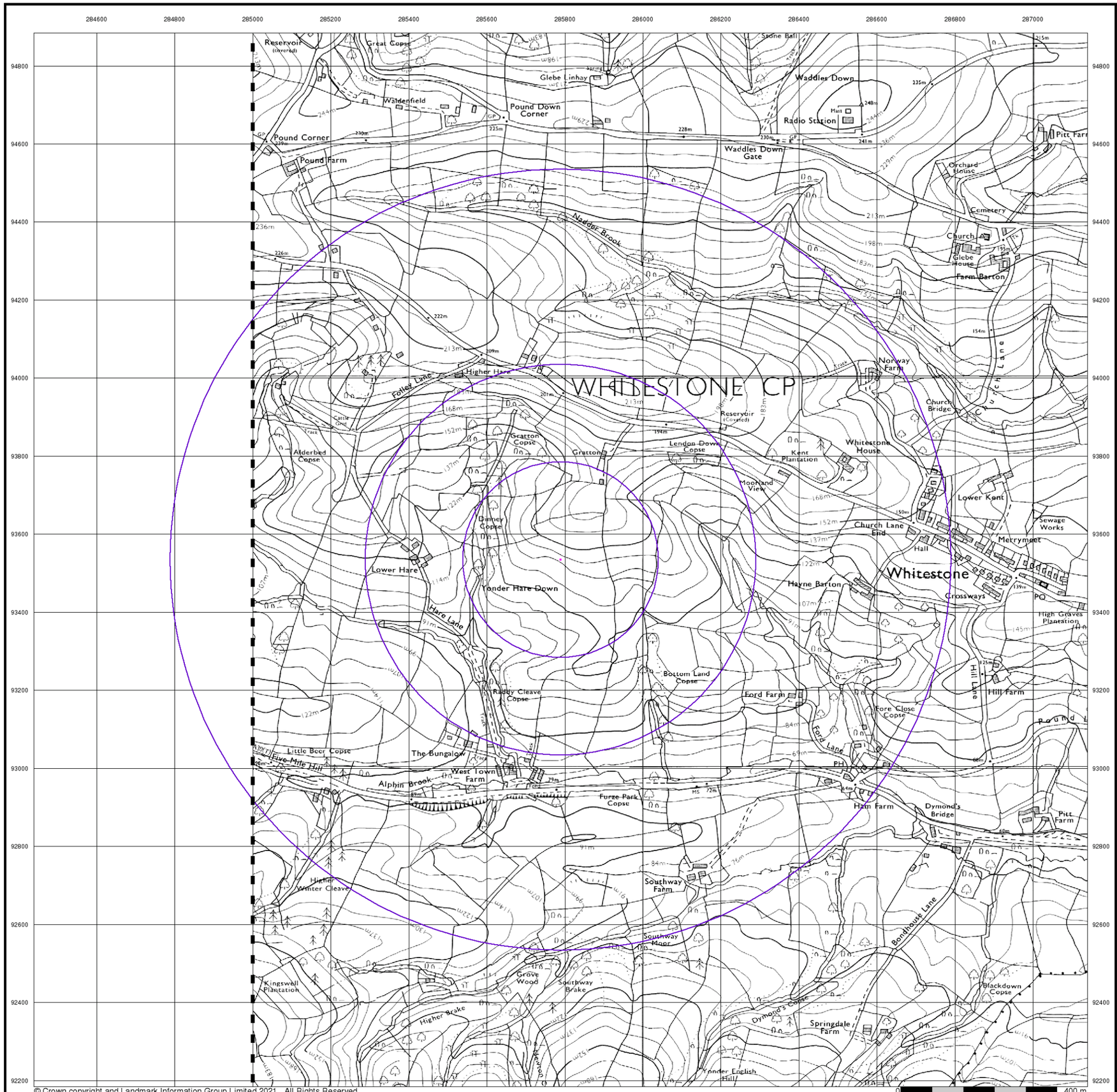

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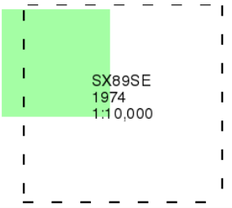
Ordnance Survey Plan

Published 1974

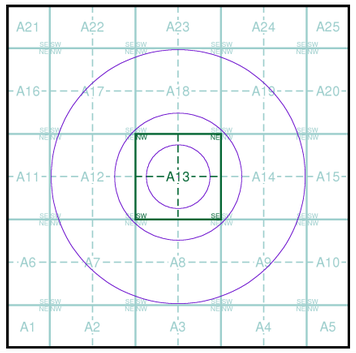
Source map scale - 1:10,000

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

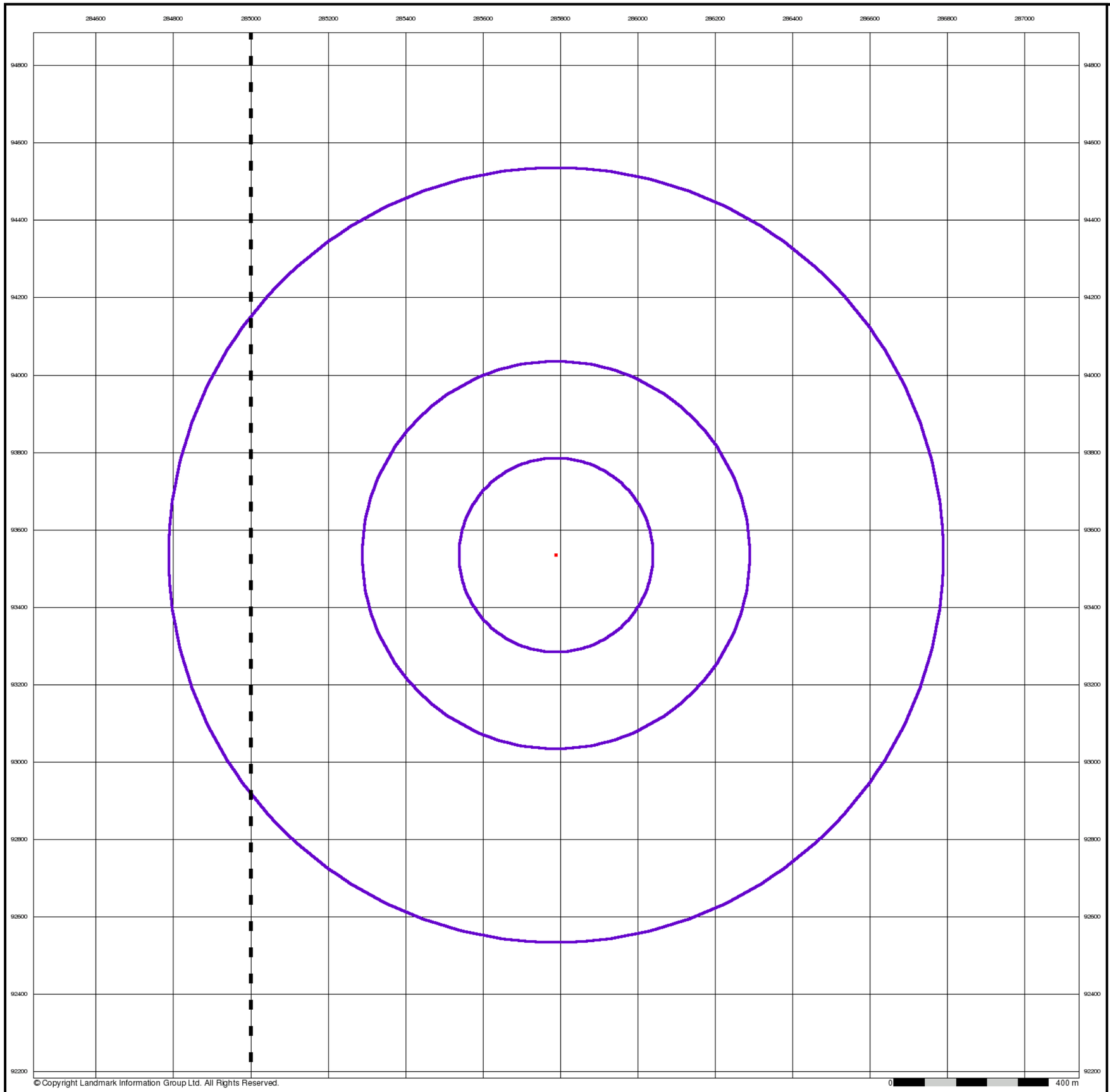
Order Number:	285408085_1_1
Customer Ref:	213189
National Grid Reference:	285790, 93530
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

Lower Hare Farm, Whitestone, EXETER, EX4 2HW

Landmark® INFORMATION GROUP

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



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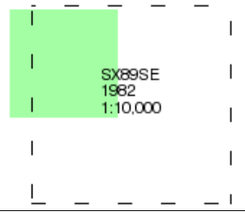
Exeter

Published 1982

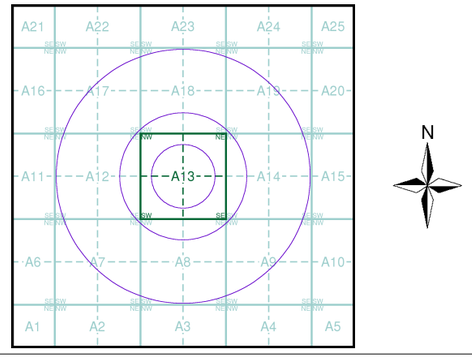
Source map scale - 1:10,000

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

Map Name(s) and Date(s)



Russian Map - Slice A



Order Details

Order Number:	285408085_1_1
Customer Ref:	213189
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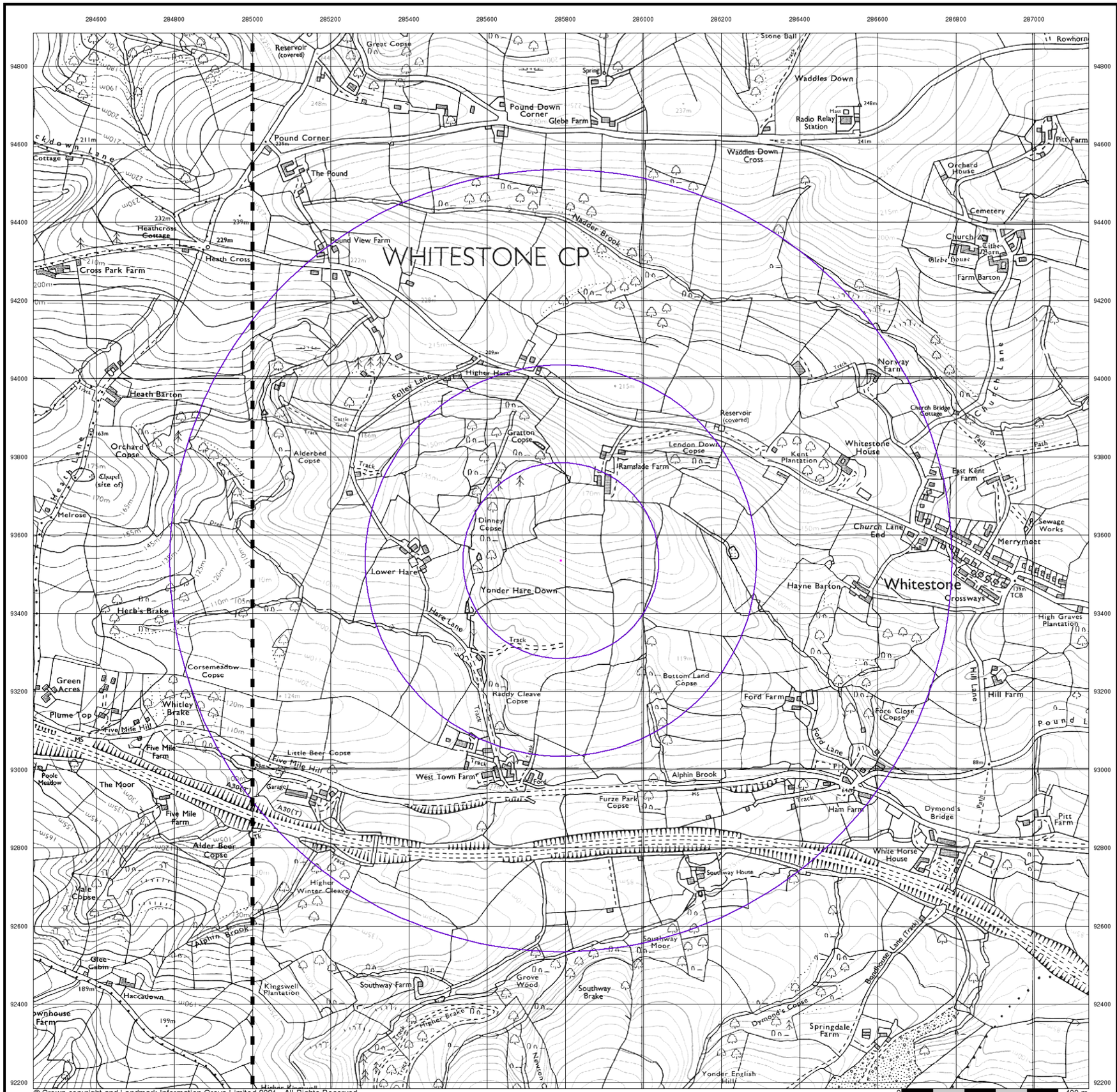

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Ordnance Survey Plan

Published 1990 - 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.

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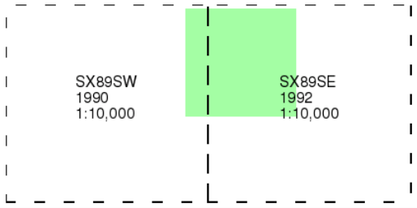
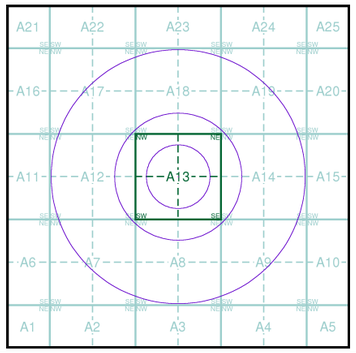


Historical Map - Slice A



Order Details

Order Number:	285408085_1_1
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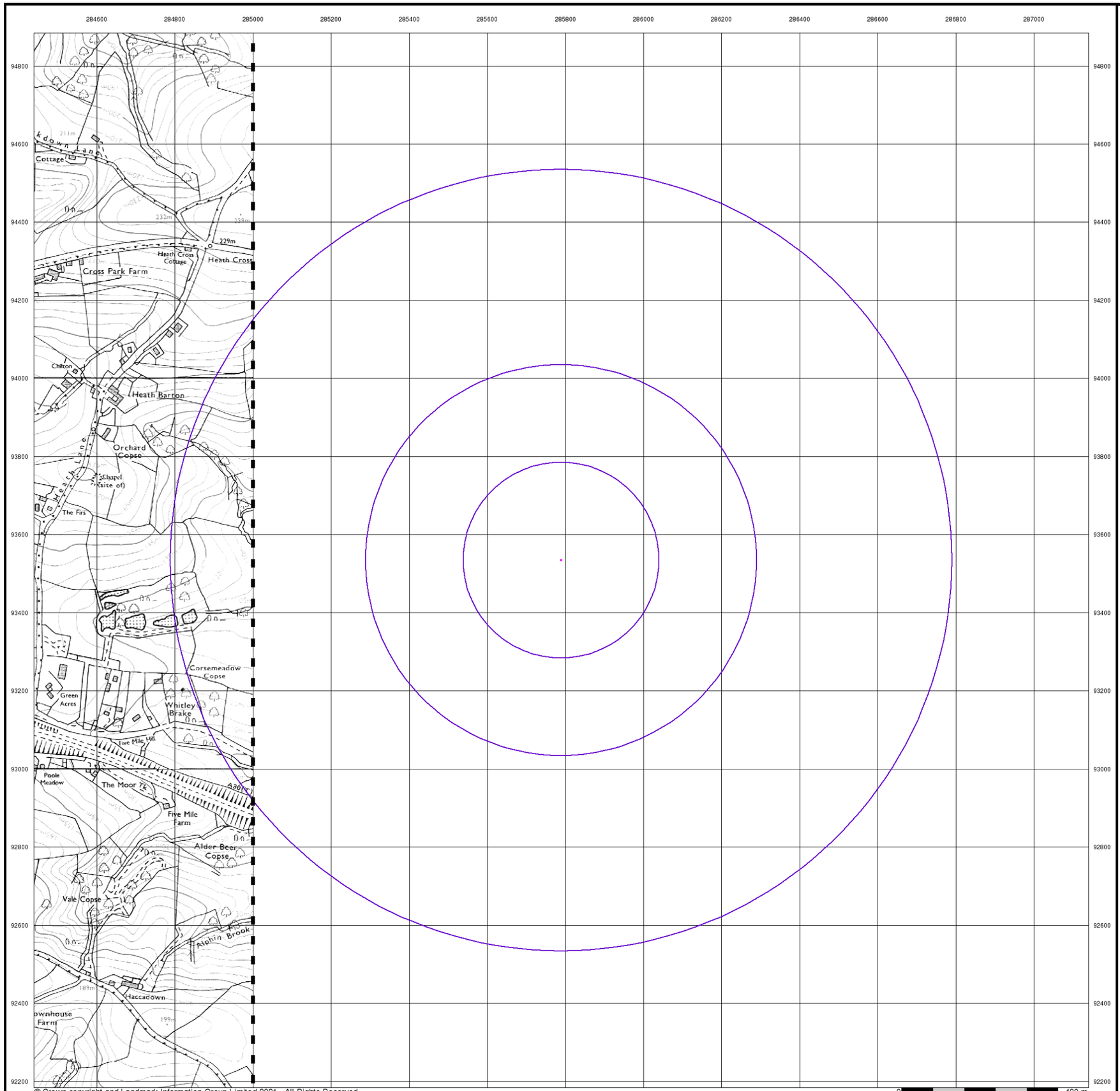

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Ordnance Survey Plan

Published 1992

Source map scale - 1:10,000

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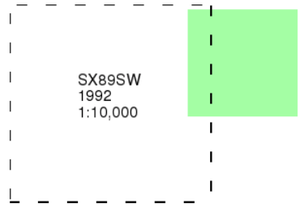
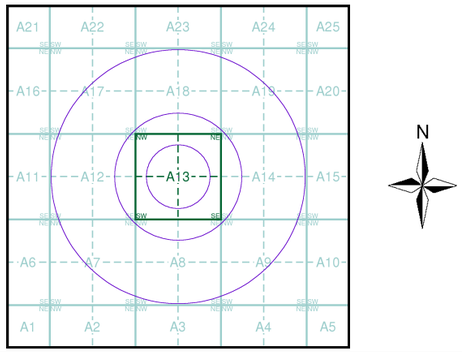


Historical Map - Slice A



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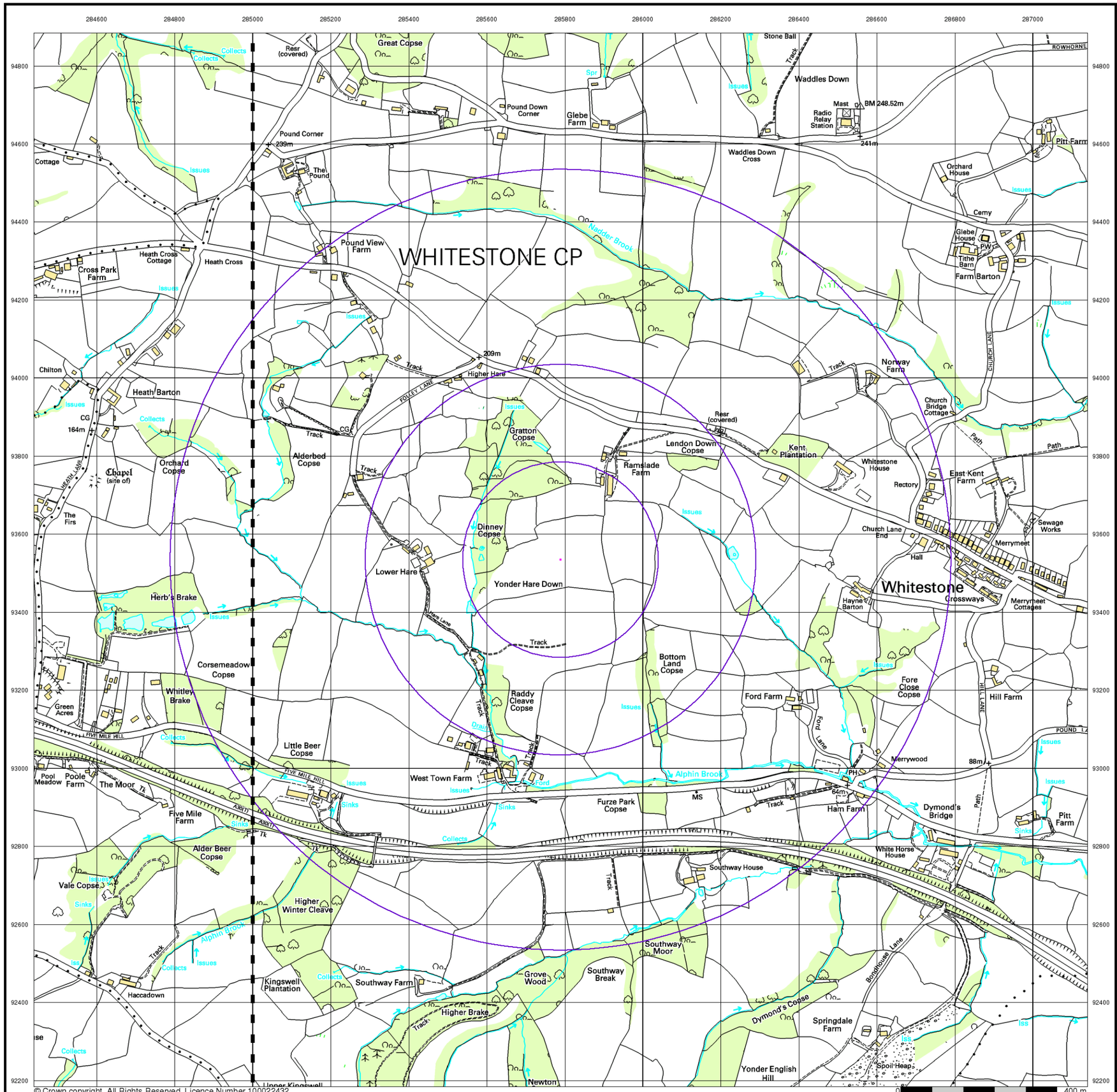

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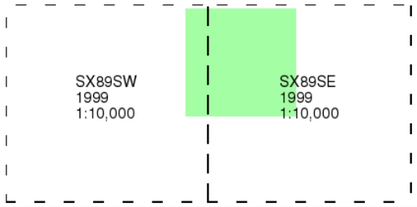
10k Raster Mapping

Published 1999

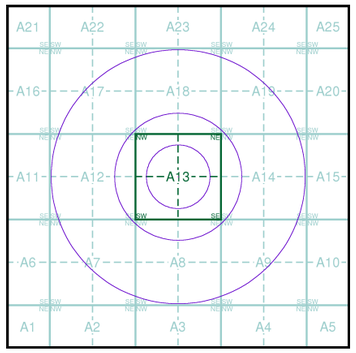
Source map scale - 1:10,000

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

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

Order Number:	285408085_1_1
Customer Ref:	213189
National Grid Reference:	285790, 93530
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

Lower Hare Farm, Whitestone, EXETER, EX4 2HW

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10k Raster Mapping

Published 2006

Source map scale - 1:10,000

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

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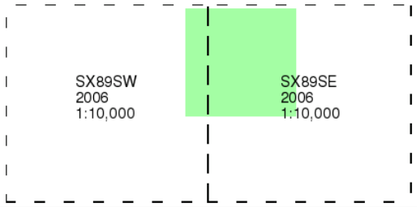
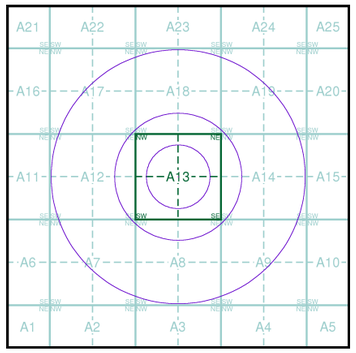


Historical Map - Slice A



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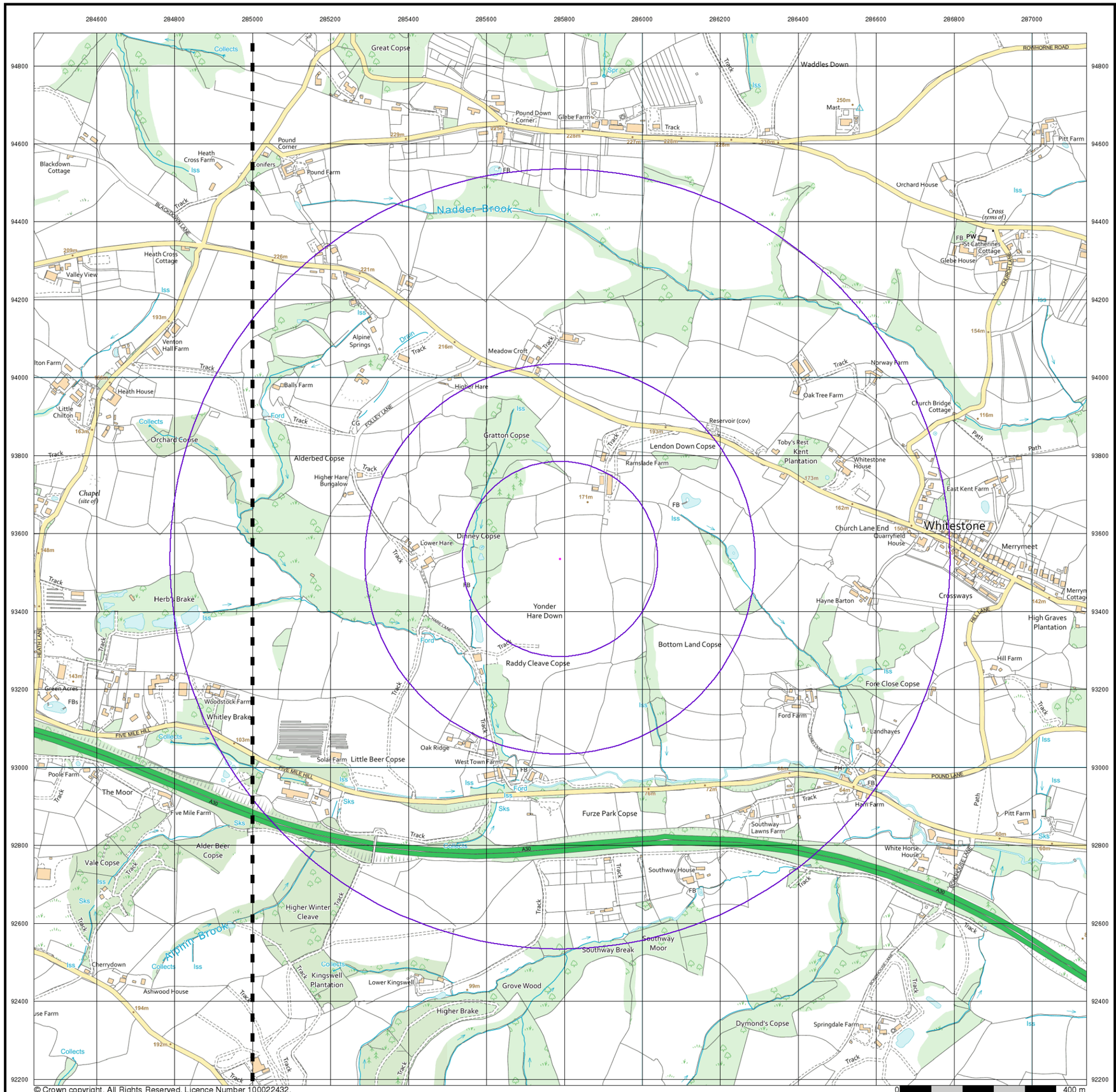

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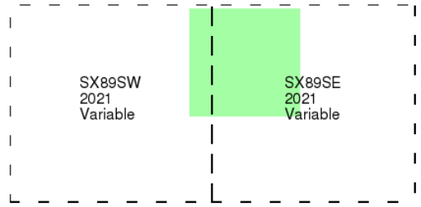
VectorMap Local

Published 2021

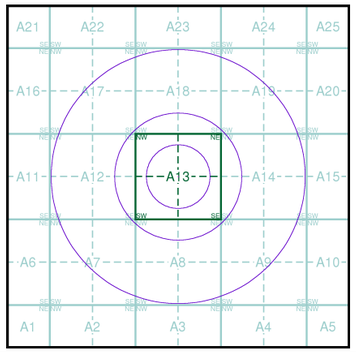
Source map scale - 1:10,000

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

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

Order Number:	285408085_1_1
Customer Ref:	213189
National Grid Reference:	285790, 93530
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

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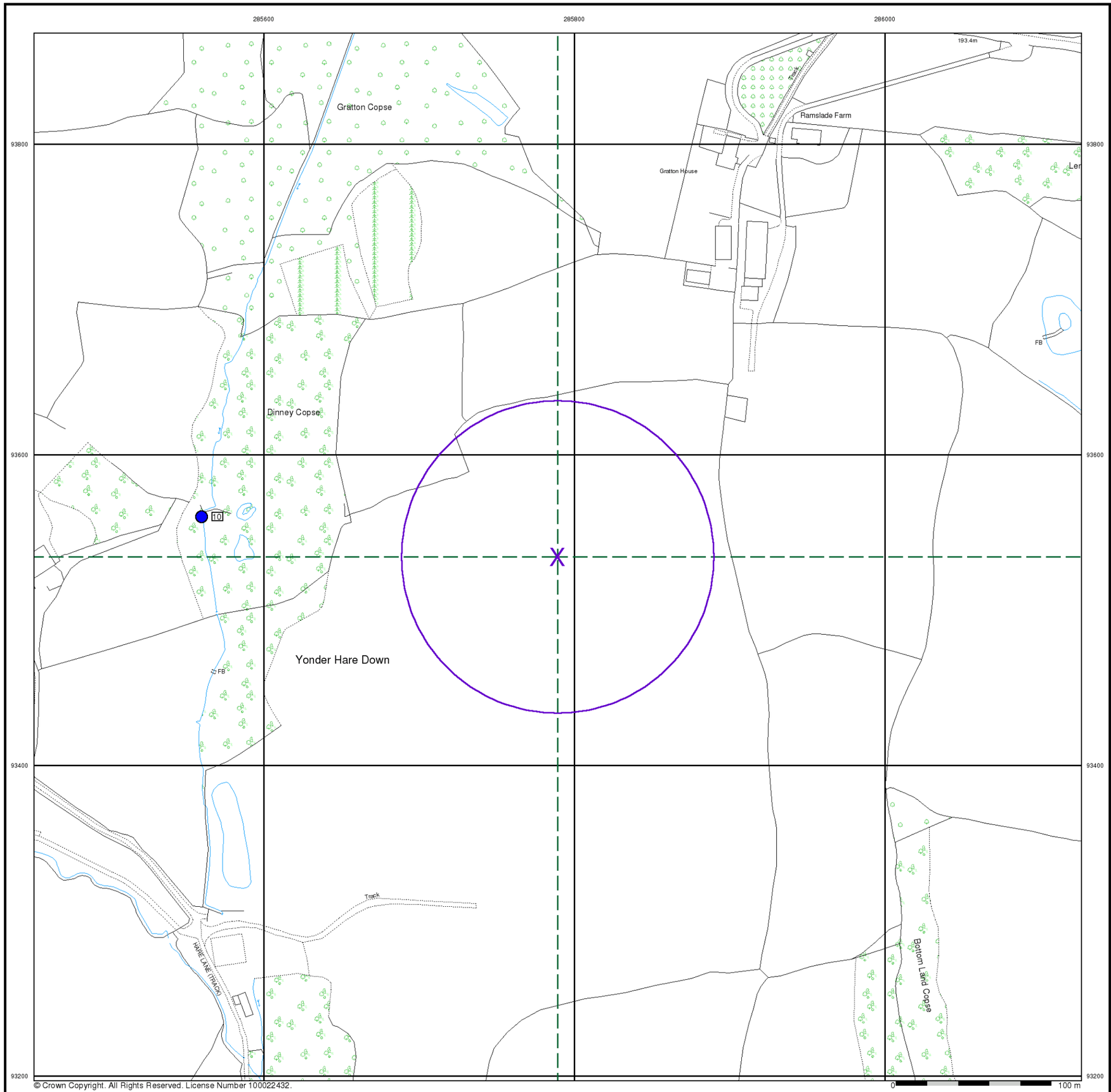


Envirocheck®

LANDMARK INFORMATION GROUP®

General

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

Agency and Hydrological

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

Hazardous Substances

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

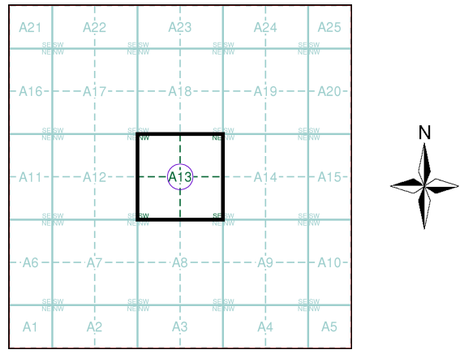
Geological

- BGS Recorded Mineral Site

Waste

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

Site Sensitivity Map - Segment A13



Order Details

Order Number:	285408085_1_1
Customer Ref:	213189
National Grid Reference:	285790, 93530
Slice:	A
Site Area (Ha):	0.01
Plot Buffer (m):	100

Site Details

Lower Hare Farm, Whitestone, EXETER, EX4 2HW

Landmark® INFORMATION GROUP

Tel: 0844 844 9952
Fax: 0844 844 9951
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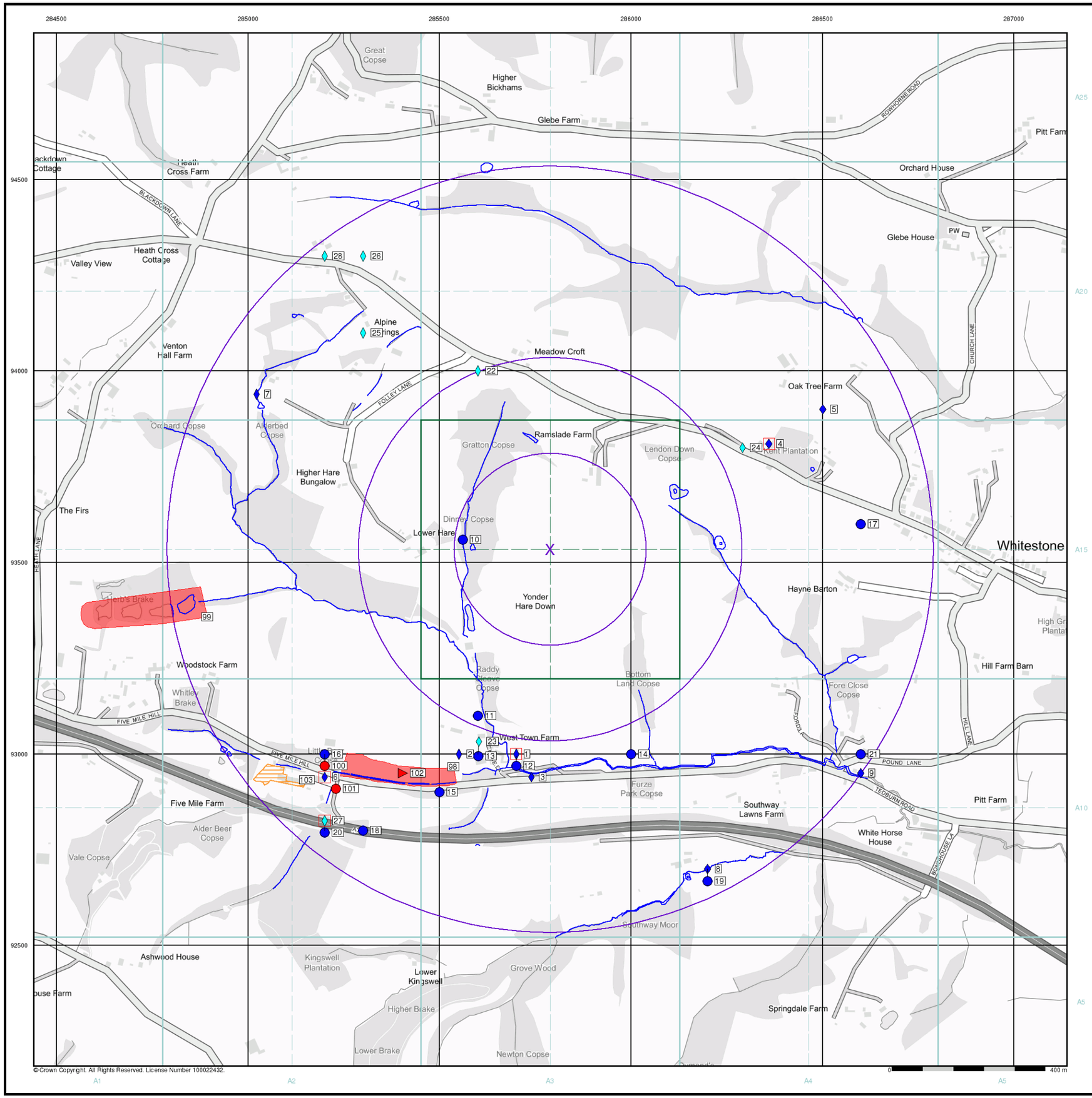

Envirocheck®

LANDMARK INFORMATION GROUP®

General

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

Agency and Hydrological

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

Hazardous Substances

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

Geological

- BGS Recorded Mineral Site

Waste

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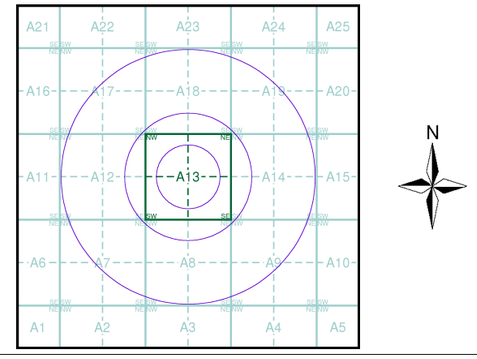
- Registered Landfill Site (Location)
- Registered Landfill Site (Point Buffered to 100m)
- Registered Landfill Site (Point Buffered to 250m)
- Registered Waste Transfer Site (Location)
- Registered Waste Transfer Site
- Registered Waste Treatment or Disposal Site (Location)
- Registered Waste Treatment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

Site Sensitivity Map - Slice A



Order Details

Order Number:	285408085_1_1
Customer Ref:	213189
National Grid Reference:	285790, 93530
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

