Site Condition Report – Three Maids AD Plant

On Behalf of Acorn Bioenergy Operations Limited

ETL724/2024

Earthcare Technical Ltd
Manor Farm
Chalton
Waterlooville
Hants PO8 0BG

Tel: 02392 290 488

Office@earthcaretechnical.co.uk

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QUALITY CONTROL

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Quality control sign off		
Document Author V1.0	A L Becvar	*AL Becvar*
Document Reviewer V1.0	E Shann Pitts	*EV Shann Pitts*
Document Updated V2.0	E Shann Pitts	*EV Shann Pitts*
Document Reviewer V2.0	A L Becvar	*AL Becvar*

Contents

Abbreviations

ABL	Acorn Bioenergy Operations Limited
AD	Anaerobic Digestion/er
BGS	British Geological Survey
BUU	Biogas upgrade unit
CHP	Combined heat and power
CO_2	Carbon dioxide
COMAH	The Control of Major Accident Hazards (COMAH) Regulations 2015
DSEAR	The Dangerous Substances and Explosive Atmospheres Regulations 2002
EVCS	Electric Vehicle Charging Station
EA	Environment Agency
EPR	Environmental Permitting Regulations
HAZOP	Hazard and Operability Study
m AOD	metres above Ordnance Datum
NVZ	Nitrate Vulnerable Zone
PHI	Priority Habitat Inventory
PVRV	Pressure and vacuum relief valve
SCR	Site Condition Report
TPA	Tonnes per annum
UV	Ultra violet

1. Introduction

This document, comprising a Site Condition Report (SCR) including a Baseline Report, has been prepared by Earthcare Technical Ltd on behalf of Acorn Bioenergy Operations Ltd in support of an application for a new bespoke Installation Environmental Permit for an anaerobic digestion (AD) plant including the use of resultant biogas for Three Maids AD Plant, located on agricultural land at Three Maids Farm, Three Maids Hill, Winchester, SO21 2QG, Centred on National Grid Reference (NGR): SU 46094 33959, herein termed 'the Site'. The plant will be operated by Acorn Bioenergy Operations Limited (ABL), herein termed 'the Operator'.

The permit application, which this SCR supports, is for a bespoke permit based upon Standard Rules Permit *SR2021 No 8: on-farm anaerobic digestion facility using farm wastes only, including use of the resultant biogas – installations. For a Part A installation with an anaerobic digestion capacity of over 100 tonnes of waste, or a combination of waste and non-waste each day and accepting no more than 100,000 tonnes per year*.

The Environmental Permitting Regulations Site Condition Report guidance for applicants H5,[1] defines a SCR as a document that describes and records the condition of the land and groundwater at a site at a point in time. When an operator applies to the Environment Agency (EA) to surrender the Environmental Permit, the SCR can be used to demonstrate that the land and water within the vicinity have been protected during the lifetime of the regulated facility and that the land is in a satisfactory state.

The Baseline Report assessment included within this version of the SCR draws upon European Commission Guidance[2] which explains that a baseline report is required where an activity involves the use, production or release of relevant hazardous substances, having regard to the possibility of soil and groundwater contamination. This requirement has arisen following the production date of version 1.0 of the SCR.

This report describes the site condition at the time of the permit application. It is designed to be updated and retained through the operational phase of the regulated facility, for use as a reference at the end of the operational phase, when the operator makes an application to surrender the Environmental Permit.

The SCR comprises information gathered during a site walkover by Earthcare Technical Limited (22 September 2022) and a desk top study utilising:

Publicly available information.
Enviro Geo Insight Report, Groundsure (May 2023).
Preliminary Land Quality Risk Assessment, SLR (2022).
Flood Risk Assessment and Surface Water Drainage Strategy, SLR (2022).
EIA Screening Report, SLR (2022).
Three Maids Green Power AD Plant Construction Environmental Management Plan (CEMP), Acorn Bioenergy Ltd, March 2023.

Please refer to the following SCR template which has been replicated from the guidance for the purposes of consistency. Section 5 comprises the Baseline Report assessment.