Lower Hare Farm, Whitestone, EXETER, EX4 2HW

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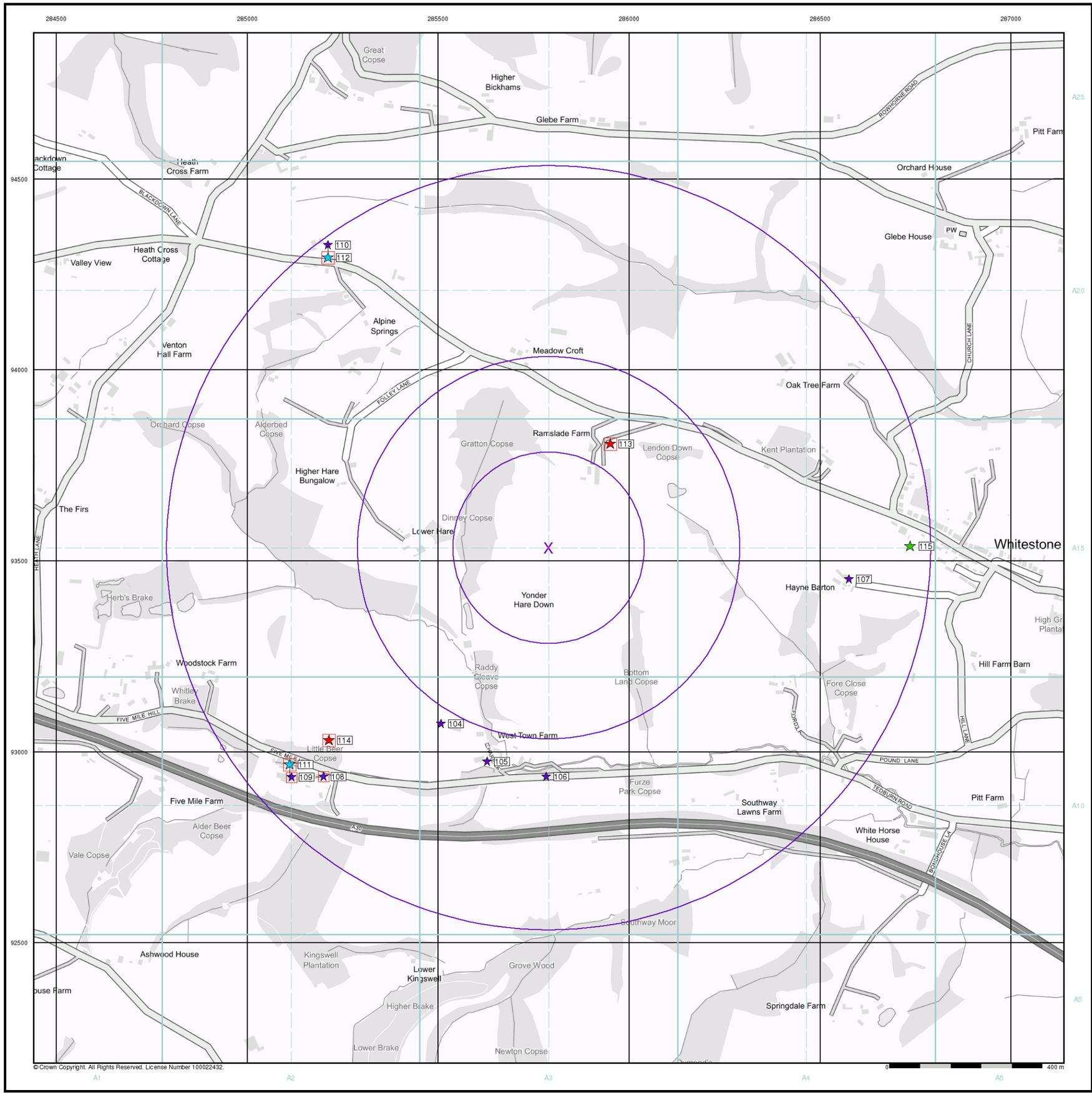

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LANDMARK INFORMATION GROUP®

Industrial Land Use Map

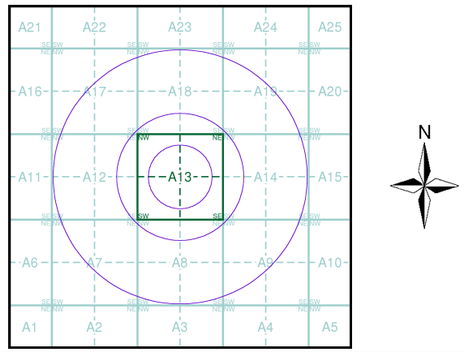
General

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

Industrial Land Use

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

Industrial Land Use Map - Slice A



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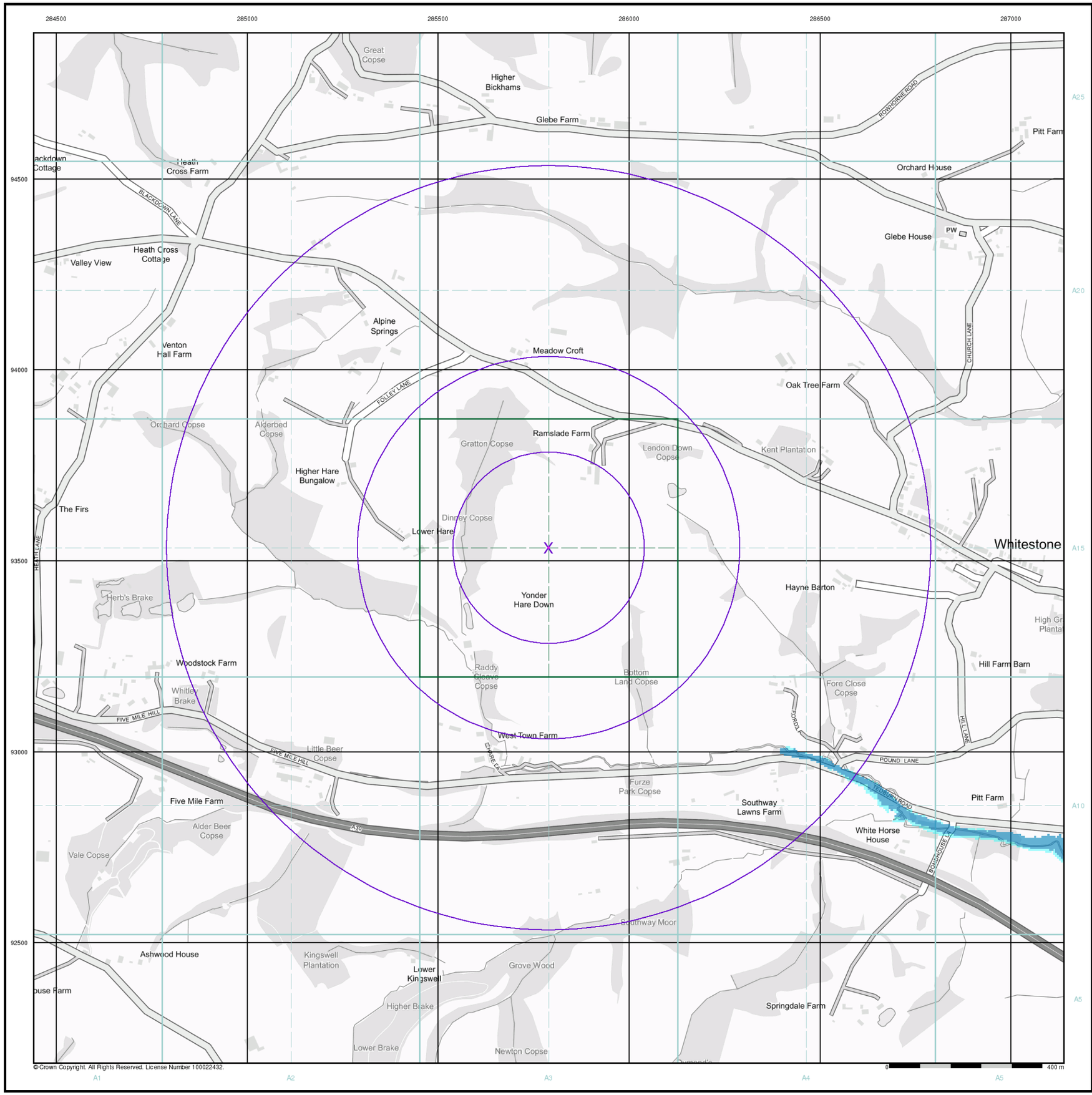


Envirocheck®

LANDMARK INFORMATION GROUP®

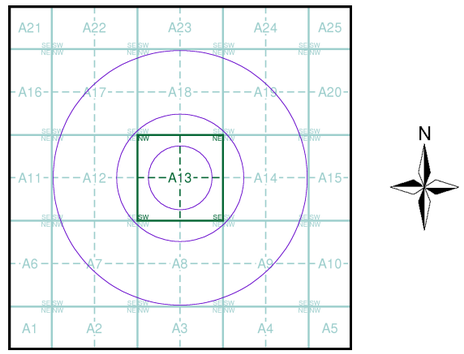
General

- 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



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Slice:	A
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Search Buffer (m):	1000

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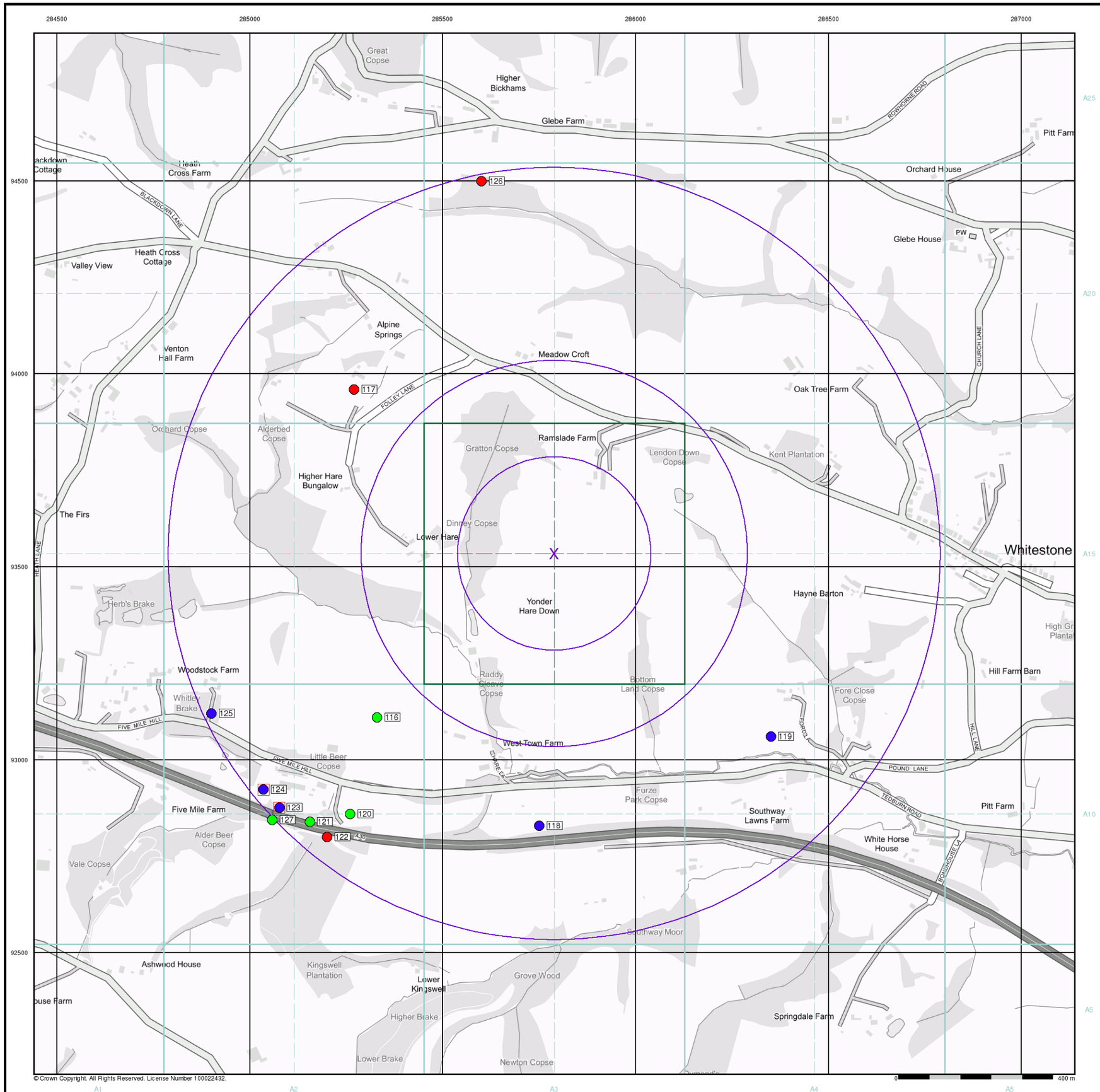

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General

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

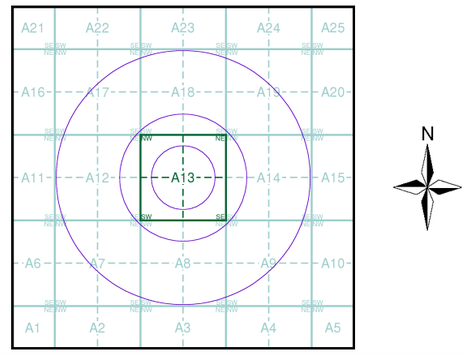
Agency and Hydrological (Boreholes)

- 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:	285408085_1_1
Customer Ref:	213189
National Grid Reference:	285790, 93530
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

Lower Hare Farm, Whitestone, EXETER, EX4 2HW

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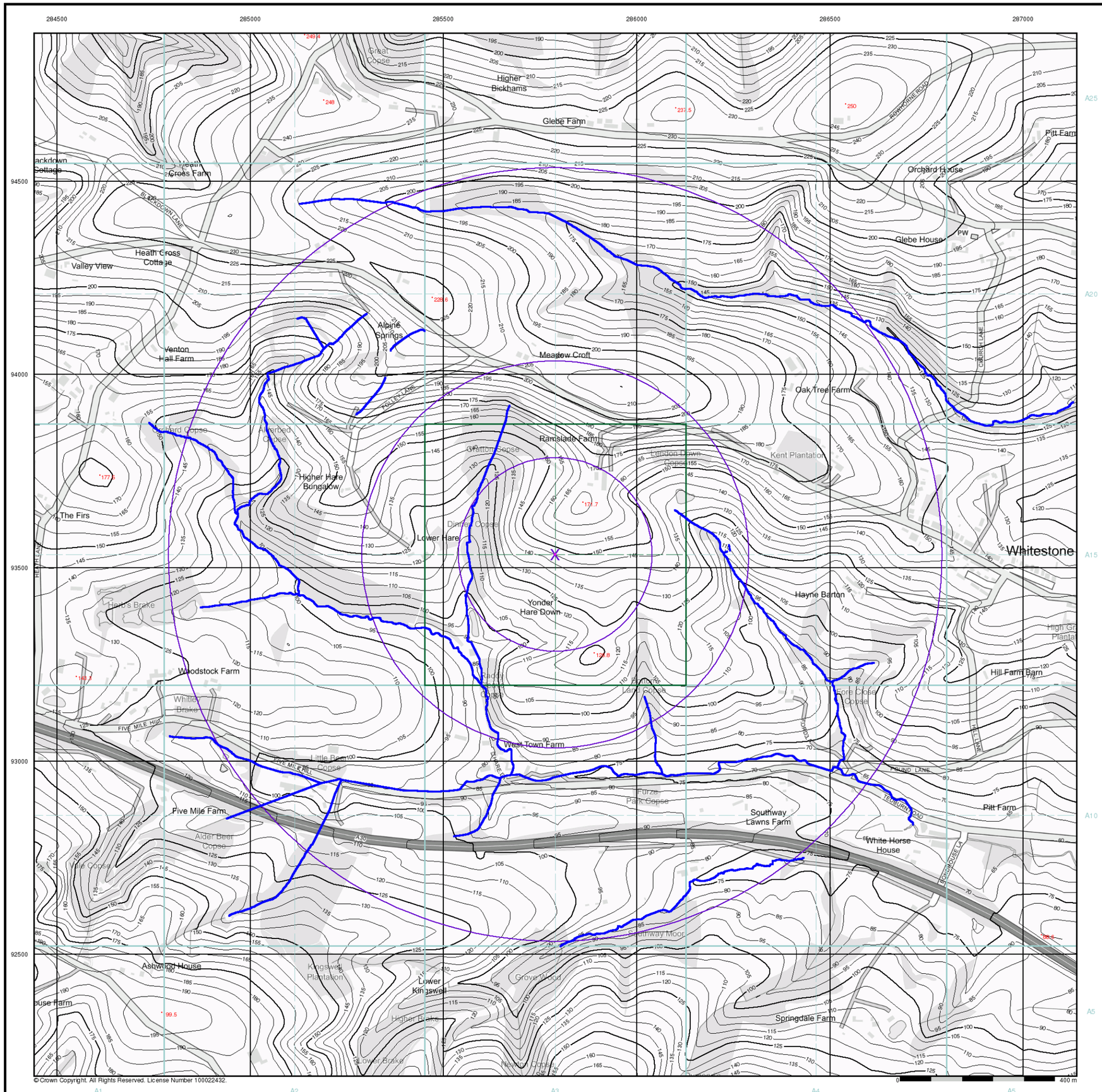

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LANDMARK INFORMATION GROUP®

General

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

OS Water Network Data

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

Contours (height in meters)

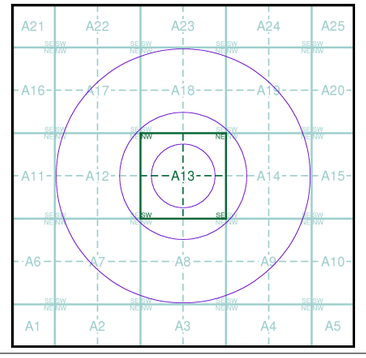
Standard Contour 105 100 95

Master Contour

Spot Height 167.3

- MLW Mean Low Water
- MHW Mean High Water

OS Water Network Map - Slice A



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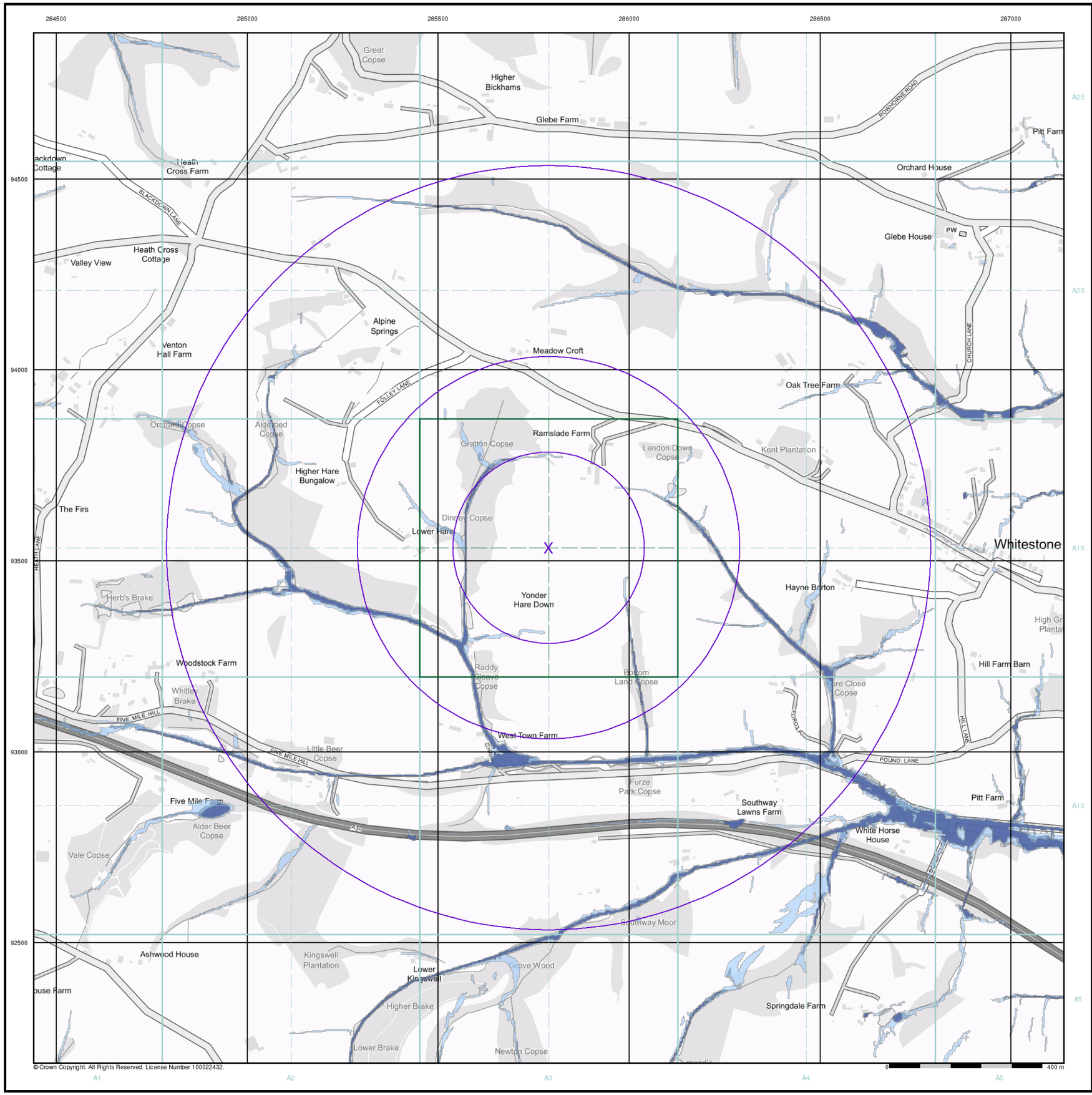

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LANDMARK INFORMATION GROUP®

General

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

Risk of Flooding from Surface Water

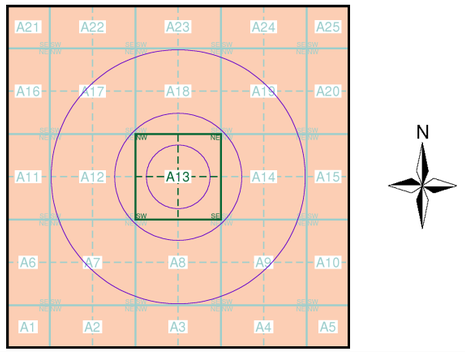
- High - 30 Year Return
- Medium - 100 Year Return
- Low - 1000 Year Return

Suitability

See the suitability map below

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

EA/NRW Suitability Map - Slice A



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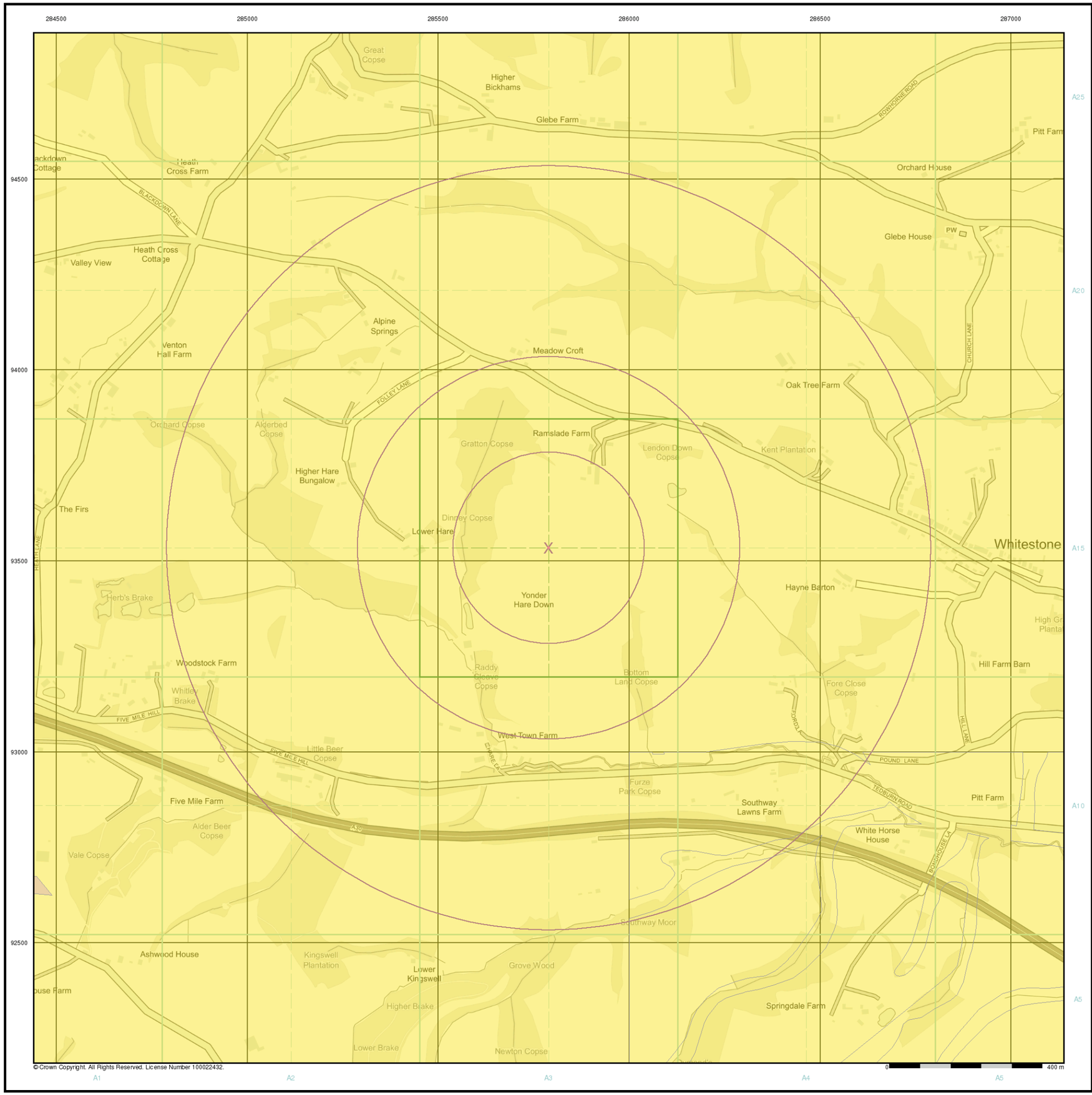

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LANDMARK INFORMATION GROUP®

General

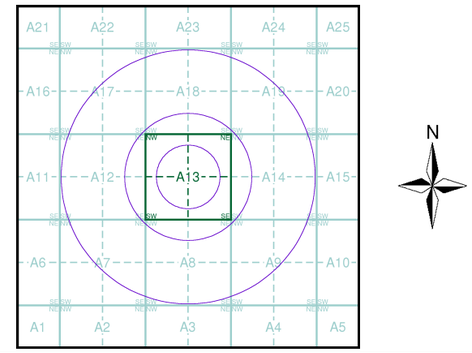
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Arsenic

Arsenic Concentrations mg/kg

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

Estimated Soil Chemistry Arsenic - Slice A



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General

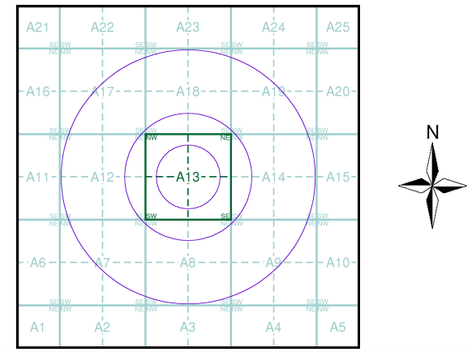
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Cadmium

Cadmium Concentrations mg/kg

- < 1.8
- 1.8 - 2.2
- 2.2 - 3.0
- > 3.0

Estimated Soil Chemistry Cadmium - Slice A



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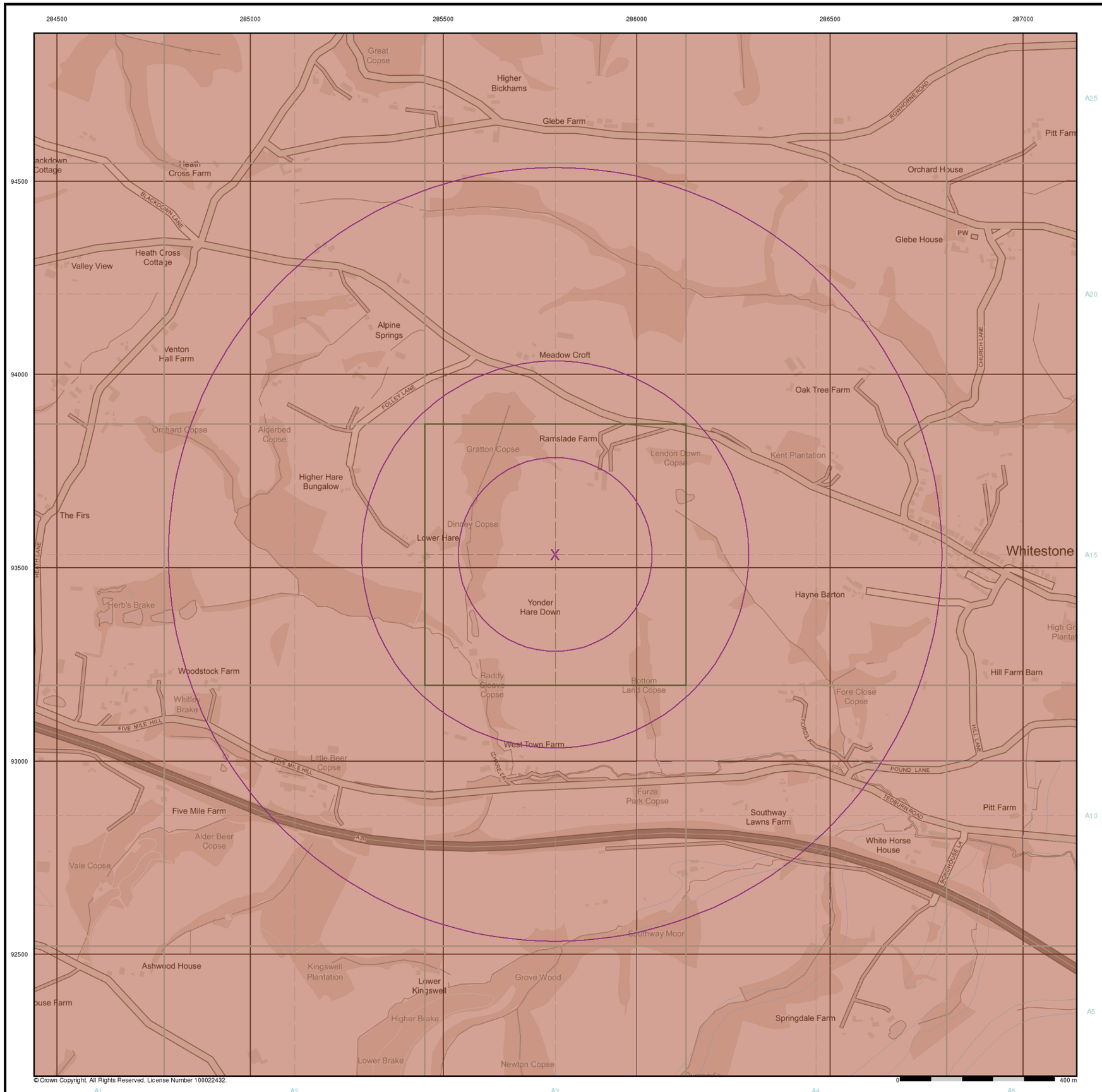

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LANDMARK INFORMATION GROUP®

General

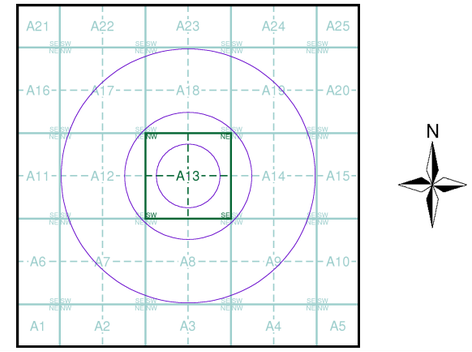
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Chromium

Chromium Concentrations mg/kg

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

Estimated Soil Chemistry Chromium - Slice A



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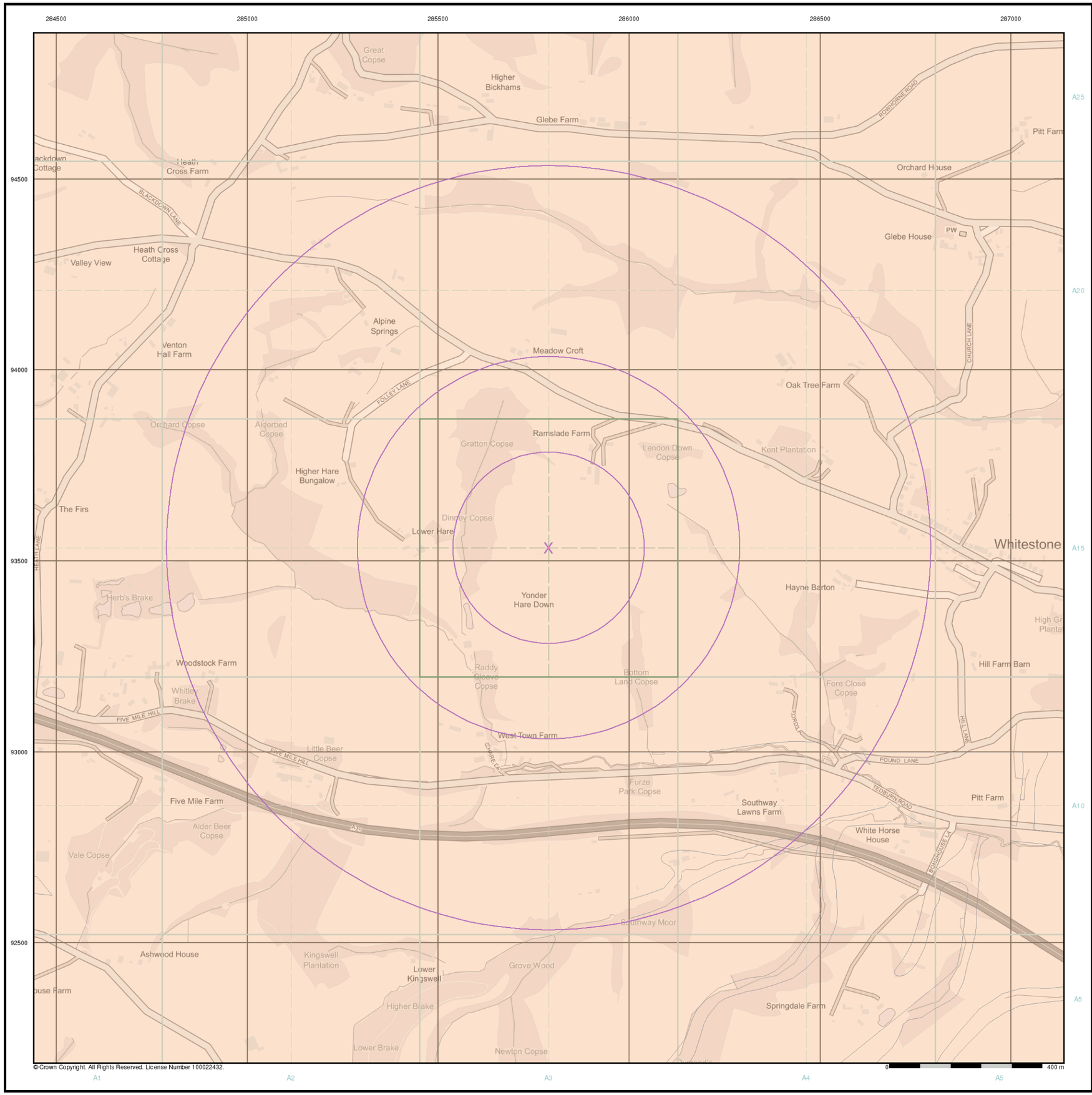

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LANDMARK INFORMATION GROUP®

General

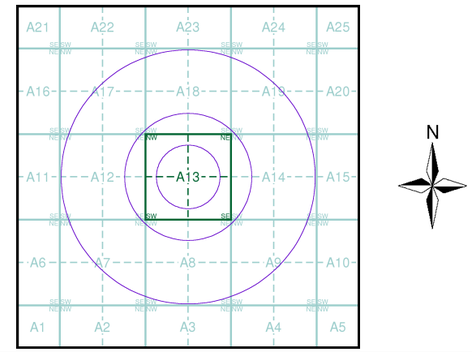
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Lead

Lead Concentrations mg/kg

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

Estimated Soil Chemistry Lead - Slice A



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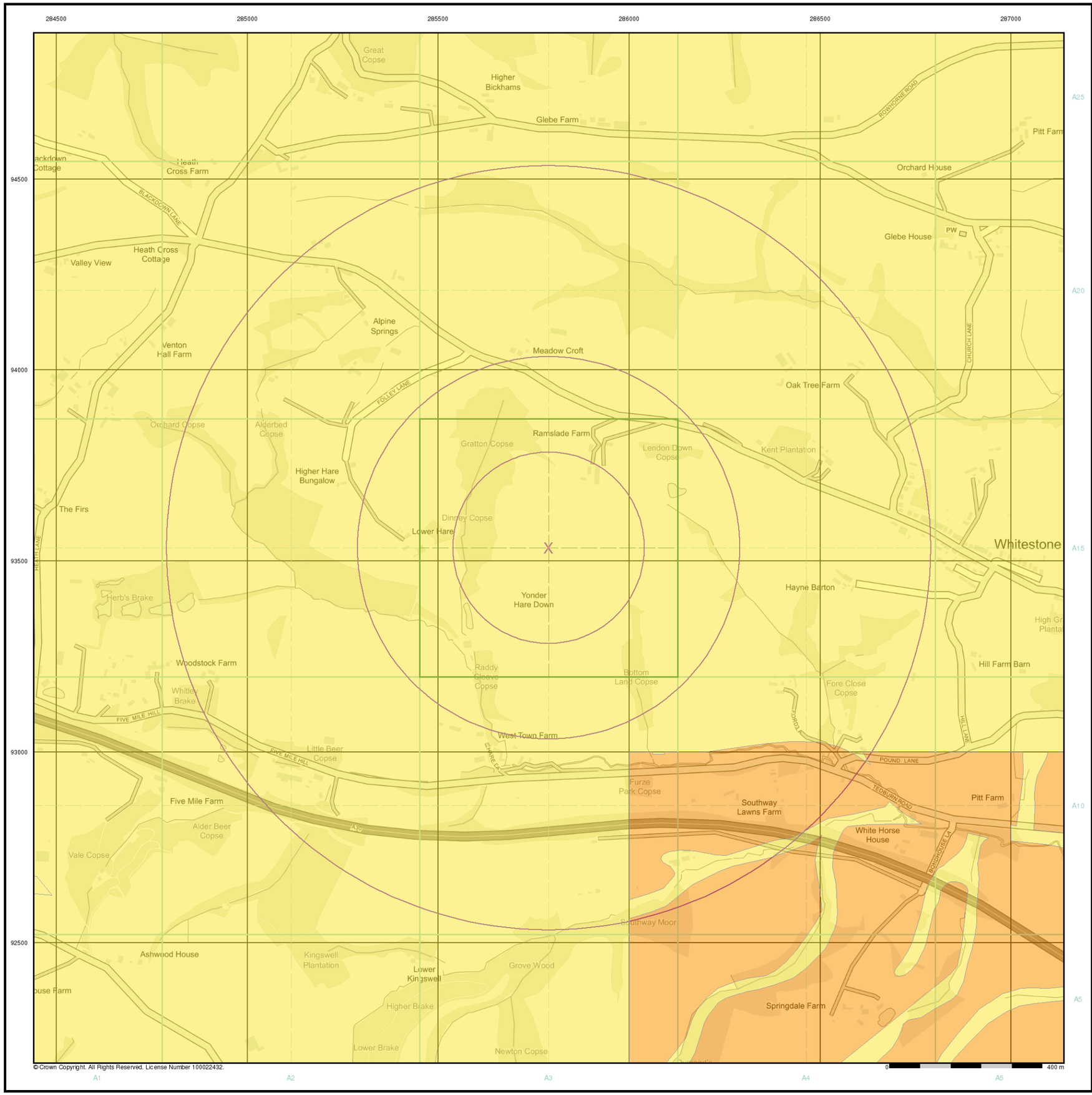


Envirocheck®

LANDMARK INFORMATION GROUP®

General

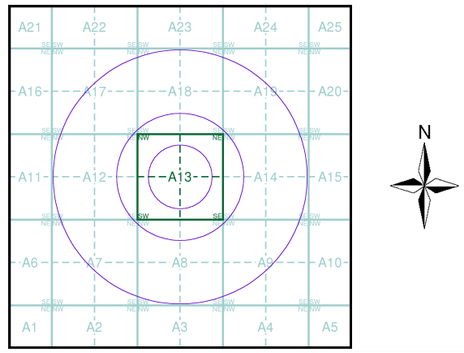
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Nickel

Nickel Concentrations mg/kg

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

Estimated Soil Chemistry Nickel - Slice A



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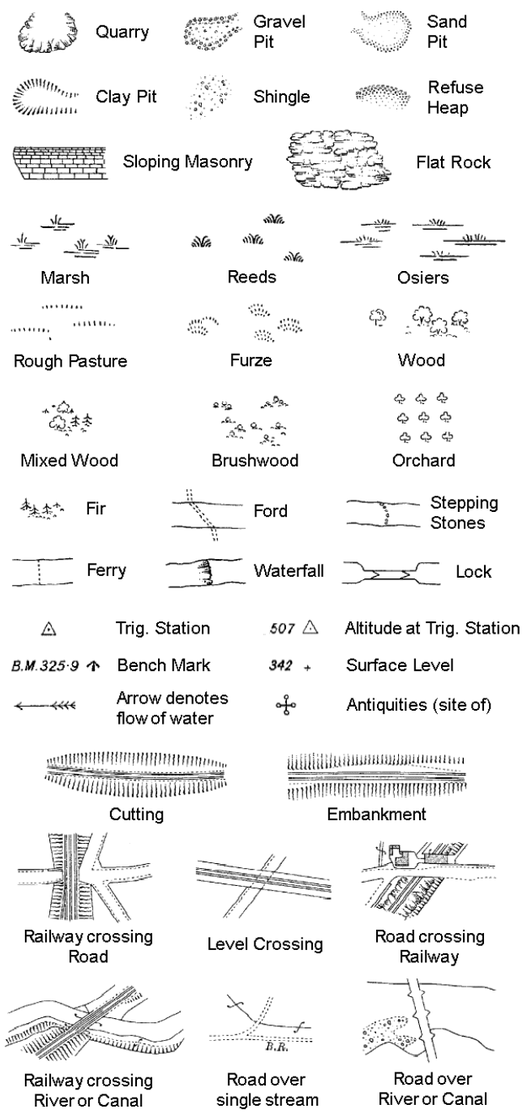
Historical Mapping Legends

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



County Boundary (Geographical)

County & Civil Parish Boundary

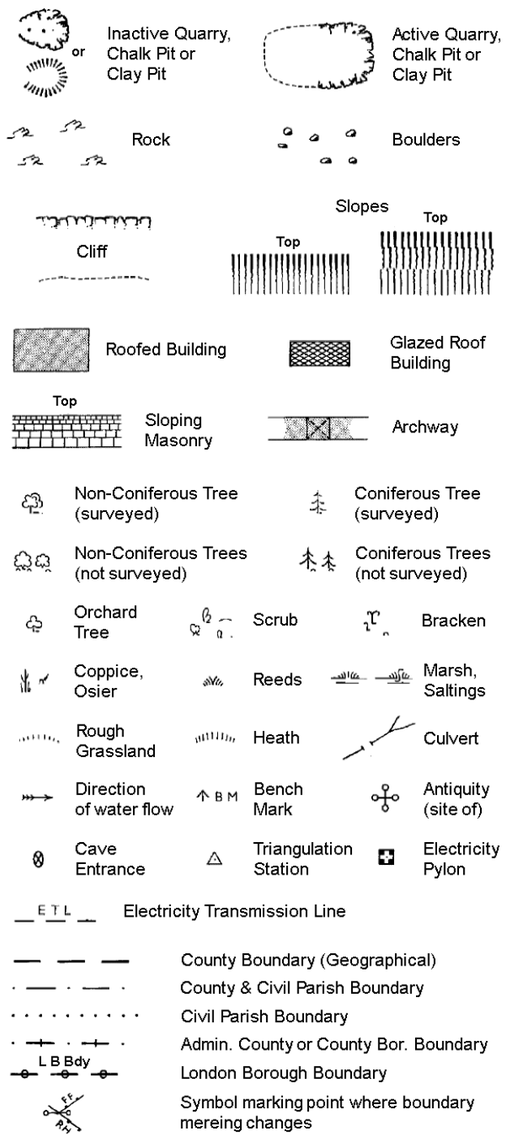
Administrative County & Civil Parish Boundary

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

Co. Burgh Bdy. County Burgh Boundary (Scotland)

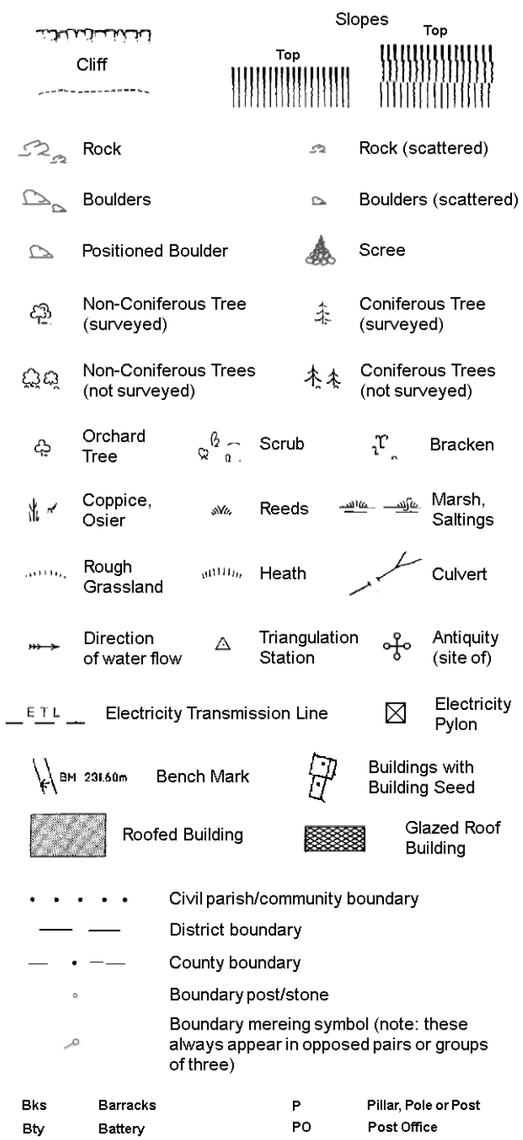
B P B S	Boundary Post or Stone	P.C.B	Police Call Box
B.R.	Bridle Road	P	Pump
E.P	Electricity Pylon	S.P	Signal Post
F.B.	Foot Bridge	St.	Sluice
F.P.	Foot Path	Sp.	Spring
G.P	Guide Post or Board	T.C.B	Telephone Call Box
M.S	Mile Stone	Tr.	Trough
M.P M.R	Mooring Post or Ring	W	Well

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



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

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



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

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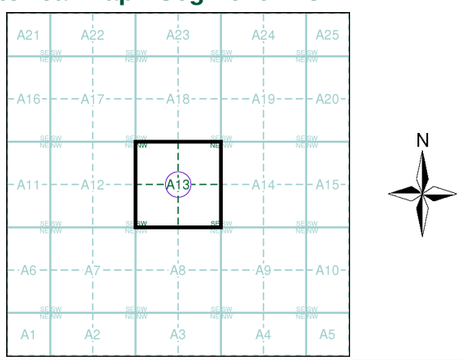
Historical Mapping & Photography included:

Historical Map - Segment A13



Order Details

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Slice:	A
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Site Details

Lower Hare Farm, Whitestone, EXETER, EX4 2HW

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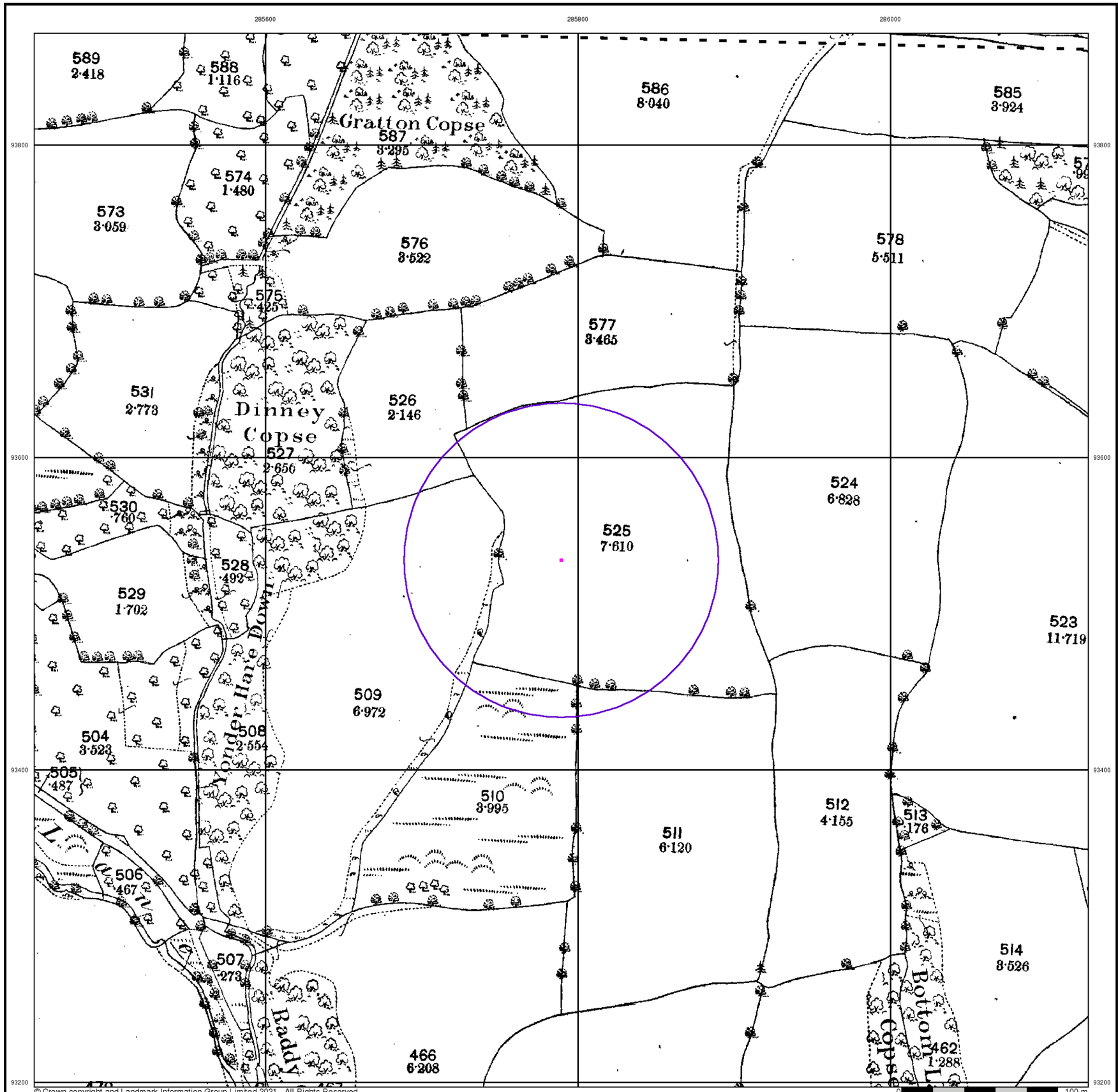

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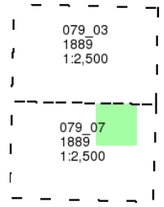
Devon

Published 1889

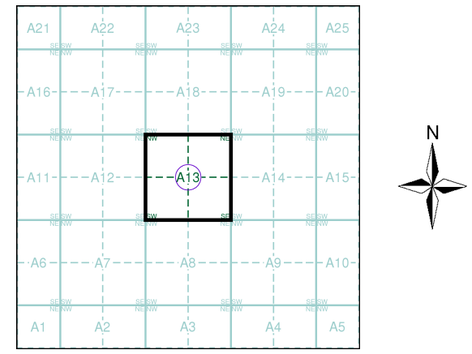
Source map scale - 1:2,500

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



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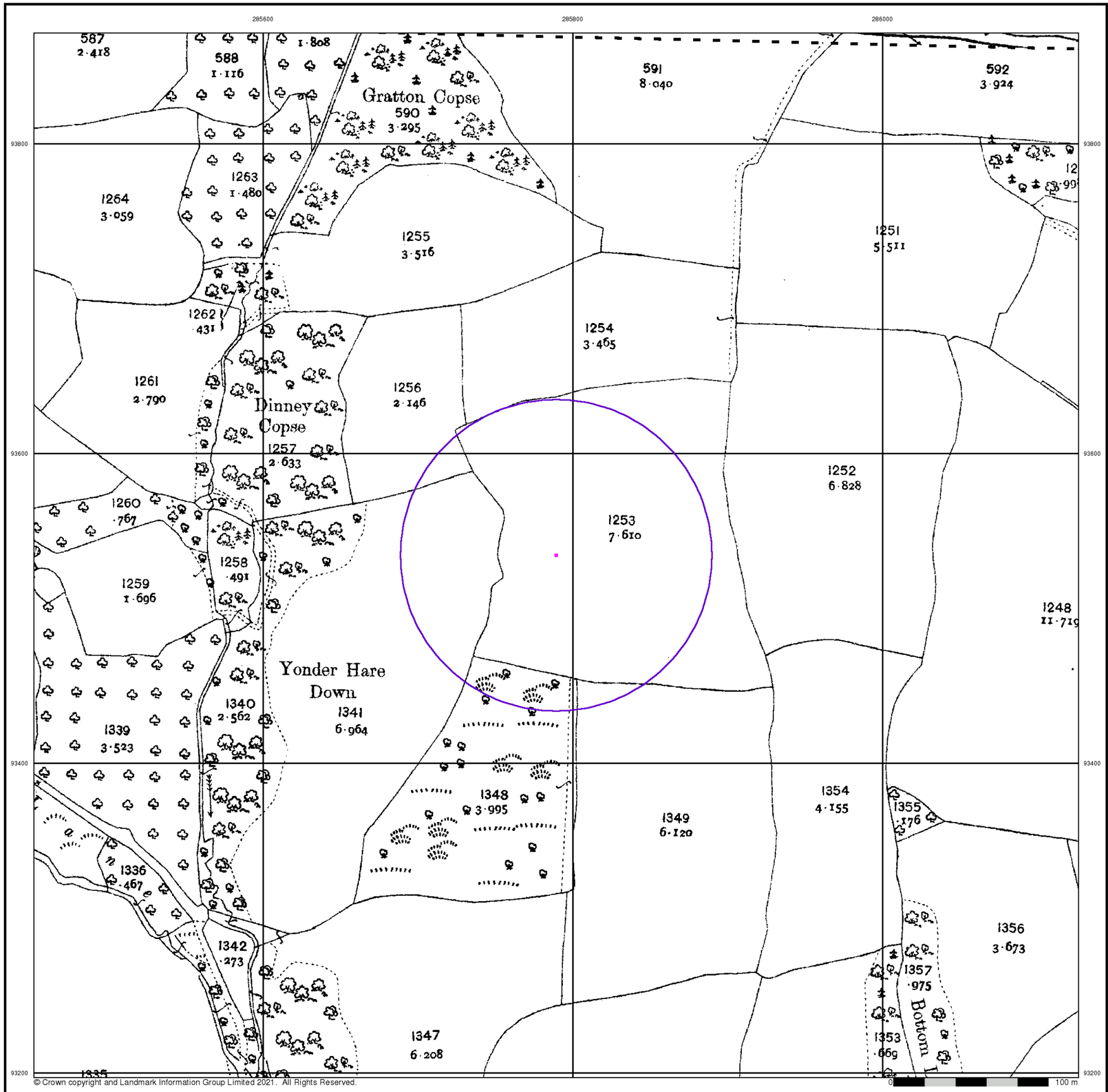

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Devon

Published 1905

Source map scale - 1:2,500

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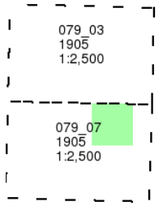
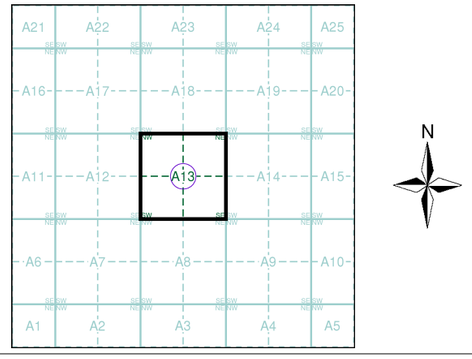


Historical Map - Segment A13



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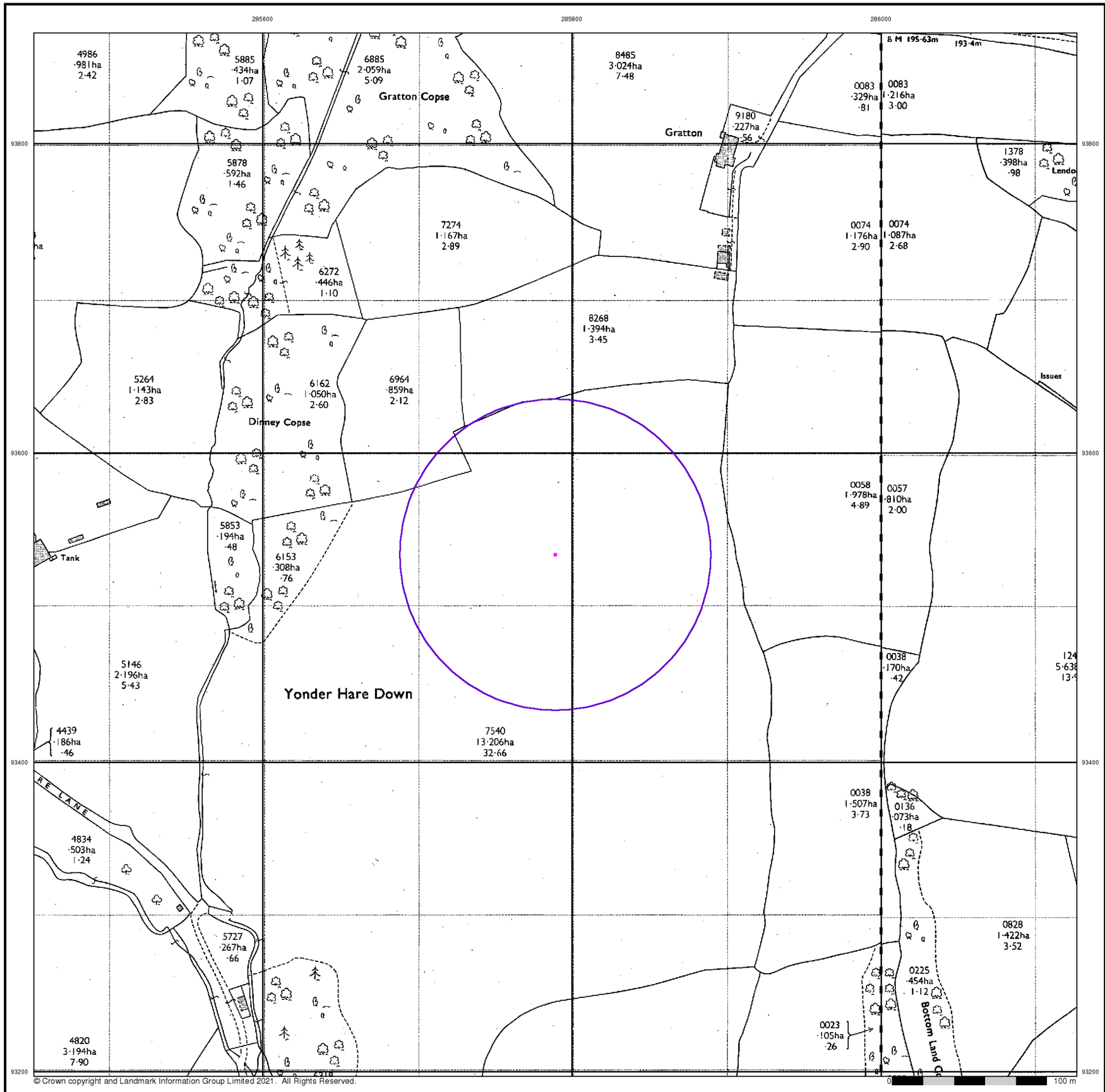

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Ordnance Survey Plan

Published 1971 - 1972

Source map scale - 1:2,500

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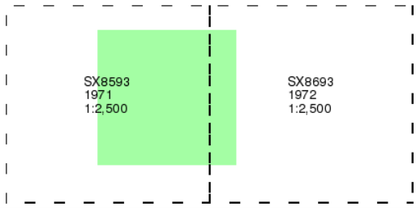
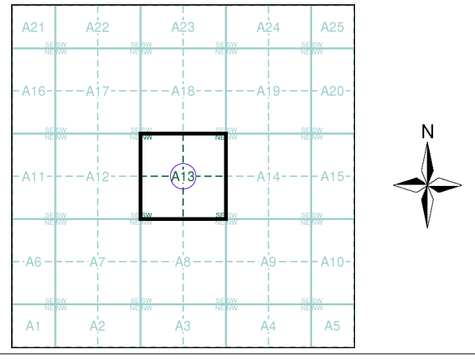


Historical Map - Segment A13



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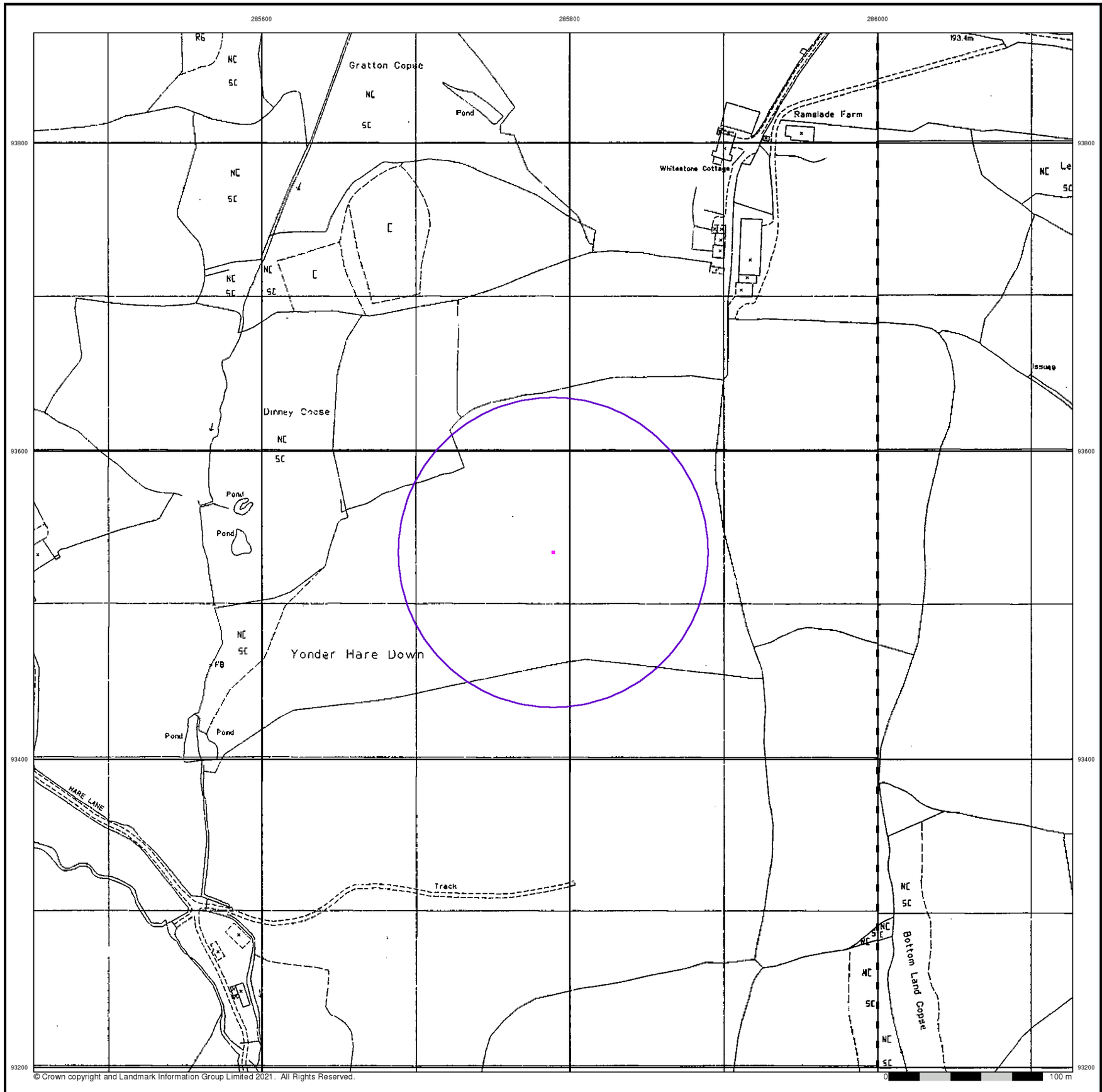

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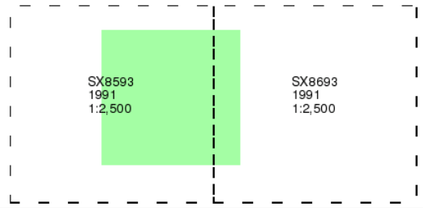
Additional SIMs

Published 1991

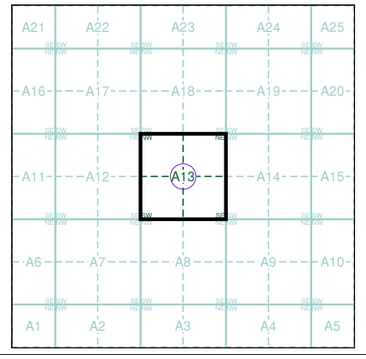
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A13



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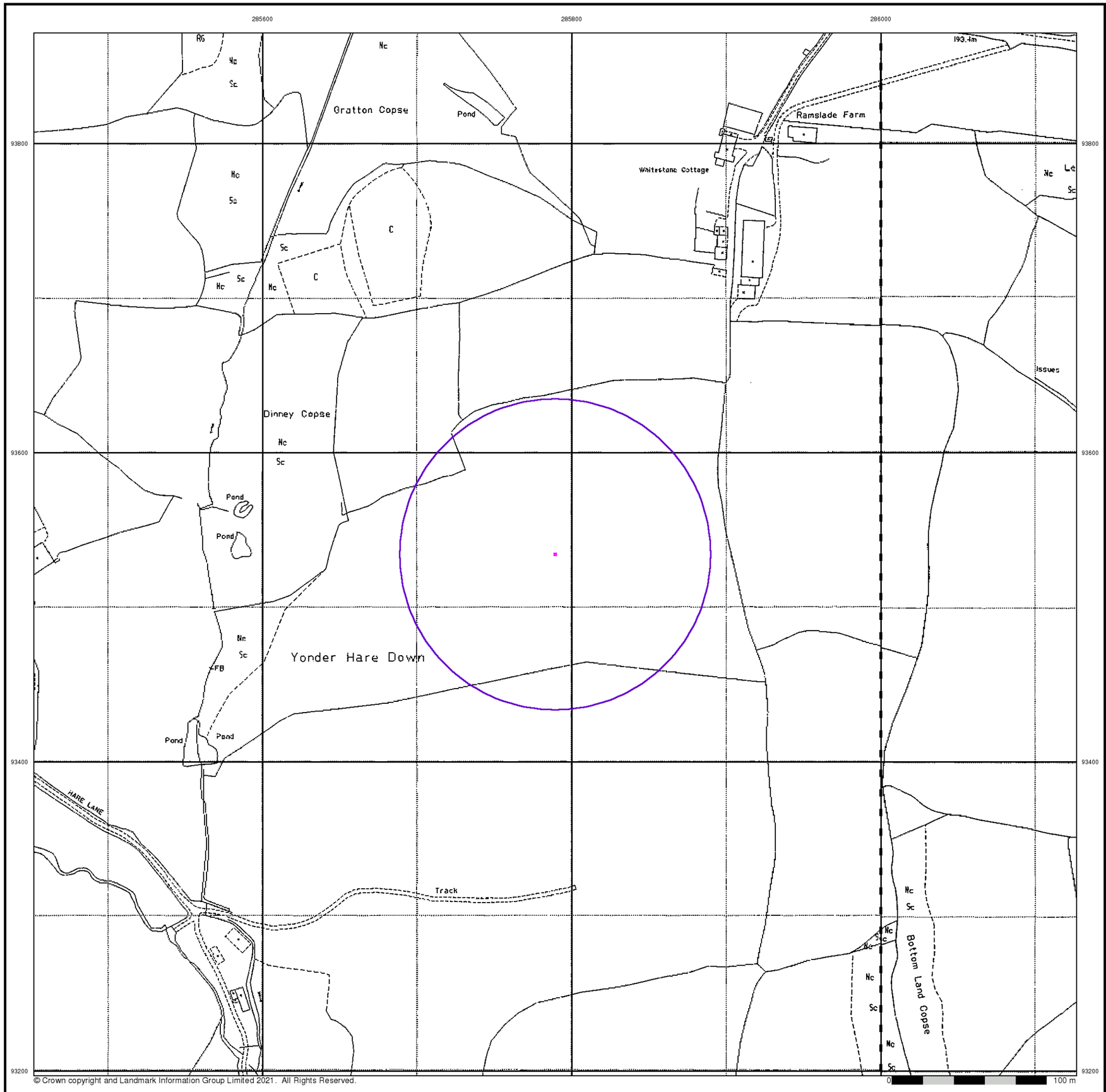

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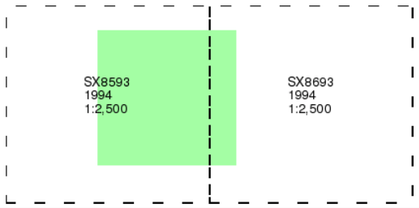
Large-Scale National Grid Data

Published 1994

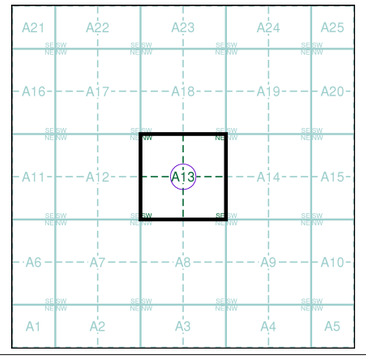
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

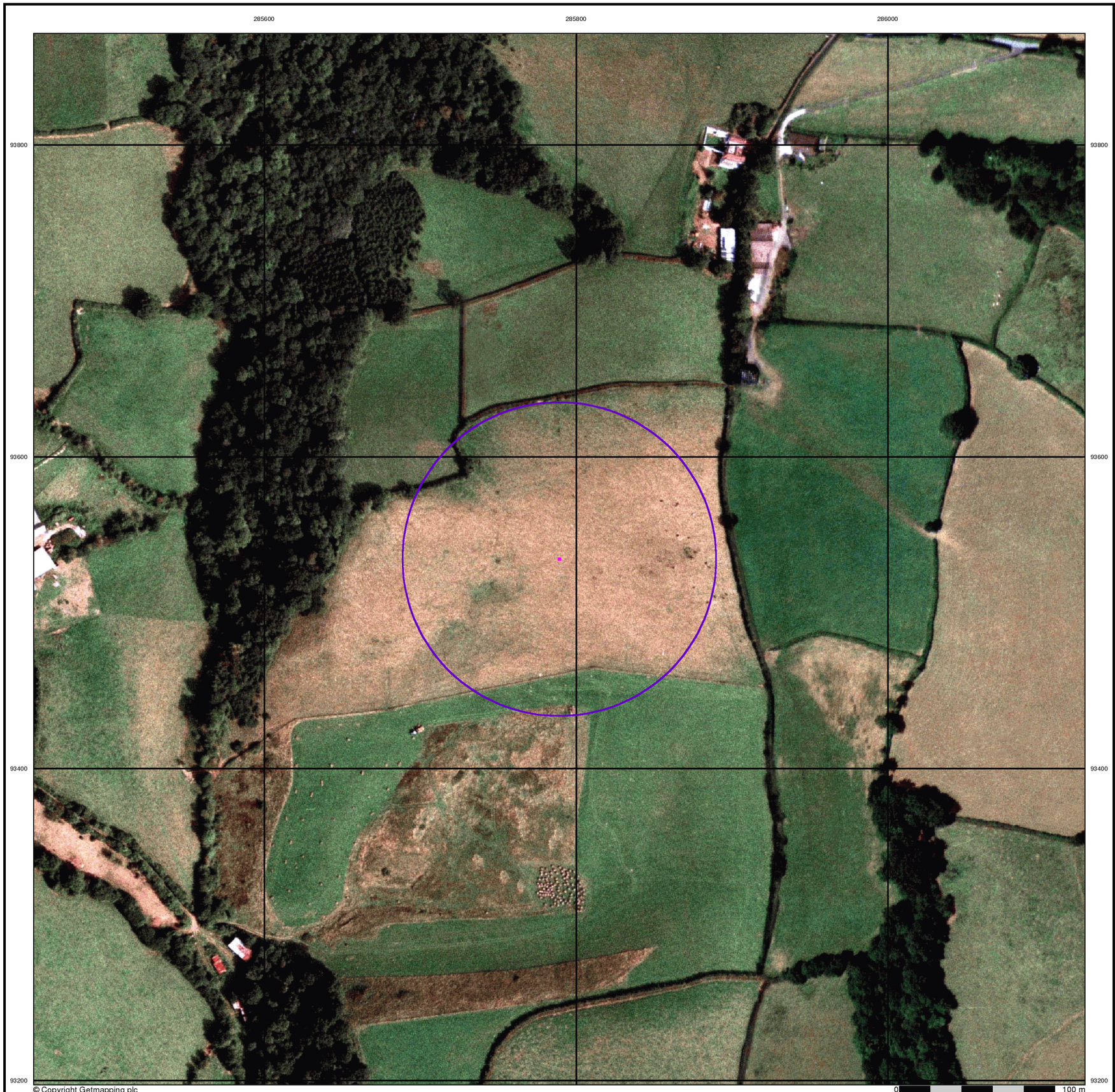
Order Number:	285408085_1_1
Customer Ref:	213189
National Grid Reference:	285790, 93530
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	100

Site Details

Lower Hare Farm, Whitestone, EXETER, EX4 2HW

Landmark® INFORMATION GROUP

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



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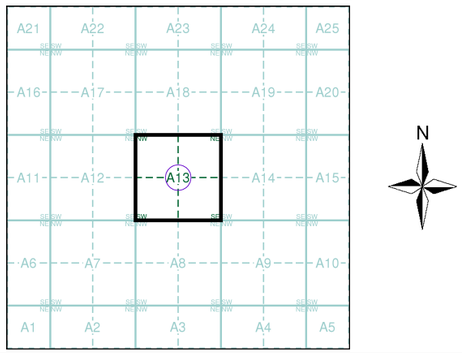
Historical Aerial Photography

Published 1999

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

Historical Aerial Photography - Segment A13



Order Details

Order Number:	285408085_1_1
Customer Ref:	213189
National Grid Reference:	285790, 93530
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	100

Site Details

Lower Hare Farm, Whitestone, EXETER, EX4 2HW

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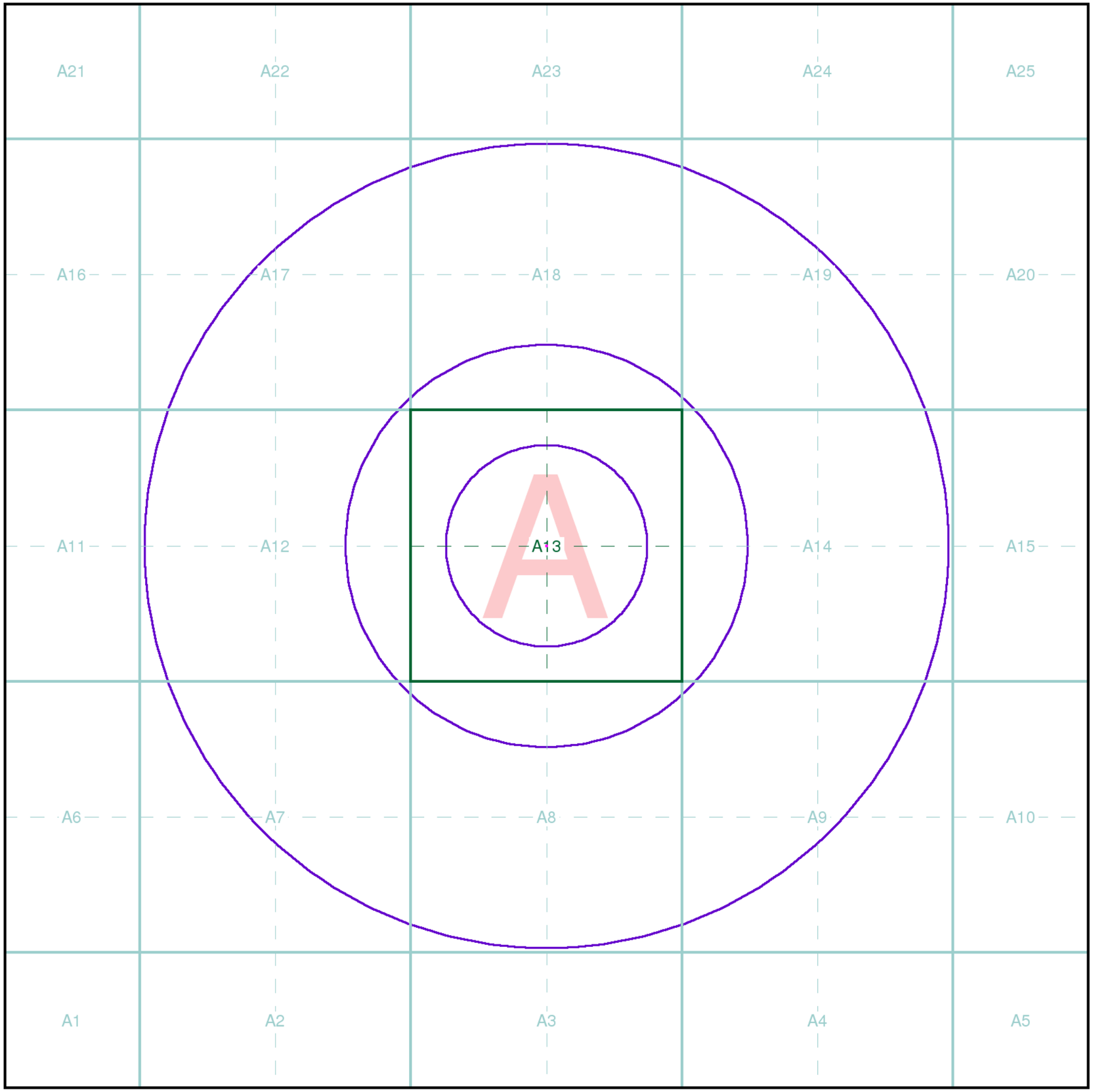

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Index Map

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:

Map data

British Geological Survey
NATURAL ENVIRONMENT RESEARCH COUNCIL

Environment Agency

NATURAL ENGLAND

Envirocheck reports are compiled from 136 different sources of data.