2. Site Details

Name of applicant	Acorn Bioenergy Operations Limited
Activity address	The AD Plant is to be located on agricultural land at Three Maids Farm, Three Maids Hill, Winchester, SO21 2QG.
National grid reference	SU 46094 33959
Site footprint	The proposed site footprint (permitted area) is approximately 4.5 hectares (11.1 acres)
Current infrastructure	There is a below ground power cable to the western edge of the site serving the adjacent solar park to the north.
Proposed infrastructure	New gateway and access road from the A272 Liquid feedstock reception point Liquid feedstock pre-treatment system (macerate and screen) Liquid feedstock tank with mixing system (8m height x 8m diameter) (400 m^3) Manure reception building (24.623 x 20.154 x 12.24 m to eaves, 13.53 m to ridge) containing: Fast acting roller shutter doors Air handling and emissions abatement plant Dedicated manure conveyor feed hopper Pre-mix system Straw treatment building (41.6 m x 23 m x 7 m to eaves, 8.2 m to ridge) containing: Bale conveyor Destringer Bale opener Bale breaker Straw mill with water injection 7.9 m x 12.9 m storage bay for crushed wet straw 2 No. straw extruders with 1 No. feed hopper 1 No. set down bay for prepared extruded straw 2 No. silage clamps: Clamp 1 – 123.75 m x 42.5 m wide x 3.52m high (28,534 m^3 capacity) Clamp 2 – 118.75 m. x 40m x 3.52 high (25,080 m^3) 1 No. Silage leachate tank with leak detection (50m^3) 2 No. Feed hoppers (external) (150 m^3 each) 5 No. Digesters: 2 No. Primary digesters (5,840 m^3 each) 2 No. Secondary digesters (6,430 m^3 each) 1 No. Tertiary digester (6,430 m^3) 3 No. pasteurisation tanks (35 m^3 each) Suspension buffer tank (400 m^3)

	Separator covered bunker: 2 No. Separators Separated fibre storage bay (W x L x H) 18m x 13.2 m x 6.4 m 2 No. Buffer water tanks (400 m^3 each) 1 No. Process water buffer tank (100 m^3) 1 No. Digestate storage bag with leak detection (7,344 m^3 capacity) 1 No. Digestate off-take bay with sump (3m^3) Emergency flare – 8.7m stack height Biogas Upgrade Unit (BUU) (includes a gatekeeper as there is no Grid Entry Unit). Biogas booster on inlet to BUU Carbon dioxide capture unit 2. No. carbon dioxide storage tanks (50 m^3 each) 2 No. dual fuel combined heat and power (CHP) engines with 7 m stacks (TEDOM Quanto 1200 1.2MWe) 1 No. 300 kW chiller between 2 Primary digesters. 1 No. chiller on BUU 2 No. condensate sumps 1 No. 550 kW dual fuel emergency boiler 1 No. diesel emergency generator (770 kVA) 2 No. compressors (compressing gas before injecting into road tankers) 4 No. biomethane / carbon dioxide off-take vehicle bays 1 No. secondary containment bund Full surface water interceptor and cellular storage system for clean surface water (266 m^3 at 95% void space) 3. No pump containers (1 No. inside bund & 2 No. outside bund) Site boundary fence Parking area Access road Weighbridge Site office Cesspit (55m^3)
Document reference and dates for Site Condition Report at permit application	Application SCR (this report): Site Condition Report – Three Maids AD Plant July 2024 V2.0 (ETL724/THRM/SCR/V2.0)
Document References for site plans (including location and boundaries)	Figure 1: Site Location Plan (ETL724/THRM/SiteLocation/EPR01) Figure 2: Permit Boundary & Emission Point Plan (Acorn-29348-C-202-E Site Emissions Plan) Figure 3: Site Layout Plan (GGP-29348-C-101-C6) Figure 4: Proposed Drainage Layout (GGP-29348-C-110-C3)

	Figure 5: Drainage Catchment Plan (GGP-29348-C-103-EA1) Figure 6: Human Receptor Plan, Earthcare Technical (ETL724/THRM/HumanReceptors/EPR02) (See Figures)

3. Condition of the Land at Permit Issue

Environmental setting including: **Geology** **Hydrogeology** **Surface waters** **Flood risk**	**Geology** The site is at an elevation of approximately 101m above Ordnance Datum (m AOD) and falls generally in a southeastern direction to 87.75m AOD. The site is broadly rectangular and slopes down towards the A34. As detailed in Section 15 of the Enviro Geo Insight Report (Appendix A): The soil type is classified as freely draining, shallow lime-rich soils over chalk and limestone with a loamy texture. The bedrock geology comprises principally Chalk (Seaford Chalk Formation) and limestone (Stockbridge Rock Member) of very high permeability. There are superficial drift deposits in the northeastern corner of the site of clay, silt, sand, and gravel of high permeability and at very low to negligible risk of shrink swell clays. Though soluble rocks are present within the ground. Few dissolution features are likely to be present and is of very low risk. There is no made or artificial ground on site. Chalk pits are present locally but there are none on site. There are no BGS borehole records within 250m of the site. **Hydrogeology** As detailed in Section 5 of the Enviro Geo Insight Report (Appendix A): The soil surface is high leaching class with an infiltration value of >70% The site bedrock geology has well connected fractures and puts the Principal aquifer at high vulnerability risk. There is an area of superficial aquifer in the northeastern corner of the site corresponding to superficial drift deposits of secondary undifferentiated superficial aquifer also classified as high vulnerability. Therefore, Groundwater is at high vulnerability to pollutants released at ground level across the entire site. The site is not within a Groundwater Source Protection Zone. There are two groundwater abstractions within 2km of the site. The first location is 792m east Licence No. 11/42/22.5/73 for a maximum daily volume of 36.4 $m^{3\,for}$ general agricultural use and the second 1578m to the northwest Licence No.33/240 of processing use and with no stated limit. **Surface Water** There is a gulley ditch to the A34 to the eastern boundary of the site. The Nun's Walk Stream surface water body Catchment area part of the wider Itchen Catchment falls to the southeastern area of the site with the stream itself some 2.83 Km south east. The site is not located within a Drinking Water Surface Water Safeguard Zone or a Drinking Water Protected area for surface water. There are no surface water abstraction licences within 2km of the site.

	Flood Risk Flood risk for this site is *very low*. The site is in a Flood zone 1 which means that overall, there is a low probability of flooding from rivers or sea.[3] The south eastern corner of the site is shown to be at a higher risk of flooding of *medium to low*. This is shown in Section 8 of the Enviro Geo Insight Report (Appendix A) and further detail is provided in the SLR Flood Risk Assessment and Surface Water Drainage Strategy report (Appendix B). The Groundwater Flood risk addendum prepared to support the planning application concluded that there is '*little or no risk of groundwater flooding or obstruction to infiltration for the proposed drainage scheme from historical data*.' The report also stated, '*The topography of the land, and the position of the site, the risk of groundwater flooding to the site is low to negligible'*. Ground investigation work was carried out 21 of September 2022 that included the drilling of five boreholes, five trial pits and the collection of soils samples from various locations across the site. As part of this work groundwater monitoring was requested and all wells were found to be dry to 5.57-9.55m.
Pollution history including: Pollution incidents that may have affected land. Historical land uses and associated contaminants Any visual/ olfactory evidence of existing contamination Evidence of damage to pollution prevention measures	**Pollution incidents that may have affected land.** As detailed in Sections 4.18 of the Enviro Geo Insight Report (Appendix A) in 2003 there was 1 recorded Category 3 pollution incident 386m N of the site of Diesel of minor impact. Only Category 1 and 2 pollution incidents have been recorded since 2006 and none are recorded within 500m of the site. A Local Environment Agency Officer informed the applicant of an incident of chloride contamination to groundwater 1.5Km north of the site at Larkwhistle Farm Oil Well, Crawley Down, Winchester SO21 2RJ, but at depths which would not interact with site groundwater levels. **Permitted activities that may have affected land.** As detailed in Section 3 of the Enviro Geo Insight Report (Appendix A), there are no active or historical landfills within 500m of the site. T & M Recycling Ltd hold an environmental permit for an Inert Waste Recycling Facility, (EPR/WE0609AB) 29m south of the AD Plant site area, issued on the 13 August 2021. Planning was granted for the scheme on Appeal, 22 June 2022 (APP/Q1770/W/21/3279319). The site is currently not in existence. This land use has been superseded as planning permission was granted 18 December 2023, (Ref:23/01594/FUL) for the Development of an Electric Vehicle Charging Station (EVCS) with associated means of access, internal parking and roadways, siting of ancillary power generation, storage and distribution infrastructure, landscaping and

	engineering works, erection of ancillary restaurant, outdoor seating and play area adjacent to the Three Maids AD site area. There is a further waste site 222m east for the treatment of waste to produce soil held by Pringle Reclaim Ltd and issued 1 July 2022 (EPR/WE6248AB). There are 2 non-agricultural waste exemptions 178m east for use of waste in construction and for Screening and blending of waste and 1 on farm exemption for the use of waste in construction 349m east and 382m east. There is one historic record of a licensed discharge to controlled waters within 500m of the site. This is located 266m south and related to sewage discharges, the licence was revoked in 1997. **Historical / current land uses** The proposed site is located on greenfield land. A site walkover was conducted by SLR Consulting to inform the Preliminary Land Quality Risk Assessment, (Appendix C) March 2022. A site walkover was conducted by Earthcare Technical September 2022). There was some evidence of physical contaminants in the gateway of the site access, but otherwise only wind-blown rubbish was found in small quantities along the site fence line. From the first available maps dated 1870 onwards the site shown to be undeveloped agricultural land with a track running through it from 1870 to the mid-1980s. In 1956 mixed woodland is mapped in the northern and western portions of the site which is no longer mapped in 1963. Aerial photographs between 2005 and 2008 show the site to contain racetracks, thought to be part of the nearby PCE Motopark at that time. The site is agricultural land ALC Grade 3, bordered on the east and west by the A34 and A272, with the Three Maids Roundabout directly to the south. **Potential contaminants associated with previous site use** As detailed in Section 4.5 of the Enviro Geo Insight Report (Appendix A) there are no records of sites determined as Contaminated Land within 500m of the study site. As detailed in Section 4.16 and 4.17 of the Enviro Geo Insight Report (Appendix A) there are no records of discharges of List 1 or List 2 Dangerous Substances within 500m of the site. The Preliminary Land Quality Risk Assessment (Appendix C), concludes that: *'The site consists of a broadly rectangular arable field. Historically the site has been used as agricultural land, and at some points mixed woodland was present in the north and west of the site. A track/gallop ran through the site from north to south and the site was used as a racetrack for the nearby motopark. There was no evidence of potentially significant sources of contamination identified on site during the walkover or from published information.* *Groundwater is sensitive at the site given the presence of a secondary undifferentiated aquifer in the superficial deposits and a principal chalk*