Client Details

Miss S Muir, AA Environmental Ltd, 4-8 Cholswell Court, Shippon, Abingdon, OX13 6HX

Order Details

Order Number:	285408085_1_1
Customer Ref:	213189
National Grid Reference:	285790, 93530
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

Lower Hare Farm, Whitestone, EXETER, EX4 2HW

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

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Appendix C
Groundwater & Gas Borehole Logs

AA Environmental Ltd
Units 4-8 Cholswell Court
Shippon
Abingdon
OX13 6HX

Borehole Log

Borehole No.
BH101
Sheet 1 of 2

Project Name: Lower Hare Farm	Project No. 213189	Co-ords: 285629.79 - 93289.26	Hole Type RO
Location: Whitestone, Devon		Level: 90.06	Scale 1:50
Client: GRS Stone Supplies LTD		Dates: 13/09/2021 - 13/09/2021	Logged By ADP

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.40	89.66		Topsoil with MADE GROUND
					0.80	89.26		Grey silty CLAY
								Grey MUDSTONE
								Continued on next sheet

1 2 3 4 5 6 7 8 9 10

Remarks
Open hole Rotary technique. Strata determined from driller's description. No visual and/or olfactory evidence of contamination was identified in the arisings. No groundwater was encountered during drilling.

AGS

AA Environmental Ltd
Units 4-8 Cholswell Court
Shippon
Abingdon
OX13 6HX

Borehole Log

Borehole No.
BH101
Sheet 2 of 2

Project Name: Lower Hare Farm	Project No. 213189	Co-ords: 285629.79 - 93289.26	Hole Type RO
Location: Whitestone, Devon		Level: 90.06	Scale 1:50
Client: GRS Stone Supplies LTD		Dates: 13/09/2021 - 13/09/2021	Logged By ADP

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					12.00	78.06		End of borehole at 12.00 m

11
12
13
14
15
16
17
18
19
20

Remarks
Open hole Rotary technique. Strata determined from driller's description. No visual and/or olfactory evidence of contamination was identified in the arisings. No groundwater was encountered during drilling.

AGS

AA Environmental Ltd
Units 4-8 Cholswell Court
Shippon
Abingdon
OX13 6HX

Borehole Log

Borehole No.
BH102
Sheet 1 of 2

Project Name: Lower Hare Farm	Project No. 213189	Co-ords: 285848.43 - 93277.23	Hole Type RO
Location: Whitestone, Devon		Level: 122.10	Scale 1:50
Client: GRS Stone Supplies LTD		Dates: 15/09/2021 - 15/09/2021	Logged By ADP

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
								Stiff grey CLAY
					1.20	120.90		Grey CLAY
					4.00	118.10		Grey MUDSTONE
								Continued on next sheet

1 2 3 4 5 6 7 8 9 10

Remarks
Open hole Rotary technique. Strata determined from driller's description. No visual and/or olfactory evidence of contamination was identified in the arisings. No groundwater was encountered during drilling.

AGS

Borehole Log

Environmental Consultants

Borehole No. **BH102** Sheet 2 of 2

Project Name: Lower Hare Farm	Project No. 213189	Co-ords: 285848.43 - 93277.23	Hole Type RO
Location: Whitestone, Devon		Level: 122.10	Scale 1:50
Client: GRS Stone Supplies LTD		Dates: 15/09/2021 - 15/09/2021	Logged By ADP

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					12.00	110.10		Stiff grey MUDSTONE
					16.00	106.10		Grey IGNEOUS
					18.00	104.10		End of borehole at 18.00 m

11 12 13 14 15 16 17 18 19 20

Remarks

Open hole Rotary technique. Strata determined from driller's description. No visual and/or olfactory evidence of contamination was identified in the arisings. No groundwater was encountered during drilling.

AGS

AA Environmental Ltd
Units 4-8 Cholswell Court
Shippon
Abingdon
OX13 6HX

Borehole Log

Borehole No.
BH103
Sheet 1 of 3

Project Name: Lower Hare Farm	Project No. 213189	Co-ords: 285709.79 - 93540.10	Hole Type RO
Location: Whitestone, Devon		Level: 136.50	Scale 1:50
Client: GRS Stone Supplies LTD		Dates: 15/09/2021 - 15/09/2021	Logged By ADP

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
								Silty grey CLAY
					2.50	134.00		Grey CLAY into MUDSTONE
					6.00	130.50		Stiff grey CLAY
								Continued on next sheet

Remarks
Open hole Rotary technique. Strata determined from driller's description. No visual and/or olfactory evidence of contamination was identified in the arisings. No groundwater was encountered during drilling.

Borehole Log

Environmental Consultants

Borehole No. **BH103**

Sheet 2 of 3

Project Name:	Lower Hare Farm	Project No. 213189	Co-ords:	285709.79 - 93540.10	Hole Type RO
Location:	Whitestone, Devon		Level:	136.50	Scale 1:50
Client:	GRS Stone Supplies LTD		Dates:	15/09/2021 - 15/09/2021	Logged By ADP

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				

11
12
13
14
15
16
17
18
19
20

Continued on next sheet

Remarks

Open hole Rotary technique. Strata determined from driller's description. No visual and/or olfactory evidence of contamination was identified in the arisings. No groundwater was encountered during drilling.

AGS

Borehole Log

Environmental Consultants

Borehole No. **BH103**

Sheet 3 of 3

Project Name: Lower Hare Farm	Project No. 213189	Co-ords: 285709.79 - 93540.10	Hole Type RO
Location: Whitestone, Devon		Level: 136.50	Scale 1:50
Client: GRS Stone Supplies LTD		Dates: 15/09/2021 - 15/09/2021	Logged By ADP

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					21.00	115.50		Grey MUDSTONE
					25.00	111.50		End of borehole at 25.00 m

21 22 23 24 25 26 27 28 29 30

Remarks

Open hole Rotary technique. Strata determined from driller's description. No visual and/or olfactory evidence of contamination was identified in the arisings. No groundwater was encountered during drilling.

AGS

AA Environmental Ltd
Units 4-8 Cholswell Court
Shippon
Abingdon
OX13 6HX

Borehole Log

Borehole No.
BH104
Sheet 1 of 2

Project Name: Lower Hare Farm	Project No. 213189	Co-ords: 285611.22 - 93347.79	Hole Type RO
Location: Whitestone, Devon		Level: 97.12	Scale 1:50
Client: GRS Stone Supplies LTD		Dates: 14/09/2021 - 14/09/2021	Logged By ADP

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
								Grey silty CLAY
					0.70	96.42		Stiff grey CLAY
					1.20	95.92		Grey MUDSTONE with narrow bands of soft clay
								Continued on next sheet

1 2 3 4 5 6 7 8 9 10

Remarks
Open hole Rotary technique. Strata determined from driller's description. No visual and/or olfactory evidence of contamination was identified in the arisings. No groundwater was encountered during drilling.

AGS

AA Environmental Ltd
Units 4-8 Cholswell Court
Shippon
Abingdon
OX13 6HX

Borehole Log

Borehole No.
BH104
Sheet 2 of 2

Project Name: Lower Hare Farm	Project No. 213189	Co-ords: 285611.22 - 93347.79	Hole Type RO
Location: Whitestone, Devon		Level: 97.12	Scale 1:50
Client: GRS Stone Supplies LTD		Dates: 14/09/2021 - 14/09/2021	Logged By ADP

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					15.00	82.12		End of borehole at 15.00 m

Remarks
Open hole Rotary technique. Strata determined from driller's description. No visual and/or olfactory evidence of contamination was identified in the arisings. No groundwater was encountered during drilling.

Appendix D

Noise Assessment (LF Acoustics Ltd, September 2018) – INFORMATION ONLY

LFAcoustics
consulting engineers

NOISE ASSESSMENT

PROPOSED GROUND RESHAPING WORKS ON LAND AT LOWER HARE FARM

RJA PLANNING SERVICES

SEPTEMBER 2018

LF Acoustics Ltd
Wrest Park Enterprise Centre
Building 52, Wrest Park
Silsoe, Bedfordshire
MK45 4HS

t: 01525 888046
e: mail@lfacoustics.co.uk

Registered in England
Company Reg: 8434608

NOISE ASSESSMENT

PROPOSED GROUND RESHAPING WORKS ON LAND AT LOWER HARE FARM

RJA PLANNING SERVICES

SEPTEMBER 2018

Status	Prepared By	Date
1.0	L Jephson BEng (Hons) MIOA	5/9/18

Contents

1. Introduction

LF Acoustics Limited have been appointed by RJA Planning Services to undertake a noise assessment in support of a planning application for proposed ground reshaping works on land at Lower Hare Farm.

The land has been previously altered by the importation of inert materials, which has left the land unsuitable for agricultural use. It is proposed to import clean inert soils to reshape the land to enable it to be returned to agricultural use.

This report presents an assessment of the noise levels associated with the proposed infilling and ground reshaping operations. The following section of the report provides a summary of the applicable Standards and guidance adopted when assessing noise from minerals operations. Section 3 identifies the surrounding noise sensitive properties and provides details of the baseline noise monitoring exercise. Section 4 provides a summary of the development proposals, calculations and an assessment of the noise levels attributable to the operation of the plant. Section 5 provides recommendations for noise control and monitoring requirements, with a summary of the report in Section 6.

2. Applicable Standards and Guidance

A description of the noise units referred to within this report is provided in Appendix A.

2.1. National Planning Policy Framework

The National Planning Policy Framework (NPPF), revised in July 2018 [1], sets out the Government's planning policies for England and how these should be applied. It provides a framework upon which locally-prepared plans for housing and other development can be produced.

The purpose of the planning system is to contribute to the achievement of sustainable development and at the heart of the Framework is a presumption in favour of sustainable development.

With regards noise, local planning policies and decisions should contribute to and enhance the natural and local environment by:

- preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels noise pollution;
- mitigate and reduce to a minimum potential adverse impacts resulting from noise from new development (including cumulative effects) – and avoid noise giving rise to significant adverse impacts on health and the quality of life;
- identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason.

The Planning Policy Guidance note on noise, published in March 2014 [2], defines potential adverse effects and the required mitigation, as follows:

No Observed Adverse Effect

Noise can be heard, but does not cause any change in behaviour or attitude. Can slightly affect the acoustic character of the area but not such that there is a perceived change in the quality of life (no specific measured required to mitigate noise).

Observed Adverse Effect

Noise can be heard and causes small changes in behaviour and/or attitude, eg turning up volume of television; speaking more loudly; where there is no alternative ventilation, having to close windows for some of the time because of the noise. Potential for some reported sleep disturbance. Affects the acoustic character of the area such that there is a perceived change in the quality of life (mitigate and reduce noise levels to a minimum).

Significant Observed Adverse Effect

The noise causes a material change in behaviour and/or attitude, eg avoiding certain activities during periods of intrusion; where there is no alternative ventilation, having to keep windows closed most of the time because of the noise. Potential for sleep disturbance resulting in difficulty in getting to sleep, premature awakening and difficulty in getting back to sleep. Quality of life diminished due to change in acoustic character of the area (avoid).

The current minerals planning guidance attached to the NPPF was updated in March 2014 [3], which covers mineral extraction, processing and related processes, including aggregate recycling, provides guidance and advises upon acceptable levels of noise from minerals operations. Given the nature of the proposed operations, it is considered that this is the most applicable guidance to adopt, as they are akin to minerals restoration operations.

For normal daytime works the guidance seeks to ensure that the operations do not result in significant adverse effects and advises for normal daytime operations that the following limits should not exceed:

- 10 dB above the background (L_{A90}) noise level; subject to
- a maximum value of 55 dB $L_{Aeq,\ 1\ hour}$ (free field).

Where background noise levels are low, the guidance accepts that it may be very difficult to achieve a limit based upon background +10 dB(A) without imposing unreasonable burdens on the mineral operator. In such cases, the limit set should be as near that level as practicable during normal working hours and should not exceed 55 dB $L_{Aeq,\ 1\ hour}$ (free field).

The guidance suggests that in the evening (19:00 – 22:00) $L_{Aeq,\ 1\ hour}$ noise levels should not exceed the background (L_{A90}) noise level by more than 10 dB and during the night-time a limit of 42 dB $L_{Aeq,\ 1\ hour}$ should be adopted.

There is no lower noise limit for daytime operations within the current guidance, although significant impact would occur at a higher level of noise than defined for night-time operations. The night-time limit defined above was initially set on the basis of ensuring a good standard of noise internally, whilst the occupants maintained windows open. This was defined upon the World Health Organisation (WHO) [4] guidance level of 30 dB L_{Aeq} within bedrooms. During the daytime, a level of 35 dB L_{Aeq} is normally defined within living rooms as representing a good standard of noise and upon the basis of a reduction of 12 dB(A) from outside to inside, an external level of 47 dB L_{Aeq} during the daytime would not therefore be unlikely to result in significant adverse effects.

Furthermore, the WHO guidance for daytime noise, indicates a level of 50 dB L_{Aeq}, represents a level where people would be moderately annoyed (an observed adverse effect), with a level of 55 dB L_{Aeq}, a level where people would be likely to be seriously annoyed, i.e. the latter representing a significant observed adverse effect and thus non-compliant with the requirements of the NPPF.

In addition to the general daytime works, the guidance advises that all mineral operations will have some particularly noisy short-term activities that cannot meet the limits set for normal operations. These include soil-stripping, construction or removal of bunding or spoil heaps and construction of new permanent landforms. A level of 70 dB $L_{Aeq,\ 1\ hour}$ is suggested as a limit for these activities for periods of up to eight weeks in any one year. Where the duration of temporary works may exceed eight weeks it can be appropriate to apply a lower limit for a longer period. The guidance also recognises that, in wholly exceptional cases, where there is no viable alternative, a limit of more than 70 dB $L_{Aeq,\ 1\ hour}$ may be appropriate in order to obtain other environmental benefits.

3. Baseline Assessment

3.1. Identification of Potentially Affected Noise-Sensitive Receptors

There are no properties in close proximity to the proposed operational areas.

The closest property is Oak Ridge, which is located to the south of the operational areas and to the east of the proposed access road. The property is located approximately 200 metres from the southernmost area of the site and 150 metres from the access road.

There are further properties to the south and east of Oak Ridge, which would be further from the operational areas and access road.

Lower Hare farmhouse is located approximately 225 metres from the western boundary of the ground reshaping area and 200 metres to the north of the access road, which would run at a lower ground level to the property and generally be screened.

Gratton House and Ramslade Farm are located to the north of the proposed operational area, with the properties located approximately 250 metres from the northernmost site boundary.

These locations are identified on Figure 1.

3.2. Baseline Noise Monitoring

In order to establish the noise environment in the surrounding area, an unattended noise survey was carried out adjacent to Oak Ridge over a 24 hour period between Tuesday 31st July and Wednesday 1st August 2018, which was supplemented with attended noise measurements at further positions around the site, representative of the potentially affected properties.

Unattended Noise Survey

The unattended noise measurements were made using a Rion NL-52 Class 1 Sound Level Meter, which was calibrated before and after the exercise using a Rion NC-74 Class 1 Acoustic Calibrator, with the instrument reading 94.0 dB on each occasion and no drift recorded. The microphone was fitted with Rion WS-15 Outdoor Microphone Protection, which provided weather protection and maintains Class 1 performance.

The meter was positioned within the field to the west of the property, freefield and with the microphone set at a height of 1.3 metres above the ground. The instrument was configured to monitor over consecutive 15 minute periods throughout the survey. The monitoring location is indicated on Figure 1.

Weather conditions during the survey remained good, with dry conditions throughout. Winds remained either calm or light from a south westerly direction. The conditions were considered to be suitable for undertaking environmental noise monitoring at this location.

The results of the survey are presented in both tabular and graphical form within Appendix B.

Ambient (L_{Aeq}) and background (L_{A90}) noise levels at this location were observed to be principally attributable to road traffic noise from vehicles travelling along the A30 to the south. Road traffic noise was observed to be constant throughout the day.

The results obtained from the survey have been analysed to determine the typical daytime noise levels over the periods the site would operate, based upon ambient noise levels and a statistical analysis of the background noise levels to determine a typical background noise level.

The analysis indicated typical background noise levels of 54 dB L_{A90}, with daytime ambient noise levels of 57 dB $L_{Aeq,T}$ at this location.

Sample Noise Surveys

Sample daytime noise measurements were made at a further 3 positions around the site, representative of the remaining potentially affected properties. At each position, the measurements were taken using Rion NL-52 / Rion NA-28 Class 1 Sound Level Meters, which had been calibrated using a Rion NC-74 Class 1 Acoustic Calibrator. The measurements were taken freefield and at a height of 1.2 metres above the ground.

A description of the principal influences on the measured noise levels along with the results are provided below.

Gratton House

The measurements at this location were taken within the field to the south of the property. The property is at an elevated position on the hillside and it was possible to see traffic travelling along the A30 from this location.

Road traffic from vehicles travelling along the A30 to the south was clearly audible at this location, with the traffic noise the main influence on the background noise environment.

The results of the noise measurements obtained at this location are presented below.

Time	Measured Noise Levels [dB]		
	L_{Aeq}	$L_{Amax,F}$	L_{A90}
10:10	50.4	60.8	48.5
10:25	50.2	59.7	47.7
10:40	50.5	63.1	47.1
10:55	51.5	61.9	49.3

Table 3.1 Results of Noise Monitoring at Gratton House

Lower Hare Farmhouse

The noise measurements at this location were taken adjacent to the track to the south of the property. The A30 is screened at this location by the land form, with the road in a shallow cutting.

Noise levels at this location were observed to be principally attributable to traffic travelling along the A30.

The results of the noise measurements obtained at this location are presented below.

Time	Measured Noise Levels [dB]		
	L_{Aeq}	$L_{Amax,F}$	L_{A90}
11:20	48.8	60.0	46.5
11:35	47.5	58.1	45.4
11:50	49.5	60.4	46.5
12:05	51.1	65.6	46.9

Table 3.2 Results of Noise Monitoring at Lower Hare Farmhouse

West Town Farm / Properties to South

The noise measurements at this location were taken along the old farm track adjacent to the northernmost dwelling within the mall cluster of properties.

Noise levels at this location were again observed to be principally influenced by the traffic travelling along the A30.

The results of the noise measurements obtained at this location are presented below.

Time	Measured Noise Levels [dB]		
	L_{Aeq}	$L_{Amax,F}$	L_{A90}
11:30	51.7	56.2	48.0
11:45	49.9	58.7	46.6
12:00	50.4	56.1	47.1
12:15	52.6	59.6	50.2

Table 3.3 Results of Noise Monitoring at Properties to South

4. Calculation and Assessment of Noise Levels

4.1. Proposed Site Operations

It is proposed to import clean inert soils to infill and reshape the site.

The site would operate typical working hours of between 07:30 – 18:00 hours Mondays to Fridays and 08:00 – 13:00 hours on Saturdays.

Based upon current proposals, it is anticipated that between 50,000 – 100,000 tonnes per annum would be imported to the site. Based upon 20 tonne loads, this equates to between 2,500 – 5,000 loads per annum or typically between 10 – 20 loads per day. To provide a likely worst case assessment, 5 – 10 loads per hour have therefore been assumed to account for any likely peaks in deliveries.

During dry months (typically throughout the summer and during spring / autumn), the vehicles would travel onto the site and tip directly onto the working area. The soils would then be spread periodically using a dozer (CAT D6 or equivalent), to create the required landform. It is proposed to work generally in a north to south direction down the hill.

During wetter months (principally over the winter months), the HGVs would not be able to access the working area. During these periods, the vehicles would deposit the material at the southern end of the site close to the entrance. The material would then be loaded onto articulated dump trucks utilising an excavator, which would then transport the material to the working area.

4.2. Calculation of Noise Levels

Noise levels associated with the proposed operations have been made utilising the SoundPlan computer modelling package. The model utilises the calculation procedure from ISO 9613-2, taking account of distance, screening and ground absorption effects.

Ground levels for the surrounding area have been obtained from Google mapping.

At this stage, the final plant requirements are unknown and source term data for the calculations has been obtained from measurements of plant operating within similar quarries.

The assumed source term noise levels are as follows:

- Dozer – 79 dB L_{Aeq} @10 metres (107 dB(A) SWL);
- Tracked excavator – 74 dB L_{Aeq} @10 metres (102 dB(A) SWL);
- ADT Movements – 110 dB(A) SWL (Assuming 20km/h); and
- HGV Movements – 110 dB(A) SWL (Assuming 20km/h).

For the purposes of the assessment it has been assumed that the excavator and dozer would be fully operational over an hourly period. Generally, however, the plant would often be stood during loads, with the engines powered down and the approach taken provides a worst case assessment.

The dozer would be mobile around the working area spreading the soil. Calculations at each property have been prepared upon the basis of a typical level, i.e. with the dozer working within the operational area and also prepared at a position closest to each property, to represent likely worst case conditions.

The calculations have assumed the dozer working close to the final restoration levels, thus minimising any screening effects initially as the dozer work at a lower level.

Calculations have been prepared for dry conditions, assuming the HGVs access the operational areas directly and on the basis of 5 or 10 loads per hour and for the wet conditions, where the HGVs would unload at the southern area, with the excavator used to load ADTs to transport the material to the operational area. The latter has also assumed either 5 or 10 loads per hour.

The details of the calculation results obtained from the modelling are provided in Appendix C, with a graphical representation provided on Figures 2 and 3, which present the results for typical operating conditions and assuming 10 loads per hour. The results are summarised in Table 4.1 below.

Location	**Calculated $L_{Aeq,\ 1\ hour}$ Noise Levels [dB] Assuming 5 / 10 Loads / Hour**			
	Dry Conditions		**Wet Conditions**	
	Typical	**Likely Worst Case**	**Typical**	**Likely Worst Case**
Oak Ridge	43 / 45	50 / 50	46 / 47	50 / 51
Gratton House	34 / 35	45 / 45	35 / 36	45 / 45
Lower Hare Farm	42 / 43	50 / 50	43 / 44	50 / 51
West Town Farm / Properties to South	36 / 38	43 / 43	37 / 38	43 / 43

Table 4.1 Calculated Noise Levels

4.3. Assessment

The baseline noise monitoring exercise indicated that the background noise levels at the properties likely to be affected by the proposed operations were above 45 dB L_{A90} during daytime periods. On this basis, the guidance advises that it would be appropriate to impose an upper noise limit for noise attributable to normal operations within the site of 55 dB $L_{Aeq,\ 1\ hour}$. This limit has therefore been considered when assessing the potential adverse noise impacts associated with the operation of the site.

The highest noise levels associated with the operation of the site are anticipated at Oak Ridge and Lower Hare Farm, which are the closest properties to the proposed operations and would potentially have a clear line of sight to the vehicles accessing the site and plant operating on site.

Elsewhere, noise levels are anticipated to be lower, as the properties would be further from operational areas or the properties would be effectively screened by the existing ground formation.

The calculated noise levels at the other surrounding properties have been assessed against the proposed 55 dB $L_{Aeq,\ 1\ hour}$ normal working limit at each location to identify any potential adverse impacts. The assessment is provided in Table 4.2.

Location	Difference Between Calculated (dB $L_{Aeq, 1\ hour}$) Noise Levels and Proposed 55 dB $L_{Aeq, 1\ hour}$ Noise Limit Assuming 10 Loads per Hour			
	Dry Conditions		Wet Conditions	
	Typical	Likely Worst Case	Typical	Likely Worst Case
Oak Ridge	-10	-5	-8	-4
Gratton House	-20	-10	-19	-10
Lower Hare Farm	-12	-5	-11	-4
West Town Farm / Properties to South	-17	-12	-17	-12

Table 4.2 Assessment Against Proposed Noise Limit at Neighbouring Properties

The assessment above indicates that the noise levels attributable to the operation of the plant whilst working at a level close to the existing ground levels would generally remain substantially below the proposed normal working limit and would mean the operations would be unlikely to result in any adverse noise impacts.

Higher noise levels would be experienced at Lower Hare Farm and Oak Ridge, associated with the vehicles accessing the site and during periods when the plant is operating close to the boundaries with the two properties. Noise levels are not, however, anticipated to exceed the proposed normal working limit and would remain acceptable to ensure any potential adverse impacts were minimised. The vehicle movements along the access would, however, have potential to generate disturbance, even at low levels and it is recommended that the road surface be kept in good condition to ensure that any potential body slap from empty vehicles leaving the site is minimised. This would also be controlled by ensuring vehicles maintain the proposed site speed limit along the access.

On this basis, the operation of the site would not result in any significant adverse noise impacts at surrounding noise-sensitive properties, thus meeting the requirements of the NPPF.

5. Recommendations for Measures to Control Noise Levels

The assessment within Section 4 indicates that noise levels associated with the operational activities within the site during the ground reshaping operations would not result in significant adverse effects at neighbouring properties.

To ensure noise levels associated with the operation of the site were minimised appropriate on-site controls would continue to be adopted, which include:

- Ensuring all plant is kept well maintained;
- Ensuring silencers on plant are effective;
- Turning off plant when not in use; and
- Using alternative non tonal reversing signals on mobile plant.

Vehicles travelling along the access road have potential to cause disturbance even at low noise levels, particularly when empty. To ensure potential disturbance is minimised, the access should be inspected at regular intervals to ensure that the surface remains in good condition. Where defects are identified, these should be rectified immediately. This action seeks to ensure that empty vehicles travelling on the access and passing over the defect do not give rise to body slap, which is potentially disturbing. Furthermore, the speed limit on the access road should be well enforced, this measure also seeks to minimise the likelihood of disturbance from empty vehicle movements.

The current planning guidance advises that noise monitoring should be carried out periodically to ensure that noise levels associated with site operations remain within acceptable limits.

Given the fact that the calculated noise levels were substantially below the appropriate normal working limits, it is not considered that regular noise monitoring would be required to demonstrate compliance. Monitoring has therefore only been proposed following receipt of any justified complaints.

For any measurements made, a meter conforming to at least Class 2 standards should be used, which should be calibrated before and after the exercise. The meter should be positioned at a height of 1.2 metres above the ground and at a free-field location (i.e. at least 3.5 metres from a building facade or other reflecting surface other than the ground).

It is recommended that two 15 minute measurements be obtained at each monitoring location, during a period when the site is fully operational (a 15 minute period is usually considered to be representative of the hourly period upon which the limits are based). Notes should be taken identifying the main sources of noise during the monitoring period.

Should the results of the monitoring indicate an exceedance of the site noise limit, with the site operations not clearly audible, a second measurement should be obtained whilst the site is stood (e.g. during a break period) to enable a comparison to be made

Should the results indicate that the noise levels attributable to the site plant are exceeding the limits, further mitigation and control measures should be considered and implemented, as appropriate.

6. Summary

LF Acoustics Limited were appointed by RJA Planning Services to undertake a noise assessment in support of a planning application for proposed ground reshaping works on land at Lower Hare Farm.

The land has been previously altered by the importation of inert materials, which has left the land unsuitable for agricultural use. It is proposed to import clean inert soils to reshape the land to enable it to be returned to agricultural use.

Noise monitoring was carried out at surrounding properties to establish typical daytime background noise levels upon which appropriate noise limits were identified in accordance with the PPG attached to the NPPF.

Noise levels have been calculated for the operation of the quarry, which indicated noise levels would remain below proposed noise limits based upon the PPG at surrounding residential properties, thus ensuring adverse impacts were minimised.

Appropriate controls would be adopted on site to ensure noise levels were minimised, which would include the use of non-tonal warning devices on mobile plant operating within the quarry and regular maintenance of the access road.

With appropriate measures noise levels would remain acceptable to minimise adverse impacts and thus fully comply with the requirements of the NPPF.

References

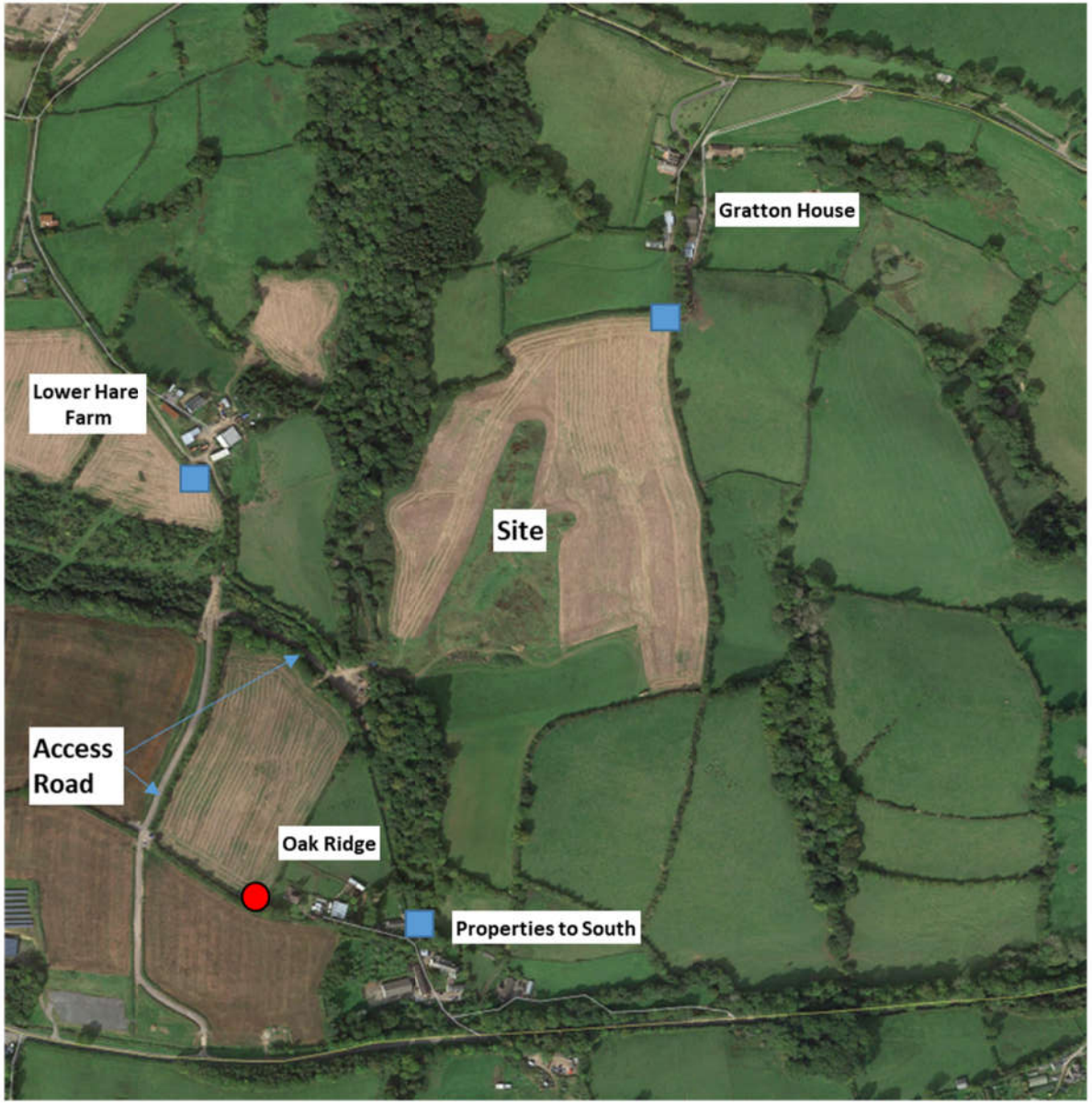
1. Ministry of Housing, Communities and Local Government. National Planning Policy Framework. July 2018.

2. Department for Communities and Local Government. Planning Practice Guidance. Noise. 6 March 2014.

3. Department for Communities and Local Government. Planning Practice Guidance. Assessing Environmental Impacts from Minerals Extraction. 6 March 2014.

4. World Health Organisation. Guidelines for Community Noise. Geneva. 1999.

Figures



Key

- Unattended Survey Position
- Sample Monitoring Position

Figure 1:
Site Location and Monitoring Positions

LFAcoustics consulting engineers

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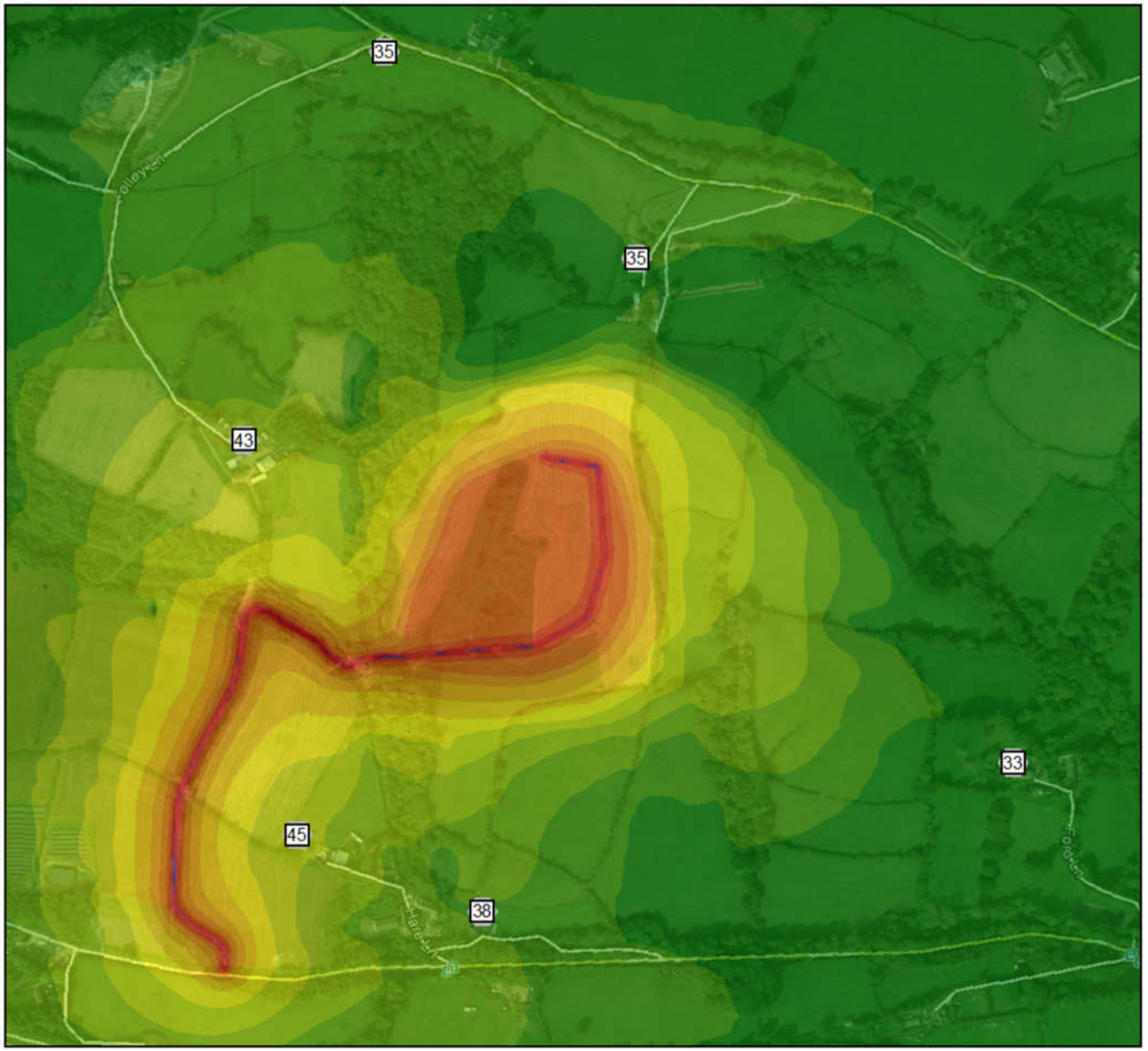

Noise Level LAeq,T
in dB(A)

< 35	
35 - 38	
38 - 41	
41 - 44	
44 - 47	
47 - 50	
50 - 53	
53 - 56	
56 - 59	
59 - 62	
62 - 65	
65 - 68	
68 - 71	
71 - 74	
>= 74	

Figure 2:
Calculated Noise Levels
Dry Conditions – Typical
10 Loads Per Hour

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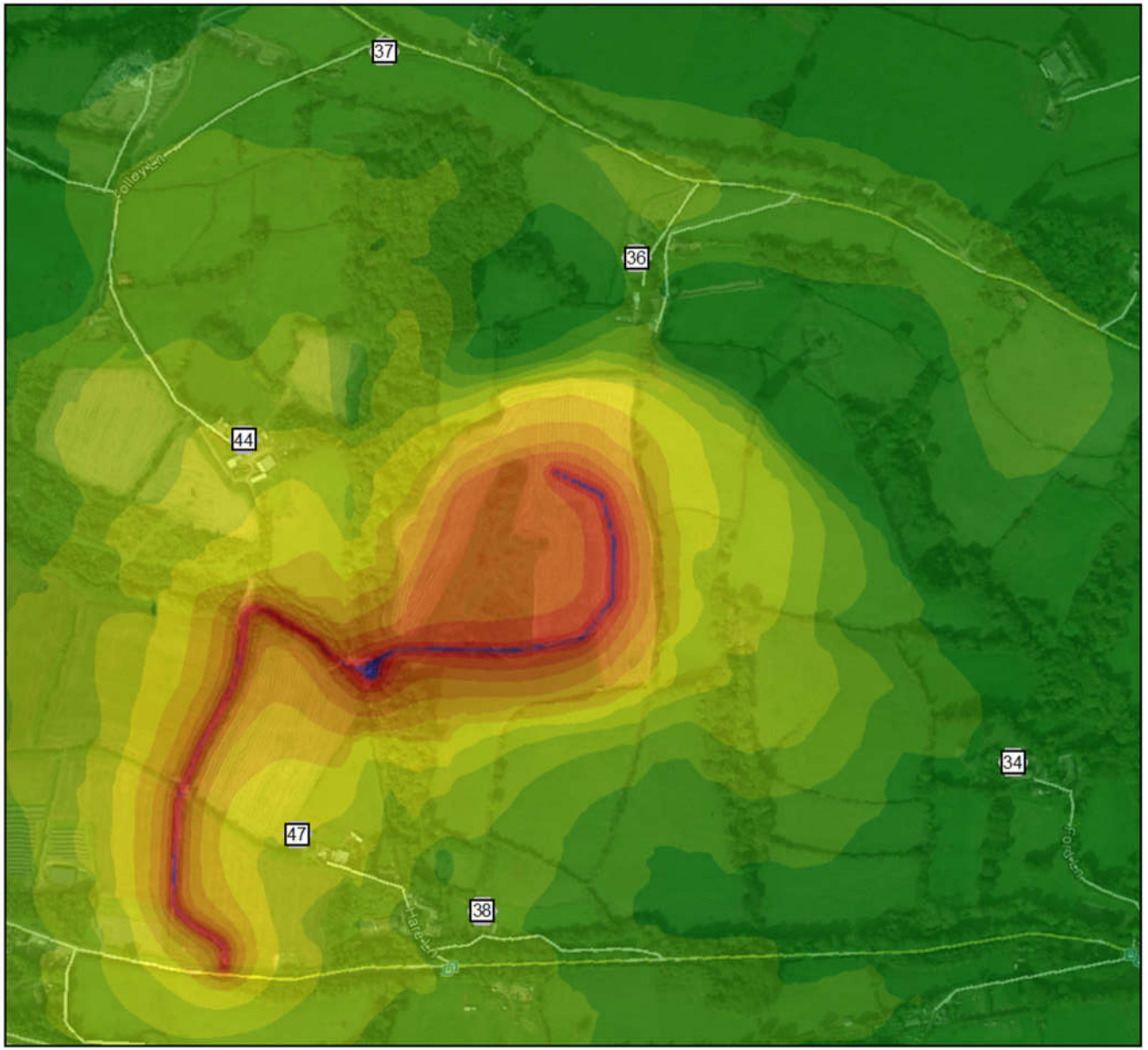

Noise Level LAeq,T
in dB(A)

< 35
35 - 38
38 - 41
41 - 44
44 - 47
47 - 50
50 - 53
53 - 56
56 - 59
59 - 62
62 - 65
65 - 68
68 - 71
71 - 74
>= 74

Figure 3:
Calculated Noise Levels
Wet Conditions – Typical
10 Loads Per Hour

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Appendix A
Noise Units

Decibels (dB)

Noise can be considered as 'unwanted sound'. Sound in air can be considered as the propagation of energy through the air in the form of oscillatory changes in pressure. The size of the pressure changes in acoustic waves is quantified on a logarithmic decibel (dB) scale firstly because the range of audible sound pressures is very great, and secondly because the loudness function of the human auditory system is approximately logarithmic.