	aquifer in the bedrock, although the nearest groundwater abstraction is approximately 750m to the east. *Surface water sensitivity is considered low due to no surface water features having been identified within 1km of the site.* *Qualitative risk assessment indicates that the site represents a low risk of contamination impacts to human health and controlled waters associated with the proposed development as no potentially significant sources have been identified. Given the lack of potential contamination sources it is likely that on site soils can be excavated and reused as part of the proposed development.'* **Any visual / olfactory evidence of existing contamination** At the time of the site walkover carried out by Earthcare Technical Limited (22 September 2022), there was some plastic and rubble waste visible in the gateway of the site entrance and northern perimeter in a small area but no further evidence of land contamination within the proposed permitted area. **Evidence of damage to pollution prevention measures** At the time of the site walkover carried out by Earthcare Technical Limited (22 September 2022), the site remained in agricultural use. There was no evidence of any usage other than agricultural and there was no evidence of contamination of any sort.
Evidence of historic contamination, for example, historical site investigation, assessment, remediation and verification reports	Please see above under 'Any visual / olfactory evidence of existing contamination' and Preliminary Land Quality Risk Assessment, SLR (2022) (Appendix C). There is no evidence indicating potential historical contamination of the site.
Baseline soil and groundwater reference data	Please refer to section 20 of the Enviro Geo Insight Report (Appendix A), which contains information on BGS Estimated Background Soil Chemistry. The estimated values provide the likely background concentration of the potentially harmful elements Arsenic, Cadmium, Chromium, Lead and Nickel in topsoil. No ground investigation and analysis of soils for potential contaminants has been carried out.
Supporting information	Enviro Geo Insight Report (Appendix A) Flood Risk Assessment and Surface Water Drainage Strategy, SLR (2022) (Appendix B) Preliminary Land Quality Risk Assessment, SLR (2022) (Appendix C) Site Photographs (Appendix D) Google Earth Images (Appendix E)

4. Permitted Activities

Proposed Permitted activities	Schedule 1 5.4 A(1)(b)(i) - Biological Treatment (Anaerobic digestion / more than 100 tonnes per day treatment capacity) of the Environmental Permitting Regulations 2016 (as amended). Directly Associated Activities (DAAs): Storage of waste pending recovery or disposal Physical and chemical treatment of waste Gas combustion to produce heat and power Treating biogas and biomethane Recovering, treating and storing cardon dioxide Using an emergency flare Storage of raw material and waste generated on site Surface water collection, storage and discharge Dirty water collection and storage Air treatment and release
Non – permitted activities	None
Document references: Plan showing activity layout; and Environmental risk assessment	Site Layout Plan (GGP-29348-C-101-C6-Site Layout Plan) Environmental Risk Assessment (Appendix A of Three Maids EMS Manual V1.0 **(THR-OD-01)**)

5. Baseline Report Assessment

5.1 Introduction

This section comprises an assessment of whether a Baseline Report is required before permitted activities commence on site. The guidance[2] states that a Baseline Report should include:

> *'Information on the present use and, where available, on past uses of the site; and*
>
> *where available, existing information on soil and groundwater measurements that reflect the state at the time the report is drawn up or, alternatively, new soil and groundwater measurements having regard to the possibility of soil and groundwater contamination by those hazardous substances to be used, produced or released by the installation concerned.'*

The stages of the Baseline Report assessment are replicated below followed by the assessment of the proposed site and activities in line with the guidance.

5.2 Stage 1

Activity - Identify which hazardous substances are used, produced or released at the installation and produce a list of these hazardous substances.

Objective - Determine whether or not hazardous substances are used, produced or released in view of deciding on the need to prepare and submit a baseline report.

In line with the Hazardous Substances Consent for the site that was issued by Hampshire County Council on 30 April 2024[4]:

The maximum quantity of Natural Gas and Raw Biogas Mixture (Schedule 1 – Part 2-18 and Part 1–P2) stored on site at any one time shall not exceed 27.2 tonnes and 10.9 tonnes respectively.

Table 1 below show the hazardous substances that may be stored on site, their use and storage arrangements including the maximum amount that may be stored at any one time.