The dynamic range of the auditory system is generally taken to be 0 dB to 140 dB. Generally, the addition of noise from two sources producing the same sound pressure level will lead to an increase in sound pressure level of 3 dB. A 3 dB noise change is generally considered to be just noticeable, a 5 dB change is generally considered to be clearly discernible and a 10 dB change is generally accepted as leading to the subjective impression of a doubling or halving of loudness.

A-Weighting

The bandwidth of the frequency response of the ear is usually taken to be from about 18 Hz to 18,000 Hz. The auditory system is not equally sensitive throughout this frequency range. This is taken into account when making acoustic measurements by the use of A-weighting, a filter circuit that has a frequency response similar to the human auditory system. All the measurement results referred to in this report are A-weighted.

Units Used to Describe Time-Varying Noise Sources (L_{Aeq}, L_{Amax}, and L_{A90})

Instantaneous A-weighted sound pressure level is not generally considered as an adequate indicator of subjective response to noise because levels of noise usually vary with time.

For many types of noise the Equivalent Continuous A-Weighted Sound Pressure Level ($L_{Aeq,T}$) is used as the basis of determining community response. The $L_{Aeq,T}$ is defined as the A-weighted sound pressure level of the steady sound which contains the same acoustic energy as the noise being assessed over a specific time period, T.

The L_{Amax} is the maximum value that the A-weighted sound pressure level reaches during a measurement period. $L_{Amax\,F}$, or Fast, is averaged over 0.125 of a second and $L_{Amax\,S}$, or Slow, is averaged over 1 second. All L_{Amax} values referred to in this report are Fast.

The L_{A90} is the noise level exceeded for 90% of the measurement period. It is generally used to quantify the background noise level, the underlying level of noise that is present even during the quieter parts of measurement period.

Appendix B
Results of Unattended Noise Measurements

Lower Hare Farm
Results of Noise Measurements Carried Out Between
31 July - 1 August 2018

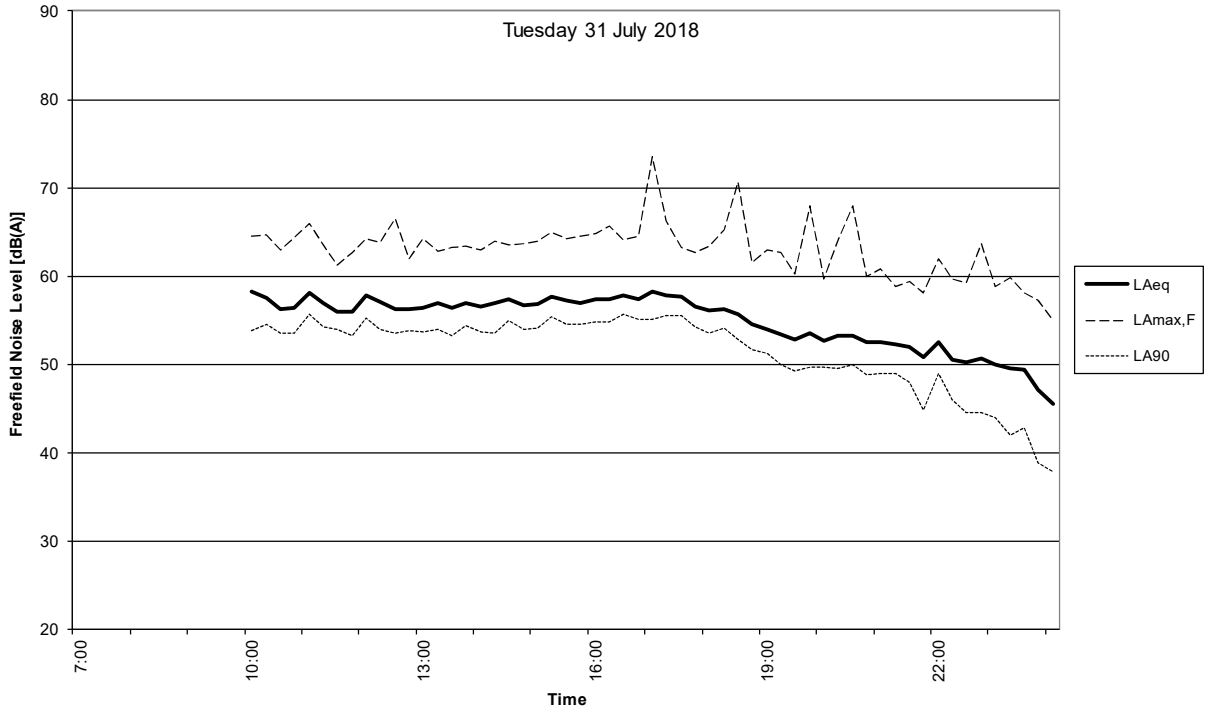
Equipment Used: Rion NL-52 Class 1 Sound Level Analyser (Serial No. 00231657)
Location: U - Along Field Boundary Adjacent to Oak Ridge
All Levels; Fast, Freefield, Mic Height 1.3 metres.

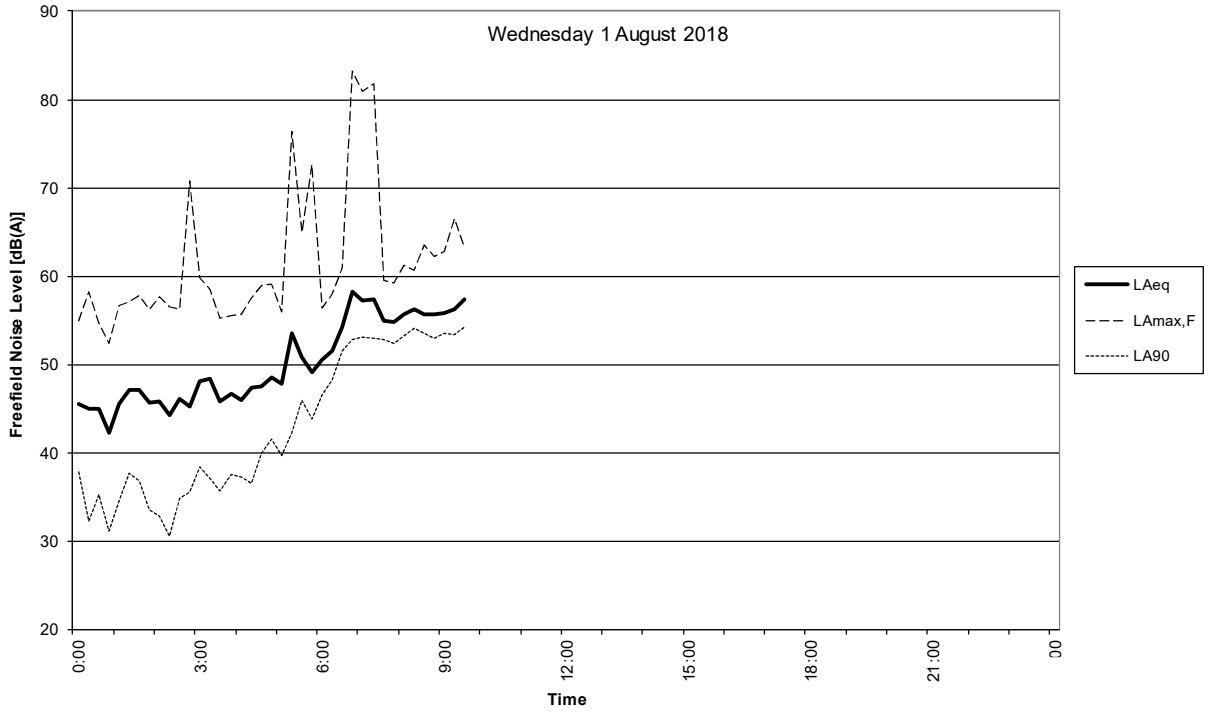
Date	Start Period	Measured Noise Levels [dB]			
		L_{Aeq}	L_{Amax}	L_{A10}	L_{A90}
Tuesday	10:00	58.2	64.5	60.0	53.8
31/07/2018	10:15	57.5	64.6	59.6	54.6
	10:30	56.2	63.0	58.0	53.6
	10:45	56.4	64.4	58.3	53.6
	11:00	58.1	66.0	59.9	55.6
	11:15	56.9	63.5	58.8	54.3
	11:30	55.9	61.2	57.5	53.9
	11:45	56.0	62.7	58.0	53.3
	12:00	57.8	64.3	59.7	55.3
	12:15	57.1	63.8	59.2	54.0
	12:30	56.2	66.5	58.3	53.5
	12:45	56.3	61.9	58.1	53.8
	13:00	56.4	64.3	58.3	53.7
	13:15	56.9	62.8	59.0	54.0
	13:30	56.4	63.3	58.5	53.3
	13:45	56.9	63.4	58.8	54.4
	14:00	56.5	62.9	58.6	53.7
	14:15	56.9	64.0	58.9	53.6
	14:30	57.4	63.5	59.3	54.9
	14:45	56.7	63.7	58.4	54.0
	15:00	56.8	64.0	58.8	54.1
	15:15	57.7	64.9	59.5	55.4
	15:30	57.2	64.2	59.1	54.5
	15:45	57.0	64.5	58.7	54.5
	16:00	57.4	64.8	59.4	54.8
	16:15	57.4	65.6	59.2	54.8
	16:30	57.8	64.1	59.5	55.6
	16:45	57.4	64.5	59.2	55.1
	17:00	58.2	73.5	59.7	55.1
	17:15	57.8	66.3	59.6	55.5
	17:30	57.6	63.2	59.3	55.5
	17:45	56.5	62.7	58.3	54.3
	18:00	56.1	63.4	57.9	53.5
	18:15	56.3	65.2	58.1	54.1
	18:30	55.6	70.7	57.3	52.8
	18:45	54.5	61.5	56.4	51.7
	19:00	54.0	63.0	55.8	51.2
	19:15	53.4	62.7	55.5	50.0
	19:30	52.8	60.3	55.1	49.3
	19:45	53.5	68.0	55.2	49.7
	20:00	52.7	59.6	54.9	49.7
	20:15	53.3	63.9	55.6	49.5
	20:30	53.3	68.0	55.3	49.9
	20:45	52.6	60.0	54.9	48.8
	21:00	52.5	60.8	54.9	48.9
	21:15	52.3	58.8	54.5	48.9
	21:30	51.9	59.4	54.1	48.0
	21:45	50.8	58.1	53.4	44.8
	22:00	52.6	61.9	54.9	48.9

Lower Hare Farm
Results of Noise Measurements Carried Out Between
31 July - 1 August 2018

Equipment Used: Rion NL-52 Class 1 Sound Level Analyser (Serial No. 00231657)
Location: U - Along Field Boundary Adjacent to Oak Ridge
All Levels; Fast, Freefield, Mic Height 1.3 metres.

Date	Start Period	Measured Noise Levels [dB]			
		L_{Aeq}	L_{Amax}	L_{A10}	L_{A90}
	22:15	50.6	59.6	53.4	45.9
	22:30	50.3	59.3	53.1	44.6
	22:45	50.7	63.7	53.5	44.5
	23:00	50.0	58.8	52.9	43.9
	23:15	49.6	59.8	52.9	42.0
	23:30	49.4	58.1	52.5	42.8
	23:45	47.1	57.3	50.6	38.9
Wednesday	0:00	45.5	54.9	48.5	37.9
01/08/2018	0:15	44.9	58.2	48.7	32.3
	0:30	45.0	54.7	49.0	35.2
	0:45	42.2	52.4	46.0	31.1
	1:00	45.6	56.7	49.1	34.5
	1:15	47.1	57.1	50.7	37.7
	1:30	47.1	57.8	51.0	36.8
	1:45	45.7	56.3	49.8	33.5
	2:00	45.8	57.6	49.8	32.8
	2:15	44.2	56.5	48.3	30.5
	2:30	46.1	56.3	48.9	34.9
	2:45	45.3	70.8	48.6	35.6
	3:00	48.1	59.8	51.6	38.4
	3:15	48.4	58.5	51.9	37.1
	3:30	45.8	55.2	49.3	35.7
	3:45	46.7	55.5	50.4	37.5
	4:00	46.0	55.7	49.6	37.3
	4:15	47.4	57.5	51.7	36.6
	4:30	47.5	58.9	51.0	39.9
	4:45	48.6	59.1	51.4	41.5
	5:00	47.8	56.0	50.7	39.7
	5:15	53.5	76.4	51.2	42.2
	5:30	50.8	64.9	53.1	45.9
	5:45	49.1	72.7	51.4	43.8
	6:00	50.6	56.4	52.8	46.5
	6:15	51.5	57.9	53.5	48.3
	6:30	54.3	60.9	56.1	51.5
	6:45	58.3	83.2	57.2	52.8
	7:00	57.2	81.0	57.6	53.1
	7:15	57.4	81.8	57.7	53.0
	7:30	55.0	59.5	56.6	52.8
	7:45	54.8	59.3	56.5	52.4
	8:00	55.7	61.2	57.3	53.3
	8:15	56.2	60.7	57.8	54.1
	8:30	55.7	63.5	57.3	53.6
	8:45	55.7	62.3	57.6	53.0
	9:00	55.8	62.8	57.5	53.5
	9:15	56.2	66.5	57.9	53.4
	9:30	57.4	63.3	58.5	54.3
	9:45	56.5	64.2	58.0	53.8


Tuesday 31 July 2018
Freefield Noise Level [dB(A)]
90
80
70
60
50
40
30
20
7:00
10:00
13:00
16:00
19:00
22:00
Time
LAeq
LAmax,F
LA90


Wednesday 1 August 2018
Freefield Noise Level [dB(A)]
90
80
70
60
50
40
30
20
0:00
3:00
6:00
9:00
12:00
15:00
18:00
21:00
Time
LAeq
LAmax,F
LA90

Appendix C
Calculation Details

Lower Hare Farm
Mean propagation Leq - Summer 10lph

Source	Source type	Time slice	L'w dB(A)	Lw dB(A)	l or A m,m²	KI dB	KT dB	Ko dB	S m	Adiv dB	Agr dB	Abar dB	Aatm dB	ADI dB	dLrefl dB	Ls dB(A)	dLw dB	Lr dB(A)
Receiver Gratton House Fl GF LAeq 35.0 dB(A)																		
Dozer	Area	LAeq	59.6	107.2	58414.9	0.0	0.0	0	387.08	-62.7	-2.7	-8.3	-0.8	0.0	0.0	32.7	0.0	32.7
HGV on Access Dry	Line	LAeq	63.0	93.8	1191.5	0.0	0.0	0	489.98	-64.8	-1.5	-8.0	-1.4	0.0	0.0	18.0	13.0	31.0
Receiver Higher Hare Fl GF LAeq 35.4 dB(A)																		
Dozer	Area	LAeq	59.6	107.2	58414.9	0.0	0.0	0	645.41	-67.2	-2.7	-1.5	-2.6	0.0	0.0	33.2	0.0	33.2
HGV on Access Dry	Line	LAeq	63.0	93.8	1191.5	0.0	0.0	0	751.23	-68.5	-1.6	-2.2	-3.2	0.0	0.0	18.3	13.0	31.3
Receiver Littlehay Fl GF LAeq 32.8 dB(A)																		
Dozer	Area	LAeq	59.6	107.2	58414.9	0.0	0.0	0	635.65	-67.1	-2.7	-4.4	-2.0	0.0	0.0	31.1	0.0	31.1
HGV on Access Dry	Line	LAeq	63.0	93.8	1191.5	0.0	0.0	0	747.03	-68.5	-1.6	-6.4	-2.5	0.0	0.0	14.8	13.0	27.8
Receiver Lower Hare Fl GF LAeq 43.0 dB(A)																		
Dozer	Area	LAeq	59.6	107.2	58414.9	0.0	0.0	0	362.67	-62.2	-2.7	0.0	-1.9	0.0	0.0	40.4	0.0	40.4
HGV on Access Dry	Line	LAeq	63.0	93.8	1191.5	0.0	0.0	0	351.52	-61.9	-1.5	-2.2	-1.8	0.0	0.0	26.4	13.0	39.4
Receiver Oak Ridge Fl GF LAeq 45.1 dB(A)																		
Dozer	Area	LAeq	59.6	107.2	58414.9	0.0	0.0	0	403.75	-63.1	-2.7	-0.4	-2.0	0.0	0.0	39.0	0.0	39.0
HGV on Access Dry	Line	LAeq	63.0	93.8	1191.5	0.0	0.0	0	223.91	-58.0	-1.4	-2.4	-1.2	0.0	0.0	30.8	13.0	43.8
Receiver Wheal House Fl GF LAeq 37.7 dB(A)																		
Dozer	Area	LAeq	59.6	107.2	58414.9	0.0	0.0	0	405.90	-63.2	-2.7	-7.0	-1.3	0.0	0.0	33.1	0.0	33.1
HGV on Access Dry	Line	LAeq	63.0	93.8	1191.5	0.0	0.0	0	383.51	-62.7	-1.5	-4.9	-1.8	0.0	0.0	22.9	13.0	35.9

Lower Hare Farm
Mean propagation Leq - Winter 10lph

Source	Source type	Time slice	L'w	Lw	l or A	KI	KT	Ko	S	Adiv	Agr	Abar	Aatm	ADI	dLrefl	Ls	dLw	Lr
			dB(A)	dB(A)	m,m²	dB	dB	dB	m	dB	dB	dB	dB	dB	dB	dB(A)	dB	dB(A)
Receiver Gratton House Fl GF LAeq 36.3 dB(A)																		
ADT Movements	Line	LAeq	67.0	94.2	522.5	0.0	0.0	0	401.25	-63.1	-1.6	-9.3	-0.6	0.0	0.0	19.6	13.0	32.6
Dozer	Area	LAeq	59.6	107.2	58414.9	0.0	0.0	0	387.08	-62.7	-2.7	-8.3	-0.8	0.0	0.0	32.7	0.0	32.7
Excavator	Point	LAeq	102.2	102.2		0.0	0.0	0	599.32	-66.5	-2.1	-10.1	-1.4	0.0	0.0	22.2	0.0	22.2
HGV on Access Wet	Line	LAeq	63.0	91.1	647.0	0.0	0.0	0	748.19	-68.5	-1.6	-5.1	-2.7	0.0	0.0	13.2	13.0	26.2
Receiver Higher Hare Fl GF LAeq 36.8 dB(A)																		
ADT Movements	Line	LAeq	67.0	94.2	522.5	0.0	0.0	0	689.37	-67.8	-1.7	-3.2	-3.0	0.0	0.0	18.5	13.0	31.5
Dozer	Area	LAeq	59.6	107.2	58414.9	0.0	0.0	0	645.41	-67.2	-2.7	-1.5	-2.6	0.0	0.0	33.2	0.0	33.2
Excavator	Point	LAeq	102.2	102.2		0.0	0.0	0	756.78	-68.6	-2.1	0.0	-4.1	0.0	0.0	27.5	0.0	27.5
HGV on Access Wet	Line	LAeq	63.0	91.1	647.0	0.0	0.0	0	847.42	-69.6	-1.6	-1.0	-3.5	0.0	0.0	15.5	13.0	28.5
Receiver Littlehay Fl GF LAeq 34.0 dB(A)																		
ADT Movements	Line	LAeq	67.0	94.2	522.5	0.0	0.0	0	604.99	-66.6	-1.6	-6.7	-2.0	0.0	0.0	17.2	13.0	30.2
Dozer	Area	LAeq	59.6	107.2	58414.9	0.0	0.0	0	635.65	-67.1	-2.7	-4.4	-2.0	0.0	0.0	31.1	0.0	31.1
Excavator	Point	LAeq	102.2	102.2		0.0	0.0	0	786.98	-68.9	-2.1	-18.1	-1.5	0.0	0.0	11.6	0.0	11.6
HGV on Access Wet	Line	LAeq	63.0	91.1	647.0	0.0	0.0	0	953.05	-70.6	-1.6	-5.9	-3.2	0.0	0.0	9.9	13.0	22.9
Receiver Lower Hare Fl GF LAeq 44.4 dB(A)																		
ADT Movements	Line	LAeq	67.0	94.2	522.5	0.0	0.0	0	403.62	-63.1	-1.5	-0.7	-2.1	0.0	0.0	26.7	13.0	39.7
Dozer	Area	LAeq	59.6	107.2	58414.9	0.0	0.0	0	362.67	-62.2	-2.7	0.0	-1.9	0.0	0.0	40.4	0.0	40.4
Excavator	Point	LAeq	102.2	102.2		0.0	0.0	0	319.30	-61.1	-2.0	-3.6	-1.7	0.0	0.0	33.8	0.0	33.8
HGV on Access Wet	Line	LAeq	63.0	91.1	647.0	0.0	0.0	0	323.49	-61.2	-1.4	-3.2	-1.5	0.0	0.0	23.7	13.0	36.8
Receiver Oak Ridge Fl GF LAeq 47.1 dB(A)																		
ADT Movements	Line	LAeq	67.0	94.2	522.5	0.0	0.0	0	364.61	-62.2	-1.5	-1.5	-1.7	0.0	0.0	27.2	13.0	40.3
Dozer	Area	LAeq	59.6	107.2	58414.9	0.0	0.0	0	403.75	-63.1	-2.7	-0.4	-2.0	0.0	0.0	39.0	0.0	39.0
Excavator	Point	LAeq	102.2	102.2		0.0	0.0	0	217.29	-57.7	-2.0	0.0	-1.5	0.0	0.0	41.0	0.0	41.0
HGV on Access Wet	Line	LAeq	63.0	91.1	647.0	0.0	0.0	0	181.35	-56.2	-1.4	-2.6	-1.0	0.0	0.0	29.9	13.0	43.0
Receiver Wheal House Fl GF LAeq 38.4 dB(A)																		
ADT Movements	Line	LAeq	67.0	94.2	522.5	0.0	0.0	0	374.54	-62.5	-1.5	-10.4	-1.2	0.0	0.0	18.6	13.0	31.6
Dozer	Area	LAeq	59.6	107.2	58414.9	0.0	0.0	0	405.90	-63.2	-2.7	-7.0	-1.3	0.0	0.0	33.1	0.0	33.1
Excavator	Point	LAeq	102.2	102.2		0.0	0.0	0	321.79	-61.1	-2.0	-15.7	-0.7	0.0	0.0	22.7	0.0	22.7
HGV on Access Wet	Line	LAeq	63.0	91.1	647.0	0.0	0.0	0	383.99	-62.7	-1.5	-2.9	-1.9	0.0	0.0	22.1	13.0	35.1

Appendix E
Gas Risk Assessment

GAS RISK ASSESSMENT

May 2022

213189/LGRA

Report for:
GRS Stone Supplies Ltd
Durnford Quarry
Longwood Lane
Bristol
BS41 9DW

1. INTRODUCTION

AA Environmental Limited (AAe) has been commissioned by GRS Stone Supplies Ltd to produce a Gas Risk Assessment to support an inert landfill and recovery activity permit application for Lower Hare Farm, land off Five Mile Hill, Whitestone, EX4 2HW. The site location is shown in drawing 213189/D/001.

The whole site comprises of approximately 11.3 hectares of land that is predominantly in use for agriculture and is bound by agricultural land on all sides, including agricultural land that is under the Landowner's ownership. There is priority deciduous woodland and a small, unnamed tributary stream of the Alphin brook situated along the western boundary of the site. The stream meets another tributary stream to the south west, which ultimately drains to the Alphin Brook.

The nearest residential properties to the site are Lower Hare Farm which is circa 210 m west (although the resident is the landowner); and Oak Ridge and Lower Hare bungalow circa 240 m south of the site. There is natural screening provided by the existing ground contours to the south. The village of Whitestone is located circa 1.1 km east of the site. There is a Public Right of Way (PRoW) along the south western boundary of the main operational area, running north to south through the internal haul route.

The BGS records identify that there are head deposits of sand with clay and gravel that run along the western boundary of the site; however, there are no other superficial deposits within the remainder of the site. Bedrock geology of the site records Ashton Mudstone Member – Mudstone throughout the whole site. This has been confirmed by site investigation

This gas risk assessment is produced to document baseline ground gas conditions prior to the proposed landfilling activity and to produce a monitoring regime appropriate to the conceptual model of the site.

This document presents:

- site investigation details;
- recent gas monitoring data;
- a conceptual model of the site;
- an assessment of risks to sensitive properties and
- recommended monitoring measures.

2. ENVIRONMENTAL SETTING

2.1 Geology and Hydrogeology

The site is considered greenfield and comprises topsoil underlain by Ashton Mudstone Member – Mudstone bedrock geology. There are superficial head deposits of sand and clay along the western side of the site likely connected with the tributary of the Alphin Brook.

There is no obvious Made Ground other than use of hardcore for a haul road at surface on to the site in the south west corner and construction of the pond in the south west which has been constructed of site derived natural Mudstone materials. JH Groundwater Ltd report that the site has been disturbed by the importation of soils, which have not been consolidated. The current owners were advised that soil was imported in the late 1990s.

More detail is shown in drawing 213189/D/003C.

A soakaway test was undertaken as part of the Drainage Strategy at the site. The mudstone was found to have negligible infiltration in the top 3 m of ground tested. Here the soils are described as firm to stiff clay, becoming weathered mudstone below 2 m depth. This indicates that gas migration would be limited by low permeability in the ground directly below the landfill. The mudstone is considered a Secondary A aquifer and has fracturing and fissuring at greater depth, allowing groundwater movement and gas migration if present.

2.2 Surrounding Land Use

The nearest residential properties to the site are Lower Hare Farm which is circa 210 m west (although the resident is the landowner); and Oak Ridge and Lower Hare bungalow circa 240 m south of the site. There is natural screening provided by the existing ground contours to the south. The village of Whitestone is located circa 1.1 km east of the site.

There is a Public Right of Way (PRoW) along the south western boundary of the main operational area, running north to south through the internal haul route. There is a pond located on the site. Historical maps and anecdotal information show that the pond is a man-made structure. It was constructed to reduce surface water runoff rates on the steep hill slopes.

Gas risk sensitive receptors local to the site are shown in drawing 213189/D/002. Table 1 lists the closest receptors. There are five receptors within 250 m of the perimeter.

Table 1. Gas Risk Sensitive Receptors within 250 m

Reference (if shown)	Receptor	Min. estimated distance from site boundary
1a	Grafton House / Ramslade Farm	
1b	Lower Hare Farm	210 m west
1c	Oak Ridge / West Town Farm / Wheall House	240 m south
	Dinney Copse – Priority Habitat	< 50 m north west
	Raddy Cleave Copse – Priority Habitat	< 50 m south west

3. SITE INVESTIGATIONS

3.1 2021 Groundwater Boreholes

In 2021 four new groundwater and gas monitoring boreholes were constructed: Boreholes BH101 to BH104. The holes are shown in drawing 213189/D/008 and logs are shown within the permit application supporting documents. Gas monitoring has been undertaken since installation.

4. GAS MONITORING

4.1 Monitoring Regime

Gas monitoring has been undertaken by AA Environmental Ltd operatives since September 2021. Monitoring has been undertaken in the perimeter boreholes. Boreholes are monitored for:

Methane (CH_4) (% v/v)	Gas flow (l/h)
Carbon dioxide (CO_2) (% v/v)	Water level
Oxygen (O_2) (% v/v)	Atmospheric pressure (mbar)
Carbon monoxide (CO) (ppm)	Relative pressure (mb)
Hydrogen sulphide (H_2S) (ppm)	

4.2 Results for Perimeter Boreholes

Perimeter gas monitoring data is presented in Appendix A. A summary of key data is presented below in Table 2.

	Table 2. Perimeter Gas Monitoring Data									
		BH101	BH101	BH101	BH102	BH102	BH102	BH103	BH103	BH103
	Date	Flow (l/h)	CH4 (% v/v)	CO2 (% v/v)	Flow (l/h)	CH4 (% v/v)	CO2 (% v/v)	Flow (l/h)	CH4 (% v/v)	CO2 (% v/v)
*	22/09/21	0.1	0	2.3	0	0	0.1	0.1	0	1.2
*	30/09/21	0	0	5.0	0	0	0.8	0	0	1.7
*	5/10/21	0	0	2.3	0	0	0.7	0	0	1.1
*	14/10/21	0	0	7.0	0	0	0.9	0	0	1.1
*	20/10/21	0	0	4.5	0	0	0.9	0	0	1.2
*	3/11/21	0	0	4.4	0	0	1.4	0	0	2.1
	1/12/21	0	0	7.1	0	0	0.7	0	0.1	4.3
	16/02/22	0	0.3	4.3	0	0.3	0.7	0	0.4	3.2
	6/04/22	0	0.1	5.6	0	0	0.4	0	0	1.7
	12/05/22	0	0	5.9	0	0	0.3	0	0	0.3
		BH104	BH104	BH104						
	Date	Flow (l/h)	CH4 (% v/v)	CO2 (% v/v)						
	22/09/21	0	0	2.6						
	30/09/21	0	0	2.0						
	5/10/21	0	0	0.7						
	14/10/21	0	0	2.3						
	20/10/21	0	0	3.5						
	3/11/21	0	0	0.2						
	1/12/21	0	0.1	1.8						
	16/02/22	0	0.4	1.0						
	6/04/22	0	0	1.4						
	12/05/22	0.1	0	2.1						
		Exceedances of standard thresholds of 1% for methane and 1.5% for carbon dioxide, or very low oxygen								

It is noted that while variable concentrations of CO_2 gas have been observed, particularly with respect to BH101, BH103 and BH104, the flow is negligible. BH102 has no exceedances of CO_2. Methane has been detected on one or two occasions in all borehole locations, but with concentrations not exceeding 0.4 % by volume. This may be connected to farming activities, or the organic traces within the Carboniferous strata.

4.3 Current Compliance & Action Levels

Environment Agency guidance LFTGN03 presents trigger levels for gas monitoring boreholes, ie those beyond the perimeter of the waste is as follows:

- Methane – 1 % above agreed background concentrations
- Carbon dioxide – 1.5 % above agreed background concentrations

The baseline data in Table 2 regularly exceeded the CO_2 threshold in three of the boreholes... Therefore, it would not be appropriate to include a compliance level of 1.5 % CO_2 at the site, as it is highly unlikely that the CO_2 levels would meet this threshold. There were no elevations of methane in any of the perimeter boreholes above 1 %. Section 7 presents gas action levels for carbon dioxide, based on the findings of the baseline monitoring at the site.

5. CONCEPTUAL MODEL

5.1 Source

There are two potential sources of ground gas associated with the site.

1. Landfilling of inert wastes and restoration soils within infilling area – gas generation potential low.
2. Carbon dioxide and traces of methane identified in the baseline monitoring, associated with the underlying Carboniferous strata.

5.2 Pathway

The pathway for gas migration is through fractures and fissures in the bedrock Ashton Mudstone below the weathered zone (in the whole of the site). The sand and clay of the superficial Head deposits may allow migration along the western boundary. It is generally considered that receptors within 250 m of a waste deposit are those most sensitive, refer to Environment Agency guidance: 2004: LFTGN03: Guidance on the Management of Landfill Gas.

The inert waste to be placed will be underlain by an engineered clay placed against the underlying geology to prevent vertical and lateral leachate and gas migration. This will limit potential gas migration pathways from the landfilling area.

5.3 Receptors

The most sensitive receptors to the deposit of waste are presented in Table 1. Distances are measured from the permitted boundary of the site. The closest residential receptors are Lower Hare Farm (210 m west) and Oak Ridge / West Town Farm / Wheall House (240 m south). The nearest sensitive receptor is likely the public right of way < 50 m south west of the site.

6. GAS RISK ASSESSMENT

6.1 Current Conditions

Baseline gas monitoring data from site has recorded low concentrations of carbon dioxide (albeit above the 1.5 % EA threshold) in BH101, BH103 and BH104, but not BH102. Gas flow conditions are generally very low to negligible. There was methane detected in all of the boreholes but no exceedances of the 1 % threshold.

6.2 Proposed Conditions

The proposed infilling will be within the deeper depression on site which is in the centre using inert materials, engineering fill and restoration soils. The site is to return to agricultural setting following the infilling as the re-contouring will improve drainage to support viable farming practices.

6.3 Hazard Identification

The hazard considered in this assessment is the potential for generation of landfill gas from inert wastes. By definition the inert wastes have a low potential for generation of landfill gas. However, the wastes will be approximately 1 – 15 m in thickness and placed above surrounding and original ground level. EA guidance requires post-filling in-waste gas monitoring of 2 holes per hectare.

6.3 Hazard Assessment

The gas generation potential of the inert wastes is low. CO_2 occurrence is likely based on the geological setting of the site and has been positively identified and recorded. Some traces of methane have also been recorded in the baseline monitoring. It is essential for this site that background gas conditions are recorded, such that any change to ground gas conditions, as a result of the inert wastes, can be detected.

Within a landfill setting compliance limits are typically set for methane and carbon dioxide. It is well recognised that carbon dioxide can arise from other sources, natural organic rich strata being one example, refer to the Industry Code of Practice: 2011: Perimeter Soil Gas Emissions Criteria and Associated Management (ICoP). The Code of Practice recognises that methane is a key indicator of landfill gas. However, as carbon dioxide can arise from other sources it should not be assigned compliance limits within a permit. Gas action levels can be derived to assist with detecting a change in ground gas conditions.

6.4 Conclusion

The infilling of Lower Hare Farm has a low gas generation potential; however, gas monitoring is required. Compliance limits for perimeter boreholes should be set for methane based on background gas conditions. No compliance limits should be set for carbon dioxide; however, gas action levels should be derived using the methods given in the 2011 Industry Code of Practice.

Once the site is infilled the waste should be monitored for gas using boreholes installed at a frequency of 2 per hectare. Further gas sampling and analysis will be required to confirm the origins of any gas detected to support the final permit surrender application.

7. GAS MONITORING PLAN

On the basis of the above Gas Risk Assessment the following monitoring measures are proposed.

- Gas monitoring in all perimeter wells will be undertaken quarterly during operations, then six-monthly once completed.
- Gas monitoring in all in-waste boreholes will be undertaken monthly for 2 years, once constructed. After 2 years, the in-waste wells will be monitored quarterly.
- Further in-waste boreholes should be added, at a spacing of 2 per hectare, at the end of the infilling.
- Monitoring should continue for a period of two years after site closure at intervals of not more than 2 months, such that 12 data sets are available to support a surrender application.

Monitoring will be undertaken using a handheld GA5000 to record the following:

- Gases: methane, carbon dioxide, carbon monoxide, hydrogen sulphide and oxygen;
- Flow rate and differential pressure; and
- Meteorological data including atmospheric pressure.

Gas Action Levels

Gas action levels have been derived for perimeter monitoring boreholes for both methane and carbon dioxide. These are to be used to guide site management procedures and to alert the site to changes in gas conditions, which may warrant further investigation.

Gas action levels have been derived using the ICoP methodology. This refers to the Environment Agency P1-471 outlier test, which removes outliers from a standardised dataset. Once the outliers have been removed the Tmax value is used to set action levels on the following basis:

- For every well the action level will be the Tmax (background) methane concentration plus 0.5 %
- For every well the action level will be 1 % carbon dioxide above the Tmax carbon dioxide concentration if the Tmax carbon dioxide concentration is less than 5 %.
- For every well the action level will be 2 % carbon dioxide above the Tmax carbon dioxide concentration if the Tmax carbon dioxide concentration is between 5 – 10 %.
- For every well the action level will be 3 % carbon dioxide above the Tmax carbon dioxide concentration if the Tmax carbon dioxide concentration is between 10 – 20 %.
- For every well the action level will be 4 % carbon dioxide above the Tmax carbon dioxide concentration if the Tmax carbon dioxide concentration is > 20 %.
- No action levels are proposed for Tmax carbon dioxide concentrations above 25 %

The data has been processed using the ESI Soil and Groundwater Statistics calculator version 2. This uses the same techniques as Environment Agency R+D technical report P1-471, A.3 Statistical Analysis assuming normality. Outliers are automatically flagged. The highest remaining value is then considered the Tmax.

When data is proven to be non-normal by the ESI calculator this is flagged. The method then applied is the Chebychev Theorem. Methods are based on the assumption that 's'- the estimate of the true population standard deviation 'σ' is close enough to the true value. Outliers can also be discounted by this method to determine the Tmax.

The derived gas action levels for methane and carbon dioxide are presented in Table 6. Appendix B presents extracts from the ESI calculator.

In the event a gas action level is exceeded the gas action plan will be:

- A return monitoring visit within one month to confirm whether the same gas conditions prevail.
- A review of all in-waste borehole data, including borehole integrity and water level conditions.
- Gas sampling if appropriate.
- Gas walk over survey if appropriate.

Methane Compliance Levels

Methane compliance levels are also derived in line with the ICoP methods. The compliance level is equal to Tmax plus 0.5 %. Although traces of methane have been identified in all boreholes the maximum recorded value + 0.5 % is less than 1 %. Therefore, the compliance level for methane should remain as 1% in all boreholes.

In the event a methane compliance level is exceeded the gas action plan will be:

- Report the exceedance to the Environment Agency.
- Return monitoring visit within one week to confirm whether the same gas conditions prevail.
- Increased frequency of monitoring until actions below have been completed.
- A review of all in-waste borehole data, together with perimeter data and submit a report of findings to the Environment Agency.
- Gas sampling if appropriate.
- Gas walk over survey if appropriate.

The calculated gas action levels and methane compliance levels are presented in Table 6.