Table 1 – Hazardous Substances

Hazardous Substance	Form	Where present / used	Storage arrangements	Maximum amount stored at any one time
Sulphuric acid	Liquid	Emissions abatement plant (CentriAir)	Within bunded chemical store	4,000 litres
Ferric hydroxide	Powder	Control of hydrogen sulphide in digesters	Within bunded chemical store	2 tonnes
Diesel	Liquid	Emergency generator	Bunded integral tank with locked valves	950 litres
Diesel	Liquid	On-site vehicles	Bunded on-site store	3,000 litres
Diesel exhaust fluid (AdBlue)	Liquid	On-site vehicles	Bunded on-site store	1,000 litres
Glycol	Liquid	Prevention of freezing in water filled equipment	Within bunded chemical store	210 litres
Fresh oil	Liquid	Combined heat and power engine (CHP) lubricant	Bunded tanks within containers	2,000 litres
Waste oil	Liquid	Waste CHP lubricant	Bunded tanks within containers	2,000 litres
Anti-foam e.g. biodegradable oil	Liquid	Stored and used as preventative anti-foam treatment	Within bunded chemical store	1,000 litres
Activated carbon	Solid	Biogas clean-up / abatement systems	Planned to be exchanged and taken off site simultaneously	N/A

Hazardous Substance	Form	Where present / used	Storage arrangements	Maximum amount stored at any one time
Natural gas	Gas	Used in CHPs and boilers	Within gas storage systems designed in accordance with site HAZOP, Lower Tier COMAH controls and DSEAR	27.2 tonnes
Raw biogas mixture	Gas	Produced in digesters Stored in gas collection and storage system Treated in biogas upgrade unit Compressed and transported off-site	As above	10.9 tonnes

5.3 Stage 2

Activity - Identify which of the hazardous substances from Stage 1 are 'relevant hazardous substances'. Discard those hazardous substances that are incapable of contaminating soil or groundwater. Justify and record the decisions taken to exclude certain hazardous substances.

Objective - To restrict further consideration to only the relevant hazardous substances in view of deciding on the need to prepare and submit a baseline report.

'Relevant hazardous substances' (Article 3(18) and Article 22(2), first subparagraph) are those substances or mixtures defined within Article 3 of Regulation (EC) No 1272/2008 on the classification, labelling and packaging of substances and mixtures (CLP Regulation) which, as a result of their hazardousness, mobility, persistence and biodegradability (as well as other characteristics), are capable of contaminating soil or groundwater and are used, produced and/or released by the installation.

An assessment of each substance in Table 1 has been made using the Classification and Labelling (C&L) Inventory Database[5] and the following substances in Table 2 are relevant hazardous substances:

Table 2 – Assessment of Relevant Hazardous Substances

Hazardous Substance	EC: European Community number/ List no.: List number assigned by ECHA.	Chemical Abstract Service (CAS) Registry number	Classification	Relevant hazardous substance (Yes / No)
Sulphuric acid	231-639-5	7664-93-9	Skin Corrosive – sub-category 1A	Yes
Ferric hydroxide	Not applicable	Not applicable	Not classified	No
Diesel	269-822-7	68334-30-5	Carcinogenic – sub-category 2	Yes
Diesel exhaust fluid (AdBlue) – 32.2% urea and 67.5% deionised water	200-315-5	CAS Registry Number for urea 57-13-6	Not classified	No

Hazardous Substance	EC: European Community number/ List no.: List number assigned by ECHA.	Chemical Abstract Service (CAS) Registry number	Classification	Relevant hazardous substance (Yes / No)
Ethylene glycol	609-475-4	3775-85-7	Not classified	No
Fresh oil comprising: distillates (petroleum), hydrotreated heavy paraffinic distillates (petroleum), solvent dewaxed heavy paraffinic	265-157-1 265-169-7	64742-54-7 64742-65-0	Not classified Not classified	No No
Lubricating oils, used	274-635-9	70514-12-4	Aspiration Toxicity – sub-category 1	Yes
Anti-foam e.g. biodegradable oil	Not applicable	Not applicable	Not classified	No
Activated carbon / High Density Skeleton	931-328-0	7440-44-0	Not classified	No
Natural gas	270-085-9	68410-63-9	Flammable Gas – sub-category 1	Assessment terminated as substance not capable of contaminating soil or groundwater.
Raw biogas mixture*	938-355-7	Not listed	Flammable Gas – sub category 1 Gases under pressure: Compressed gas.	Assessment terminated as substance not capable of contaminating soil or groundwater.

The only entry on the CL Inventory for biogas 'Biogas product of anaerobic degradation of sewage sludge in the dairy industry' which can be equated in terms of hazardous properties.

5.4 Stage 3

Activity - For each relevant hazardous substance brought forward from Stage 2, identify the actual possibility for soil or groundwater contamination at the site of the installation, including the probability of releases and their consequences, and taking particular account of:

the quantities of each hazardous substance or groups of similar hazardous substances concerned;
how and where hazardous substances are stored, used and to be transported around the installation;
where they pose a risk to be released;

In case of existing installations also the measures that have been adopted to ensure that it is impossible in practice that contamination of soil or groundwater takes place.