Table 6: Gas Action and Methane Compliance Levels

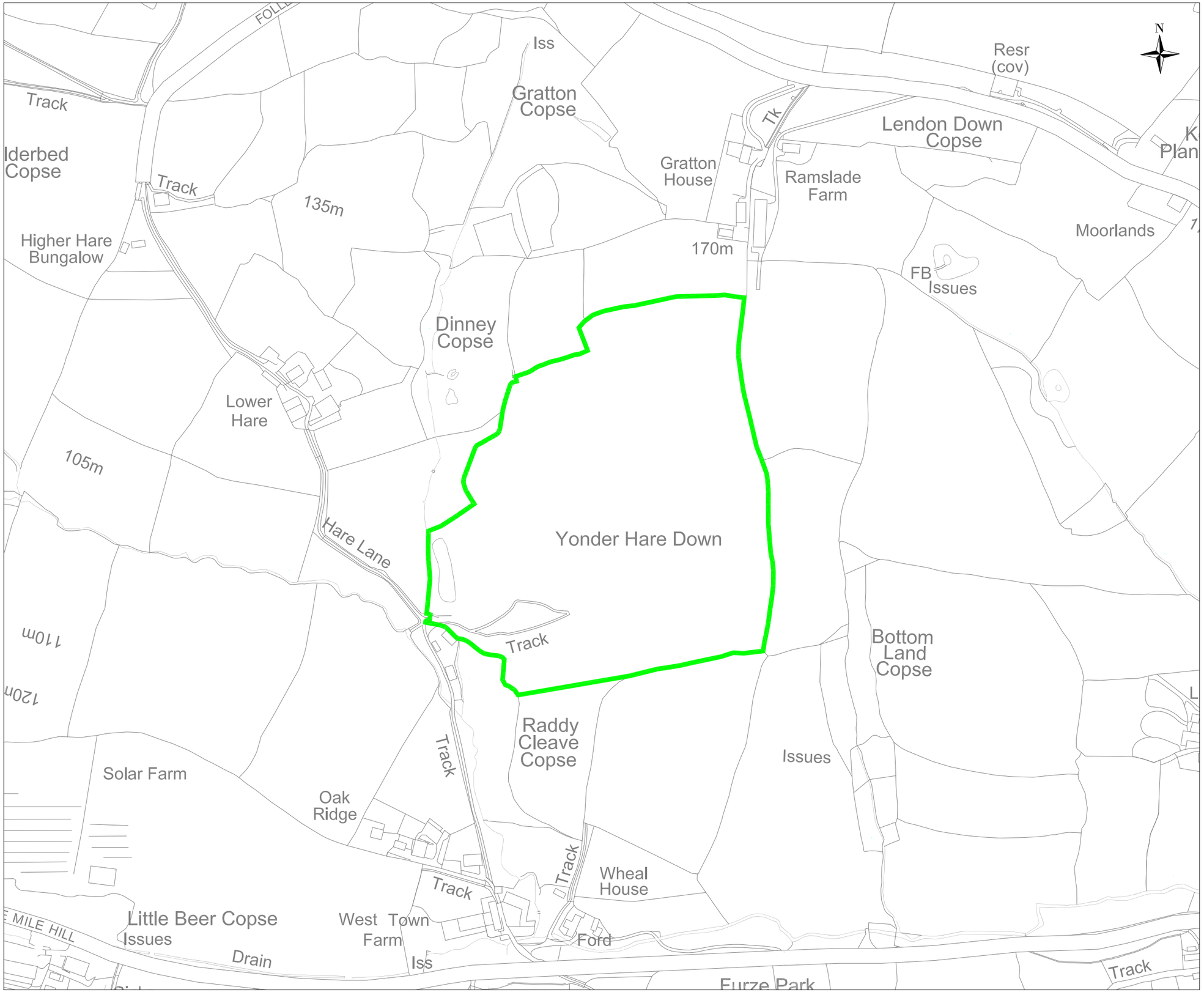
Borehole	Tmax CO2	Action level CO2	Tmax CH4	Action level CH4	Compliance level CH4
BH101	7.1	9.1	0.3	1	1
BH102	1.4	2.4	0.3	1	1
BH103	4.3	5.3	0.4	1	1
BH104	3.5	4.5	0.4	1	1

REFERENCES

1. Environment Agency: 2014 : Additional Guidance for Landfill (EPR5.02) and other permanent deposits of waste. How to Surrender your Environmental Permit.
2. Environment Agency: 2014 : LFTGN03. Guidance on the Management of Landfill Gas.
3. Industry Code of Practice: 2011: Perimeter Soil Gas Emissions Criteria and Associated Management (ICoP).

DRAWINGS

Site Location Plan - 213189/D/001
Sensitive Receptors - 213189/D/002
Boreholes Plan - 213189/D/006



Key:

Permit Site Boundary

Rev.	Details	Drawn / Chkd.	Date

Project

213189
Lower Hare Farm

Title

Permit Boundary Plan

AA Environmental Ltd
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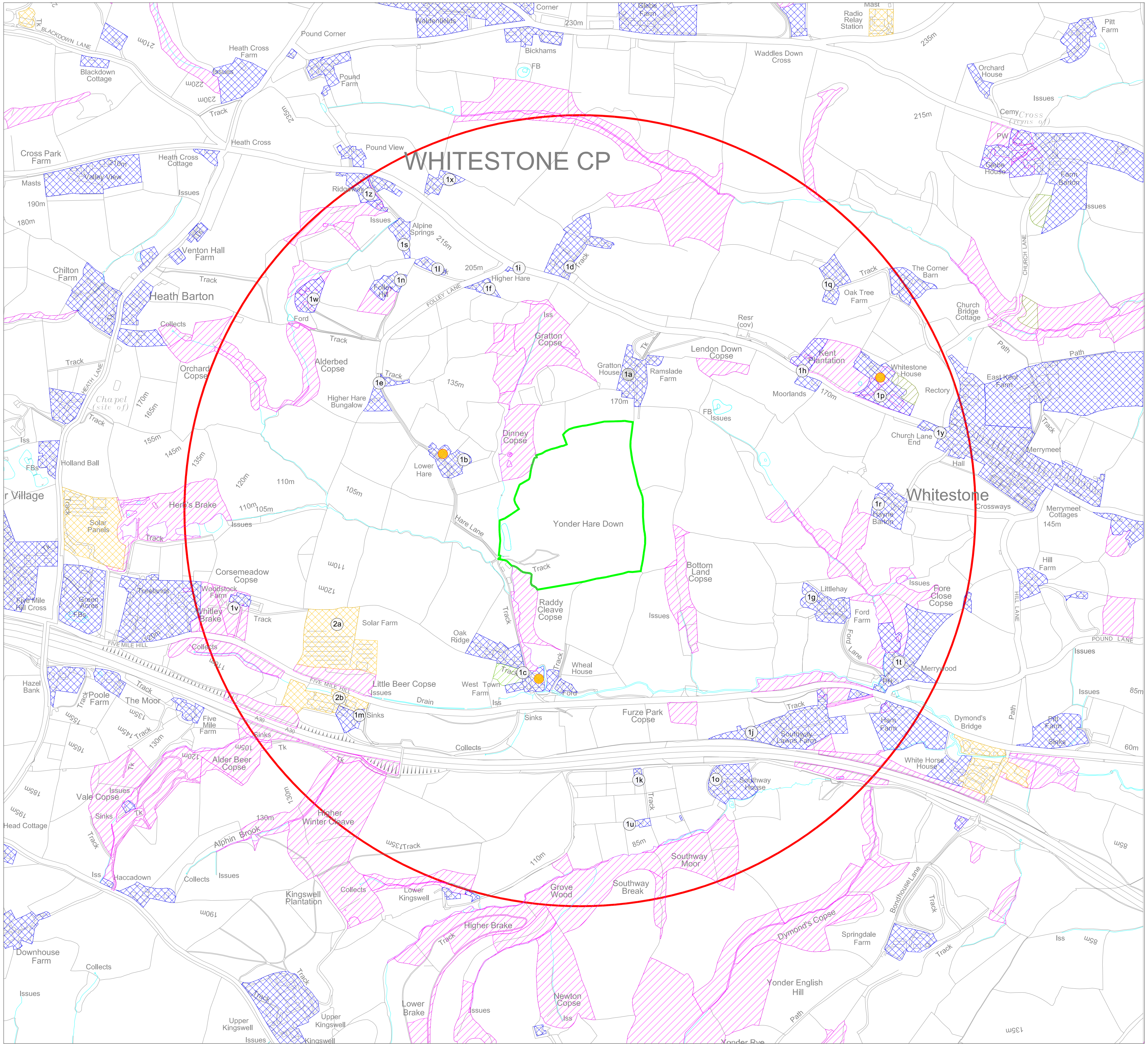
Environmental Consultants

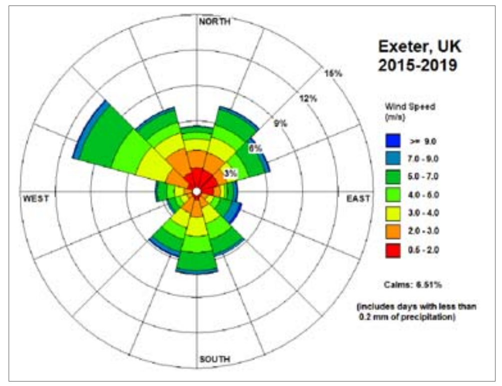
Scale	Date	Drawn	Chkd.	Drg. No.	Rev.
1:4,000@A3	Nov'21	KE	EB	213189/D/001	



N

Key:

- Permit Site Boundary
- 1km Radius
- Listed Buildings
- Commercial/Industrial Receptors
- Residential Receptors
- Priority Habitat - Deciduous Woodland
- Priority Habitat - Traditional Orchard
- Surface Water Course Receptors



Rev.	Details	Drawn / Chkd.	Date

Project
213189
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Site Receptor Plan

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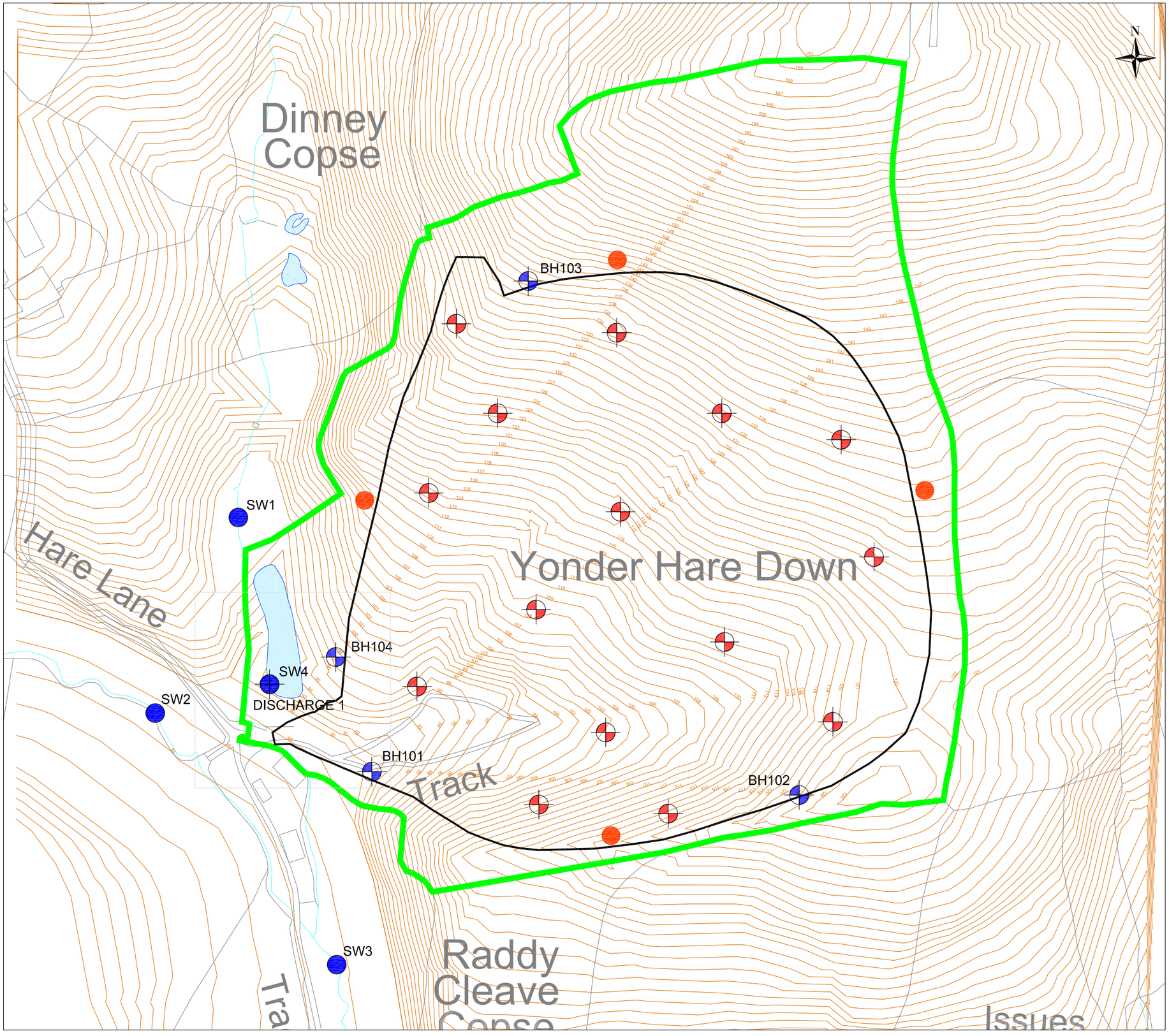
Scale	Date Nov'21		Drg. No.	Rev.
1:10,000@A3	Drawn KE	Chkd. EB	213189/D/002	



Key:

- Permit Site Boundary
- Existing Ground Level (m AOD)
- Extent of Earthworks
- Groundwater Monitoring Boreholes
- Surface Water Monitoring Location
- Visual Dust Monitoring Location
- Surface Water Pond
- Surface Water Course
- Post in-waste gas monitoring locations

Surface Water Monitoring Point Coordinates		
ID	X	Y
SW1	285558	93422
SW2	285516	93313
SW3	285609	93184
SW4 (Discharge Point)	285574	93328

Rev.	Details	Drawn / Chkd.	Date

Project
213189
Lower Hare Farm

Title
Monitoring Plan

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Environmental Consultants

Scale	Date	Drg. No.	Rev.
1:2,000@A3	May'22	213189/D/008	
	Drawn: KE / Chkd.: EB		

APPENDIX A
Monitoring Data

ID	DATE	CH4	CO2	O2	CO	H2S	PEAKCH4	PEAKCO2	CH4 %LEL	BARO	REL.PRESSI	TECH.ID	INTERNAL FLOW
22.09.21		%	%	%	ppm	ppm	%	%	%	mb	mb		l/h
LHFBH103	22/09/2021 11:58	0	1.2	20.1	3	0	0	1.2	0	1013	-0.09	JM__	
LHFBH103	22/09/2021 11:59	0	1.2	19.8	5	0	0	1.2	0	1014	-0.14	JM__	
LHFBH103	22/09/2021 11:59	0	1.2	19.8	5	0	0	1.2	0	1014	-0.05	JM__	
LHFBH103	22/09/2021 11:59	0	1.2	19.7	5	0	0	1.2	0	1014	-0.22	JM__	
LHFBH103	22/09/2021 11:59	0	1.2	19.7	5	0	0	1.2	0	1014	0.07	JM__	
LHFBH103	22/09/2021 12:00	0	1.2	19.7	5	0	0	1.2	0	1014	-0.16	JM__	
LHFBH103	22/09/2021 12:00	0	1.2	19.7	5	0	0	1.2	0	1014	-0.02	JM__	
LHFBH103	22/09/2021 12:00	0	1.2	19.7	5	0	0	1.2	0	1014	-0.14	JM__	
LHFBH103	22/09/2021 12:06	0	1.2	19.7	4	0	0	1.2	0	1013		JM__	0.1
LHFBH104	22/09/2021 12:53	0	2.6	16.8	3	0	0	2.6	0	1018	0.03	JM__	
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LHFBH104	22/09/2021 12:54	0	2.6	16.4	3	0	0	2.6	0	1019	0.03	JM__	
LHFBH104	22/09/2021 12:54	0	2.6	16.4	3	0	0	2.6	0	1019	-0.12	JM__	
LHFBH104	22/09/2021 12:54	0	2.6	16.3	3	0	0	2.6	0	1019	-0.05	JM__	
LHFBH104	22/09/2021 12:55	0	2.6	16.3	3	0	0	2.6	0	1019	-0.05	JM__	
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LHFBH104	22/09/2021 12:55	0	2.6	13	3	0	0	2.6	0	1019	0.02	JM__	
LHFBH104	22/09/2021 12:58	0	2.5	8.9	2	0	0	2.5	0	1018		JM__	0
LHFBH101	22/09/2021 13:47	0	1.8	14	2	0	0	1.8	0	1018	0	JM__	
LHFBH101	22/09/2021 13:48	0	2	10.4	3	0	0	2	0	1019	-0.09	JM__	
LHFBH101	22/09/2021 13:48	0	2.1	8.9	3	0	0	2.1	0	1019	0	JM__	
LHFBH101	22/09/2021 13:48	0	2.3	9.9	3	0	0	2.3	0	1019	0.02	JM__	
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LHFBH101	22/09/2021 13:49	0	2.6	5.8	3	0	0	2.6	0	1019	0.16	JM__	
LHFBH101	22/09/2021 13:54	0	2.9	10.9	3	0	0	2.9	0	1019		JM__	0.1
LHFBH102	22/09/2021 14:27	0	0.1	21.3	6	0	0	0.1	0	1015	0.12	JM__	
LHFBH102	22/09/2021 14:27	0	0.1	21.3	9	0	0	0.1	0	1015	-3.56	JM__	
LHFBH102	22/09/2021 14:27	0	0.1	21.3	9	0	0	0.1	0	1015	-5.57	JM__	
LHFBH102	22/09/2021 14:28	0	0.1	21.3	9	0	0	0.1	0	1015	-7.54	JM__	
LHFBH102	22/09/2021 14:28	0	0.1	21.3	9	0	0	0.1	0	1015	-8.96	JM__	
LHFBH102	22/09/2021 14:28	0	0.1	21.3	8	0	0	0.1	0	1015	-8.94	JM__	
LHFBH102	22/09/2021 14:28	0	0.1	21.3	8	0	0	0.1	0	1015	-9.92	JM__	
LHFBH102	22/09/2021 14:29	0	0.1	21.3	8	0	0	0.1	0	1015	-8.84	JM__	
LHFBH102	22/09/2021 14:33	0	0.2	21.3	7	0	0	0.2	0	1015		JM__	0
30.09.21													
LHFBH101	30/09/2021 09:51	0	5.1	13.4	1	0	0	5.1	0	1009	-0.05	JM__	
LHFBH101	30/09/2021 09:51	0	5	9.3	1	0	0	5.1	0	1010	-0.6	JM__	
LHFBH101	30/09/2021 09:51	0	5	9.1	1	0	0	5	0	1011	-0.6	JM__	
LHFBH101	30/09/2021 09:51	0	5	9	1	0	0	5	0	1011	-0.57	JM__	
LHFBH101	30/09/2021 09:52	0	5	9	1	0	0	5	0	1011	-0.45	JM__	
LHFBH101	30/09/2021 09:52	0	5	9	1	0	0	5	0	1011	-0.47	JM__	
LHFBH101	30/09/2021 09:52	0	5	9	1	0	0	5	0	1011	-0.57	JM__	
LHFBH101	30/09/2021 09:52	0	5	9	1	0	0	5	0	1011	-0.5	JM__	
LHFBH101	30/09/2021 09:57	0	5.1	9	1	0	0	5.1	0	1011	0	JM__	0
LHFBH102	30/09/2021 10:28	0	0.8	20.5	1	0	0	0.8	0	1006	0.33	JM__	
LHFBH102	30/09/2021 10:29	0	0.8	20.4	1	0	0	0.8	0	1006	-0.09	JM__	
LHFBH102	30/09/2021 10:29	0	0.8	20.3	1	0	0	0.8	0	1006	-0.12	JM__	
LHFBH102	30/09/2021 10:29	0	0.8	20.3	1	0	0	0.8	0	1007	-0.16	JM__	
LHFBH102	30/09/2021 10:29	0	0.8	20.3	1	0	0	0.8	0	1006	-0.05	JM__	
LHFBH102	30/09/2021 10:30	0	0.8	20.3	1	0	0	0.8	0	1007	0.09	JM__	
LHFBH102	30/09/2021 10:30	0	0.8	20.3	1	0	0	0.8	0	1006	0.09	JM__	
LHFBH102	30/09/2021 10:30	0	0.8	20.3	1	0	0	0.8	0	1007	-0.26	JM__	
LHFBH102	30/09/2021 10:37	0	0.8	20.3	1	0	0	0.8	0	1006	0.02	JM__	0
LHFBH103	30/09/2021 11:21	0	1.7	20.1	1	0	0	1.7	0	1003	0.02	JM__	
LHFBH103	30/09/2021 11:21	0	1.7	19.9	1	0	0	1.7	0	1005	-0.22	JM__	
LHFBH103	30/09/2021 11:21	0	1.7	19.8	1	0	0	1.7	0	1005	0.12	JM__	
LHFBH103	30/09/2021 11:22	0	1.7	19.8	1	0	0	1.7	0	1005	0.14	JM__	
LHFBH103	30/09/2021 11:22	0	1.7	19.8	1	0	0	1.7	0	1005	-0.05	JM__	
LHFBH103	30/09/2021 11:22	0	1.7	19.8	1	0	0	1.7	0	1004	-0.05	JM__	
LHFBH103	30/09/2021 11:22	0	1.7	19.8	1	0	0	1.7	0	1005	-0.19	JM__	
LHFBH103	30/09/2021 11:23	0	1.7	19.8	1	0	0	1.7	0	1004	0.05	JM__	
LHFBH103	30/09/2021 11:27	0	1.7	19.8	1	0	0	1.7	0	1004	0	JM__	0
LHFBH104	30/09/2021 12:44	0	1.9	17.5	1	0	0	1.9	0	1007	0	JM__	
LHFBH104	30/09/2021 12:44	0	2	16.1	1	0	0	2	0	1008	-0.21	JM__	
LHFBH104	30/09/2021 12:44	0	2	16	1	0	0	2	0	1003	0.26	JM__	
LHFBH104	30/09/2021 12:44	0	2	15.9	1	0	0	2	0	1007	0.16	JM__	
LHFBH104	30/09/2021 12:45	0	2	15.9	1	0	0	2	0	1008	-0.12	JM__	
LHFBH104	30/09/2021 12:45	0	2	15.8	0	0	0	2	0	1008	0.14	JM__	
LHFBH104	30/09/2021 12:45	0	2	15.8	1	0	0	2	0	1008	0	JM__	
LHFBH104	30/09/2021 12:45	0	2	15.8	1	0	0	2	0	1008	0.22	JM__	

LHFBH104	30/09/2021 12:50	0	2.3	14.8	1	0	0	2.3	0	1007	-0.02 JM__	0
05.10.21												
LHFBH102	05/10/2021 12:38	0	0.7	20.5	0	0	0	0.7	0	992	-0.05 JM__	
LHFBH102	05/10/2021 12:38	0	0.7	20.3	0	0	0	0.7	0	993	0.14 JM__	
LHFBH102	05/10/2021 12:38	0	0.7	20.3	0	0	0	0.7	0	993	-0.1 JM__	
LHFBH102	05/10/2021 12:38	0	0.7	20.3	0	0	0	0.7	0	993	0 JM__	
LHFBH102	05/10/2021 12:39	0	0.7	20.3	0	0	0	0.7	0	993	-0.17 JM__	
LHFBH102	05/10/2021 12:39	0	0.7	20.3	0	0	0	0.7	0	993	-0.12 JM__	
LHFBH102	05/10/2021 12:39	0	0.7	20.3	0	0	0	0.7	0	993	0.07 JM__	
LHFBH102	05/10/2021 12:39	0	0.7	20.3	0	0	0	0.7	0	993	-0.17 JM__	
LHFBH102	05/10/2021 12:46	0	0.6	20.3	0	0	0	0.6	0	992	0.05 JM__	0
LHFBH103	05/10/2021 13:51	0	1.2	8.2	0	0	0	1.2	0	991	-2.35 JM__	
LHFBH103	05/10/2021 13:51	0	1.2	8.4	1	0	0	1.2	0	992	-2.68 JM__	
LHFBH103	05/10/2021 13:52	0	1.2	8	1	0	0	1.2	0	992	-3.14 JM__	
LHFBH103	05/10/2021 13:52	0	1.2	7.8	1	0	0	1.2	0	992	-3.11 JM__	
LHFBH103	05/10/2021 13:52	0	1.2	7.6	1	0	0	1.2	0	992	-3.18 JM__	
LHFBH103	05/10/2021 13:52	0	1.2	9.2	1	0	0	1.2	0	992	-2.76 JM__	
LHFBH103	05/10/2021 13:53	0	1.2	8.1	1	0	0	1.2	0	992	-3.24 JM__	
LHFBH103	05/10/2021 13:53	0	1.2	8.8	1	0	0	1.2	0	992	-2.85 JM__	
LHFBH104	05/10/2021 14:44	0	0.7	6.4	0	0	0	0.7	0	997	0.05 JM__	
LHFBH104	05/10/2021 14:44	0	0.7	6.3	0	0	0	0.7	0	998	0.02 JM__	
LHFBH104	05/10/2021 14:44	0	0.7	6.3	0	0	0	0.7	0	998	0 JM__	
LHFBH104	05/10/2021 14:44	0	0.7	6.3	0	0	0	0.7	0	998	0.1 JM__	
LHFBH104	05/10/2021 14:45	0	0.7	6.3	0	0	0	0.7	0	998	0.1 JM__	
LHFBH104	05/10/2021 14:45	0	0.7	6.3	0	0	0	0.7	0	998	-0.33 JM__	
LHFBH104	05/10/2021 14:45	0	0.7	6.3	0	0	0	0.7	0	998	0.03 JM__	
LHFBH104	05/10/2021 14:45	0	0.7	6.3	0	0	0	0.7	0	998	-0.02 JM__	
LHFBH104	05/10/2021 14:55	0	0.6	6.4	0	0	0	0.7	0	997	-0.17 JM__	0
LHFBH101	05/10/2021 15:34	0	2.8	5.6	0	0	0	2.8	0	999	-0.02 JM__	
LHFBH101	05/10/2021 15:34	0	2.6	5	1	0	0	2.7	0	1000	-3.16 JM__	
LHFBH101	05/10/2021 15:35	0	2.4	5	0	0	0	2.5	0	1000	-3.54 JM__	
LHFBH101	05/10/2021 15:35	0	2.3	5	0	0	0	2.4	0	1000	-4.04 JM__	
LHFBH101	05/10/2021 15:35	0	2.2	5	0	0	0	2.3	0	1000	-4.71 JM__	
LHFBH101	05/10/2021 15:35	0	2.2	5.1	0	0	0	2.2	0	1000	-5.07 JM__	
LHFBH101	05/10/2021 15:36	0	2.1	5.1	0	0	0	2.2	0	1000	-5.38 JM__	
LHFBH101	05/10/2021 15:36	0	2	5.1	0	0	0	2.1	0	1000	-5.76 JM__	
LHFBH101	05/10/2021 15:42	0	1.9	5.1	0	0	0	2	0	999	-3.19 JM__	0
14.10.21												
LHFBH101	14/10/2021 08:50	0	7	13.1	0	0	0	7	0	1015	-0.22 JM__	
LHFBH101	14/10/2021 08:50	0	7	6.2	1	0	0	7	0	1016	-1.52 JM__	
LHFBH101	14/10/2021 08:51	0	7.1	5.8	1	0	0	7.1	0	1016	-0.24 JM__	
LHFBH101	14/10/2021 08:51	0	7	5.8	1	0	0	7.1	0	1016	-0.16 JM__	
LHFBH101	14/10/2021 08:51	0	7	5.8	0	0	0	7	0	1016	-0.16 JM__	
LHFBH101	14/10/2021 08:51	0	7.1	5.8	1	0	0	7.1	0	1016	-0.1 JM__	
LHFBH101	14/10/2021 08:52	0	7.1	5.8	0	0	0	7.1	0	1016	-0.21 JM__	
LHFBH101	14/10/2021 08:52	0	7.1	5.7	0	0	0	7.1	0	1016	-0.16 JM__	
LHFBH101	14/10/2021 09:01	0	6.8	6	0	0	0	7.1	0	1017	0.07 JM__	0
LHFBH102	14/10/2021 10:08	0	1	20.6	0	0	0	1	0	1011	0 JM__	
LHFBH102	14/10/2021 10:09	0	1	20.3	0	0	0	1	0	1012	0.05 JM__	
LHFBH102	14/10/2021 10:09	0	1	20.3	0	0	0	1	0	1012	-0.26 JM__	
LHFBH102	14/10/2021 10:09	0	1	20.3	0	0	0	1	0	1012	0.07 JM__	
LHFBH102	14/10/2021 10:09	0	0.9	20.3	0	0	0	0.9	0	1012	0 JM__	
LHFBH102	14/10/2021 10:10	0	0.9	20.3	0	0	0	0.9	0	1012	-0.1 JM__	
LHFBH102	14/10/2021 10:10	0	0.9	20.3	0	0	0	0.9	0	1012	0.02 JM__	
LHFBH102	14/10/2021 10:10	0	0.9	20.3	0	0	0	0.9	0	1012	0.17 JM__	
LHFBH102	14/10/2021 10:14	0	0.8	20.3	0	0	0	0.9	0	1011	0.03 JM__	0
LHFBH103	14/10/2021 10:56	0	1.1	20.4	1	0	0	1.1	0	1009	0.02 JM__	
LHFBH103	14/10/2021 10:56	0	1.1	20.1	1	0	0	1.1	0	1010	-3.99 JM__	
LHFBH103	14/10/2021 10:57	0	1.1	20.1	1	0	0	1.1	0	1010	-4.97 JM__	
LHFBH103	14/10/2021 10:57	0	1.1	20.1	1	0	0	1.1	0	1010	-4.28 JM__	
LHFBH103	14/10/2021 10:57	0	1.1	20.1	1	0	0	1.1	0	1010	-4.14 JM__	
LHFBH103	14/10/2021 10:57	0	1.1	20	1	0	0	1.1	0	1010	-4.82 JM__	
LHFBH103	14/10/2021 10:58	0	1.1	20	1	0	0	1.1	0	1010	-4.94 JM__	
LHFBH103	14/10/2021 10:58	0	1.1	20	1	0	0	1.1	0	1010	-4.76 JM__	
LHFBH103	14/10/2021 11:03	0	1	19.8	1	0	0	1	0	1009	0.02 JM__	0
LHFBH104	14/10/2021 12:12	0	2.3	17.2	1	0	0	2.3	0	1013	0.03 JM__	
LHFBH104	14/10/2021 12:12	0	2.3	15.5	1	0	0	2.3	0	1014	0.07 JM__	
LHFBH104	14/10/2021 12:13	0	2.3	15.4	1	0	0	2.3	0	1014	-0.02 JM__	
LHFBH104	14/10/2021 12:13	0	2.3	15.4	1	0	0	2.3	0	1014	-0.03 JM__	
LHFBH104	14/10/2021 12:13	0	2.3	15.4	1	0	0	2.3	0	1014	-0.09 JM__	
LHFBH104	14/10/2021 12:13	0	2.3	15.4	1	0	0	2.3	0	1014	0.02 JM__	
LHFBH104	14/10/2021 12:14	0	2.3	15.3	1	0	0	2.3	0	1014	0.1 JM__	
LHFBH104	14/10/2021 12:14	0	2.3	15.3	1	0	0	2.3	0	1014	0.09 JM__	

LHFBH104	14/10/2021 12:18	0	2.4	14.6	1	0	0	2.4	0	1015	0.05 JM__	0
20.10.2021												
LHFBH101	20/10/2021 10:03	0	4.5	11.9	0	0	0	4.5	0	991	-0.14 JM__	
LHFBH101	20/10/2021 10:04	0	4.6	5.7	0	0	0	4.6	0	991	-1.83 JM__	
LHFBH101	20/10/2021 10:04	0	4.6	5.3	0	0	0	4.6	0	991	-1.55 JM__	
LHFBH101	20/10/2021 10:04	0	4.6	5.3	0	0	0	4.6	0	991	-1.73 JM__	
LHFBH101	20/10/2021 10:04	0	4.5	5.3	0	0	0	4.6	0	991	-1.79 JM__	
LHFBH101	20/10/2021 10:05	0	4.5	5.3	0	0	0	4.5	0	991	-1.67 JM__	
LHFBH101	20/10/2021 10:05	0	4.5	5.3	0	0	0	4.5	0	991	-1.57 JM__	
LHFBH101	20/10/2021 10:05	0	4.5	5.2	0	0	0	4.5	0	991	-1.59 JM__	
LHFBH101	20/10/2021 10:09	0	4.5	5	0	0	0	4.5	0	991	-0.1 JM__	0
LHFBH102	20/10/2021 10:32	0	0.9	20.5	0	0	0	0.9	0	987	0.07 JM__	
LHFBH102	20/10/2021 10:32	0	0.9	20.2	0	0	0	0.9	0	988	-0.03 JM__	
LHFBH102	20/10/2021 10:32	0	0.9	20.2	0	0	0	0.9	0	987	-0.12 JM__	
LHFBH102	20/10/2021 10:33	0	0.9	20.2	0	0	0	0.9	0	988	-0.07 JM__	
LHFBH102	20/10/2021 10:33	0	0.9	20.2	0	0	0	0.9	0	987	0.02 JM__	
LHFBH102	20/10/2021 10:33	0	0.9	20.2	0	0	0	0.9	0	987	0.09 JM__	
LHFBH102	20/10/2021 10:33	0	0.9	20.2	0	0	0	0.9	0	987	0.03 JM__	
LHFBH102	20/10/2021 10:34	0	0.9	20.2	0	0	0	0.9	0	987	0.16 JM__	
LHFBH102	20/10/2021 10:36	0	0.9	20.2	0	0	0	0.9	0	987	0.05 JM__	0
LHFBH103	20/10/2021 11:14	0	1.2	20.5	1	0	0	1.2	0	985	-0.02 JM__	
LHFBH103	20/10/2021 11:14	0	1.2	20.2	1	0	0	1.2	0	986	-5.04 JM__	
LHFBH103	20/10/2021 11:15	0	1.2	20.2	1	0	0	1.2	0	986	-7.49 JM__	
LHFBH103	20/10/2021 11:15	0	1.2	20.1	1	0	0	1.2	0	986	-8.84 JM__	
LHFBH103	20/10/2021 11:15	0	1.2	20.1	1	0	0	1.2	0	986	-10.22 JM__	
LHFBH103	20/10/2021 11:15	0	1.2	20.1	1	0	0	1.2	0	986	-11.08 JM__	
LHFBH103	20/10/2021 11:16	0	1.2	20.1	1	0	0	1.2	0	986	-11.32 JM__	
LHFBH103	20/10/2021 11:16	0	1.2	20.1	1	0	0	1.2	0	986	-12.24 JM__	
LHFBH103	20/10/2021 11:21	0	1.2	20	1	0	0	1.2	0	985	0.03 JM__	0
LHFBH104	20/10/2021 11:40	0	3.4	12	0	0	0	3.4	0	990	2.26 JM__	
LHFBH104	20/10/2021 11:40	0	3.4	11.9	0	0	0	3.4	0	991	0.1 JM__	
LHFBH104	20/10/2021 11:40	0	3.4	11.9	0	0	0	3.4	0	991	0.09 JM__	
LHFBH104	20/10/2021 11:40	0	3.4	11.9	0	0	0	3.4	0	991	0.03 JM__	
LHFBH104	20/10/2021 11:41	0	3.5	11.9	0	0	0	3.5	0	991	0.17 JM__	
LHFBH104	20/10/2021 11:41	0	3.5	11.8	0	0	0	3.5	0	991	0.02 JM__	
LHFBH104	20/10/2021 11:41	0	3.5	11.8	0	0	0	3.5	0	990	0.12 JM__	
LHFBH104	20/10/2021 11:41	0	3.5	11.8	0	0	0	3.5	0	990	-0.03 JM__	
LHFBH104	20/10/2021 11:45	0	3.5	11.6	0	0	0	3.5	0	990	0.02 JM__	0
03.11.2021												
LHFBH101	03/11/2021 08:23	0.1	4.4	15	0	0	0.1	4.4	2	993	0.05 JM__	
LHFBH101	03/11/2021 08:23	0	4.4	8.3	0	0	0	4.4	0	995	-1.31 JM__	
LHFBH101	03/11/2021 08:24	0	4.4	7.8	0	0	0	4.4	0	995	-1.61 JM__	
LHFBH101	03/11/2021 08:24	0	4.4	7.8	0	0	0	4.4	0	995	-1.61 JM__	
LHFBH101	03/11/2021 08:24	0	4.4	7.8	0	0	0	4.4	0	995	-1.67 JM__	
LHFBH101	03/11/2021 08:24	0	4.4	7.9	0	0	0	4.4	0	995	-1.86 JM__	
LHFBH101	03/11/2021 08:25	0	4.4	8	0	0	0	4.4	0	995	-1.93 JM__	
LHFBH101	03/11/2021 08:25	0	4.4	8	0	0	0	4.4	0	995	-1.66 JM__	
LHFBH101	03/11/2021 08:29	0	4.6	8.6	0	0	0	4.6	0	995	-0.03 JM__	0
LHFBH102	03/11/2021 08:56	0	1	20.5	0	0	0	1	0	991	-0.03 JM__	
LHFBH102	03/11/2021 08:56	0	1	20.5	0	0	0	1	0	991	0.03 JM__	
LHFBH102	03/11/2021 08:56	0	1	20.5	0	0	0	1	0	991	-0.03 JM__	
LHFBH102	03/11/2021 08:56	0	1	20.5	0	0	0	1	0	991	-0.07 JM__	
LHFBH102	03/11/2021 08:57	0	1	20.5	0	0	0	1	0	991	-0.1 JM__	
LHFBH102	03/11/2021 08:57	0	1	20.5	0	0	0	1	0	991	0.02 JM__	
LHFBH102	03/11/2021 08:57	0	1	20.5	0	0	0	1	0	991	0.07 JM__	
LHFBH102	03/11/2021 08:57	0	1	20.5	0	0	0	1	0	991	0.12 JM__	
LHFBH103	03/11/2021 09:27	0	2.1	20	1	0	0	2.1	0	989	-2.31 JM__	
LHFBH103	03/11/2021 09:27	0	2.1	18.9	1	0	0	2.1	0	990	-6.8 JM__	
LHFBH103	03/11/2021 09:27	0	2.2	18.8	1	0	0	2.2	0	990	-8.27 JM__	
LHFBH103	03/11/2021 09:27	0	2.2	18.7	1	0	0	2.2	0	990	-6.89 JM__	
LHFBH103	03/11/2021 09:28	0	2.2	18.7	1	0	0	2.2	0	990	-6.37 JM__	
LHFBH103	03/11/2021 09:28	0	2.2	18.7	1	0	0	2.2	0	990	-6.37 JM__	
LHFBH103	03/11/2021 09:28	0	2.2	18.7	1	0	0	2.2	0	990	-6.06 JM__	
LHFBH103	03/11/2021 09:28	0	2.2	18.7	1	0	0	2.2	0	990	-6.2 JM__	
LHFBH104	03/11/2021 10:18	0	0.2	20.8	0	0	0.1	0.2	0	994	-0.03 JM__	
LHFBH104	03/11/2021 10:19	0	0.2	20.8	0	0	0.1	0.2	0	995	-0.22 JM__	
LHFBH104	03/11/2021 10:19	0	0.2	20.8	0	0	0	0.2	0	995	-0.09 JM__	
LHFBH104	03/11/2021 10:19	0	0.2	20.8	0	0	0	0.2	0	995	-0.29 JM__	
LHFBH104	03/11/2021 10:19	0	0.2	20.8	0	0	0	0.2	0	995	-0.03 JM__	
LHFBH104	03/11/2021 10:20	0	0.2	20.8	0	0	0	0.2	0	995	0.07 JM__	
LHFBH104	03/11/2021 10:20	0	0.2	20.8	0	0	0	0.2	0	995	-0.02 JM__	
LHFBH104	03/11/2021 10:20	0	0.2	20.8	0	0	0	0.2	0	995	-1.5 JM__	
LHFBH104	03/11/2021 10:22	0	0.3	20.8	0	0	0	0.3	0	994	-0.03 JM__	

01.12.2021												
LHFBH101	01/12/2021 11:50	0	7	13.1	0	0	0	7	0	992	-0.05	BG__
LHFBH101	01/12/2021 11:50	0	7.1	4.6	0	0	0	7.1	0	993	-0.12	BG__
LHFBH101	01/12/2021 11:50	0	7.1	4.1	0	0	0	7.1	0	993	-0.29	BG__
LHFBH101	01/12/2021 11:50	0	7.1	4	0	0	0	7.1	0	993	-0.17	BG__
LHFBH101	01/12/2021 11:51	0	7.1	4	0	0	0	7.1	0	993	-0.35	BG__
LHFBH101	01/12/2021 11:51	0	7.1	4	0	0	0	7.1	0	993	-0.36	BG__
LHFBH101	01/12/2021 11:51	0	7.1	3.9	0	0	0	7.1	0	993	-0.35	BG__
LHFBH101	01/12/2021 11:51	0	7.1	3.9	0	0	0	7.1	0	993	-0.41	BG__
LHFBH101	01/12/2021 11:56	0	7.2	3.9	0	0	0	7.2	0	994	0.05	BG__ 0
LHFBH102	01/12/2021 12:23	0	0.7	20.7	0	0	0	0.7	0	988	-0.09	BG__
LHFBH102	01/12/2021 12:24	0	0.7	20.6	0	0	0	0.7	0	989	-0.09	BG__
LHFBH102	01/12/2021 12:24	0	0.7	20.6	0	0	0	0.7	0	989	-0.14	BG__
LHFBH102	01/12/2021 12:24	0	0.7	20.6	0	0	0	0.7	0	989	-0.05	BG__
LHFBH102	01/12/2021 12:24	0	0.7	20.7	0	0	0	0.7	0	989	-0.07	BG__
LHFBH102	01/12/2021 12:25	0	0.7	20.6	0	0	0	0.7	0	986	-0.05	BG__
LHFBH102	01/12/2021 12:25	0	0.7	20.7	0	0	0	0.7	0	988	-0.05	BG__
LHFBH102	01/12/2021 12:25	0	0.7	20.7	0	0	0	0.7	0	989	-0.29	BG__
LHFBH102	01/12/2021 12:31	0	0.7	20.8	0	0	0	0.7	0	989	-0.09	BG__ 0
LHFBH103	01/12/2021 13:29	0.1	4.5	14.5	0	0	0.1	4.5	2	986	2.11	BG__
LHFBH103	01/12/2021 13:29	0.1	4.6	10	0	0	0.1	4.6	2	987	-6.4	BG__
LHFBH103	01/12/2021 13:30	0.1	4.6	9.5	0	0	0.1	4.6	2	987	-8.32	BG__
LHFBH103	01/12/2021 13:30	0.1	4.6	9.5	0	0	0.1	4.6	2	987	-9.87	BG__
LHFBH103	01/12/2021 13:30	0.1	4.5	9.7	0	0	0.1	4.5	2	987	-10.67	BG__
LHFBH103	01/12/2021 13:30	0.1	4.3	10	0	0	0.1	4.4	2	987	-11.36	BG__
LHFBH103	01/12/2021 13:31	0.1	4.2	10.3	0	0	0.1	4.3	2	987	-11.86	BG__
LHFBH103	01/12/2021 13:31	0.1	4.1	10.6	0	0	0.1	4.2	2	987	-11.86	BG__
LHFBH103	01/12/2021 13:34	0.1	3.7	11.8	0	0	0.1	3.9	2	987	-0.17	BG__ 0
LHFBH104	01/12/2021 14:11	0.1	1.7	19.7	0	0	0.1	1.7	2	991	-0.05	BG__
LHFBH104	01/12/2021 14:11	0.1	1.7	18	0	0	0.1	1.7	2	992	0.28	BG__
LHFBH104	01/12/2021 14:12	0.1	1.7	17.8	0	0	0.1	1.7	2	992	-0.1	BG__
LHFBH104	01/12/2021 14:12	0.1	1.7	17.8	0	0	0.1	1.7	2	992	0.12	BG__
LHFBH104	01/12/2021 14:12	0.1	1.7	17.7	0	0	0.1	1.7	2	992	-0.12	BG__
LHFBH104	01/12/2021 14:12	0.1	1.8	17.6	0	0	0.1	1.8	2	992	0.09	BG__
LHFBH104	01/12/2021 14:13	0.1	1.8	17.5	0	0	0.1	1.8	2	992	0	BG__
LHFBH104	01/12/2021 14:13	0.1	1.9	17.3	0	0	0.1	1.9	2	992	-0.05	BG__
LHFBH104	01/12/2021 14:16	0.1	2.1	16.6	0	0	0.1	2.1	2	991	-0.09	BG__ 0
16.02.2022												
LHFBH101	16/02/2022 09:04	0.3	0.2	20.4	0	0	0.3	0.2	6	991	0.14	BG__
LHFBH101	16/02/2022 09:04	0.3	4.7	9.7	0	0	0.3	4.7	6			BG__
LHFBH101	16/02/2022 09:04	0.3	4.8	5.2	0	0	0.3	4.8	6			BG__
LHFBH101	16/02/2022 09:04	0.3	4.8	5	0	0	0.3	4.8	6			BG__
LHFBH101	16/02/2022 09:05	0.3	4.8	4.9	0	0	0.3	4.8	6			BG__
LHFBH101	16/02/2022 09:05	0.3	4.8	4.9	0	0	0.3	4.8	6			BG__
LHFBH101	16/02/2022 09:05	0.3	4.8	4.9	0	0	0.3	4.8	6			BG__
LHFBH101	16/02/2022 09:05	0.3	4.8	4.9	0	0	0.3	4.8	6			BG__
LHFBH101	16/02/2022 09:09	0.3	4.8	4.8	0	0	0.3	4.8	6	991	-0.12	BG__ 0
LHFBH103	16/02/2022 09:54	0.4	0.2	20.6	0	0	0.4	0.2	8	985	1.29	BG__
LHFBH103	16/02/2022 09:54	0.4	3.8	11.6	0	0	0.4	3.8	8			BG__
LHFBH103	16/02/2022 09:55	0.4	3.8	7	0	0	0.4	3.8	8			BG__
LHFBH103	16/02/2022 09:55	0.4	3.8	6.7	0	0	0.4	3.8	8			BG__
LHFBH103	16/02/2022 09:55	0.4	3.8	6.6	0	0	0.4	3.8	8			BG__
LHFBH103	16/02/2022 09:55	0.4	3.8	6.6	0	0	0.4	3.8	8			BG__
LHFBH103	16/02/2022 09:56	0.4	3.8	6.7	0	0	0.4	3.8	8			BG__
LHFBH103	16/02/2022 09:56	0.4	3.6	7.3	0	0	0.4	3.8	8			BG__
LHFBH103	16/02/2022 10:00	0.3	2.3	12.4	0	0	0.3	3.1	6	985	-2.16	BG__ 0
LHFBH104	16/02/2022 10:31	0.4	0.2	20.5	0	0	0.4	0.2	8	990	-0.03	BG__
LHFBH104	16/02/2022 10:31	0.4	1.2	19	0	0	0.4	1.2	8			BG__
LHFBH104	16/02/2022 10:32	0.4	1.2	18.2	0	0	0.4	1.2	8			BG__
LHFBH104	16/02/2022 10:32	0.4	1.2	18.2	0	0	0.4	1.2	8			BG__
LHFBH104	16/02/2022 10:32	0.4	1.2	18.2	0	0	0.4	1.2	8			BG__
LHFBH104	16/02/2022 10:32	0.4	1.1	18.3	0	0	0.4	1.2	8			BG__
LHFBH104	16/02/2022 10:33	0.4	1.1	18.4	0	0	0.4	1.1	8			BG__
LHFBH104	16/02/2022 10:33	0.4	1.1	18.5	0	0	0.4	1.1	8			BG__
LHFBH104	16/02/2022 10:36	0.3	0.9	18.8	0	0	0.4	1	6	990	-0.05	BG__ 0
LHFBH102	16/02/2022 11:08	0.3	0.2	20.4	0	0	0.3	0.2	6	987	-0.4	BG__
LHFBH102	16/02/2022 11:08	0.3	0.8	19.7	0	0	0.3	0.8	6			BG__
LHFBH102	16/02/2022 11:08	0.3	0.8	19.4	0	0	0.3	0.8	6			BG__
LHFBH102	16/02/2022 11:08	0.3	0.8	19.4	0	0	0.3	0.8	6			BG__
LHFBH102	16/02/2022 11:09	0.3	0.8	19.4	0	0	0.3	0.8	6			BG__

LHFBH102	16/02/2022 11:09	0.3	0.8	19.4	0	0	0.3	0.8	6		BG__	
LHFBH102	16/02/2022 11:09	0.3	0.8	19.4	0	0	0.3	0.8	6		BG__	
LHFBH102	16/02/2022 11:09	0.3	0.8	19.4	0	0	0.3	0.8	6		BG__	
LHFBH102	16/02/2022 11:12	0.3	0.8	19.5	0	0	0.3	0.8	6	986	-0.09 BG__	0

No Gas data for 16/03/22 visit

06.04.2022

LHFBH101	06/04/2022 09:29	0.1	5.5	14.5	1	1	0.1	5.5	2	989	0.41 KE_	
LHFBH101	06/04/2022 09:29	0	5.6	5.7	0	1	0.1	5.6	0	991	0.75 KE_	
LHFBH101	06/04/2022 09:30	0	5.6	5	0	2	0	5.6	0	991	0.99 KE_	
LHFBH101	06/04/2022 09:30	0.1	5.6	4.9	0	2	0.1	5.6	2	991	0.1 KE_	
LHFBH101	06/04/2022 09:30	0.1	5.6	4.8	0	2	0.1	5.6	2	991	0.17 KE_	
LHFBH101	06/04/2022 09:30	0.1	5.6	4.8	0	3	0.1	5.6	2	991	0.33 KE_	
LHFBH101	06/04/2022 09:31	0.1	5.6	4.8	1	2	0.1	5.6	2	991	0.24 KE_	
LHFBH101	06/04/2022 09:31	0	5.6	4.8	0	2	0.1	5.6	0	991	0.15 KE_	
LHFBH101	06/04/2022 09:35	0	5.6	4.8	0	2	0.1	5.6	0	990	0.03 KE_	0

LHFBH102	06/04/2022 11:06	0	0.4	20.7	0	0	0	0.4	0	984	-0.03 KE_	
LHFBH102	06/04/2022 11:06	0	0.4	20.6	0	0	0	0.4	0	985	-0.07 KE_	
LHFBH102	06/04/2022 11:06	0	0.4	20.5	0	0	0	0.4	0	986	-0.19 KE_	
LHFBH102	06/04/2022 11:07	0	0.4	20.5	0	0	0	0.4	0	986	-0.02 KE_	
LHFBH102	06/04/2022 11:07	0	0.4	20.5	0	0	0	0.4	0	986	-0.1 KE_	
LHFBH102	06/04/2022 11:07	0	0.4	20.5	0	0	0	0.4	0	986	-0.27 KE_	
LHFBH102	06/04/2022 11:08	0	0.4	20.5	0	0	0	0.4	0	986	-0.17 KE_	
LHFBH102	06/04/2022 11:11	0	0.4	20.4	0	0	0	0.4	0	986	0.1 KE_	0

LHFBH104	06/04/2022 12:19	0	1.4	19	0	0	0	1.4	0	986	0.1 KE_	
LHFBH104	06/04/2022 12:19	0	1.4	17.1	0	0	0	1.4	0	988	0.12 KE_	
LHFBH104	06/04/2022 12:19	0	1.4	16.8	0	0	0	1.4	0	988	0.09 KE_	
LHFBH104	06/04/2022 12:19	0	1.4	16.8	0	0	0	1.5	0	988	-0.05 KE_	
LHFBH104	06/04/2022 12:20	0	1.4	16.8	0	0	0	1.5	0	988	0.17 KE_	
LHFBH104	06/04/2022 12:20	0	1.4	16.7	0	0	0	1.4	0	988	0.14 KE_	
LHFBH104	06/04/2022 12:20	0	1.4	16.7	0	0	0	1.4	0	988	0.02 KE_	
LHFBH104	06/04/2022 12:20	0	1.4	16.7	0	0	0	1.4	0	988	-0.09 KE_	
LHFBH104	06/04/2022 12:24	0	1.4	16.7	0	0	0	1.4	0	988	-0.03 KE_	0

LHFBH103	06/04/2022 13:44	0	2.2	19.2	0	0	0	2.2	0	981	0.56 KE_	
LHFBH103	06/04/2022 13:44	0	2.2	17.5	0	0	0	2.2	0	982	-4.96 KE_	
LHFBH103	06/04/2022 13:44	0	2.2	17.4	0	0	0	2.2	0	983	-5.75 KE_	
LHFBH103	06/04/2022 13:45	0	2.2	17.4	0	0	0	2.2	0	983	-7.36 KE_	
LHFBH103	06/04/2022 13:45	0	2.1	17.5	0	0	0	2.2	0	982	-7.61 KE_	
LHFBH103	06/04/2022 13:45	0	2	17.6	0	0	0	2.1	0	982	-7.43 KE_	
LHFBH103	06/04/2022 13:45	0	2	17.7	0	0	0	2	0	983	-8.03 KE_	
LHFBH103	06/04/2022 13:46	0	1.9	17.8	0	0	0	1.9	0	983	-7.7 KE_	
LHFBH103	06/04/2022 13:49	0	1.7	18.1	0	0	0	1.7	0	983	0.87 KE_	0.1

12.05.2022

LHFBH103	12/05/2022 09:24	0	0.1	20.8	0	0	0	0.1	0	1004	-0.17 KE__	
LHFBH103	12/05/2022 09:24	0	0.1	20.8	0	0	0	0.1	0	1005	-0.17 KE__	
LHFBH103	12/05/2022 09:24	0	0.1	20.8	0	0	0	0.1	0	1005	-0.22 KE__	
LHFBH103	12/05/2022 09:25	0	0.1	20.8	0	0	0	0.1	0	1005	-0.07 KE__	
LHFBH103	12/05/2022 09:25	0	0.1	20.8	0	0	0	0.1	0	1005	-0.26 KE__	
LHFBH103	12/05/2022 09:25	0	0.1	20.8	0	0	0	0.1	0	1005	-0.27 KE__	
LHFBH103	12/05/2022 09:25	0	0.1	20.8	0	0	0	0.1	0	1005	-0.1 KE__	
LHFBH103	12/05/2022 09:32	0	1.7	19.2	0	0	0	1.7	0	1005	-0.02 KE__	0

LHFBH104	12/05/2022 10:49	0	2.1	17.9	0	0	0.1	2.1	0	1009	-0.09 KE__	
LHFBH104	12/05/2022 10:50	0	2.1	16.1	0	0	0	2.1	0	1010	-0.14 KE__	
LHFBH104	12/05/2022 10:50	0	2.1	16	0	0	0	2.1	0	1010	0.02 KE__	
LHFBH104	12/05/2022 10:50	0	2.1	16	0	0	0	2.1	0	1010	0.03 KE__	
LHFBH104	12/05/2022 10:50	0	2.1	15.9	0	0	0	2.1	0	1010	-0.14 KE__	
LHFBH104	12/05/2022 10:51	0	2.1	15.9	0	0	0	2.1	0	1010	-0.27 KE__	
LHFBH104	12/05/2022 10:51	0	2.1	15.9	0	0	0	2.1	0	1010	0 KE__	
LHFBH104	12/05/2022 10:51	0	2.1	15.9	0	0	0	2.1	0	1010	0.07 KE__	
LHFBH104	12/05/2022 10:54	0	2	16	0	0	0	2	0	1010	0.05 KE__	0.1

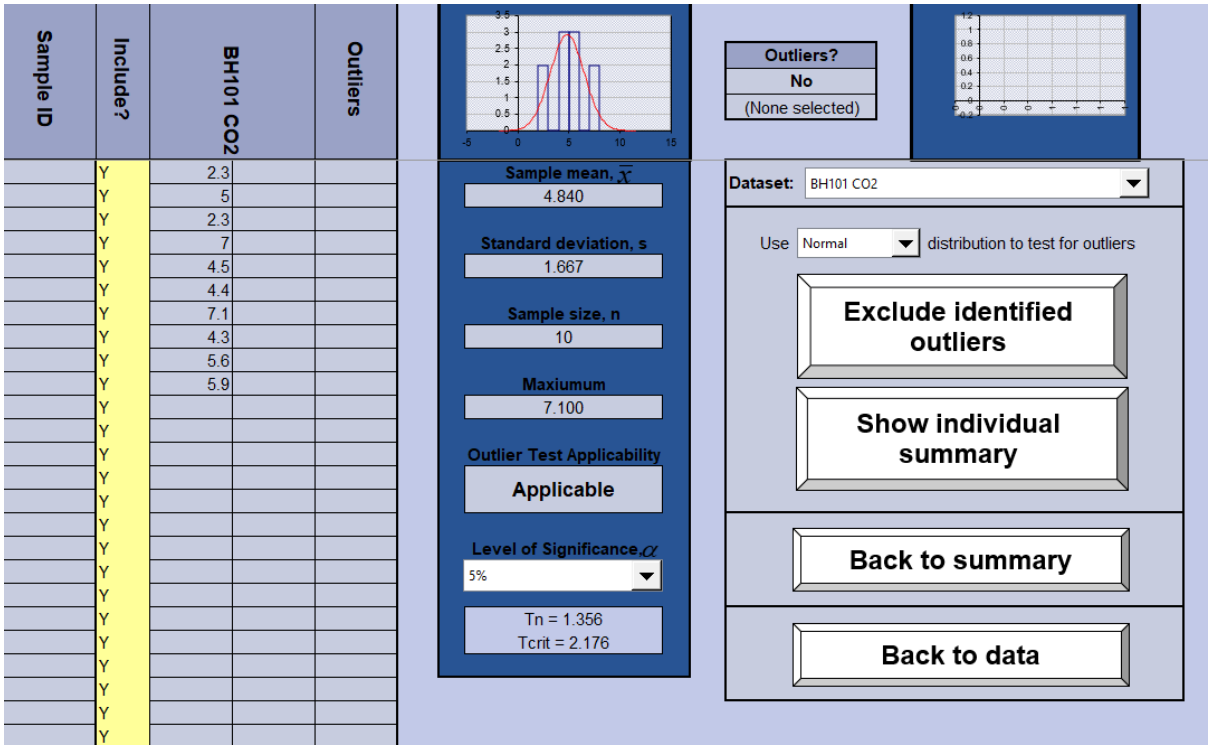
LHFBH102	12/05/2022 11:17	0	0.3	20.8	0	0	0	0.3	0	1006	0.09 KE__	
LHFBH102	12/05/2022 11:18	0	0.3	20.7	0	0	0	0.3	0	1007	0.03 KE__	
LHFBH102	12/05/2022 11:18	0	0.3	20.7	0	0	0	0.3	0	1007	0.09 KE__	
LHFBH102	12/05/2022 11:18	0	0.3	20.7	0	0	0	0.3	0	1007	-0.05 KE__	
LHFBH102	12/05/2022 11:18	0	0.3	20.7	0	0	0	0.3	0	1007	0.12 KE__	

LHFBH102	12/05/2022 11:19	0	0.3	20.8	0	0	0	0.3	0	1007	-1.11	KE__	
LHFBH102	12/05/2022 11:19	0	0.3	20.7	0	0	0	0.3	0	1005	0.05	KE__	
LHFBH102	12/05/2022 11:19	0	0.3	20.7	0	0	0	0.3	0	1007	-0.19	KE__	
LHFBH102	12/05/2022 11:22	0	0.3	20.8	0	0	0	0.3	0	1008	0.03	KE__	0
LHFBH101	12/05/2022 11:59	0.1	5.9	12.6	0	0	0.1	5.9	2	1010	0	KE__	
LHFBH101	12/05/2022 12:00	0.1	6	8.3	0	0	0.1	6	2	1011	0.12	KE__	
LHFBH101	12/05/2022 12:00	0	6	8.1	0	0	0.1	6	0	1011	0.02	KE__	
LHFBH101	12/05/2022 12:00	0	6	8.1	0	0	0	6	0	1011	-0.2	KE__	
LHFBH101	12/05/2022 12:00	0	6	8	0	0	0	6	0	1011	-0.14	KE__	
LHFBH101	12/05/2022 12:01	0	6	8	0	0	0	6	0	1011	0.12	KE__	
LHFBH101	12/05/2022 12:01	0	6	8	0	0	0	6	0	1011	-0.15	KE__	
LHFBH101	12/05/2022 12:01	0	6	8	0	0	0	6	0	1011	-0.07	KE__	
LHFBH101	12/05/2022 12:04	0	5.9	7.9	0	0	0	5.9	0	1011	0	KE__	0

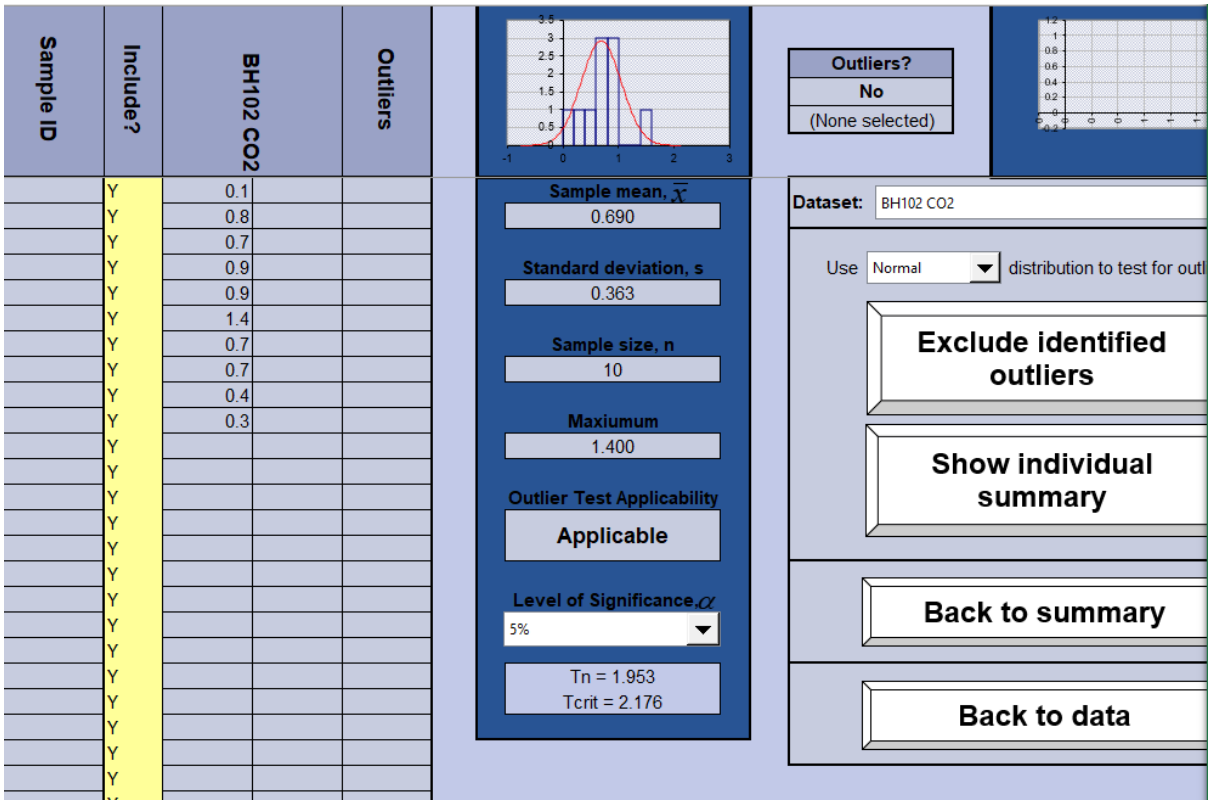
APPENDIX B
Extracts from ESI Calculator

ESI Statistical Calculator Output: Lower Hare Farm: Gas Concentrations

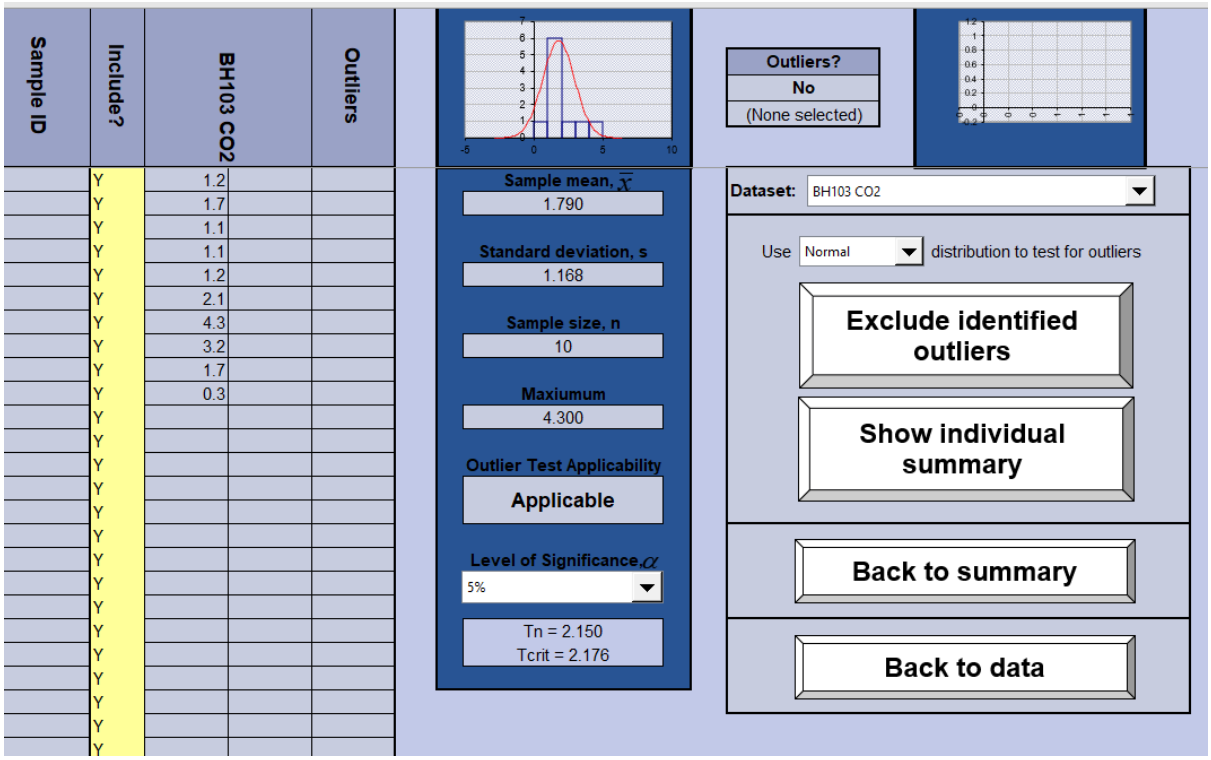
BH101: Carbon Dioxide



BH102 Carbon Dioxide

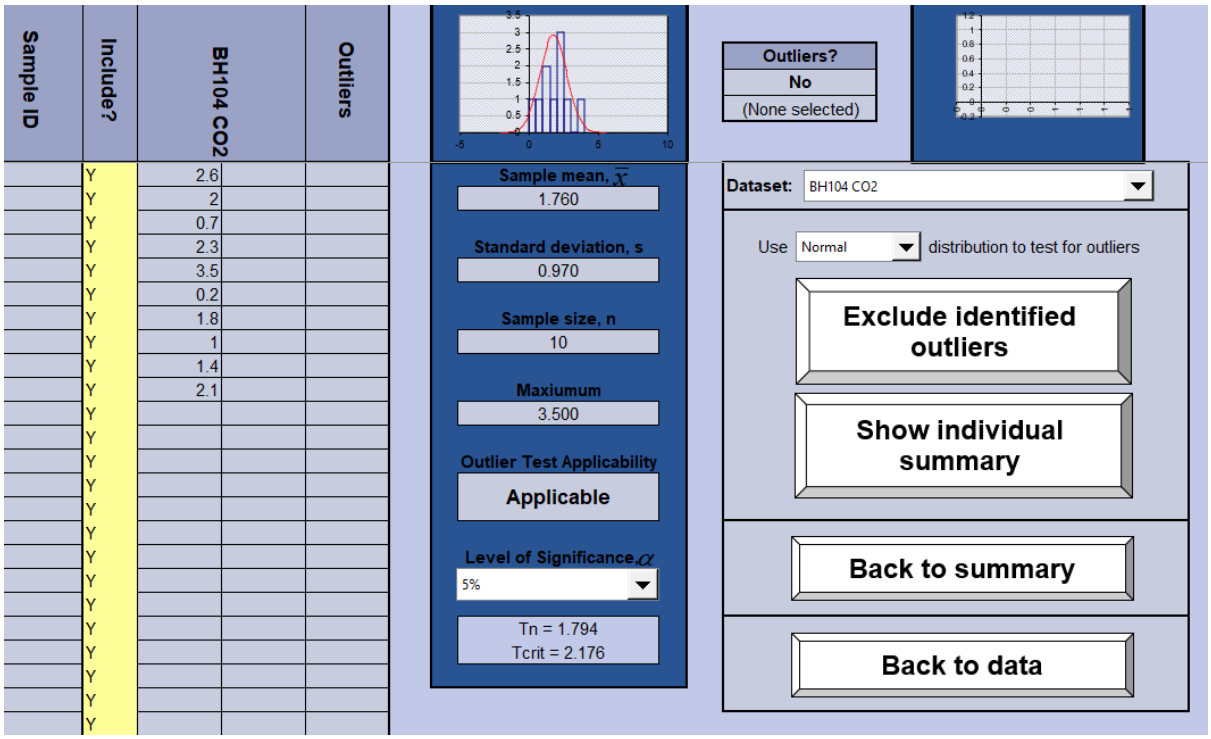


BH103 Carbon Dioxide



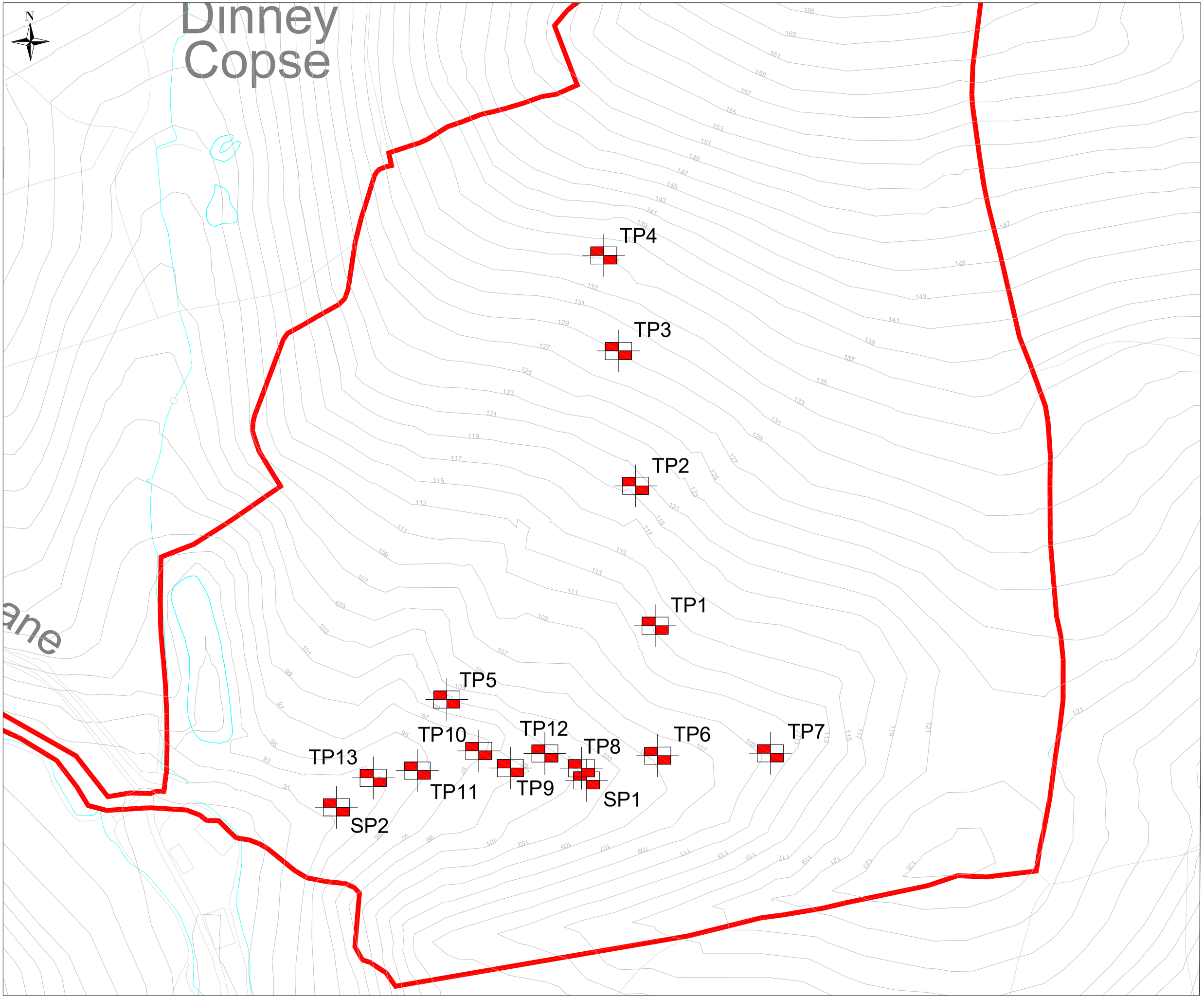
Sample ID	Include?	BH103 CO2		Outliers
	Y	1.2		
	Y	1.7		
	Y	1.1		
	Y	1.1		
	Y	1.2		
	Y	2.1		
	Y	4.3		
	Y	3.2		
	Y	1.7		
	Y	0.3		
	Y			
	Y			
	Y			
	Y			
	Y			
	Y			
	Y			
	Y			
	Y			
	Y			
	Y			
	Y			
	Y			
	Y			
	Y			

BH104 Carbon Dioxide



Sample ID	Include?	BH104 CO2		Outliers
	Y	2.6		
	Y	2		
	Y	0.7		
	Y	2.3		
	Y	3.5		
	Y	0.2		
	Y	1.8		
	Y	1		
	Y	1.4		
	Y	2.1		
	Y			
	Y			
	Y			
	Y			
	Y			
	Y			
	Y			
	Y			
	Y			
	Y			
	Y			
	Y			
	Y			
	Y			
	Y			

Appendix F
Trial Pit Investigation (February 2022)



Key:

- Planning Site Boundary
- Existing Contours (mAOD)
- Trial Pit Location (Feb'22)

Rev.	Details	Drawn / Chkd.	Date

Project

213189
Lower Hare Farm

Title

Site Investigation Plan

AA Environmental Ltd
Units 4-8
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Shippon Abingdon
Oxon OX13 6HX

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Environmental Consultants

Scale	Date	Drg. No.	Rev.
1:1,500@A3	Feb'22	213189/SI/D/001	
	Drawn: KW / Chkd.: ML		

DAILY LOG & SAMPLING RECORD

Client	GRS	**Project Number**	213189
Project Address	Lower Hare Farm	**Date**	18/02/2022
AAe Operative	S.Philp	**Weather**	Windy, Raining

Scope of works			
Description of works completed	• Trial Pitting and Inspection of stockpiles	**Grid Squares Worked**	NA
OBSERVATIONS	Activities at Site • Trial Pitting		

Sample Locations	**Reference**	**X Co-ordinate**	**Y Co-ordinate**	**Comments**
	TP2	285756	93426	See Photo Plate
	TP3	285749	93481	See Photo Plate
	TP4	285743	93520	See Photo Plate
	TP5	285679	93339	See Photo Plate
	TP6	285765	93316	See Photo Plate
	TP8	285734	93311	See Photo Plate
	TP9	285705	93311	See Photo Plate
	TP10	285692	93318	See Photo Plate
	TP11	285667	93310	See Photo Plate
	TP12	285719	93317	See Photo Plate
	TP13	285649	93307	See Photo Plate
	SP1	285736	93306	See Photo Plate
	SP2	285634	93295	See Photo Plate
Comments	**Analysis:** AA Soil Suite 1, Coal Tar analysis			

Comment TP1 0 – 0.3m Brown sandy slightly gravelly CLAY with many rootlets. (TOPSOIL) 0.3 – 1.5m Stiff to firm yellowish grey CLAY 1.5 – 2 Grey friable CLAY / weathered shale (No Sample)	**Project** LHF **Photo Plate** 1 **Date** 18/02/22 **Originator** SP

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Comment TP1 - Arisings 0 – 0.3m Brown sandy slightly gravelly CLAY with many rootlets. (TOPSOIL) 0.3 – 1.5m Stiff to firm yellowish grey CLAY 1.5 – 2m Grey friable CLAY / weathered shale (No Sample)	**Project** LHF **Photo Plate** 2 **Date** 18/02/22 **Originator** SP

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Comment TP2 0 – 0.4m Orangish brown sandy slightly gravelly CLAY with many rootlets. (TOPSOIL) 0.4 – 1.5m Stiff to firm yellowish grey CLAY rare fine to medium coal fragments. 1.5 – 2m Grey friable CLAY / weathered shale (Sample Taken)	**Project** LHF **Photo Plate** 3 **Date** 18/02/22 **Originator** SP

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Comment TP2 - Arisings 0 – 0.4m Orangish brown sandy slightly gravelly CLAY with many rootlets. (TOPSOIL) 0.4 – 1.5m Stiff to firm yellowish grey CLAY rare fine to medium coal fragments. 1.5 – 2m Grey friable CLAY / weathered shale (Sample Taken)	**Project** LHF **Photo Plate** 4 **Date** 18/02/22 **Originator** SP

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Comment TP3 0 – 0.4m Brown sandy slightly gravelly CLAY with many rootlets. (TOPSOIL) 0.4 – 1m Stiff to firm yellowish grey CLAY occasional fine to coarse subangular sandstone gravels 1 – 1.8m Stiff to firm yellowish grey CLAY 1.8 – 2m Grey friable CLAY / weathered shale (Sample Taken)	**Project** LHF **Photo Plate** 5 **Date** 18/02/22 **Originator** SP Environmental Consultants **AA Environmental Limited** Units 4-8 Cholswell Court Shippon, Abingdon OX13 6HX T: (01235) 536042 F: (01235) 523849 info@aae-ltd.co.uk www.aae-ltd.co.uk

Comment TP3 - Arisings 0 – 0.4m Brown sandy slightly gravelly CLAY with many rootlets. (TOPSOIL) 0.4 – 1m Stiff to firm yellowish grey CLAY occasional fine to coarse subangular sandstone gravels 1 – 1.8m Stiff to firm yellowish grey CLAY 1.8 – 2m Grey friable CLAY / weathered shale (Sample Taken)	**Project** LHF **Photo Plate** 6 **Date** 18/02/22 **Originator** SP

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Comment TP4 0 – 0.4m Brown sandy slightly gravelly CLAY with many rootlets. (TOPSOIL) 0.4 – 1.8m Stiff to firm yellowish grey CLAY with fine to coarse subangular sandstone and ironstone gravels, occasional cobbles of sandstone and ironstone 1.8 – 2m Grey friable CLAY / weathered shale (Sample Taken)	**Project** LHF **Photo Plate** 7 **Date** 18/02/22 **Originator** SP

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Comment TP4 - Arisings 0 – 0.4m Brown sandy slightly gravelly CLAY with many rootlets. (TOPSOIL) 0.4 – 1.8m Stiff to firm yellowish grey CLAY with fine to coarse subangular sandstone and ironstone gravels, occasional cobbles of sandstone and ironstone 1.8 – 2m Grey friable CLAY / weathered shale (Sample Taken)	**Project** LHF **Photo Plate** 8 **Date** 18/02/22 **Originator** SP

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Comment TP5 0 – 0.4m Brown sandy slightly gravelly CLAY with many rootlets. (TOPSOIL) 0.4 – 1.8m Stiff to firm yellowish grey CLAY occasional fine to coarse subangular sandstone and ironstone gravels. 1.8 – 2.5m Grey friable CLAY / weathered shale (Sample Taken)	**Project** LHF **Photo Plate** 9 **Date** 18/02/22 **Originator** SP

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Comment TP5 – Arisings 0 – 0.4m Brown sandy slightly gravelly CLAY with many rootlets. (TOPSOIL) 0.4 – 1.8m Stiff to firm yellowish grey CLAY occasional fine to coarse subangular sandstone and ironstone gravels. 1.8 – 2.5m Grey friable CLAY / weathered shale (Sample Taken)	**Project** LHF **Photo Plate** 10 **Date** 18/02/22 **Originator** SP

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Comment TP6 0 – 0.4m Brown sandy slightly gravelly CLAY with many rootlets. (TOPSOIL) 0.4 – 2m Stiff to firm yellowish grey CLAY occasional fine to coarse subangular sandstone, ironstone and quartz gravels. (Sample Taken)	**Project** LHF **Photo Plate** 11 **Date** 18/02/22 **Originator** SP

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Comment TP6 - Arisings 0 – 0.4m Brown sandy slightly gravelly CLAY with many rootlets. (TOPSOIL) 0.4 – 2m Stiff to firm yellowish grey CLAY occasional fine to coarse subangular sandstone, ironstone and quartz gravels. (Sample Taken)	**Project** LHF **Photo Plate** 12 **Date** 18/02/22 **Originator** SP

AA Environmental Limited
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Comment TP7 - Arisings 0 – 0.3m Brown sandy slightly gravelly CLAY with many rootlets. (TOPSOIL) 0.3 – 1.8m Stiff to firm yellowish grey CLAY occasional fine to coarse subangular sandstone, and ironstone gravels. ***(No photo of the trial pit TP7 itself)*** (No Sample Taken)	**Project** LHF **Photo Plate** 13 **Date** 18/02/22 **Originator** SP

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Comment

TP8

0 – 0.2m Brown sandy slightly gravelly CLAY with many rootlets. (TOPSOIL)

0.2 – 0.4m Orangish brown SAND, occasional rounded sandstone gravels

0.4 – 1m Yellowish brownish black sandy clayey GRAVEL, with occasional boulders. Gravels and boulders are tarmac / asphalt, concrete, rebar, brick, paving slabs. (MADE GROUND)

1 – 2m Stiff to firm yellowish grey CLAY occasional fine to coarse subangular sandstone, and ironstone gravels.