Objective - To identify which of the relevant hazardous substances represent a potential pollution risk at the site based on the likelihood of releases of such substances occurring. For these substances, information must be included in the baseline report.

Table 3 below lists the relevant hazardous substances identified through Stage 2 and provides a risk assessment with regard to the potential for causing soil or groundwater contamination on the site.

Table 3- Soil and Groundwater Risk Assessment with Respect to Relevant Hazardous Substances

Relevant Hazardous Substance	Classification	Form	Maximum stored at any one time	Potential risk to soil or groundwater	Use and storage arrangements	Further control measures	Residual risk to soil or groundwater
Sulphuric acid	Skin Corrosive – sub-category 1A	Liquid	4,000 litres	Yes	Stored within bunded chemical store and used within CentriAir odour abatement plant (vehicle impact protected)	The CentriAir emissions abatement system is within the secondary containment area. Stored in bunded chemical store within the main secondary containment bund. Use in accordance with safe working procedures. Chemical spill kits will be in place. Staff trained in Spill Control Procedure **(THR-SOP-08)**, including refresher training.	Low
Diesel	Carcinogenic – sub- category 2	Liquid	3,950 litres	Yes	Emergency generator (Bunded integral tank with locked valves) On-site vehicles (Bunded on-site store)	In accordance with the drainage strategy, surface water from hardstanding areas is discharged into a Klargester Full Retention Separator to ensure oils are removed. There are 2 No. penstocks in place for the clean water drainage system such that any spillages can be contained on site if required: o Before the full retention separator; and o Between the separator and the crate water storage. Filling and off-take from diesel stores are carried out in accordance with safe working procedures. Provision of spill kits.	Low

Relevant Hazardous Substance	Classification	Form	Maximum stored at any one time	Potential risk to soil or groundwater	Use and storage arrangements	Further control measures	Residual risk to soil or groundwater
						Staff trained in Spill Control Procedure **(THR-SOP-08),** including refresher training.	
Lubricating oils, used	Aspiration Toxicity – sub-category 1	Liquid	2,000 litres	Yes	Bunded waste oil tanks within CHP containers.	In accordance with the drainage strategy, surface water from hardstanding areas is discharged into a Klargester Full Retention Separator to ensure oils are removed. There are 2 No. penstocks in place for the clean water drainage system such that any spillages can be contained on site if required: o Before the full retention separator; and o Between the separator and the crate water storage. Waste oil is removed by specialist contractors. Provision of spill kits. Collections are overseen by site operatives who have training in Spill Control Procedure **(THR-SOP-08),** including refresher training.	Low

5.5 Conclusion of Baseline Report Assessment

The site hydrogeology is vulnerable to pollutants released at ground level across the entire site for the following reasons:

The soil surface is high leaching class with an infiltration value of >70%.

The site bedrock geology has well connected fractures and puts the Principal aquifer at high vulnerability risk.

There is an area of superficial aquifer in the northeastern corner of the site corresponding to superficial drift deposits of secondary undifferentiated superficial aquifer also classified as high vulnerability.

However, it is apparent that there is no significant possibility for contamination of soil or groundwater due to:

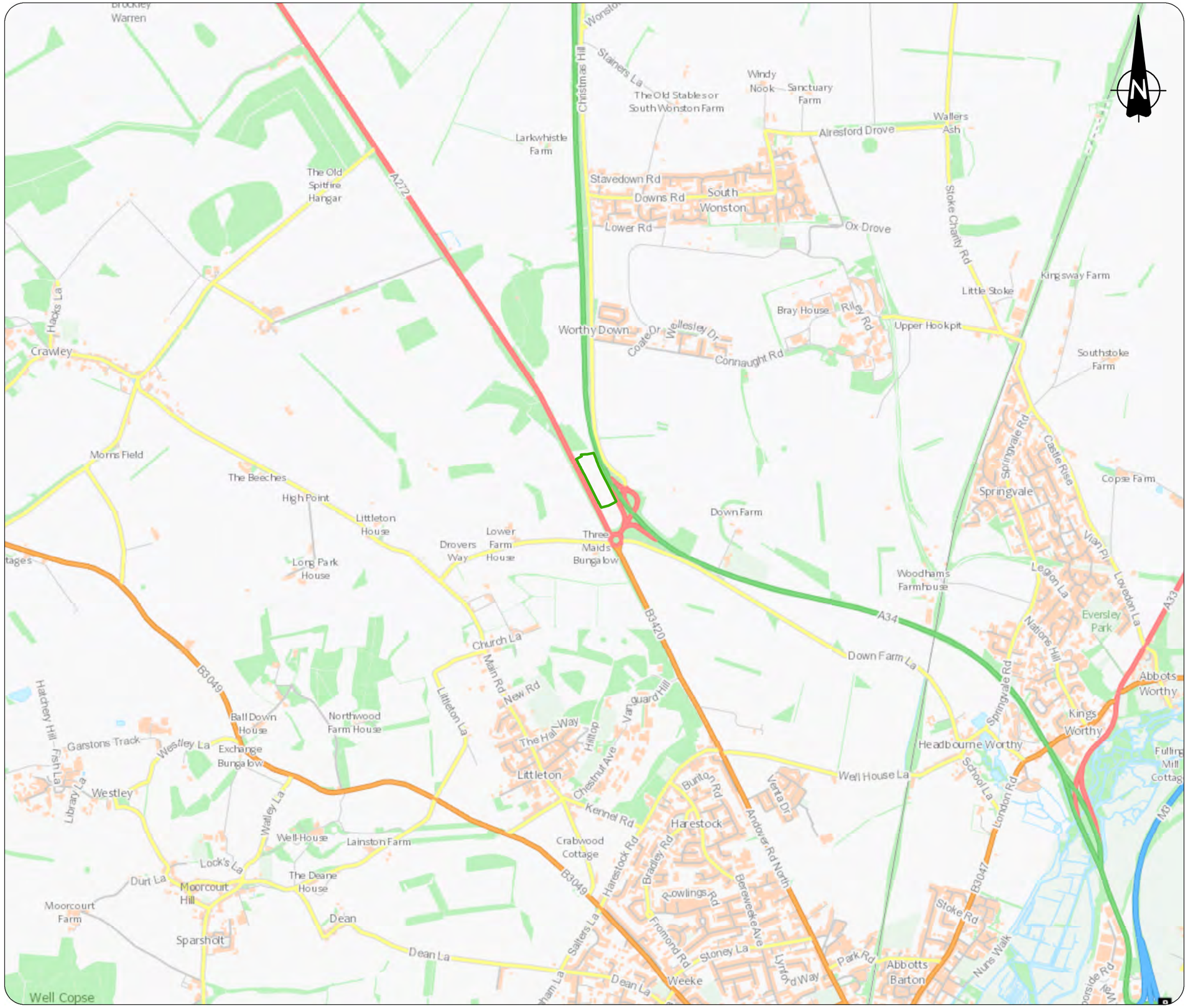
The relatively low quantities of the hazardous substances used and produced at the installation;

The robust site engineering and drainage design; and

The management control measures in place.

Therefore, it is deemed that a baseline report is not required for this installation.

Figures



Earthcare
TECHNICAL

AS NOTED ON A1 FRAME

SITE PLAN
Scale: 1:750 @ A1

NOTES:-

1. All dimensions must be checked on site and not scaled from this drawing.
2. The Contractor shall make a survey of the site and shall be responsible for obtaining all dimensions and levels necessary for the proper fabrication of the structure as indicated.
3. All levels shown on this drawing are relative to Agreed Topographic survey
4. This drawing is to be read in conjunction with 29348/100 Series Drawings.
5. All existing invert levels are to be confirmed by contractor prior to construction. Connection subject to approval.

Perimeter Fence
Permitted Area Boundary (4.453ha)
Emission Release Location
15m Woodland Easement

Rev	Date	Description	DR	CH
E	21/02/24	Issued For Information	SJC	JHC
D	14/02/24	Issued For Information	SJC	JHC
C	01/02/24	Issued For Approval	SJC	JHC
B	31/01/24	Issued For Approval	SJC	JHC
A	17/01/24	Issued For Approval	SJC	JHC

UVDB Achilles Registered
Link-up Qualified via Audit
GGP CONSULT
CONSULTING ENGINEERS
ARCHITECTS
PROJECT MANAGEMENT
2 Hallam Road
Priory Park East
HULL HU4 7DY
United Kingdom
Telephone (+44) 01482 627963
Fax (+44) 01482 641736
Email info@ggpconsult.co.uk

Client: acorn

Job Title: AD Plant. Three Maids

Drawing Title: Site Emissions Plan.