(Sample Taken)

Project

LHF

Photo Plate

14

Date

18/02/22

Originator

SP

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Comment TP8 - Arisings 0 – 0.2m Brown sandy slightly gravelly CLAY with many rootlets. (TOPSOIL) 0.2 – 0.4m Orangish brown SAND, occasional rounded sandstone gravels 0.4 – 1m Yellowish brownish black sandy clayey GRAVEL, with occasional boulders. Gravels and boulders are tarmac / asphalt, concrete, rebar, brick, paving slabs. (MADE GROUND) 1 – 2m Stiff to firm yellowish grey CLAY occasional fine to coarse subangular sandstone, and ironstone gravels. (Sample Taken)	**Project** LHF **Photo Plate** 15 **Date** 18/02/22 **Originator** SP

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Comment TP9 0 – 0.2m Brown sandy slightly gravelly CLAY with many rootlets. (TOPSOIL) 0.2 – 0.4m Orangish brown SAND, occasional rounded sandstone gravels 0.4 – 1m Yellowish brownish black sandy clayey GRAVEL, with occasional boulders. Gravels and boulders are tarmac / asphalt, concrete, rebar, brick, paving slabs, and plastic. (MADE GROUND) 1 – 2m Stiff to firm yellowish grey CLAY occasional fine to coarse subangular sandstone, and ironstone gravels. (Sample Taken)	**Project** LHF **Photo Plate** 16 **Date** 18/02/22 **Originator** SP

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Comment

TP9 - Arisings

0 – 0.2m Brown sandy slightly gravelly CLAY with many rootlets. (TOPSOIL)

0.2 – 0.4m Orangish brown SAND, occasional rounded sandstone gravels

0.4 – 1m Yellowish brownish black sandy clayey GRAVEL, with occasional boulders. Gravels and boulders are tarmac / asphalt, concrete, rebar, brick, paving slabs, and plastic. (MADE GROUND)

1 – 2m Stiff to firm yellowish grey CLAY occasional fine to coarse subangular sandstone, and ironstone gravels.

(Sample Taken)

Project

LHF

Photo Plate

17

Date

18/02/22

Originator

SP

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Comment

TP10

0 – 0.2m Brown sandy slightly gravelly CLAY with many rootlets. (TOPSOIL)

0.2 – 1.5m Blackish brownish orange sandy clayey GRAVEL, with occasional boulders. Gravels and boulders are concrete, rebar, brick, and wood. (MADE GROUND)

1.5 – 2m Stiff to firm yellowish grey CLAY occasional fine to coarse subangular sandstone, and ironstone gravels.

(Sample Taken)

Project

LHF

Photo Plate

18

Date

18/02/22

Originator

SP

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Comment TP10 - Arisings 0 – 0.2m Brown sandy slightly gravelly CLAY with many rootlets. (TOPSOIL) 0.2 – 1.5m Blackish brownish orange sandy clayey GRAVEL, with occasional boulders. Gravels and boulders are concrete, rebar, brick, and wood. (MADE GROUND) 1.5 – 2m Stiff to firm yellowish grey CLAY occasional fine to coarse subangular sandstone, and ironstone gravels. (Sample Taken)	**Project** LHF **Photo Plate** 19 **Date** 18/02/22 **Originator** SP

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Comment TP11 0 – 0.2m Brown sandy slightly gravelly CLAY with many rootlets. (TOPSOIL) 0.2 – 0.5m Brownish orange sandy clayey GRAVEL, with occasional boulders. Gravels and boulders are concrete, rebar, brick, and wood. (MADE GROUND) 0.5 – 2m Stiff to firm yellowish grey CLAY occasional fine to coarse subangular sandstone, and ironstone gravels. (Sample Taken)	**Project** LHF **Photo Plate** 20 **Date** 18/02/22 **Originator** SP

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Comment TP11 - Arisings 0 – 0.2m Brown sandy slightly gravelly CLAY with many rootlets. (TOPSOIL) 0.2 – 0.5m Brownish orange sandy clayey GRAVEL, with occasional boulders. Gravels and boulders are concrete, rebar, brick, and wood. (MADE GROUND) 0.5 – 2m Stiff to firm yellowish grey CLAY occasional fine to coarse subangular sandstone, and ironstone gravels. (Sample Taken)	**Project** LHF **Photo Plate** 21 **Date** 18/02/22 **Originator** SP

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Comment TP12 0 – 0.2m Brown sandy slightly gravelly CLAY with many rootlets. (TOPSOIL) 0.2 – 2m Stiff to firm yellowish grey CLAY occasional fine to coarse subangular sandstone, and ironstone gravels. (Sample Taken)	**Project** LHF **Photo Plate** 22 **Date** 18/02/22 **Originator** SP

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Comment TP12 0 – 0.2m Brown sandy slightly gravelly CLAY with many rootlets. (TOPSOIL) 0.2 – 2m Stiff to firm yellowish grey CLAY occasional fine to coarse subangular sandstone, and ironstone gravels. (Sample Taken)	**Project** 213397 Dalby **Photo Plate** 23 **Date** 18/02/22 **Originator** SP

AA Environmental Limited
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Comment TP13 0 – 0.2m Brown sandy slightly gravelly CLAY with many rootlets. (TOPSOIL) 0.2 – 1.1m Blackish brownish orange sandy clayey GRAVEL, with occasional boulders. Gravels and boulders are concrete, rebar, and brick. (MADE GROUND) 1.1 – 2m Stiff to firm yellowish grey CLAY occasional fine to coarse subangular sandstone, and ironstone gravels. (Sample Taken)	**Project** LHF **Photo Plate** 24 **Date** 18/02/22 **Originator** SP

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Comment TP13 0 – 0.2m Brown sandy slightly gravelly CLAY with many rootlets. (TOPSOIL) 0.2 – 1.1m Blackish brownish orange sandy clayey GRAVEL, with occasional boulders. Gravels and boulders are concrete, rebar, and brick. (MADE GROUND) 1.1 – 2m Stiff to firm yellowish grey CLAY occasional fine to coarse subangular sandstone, and ironstone gravels. (Sample Taken)	**Project** LHF **Photo Plate** 25 **Date** 18/02/22 **Originator** SP

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Comment SP1 approx. 100m^3 Brownish greyish black sandy SILT, rare fragments of brick and plastic. Piles of horse manure, and feeding bales butted against the stockpile.	**Project** LHF
	Photo Plate 26
	Date 18/02/22
	Originator SP

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Comment SP2 approx. 10m^3 Hardcore; Brick, concrete, clay pipe, paving slabs, various natural gravels of sandstone and chert.	**Project** LHF
	Photo Plate 27
	Date 18/02/22
	Originator SP
	AA Environmental Limited Units 4-8 Cholswell Court Shippon, Abingdon OX13 6HX T: (01235) 536042 F: (01235) 523849 info@aae-ltd.co.uk www.aae-ltd.co.uk

Comment Telegraph poles and steel gates.	**Project** LHF
	Photo Plate 28
	Date 18/02/22
	Originator SP
	AA Environmental Limited Units 4-8 Cholswell Court Shippon, Abingdon OX13 6HX T: (01235) 536042 F: (01235) 523849 info@aae-ltd.co.uk www.aae-ltd.co.uk

Comment Onsite aggregate piles associated with the farm	**Project** LHF
	Photo Plate 29
	Date 18/02/22
	Originator SP
	AA Environmental Limited Units 4-8 Cholswell Court Shippon, Abingdon OX13 6HX T: (01235) 536042 F: (01235) 523849 info@aae-ltd.co.uk www.aae-ltd.co.uk

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Email: info@chemtest.com

Final Report

Report No.:	22-06507-1
Initial Date of Issue:	25-Feb-2022
Client	AA Environmental Ltd
Client Address:	Units 4 to 8 Cholswell Court Shippon Abingdon Oxfordshire OX136HX
Contact(s):	Reporting
Project	Lower Hare Farm (LHF)

Quotation No.:		**Date Received:**	22-Feb-2022
Order No.:		**Date Instructed:**	22-Feb-2022
No. of Samples:	13		
Turnaround (Wkdays):	4	**Results Due:**	25-Feb-2022
Date Approved:	25-Feb-2022		

Approved By:

Details: Stuart Henderson, Technical Manager

Results - Soil

Project: Lower Hare Farm (LHF)

Client: AA Environmental Ltd			**Chemtest Job No.:**		22-06507	22-06507	22-06507	22-06507	22-06507	22-06507	22-06507	22-06507	22-06507
Quotation No.:			**Chemtest Sample ID.:**		1376806	1376807	1376808	1376809	1376810	1376811	1376812	1376813	1376814
			Sample Location:		TP2	TP3	TP4	TP5	TP6	TP8	TP9	TP10	TP11
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Top Depth (m):							0.4	0.4	0.2	0.2
			Bottom Depth (m):							1.0	1.0	1.5	0.5
			Date Sampled:		18-Feb-2022	18-Feb-2022	18-Feb-2022	18-Feb-2022	18-Feb-2022	18-Feb-2022	18-Feb-2022	18-Feb-2022	18-Feb-2022
			Asbestos Lab:		DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
ACM Type	U	2192		N/A	-	-	-	-	-	-	-	-	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Moisture	N	2030	%	0.020	22	23	23	14	23	15	14	23	24
pH	U	2010		4.0	8.5	7.7	8.3	8.9	7.8	8.5	8.7	8.2	8.5
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	< 0.40	0.46	< 0.40	0.42	< 0.40	< 0.40	< 0.40	< 0.40	< 0.40
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	0.032	0.031	0.014	0.012	0.071	0.10	0.026	0.018	0.016
Cyanide (Total)	U	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Sulphide (Easily Liberatable)	N	2325	mg/kg	0.50	1.2	1.5	2.4	1.4	0.98	0.67	< 0.50	5.3	1.1
Arsenic	U	2450	mg/kg	1.0	7.9	7.5	3.7	11	11	12	10	9.4	8.9
Cadmium	U	2450	mg/kg	0.10	0.35	< 0.10	< 0.10	< 0.10	< 0.10	0.64	0.53	0.21	0.24
Chromium	U	2450	mg/kg	1.0	11	13	8.8	5.9	13	13	14	13	14
Copper	U	2450	mg/kg	0.50	19	21	15	31	40	20	27	21	22
Mercury	U	2450	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Nickel	U	2450	mg/kg	0.50	69	10	16	36	27	29	21	25	20
Lead	U	2450	mg/kg	0.50	14	11	9.8	17	20	24	34	33	56
Selenium	U	2450	mg/kg	0.20	0.52	0.23	0.24	0.40	0.54	0.45	0.45	0.29	< 0.20
Vanadium	U	2450	mg/kg	5.0	13	14	11	13	20	17	19	19	17
Zinc	U	2450	mg/kg	0.50	95	37	36	72	70	53	65	58	64
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Total Organic Carbon	U	2625	%	0.20	0.47	0.21	0.26	0.30	0.54	1.3	0.86	1.4	1.6
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	64
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	250
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Results - Soil

Project: Lower Hare Farm (LHF)

Client: AA Environmental Ltd				**Chemtest Job No.:**	22-06507	22-06507	22-06507	22-06507	22-06507	22-06507	22-06507	22-06507	22-06507
Quotation No.:				**Chemtest Sample ID.:**	1376806	1376807	1376808	1376809	1376810	1376811	1376812	1376813	1376814
				Sample Location:	TP2	TP3	TP4	TP5	TP6	TP8	TP9	TP10	TP11
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):						0.4	0.4	0.2	0.2
				Bottom Depth (m):						1.0	1.0	1.5	0.5
				Date Sampled:	18-Feb-2022	18-Feb-2022	18-Feb-2022	18-Feb-2022	18-Feb-2022	18-Feb-2022	18-Feb-2022	18-Feb-2022	18-Feb-2022
				Asbestos Lab:	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	320
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	320
Naphthalene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	5.6	5.8	< 0.10	3.6
Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	1.9	1.2	< 0.10	1.2
Fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	13	7.5	< 0.10	8.9
Pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	12	6.5	< 0.10	8.8
Benzo[a]anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	5.4	2.8	< 0.10	5.3
Chrysene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	5.7	2.6	< 0.10	4.3
Benzo[b]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	7.4	3.5	< 0.10	6.6
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	3.2	1.7	< 0.10	3.6
Benzo[a]pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	5.2	2.5	< 0.10	5.3
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	4.0	1.7	< 0.10	3.8
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.98	0.59	< 0.10	0.96
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	4.1	1.6	< 0.10	3.5
Total Of 16 PAH's	U	2700	mg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	69	38	< 2.0	56
Total Phenols	U	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

Results - Soil

Project: Lower Hare Farm (LHF)

Client: AA Environmental Ltd			**Chemtest Job No.:**		22-06507	22-06507	22-06507	22-06507
Quotation No.:			**Chemtest Sample ID.:**		1376815	1376816	1376817	1376818
			Sample Location:		TP12	TP13	SP1	SP2
			Sample Type:		SOIL	SOIL	SOIL	SOIL
			Top Depth (m):			0.2		
			Bottom Depth (m):			1.1		
			Date Sampled:		18-Feb-2022	18-Feb-2022	18-Feb-2022	18-Feb-2022
			Asbestos Lab:		DURHAM	DURHAM	DURHAM	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**				
ACM Type	U	2192		N/A	-	-	-	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Moisture	N	2030	%	0.020	32	21	53	12
pH	U	2010		4.0	8.6	8.6	7.9	8.8
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	< 0.40	< 0.40	< 0.40	< 0.40
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	< 0.010	0.071	0.54	0.021
Cyanide (Total)	U	2300	mg/kg	0.50	< 0.50	< 0.50	1.7	< 0.50
Sulphide (Easily Liberatable)	N	2325	mg/kg	0.50	< 0.50	2.2	< 0.50	< 0.50
Arsenic	U	2450	mg/kg	1.0	11	12	7.2	22
Cadmium	U	2450	mg/kg	0.10	< 0.10	0.30	0.22	0.60
Chromium	U	2450	mg/kg	1.0	13	19	11	32
Copper	U	2450	mg/kg	0.50	39	32	70	51
Mercury	U	2450	mg/kg	0.10	< 0.10	0.20	0.10	0.11
Nickel	U	2450	mg/kg	0.50	13	30	13	43
Lead	U	2450	mg/kg	0.50	18	54	19	66
Selenium	U	2450	mg/kg	0.20	0.39	0.50	0.92	0.80
Vanadium	U	2450	mg/kg	5.0	18	26	7.4	36
Zinc	U	2450	mg/kg	0.50	43	78	88	180
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Total Organic Carbon	U	2625	%	0.20	< 0.20	1.4	12	1.2
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0

Results - Soil

Project: Lower Hare Farm (LHF)

Client: AA Environmental Ltd		**Chemtest Job No.:**			22-06507	22-06507	22-06507	22-06507
Quotation No.:		**Chemtest Sample ID.:**			1376815	1376816	1376817	1376818
		Sample Location:			TP12	TP13	SP1	SP2
		Sample Type:			SOIL	SOIL	SOIL	SOIL
		Top Depth (m):				0.2		
		Bottom Depth (m):				1.1		
		Date Sampled:			18-Feb-2022	18-Feb-2022	18-Feb-2022	18-Feb-2022
		Asbestos Lab:			DURHAM	DURHAM	DURHAM	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**				
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10	< 10	< 10	< 10
Naphthalene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	0.62
Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	0.55
Fluoranthene	U	2700	mg/kg	0.10	< 0.10	0.74	0.42	1.4
Pyrene	U	2700	mg/kg	0.10	< 0.10	0.77	0.22	1.5
Benzo[a]anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	1.5	0.75
Chrysene	U	2700	mg/kg	0.10	< 0.10	< 0.10	0.87	1.4
Benzo[b]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	0.88
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	0.91
Benzo[a]pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	0.63
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Of 16 PAH's	U	2700	mg/kg	2.0	< 2.0	< 2.0	3.0	8.6
Total Phenols	U	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2325	Sulphide in Soils	Sulphide	Steam distillation with sulphuric acid / analysis by 'Aquakem 600' Discrete Analyser, using N,N–dimethyl-p-phenylenediamine.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID (GC-FID detection is non-selective and can be subject to interference from co-eluting compounds)
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	22-06509-1
Initial Date of Issue:	25-Feb-2022
Client	AA Environmental Ltd
Client Address:	Units 4 to 8 Cholswell Court Shippon Abingdon Oxfordshire OX136HX
Contact(s):	Reporting
Project	Lower Harm Farm (LHF)

Quotation No.:		**Date Received:**	22-Feb-2022
Order No.:		**Date Instructed:**	22-Feb-2022
No. of Samples:	2		
Turnaround (Wkdays):	4	**Results Due:**	25-Feb-2022
Date Approved:	25-Feb-2022		

Approved By:

Details: Stuart Henderson, Technical Manager

Results - Miscellaneous Solid

Project: Lower Harm Farm (LHF)

Client: AA Environmental Ltd		**Chemtest Job No.:**			22-06509	22-06509
Quotation No.:		**Chemtest Sample ID.:**			1376822	1376823
Order No.:		Client Sample Ref.:			TARMAC	TARMAC
		Sample Location:			TP8	TP9
		Sample Type:			MISCSOLID	MISCSOLID
		Top Depth (m):			0.4	0.4
		Bottom Depth (m):			1.0	1.0
		Date Sampled:			18-Feb-2022	18-Feb-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
Naphthalene	N	2700	mg/kg	0.10	0.38	0.23
Acenaphthylene	N	2700	mg/kg	0.10	0.24	0.23
Acenaphthene	N	2700	mg/kg	0.10	0.41	0.15
Fluorene	N	2700	mg/kg	0.10	0.64	0.22
Phenanthrene	N	2700	mg/kg	0.10	1.9	0.61
Anthracene	N	2700	mg/kg	0.10	0.54	0.10
Fluoranthene	N	2700	mg/kg	0.10	2.0	1.1
Pyrene	N	2700	mg/kg	0.10	2.5	1.1
Benzo[a]anthracene	N	2700	mg/kg	0.10	1.9	0.88
Chrysene	N	2700	mg/kg	0.10	4.3	0.18
Benzo[b]fluoranthene	N	2700	mg/kg	0.10	8.6	< 0.10
Benzo[k]fluoranthene	N	2700	mg/kg	0.10	1.4	< 0.10
Benzo[a]pyrene	N	2700	mg/kg	0.10	3.2	< 0.10
Indeno(1,2,3-c,d)Pyrene	N	2700	mg/kg	0.10	7.1	< 0.10
Dibenz(a,h)Anthracene	N	2700	mg/kg	0.10	1.6	< 0.10
Benzo[g,h,i]perylene	N	2700	mg/kg	0.10	8.0	< 0.10
Total Of 16 PAH's	N	2700	mg/kg	2.0	45	4.8
Moisture	N		%	0.10	< 0.10	< 0.10

Test Methods

SOP	Title	Parameters included	Method summary
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID (GC-FID detection is non-selective and can be subject to interference from co-eluting compounds)

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

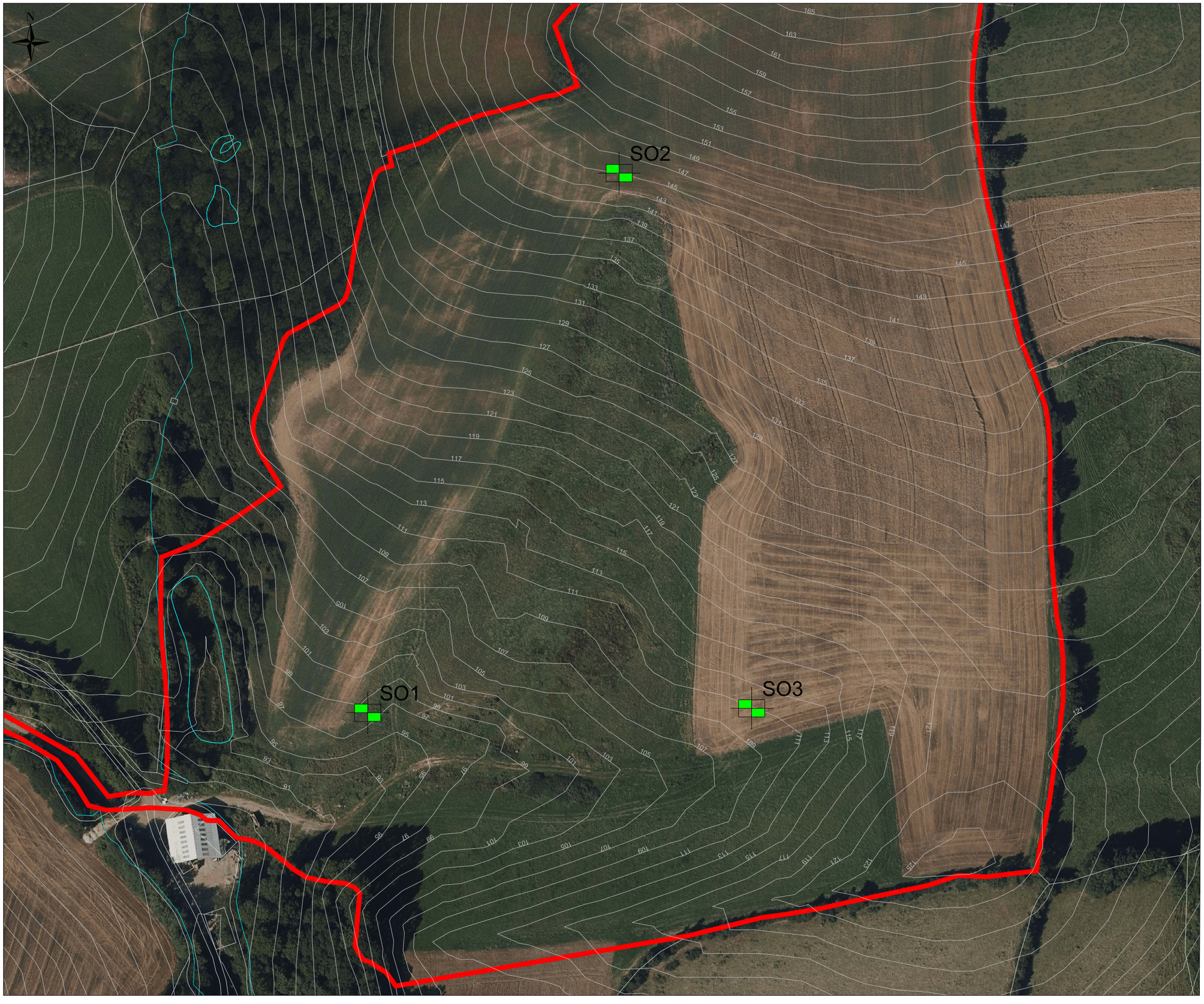
A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Appendix G
Hand Pit Certificates of Analysis and Location Plan (June 2022)



Key:

- Site Boundary
- Existing Contours (mAOD)
- Hand Pit Location (Jun'22)

Rev.	Details	Drawn / Chkd.	Date

Project

213189
Lower Hare Farm

Title

Hand Pit Location Plan

AA Environmental Ltd
Units 4-8
Cholswell Court
Shippon Abingdon
Oxon OX13 6HX

T:(01235) 536042
F:(01235) 523849
info@aae-ltd.co.uk
www.aae-ltd.co.uk

Environmental Consultants

Scale	Date	Drg. No.	Rev.
1:1,500@A3	Jun'22	213189/HP/D/001	
	Drawn: KW / Chkd.: ML		

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	22-22897-1
Initial Date of Issue:	23-Jun-2022
Client	AA Environmental Ltd
Client Address:	Units 4 to 8 Cholswell Court Shippon Abingdon Oxfordshire OX136HX
Contact(s):	Reporting
Project	213189 Lower Hare Farm

Quotation No.:		**Date Received:**	20-Jun-2022
Order No.:		**Date Instructed:**	20-Jun-2022
No. of Samples:	6		
Turnaround (Wkdays):	4	**Results Due:**	23-Jun-2022
Date Approved:	23-Jun-2022		

Approved By:

Details: Stuart Henderson, Technical Manager

Results - Soil

Project: 213189 Lower Hare Farm

Client: AA Environmental Ltd			**Chemtest Job No.:**		22-22897	22-22897	22-22897
Quotation No.:			**Chemtest Sample ID.:**		1451451	1451453	1451455
Order No.:			Client Sample Ref.:		SO1	SO2	SO3
			Sample Type:		SOIL	SOIL	SOIL
			Top Depth (m):		0.00	0.00	0.00
			Bottom Depth (m):		0.40	0.40	0.40
			Date Sampled:		15-Jun-2022	15-Jun-2022	15-Jun-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**			
Moisture	N	2030	%	0.020	3.4	11	9.8
Total Organic Carbon	U	2625	%	0.20	2.9	2.6	2.8

Results - Single Stage WAC

Project: 213189 Lower Hare Farm

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	22-22897						
Chemtest Sample ID:	1451451						
Sample Ref:	SO1						
Sample ID:							
Sample Location:							
Top Depth(m):	0.00						
Bottom Depth(m):	0.40						
Sampling Date:	15-Jun-2022				**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Determinand	**SOP**	**Accred.**	**Units**				
Total Organic Carbon					3	5	6
Loss on Ignition					--	--	10
Total BTEX					6	--	--
Total PCBs (7 congeners)					1	--	--
TPH Total WAC (Mineral Oil)					500	--	--
Total (of 17) PAHs					100	--	--
pH					--	>6	--
Acid Neutralisation Capacity					--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0022	0.022	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	< 0.0005	< 0.0005	0.5	10	70
Copper	1455	U	0.0046	0.047	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0007	0.0074	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0005	0.4	10	40
Lead	1455	U	0.0027	0.028	0.5	10	50
Antimony	1455	U	< 0.0005	< 0.0005	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	0.007	0.072	4	50	200
Chloride	1220	U	5.1	51	800	15000	25000
Fluoride	1220	U	0.20	2.0	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	52	520	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	11	110	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	3.4

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 213189 Lower Hare Farm

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	22-22897						
Chemtest Sample ID:	1451452						
Sample Ref:	SO1						
Sample ID:							
Sample Location:							
Top Depth(m):	0.50						
Bottom Depth(m):	1.00						
Sampling Date:	15-Jun-2022				**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Determinand	**SOP**	**Accred.**	**Units**				
Total Organic Carbon					3	5	6
Loss on Ignition					--	--	10
Total BTEX					6	--	--
Total PCBs (7 congeners)					1	--	--
TPH Total WAC (Mineral Oil)					500	--	--
Total (of 17) PAHs					100	--	--
pH					--	>6	--
Acid Neutralisation Capacity					--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0011	0.011	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	< 0.0005	< 0.0005	0.5	10	70
Copper	1455	U	0.0021	0.021	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	< 0.0002	< 0.0002	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0005	0.4	10	40
Lead	1455	U	0.0007	0.0072	0.5	10	50
Antimony	1455	U	< 0.0005	< 0.0005	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	0.004	0.042	4	50	200
Chloride	1220	U	4.2	42	800	15000	25000
Fluoride	1220	U	0.052	< 1.0	10	150	500
Sulphate	1220	U	11	110	1000	20000	50000
Total Dissolved Solids	1020	N	52	520	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	7.5	75	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	2.3

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 213189 Lower Hare Farm

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	22-22897						
Chemtest Sample ID:	1451453						
Sample Ref:	SO2						
Sample ID:							
Sample Location:							
Top Depth(m):	0.00						
Bottom Depth(m):	0.40						
Sampling Date:	15-Jun-2022						
Determinand	**SOP**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon					3	5	6
Loss on Ignition					--	--	10
Total BTEX					6	--	--
Total PCBs (7 congeners)					1	--	--
TPH Total WAC (Mineral Oil)					500	--	--
Total (of 17) PAHs					100	--	--
pH					--	>6	--
Acid Neutralisation Capacity					--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0006	0.0057	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	< 0.0005	< 0.0005	0.5	10	70
Copper	1455	U	0.0013	0.013	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	< 0.0002	< 0.0002	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0005	0.4	10	40
Lead	1455	U	0.0011	0.011	0.5	10	50
Antimony	1455	U	< 0.0005	< 0.0005	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	0.004	0.039	4	50	200
Chloride	1220	U	2.4	24	800	15000	25000
Fluoride	1220	U	0.17	1.7	10	150	500
Sulphate	1220	U	5.8	58	1000	20000	50000
Total Dissolved Solids	1020	N	46	450	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	14	140	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	11

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 213189 Lower Hare Farm

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	22-22897						
Chemtest Sample ID:	1451454						
Sample Ref:	SO2						
Sample ID:							
Sample Location:							
Top Depth(m):	0.50						
Bottom Depth(m):	1.00						
Sampling Date:	15-Jun-2022						
Determinand	**SOP**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon					3	5	6
Loss on Ignition					--	--	10
Total BTEX					6	--	--
Total PCBs (7 congeners)					1	--	--
TPH Total WAC (Mineral Oil)					500	--	--
Total (of 17) PAHs					100	--	--
pH					--	>6	--
Acid Neutralisation Capacity					--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	< 0.0002	< 0.0002	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	< 0.0005	< 0.0005	0.5	10	70
Copper	1455	U	< 0.0005	< 0.0005	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	< 0.0002	< 0.0002	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0005	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	< 0.0005	< 0.0005	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	1.3	13	800	15000	25000
Fluoride	1220	U	0.054	< 1.0	10	150	500
Sulphate	1220	U	5.1	51	1000	20000	50000
Total Dissolved Solids	1020	N	33	330	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	7.7	77	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	9.0

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 213189 Lower Hare Farm

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	22-22897						
Chemtest Sample ID:	1451455						
Sample Ref:	SO3						
Sample ID:							
Sample Location:							
Top Depth(m):	0.00						
Bottom Depth(m):	0.40						
Sampling Date:	15-Jun-2022						
Determinand	**SOP**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon					3	5	6
Loss on Ignition					--	--	10
Total BTEX					6	--	--
Total PCBs (7 congeners)					1	--	--
TPH Total WAC (Mineral Oil)					500	--	--
Total (of 17) PAHs					100	--	--
pH					--	>6	--
Acid Neutralisation Capacity					--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0008	0.0077	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	< 0.0005	< 0.0005	0.5	10	70
Copper	1455	U	0.0016	0.016	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	< 0.0002	< 0.0002	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0005	0.4	10	40
Lead	1455	U	0.0006	0.0063	0.5	10	50
Antimony	1455	U	< 0.0005	< 0.0005	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	0.004	0.039	4	50	200
Chloride	1220	U	2.1	21	800	15000	25000
Fluoride	1220	U	0.11	1.1	10	150	500
Sulphate	1220	U	7.7	77	1000	20000	50000
Total Dissolved Solids	1020	N	39	390	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	12	120	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	9.8

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 213189 Lower Hare Farm

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	22-22897						
Chemtest Sample ID:	1451456						
Sample Ref:	SO3						
Sample ID:							
Sample Location:							
Top Depth(m):	0.50						
Bottom Depth(m):	1.00						
Sampling Date:	15-Jun-2022						
Determinand	**SOP**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon					3	5	6
Loss on Ignition					--	--	10
Total BTEX					6	--	--
Total PCBs (7 congeners)					1	--	--
TPH Total WAC (Mineral Oil)					500	--	--
Total (of 17) PAHs					100	--	--
pH					--	>6	--
Acid Neutralisation Capacity					--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0012	0.012	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	< 0.0005	< 0.0005	0.5	10	70
Copper	1455	U	0.0018	0.018	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	< 0.0002	< 0.0002	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0005	0.4	10	40
Lead	1455	U	0.0006	0.0058	0.5	10	50
Antimony	1455	U	< 0.0005	< 0.0005	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	0.004	0.039	4	50	200
Chloride	1220	U	2.4	24	800	15000	25000
Fluoride	1220	U	< 0.050	< 1.0	10	150	500
Sulphate	1220	U	3.6	36	1000	20000	50000
Total Dissolved Solids	1020	N	26	260	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	19	190	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	14

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Test Methods

SOP	Title	Parameters included	Method summary
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	pH	pH Meter
2015	Acid Neutralisation Capacity	Acid Reserve	Titration
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID (GC-FID detection is non-selective and can be subject to interference from co-eluting compounds)
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Lower Hare subsoils - leachate testing						
			Chemtest Job No:	22-22897	22-22897	22-22897
			Chemtest Sample ID:	1451452	1451454	1451456
All values are in mg/l			**Sample Ref:**	SO1	SO2	SO3
			Sample ID:			
			Sample Location:			
			Top Depth(m):	0.5	0.5	0.5
			Bottom Depth(m):	1	1	1
			Sampling Date:	15-Jun-2022	15-Jun-2022	15-Jun-2022
			Inert WAC			
	Maximum	Average	Threshold			
Arsenic	0.0012	0.0008	0.05	0.0011	0.0002	0.0012
Barium	0.0050	0.0050	2	0.005	0.005	0.005
Cadmium	0.0001	0.0001	0.004	0.00011	0.00011	0.00011
Chromium	0.0005	0.0005	0.05	0.0005	0.0005	0.0005
Copper	0.0021	0.0015	0.2	0.0021	0.0005	0.0018
Mercury	0.0001	0.0001	0.001	0.00005	0.00005	0.00005
Molybdenum	0.0002	0.0002	0.05	0.0002	0.0002	0.0002
Nickel	0.0005	0.0005	0.04	0.0005	0.0005	0.0005
Lead	0.0007	0.0006	0.05	0.0007	0.0005	0.0006
Antimony	0.0005	0.0005	0.006	0.0005	0.0005	0.0005
Selenium	0.0005	0.0005	0.01	0.0005	0.0005	0.0005
Zinc	0.0040	0.0037	0.4	0.004	0.003	0.004
Chloride	4.2000	2.6333	80	4.2	1.3	2.4
Fluoride	0.0540	0.0520	1	0.052	0.054	0.05
Sulphate	11.0000	6.5667	100	11	5.1	3.6
Total Dissolved Solids	52.0000	37.0000	400	52	33	26
Phenol Index	0.0300	0.0300	0.1	0.03	0.03	0.03
Dissolved Organic Carbon	19.0000	11.4000	50	7.5	7.7	19

Lower Hare topsoils - leachate testing						
			Chemtest Job No:	22-22897	22-22897	22-22897
All values are in mg/l			**Chemtest Sample ID**	1451451	1451453	1451455
			Sample Ref:	SO1	SO2	SO3
			Sample ID:			
			Sample Location:			
			Top Depth(m):	0.00	0.00	0.00
			Bottom Depth(m):	0.40	0.40	0.40
			Sampling Date:	15-Jun-2022	15-Jun-2022	15-Jun-2022
			Inert WAC			
	Maximum	Average	Threshold			
Arsenic	0.0022	0.0012	0.05	0.0022	0.0006	0.0008
Barium	0.0050	0.0050	2	0.0050	0.0050	0.0050
Cadmium	0.0001	0.0001	0.004	0.0001	0.0001	0.0001
Chromium	0.0005	0.0005	0.05	0.0005	0.0005	0.0005
Copper	0.0046	0.0025	0.2	0.0046	0.0013	0.0016
Mercury	0.0001	0.0001	0.001	0.0001	0.0001	0.0001
Molybdenum	0.0007	0.0004	0.05	0.0007	0.0002	0.0002
Nickel	0.0005	0.0005	0.04	0.0005	0.0005	0.0005
Lead	0.0027	0.0015	0.05	0.0027	0.0011	0.0006
Antimony	0.0005	0.0005	0.006	0.0005	0.0005	0.0005
Selenium	0.0005	0.0005	0.01	0.0005	0.0005	0.0005
Zinc	0.0070	0.0050	0.4	0.0070	0.0040	0.0040
Chloride	5.1000	3.2000	80	5.1000	2.4000	2.1000
Fluoride	0.2000	0.1600	1	0.2000	0.1700	0.1100
Sulphate	7.7000	4.8333	100	1.0000	5.8000	7.7000
Total Dissolved Solids	52.0000	45.6667	400	52.0000	46.0000	39.0000
Phenol Index	0.0300	0.0300	0.1	0.0300	0.0300	0.0300
Dissolved Organic Carbon	14.0000	12.3333	50	11.0000	14.0000	12.0000