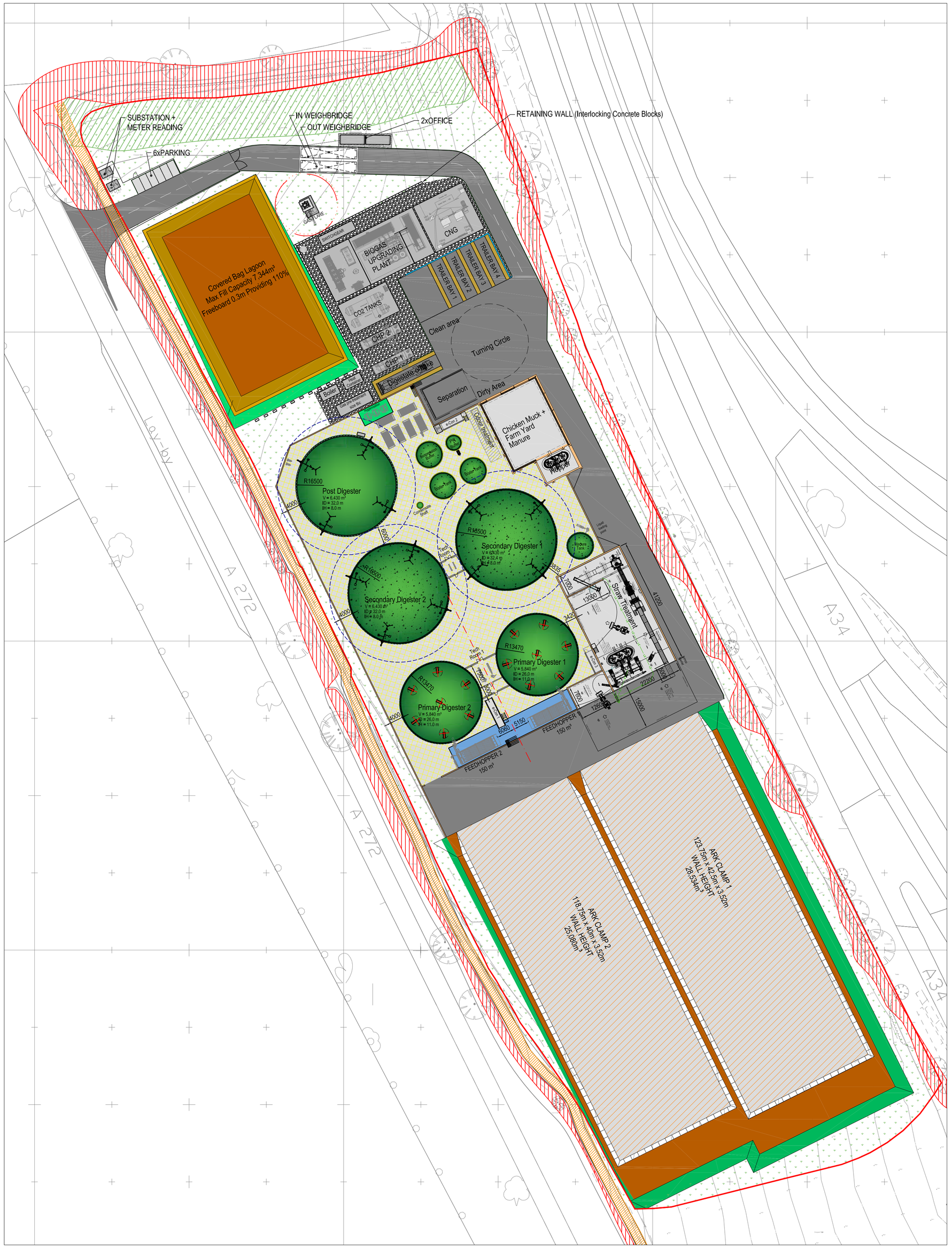
Status: Approval

Scale: As Shown | Date: Jan '24

Drawn By: SJC | Checked: JHC | Approved: JHC

Drg. No.: 29348/202 | Rev: E

AS NOTED ON A1 FRAME



0 50m 100m 150m 200m 250m
Scale 1:5000 @ A1

SITE LOCATION PLAN
Scale: 1:5000 @ A1

SITE PLAN
Scale: 1:750 @ A1

FOR CONSTRUCTION

NOTES:-

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Site Red Line Boundary (4.453ha)

15m Woodland Easement

Tree Easement

Rev	Date	Description	DR	CH
C6	26/01/24	Tanking Layout amended	MK	JHC
C5	15/01/24	Odour moved	MK	JHC
C4	11/01/24	Switchgear updated to 40ft	MK	JHC
C3	11/01/24	Separation changed	MK	JHC
C2	18/12/23	ISSUED FOR CONSTRUCTION	MK	JHC
C1	08/12/23	ISSUED FOR CONSTRUCTION	MK	JHC

GGP CONSULT
CONSULTING ENGINEERS
ARCHITECTS
PROJECT MANAGEMENT
2 Hallam Road
Priory Park East
HULL HU4 7DY
United Kingdom
Telephone (+44) 01482 627963
Fax (+44) 01482 641736
Email info@ggpconsult.co.uk

Client: acorn BIOENERGY

Job Title
AD Plant.
Three Maids

Drawing Title
Site Layout Plan

Status: For Construction

Scale: AS NOTED @ A1
Date: DEC' '23

Drawn By: MK
Checked: JHC
Approved: JHC

Drg. No.: 29348/C/101
Rev: C6

DRAWN AT 1:1 ON A1 FRAME

SITE PLAN
Scale: 1:750 @ A1

NOTES:-

1. All dimensions must be checked on site and not scaled from this drawing.
2. The Contractor shall make a survey of the site and shall be responsible for obtaining all dimensions and levels necessary for the proper fabrication of the structure as indicated.
3. All levels shown on this drawing are relative to Agreed Topographic survey
4. This drawing is to be read in conjunction with 29348/100 Series Drawings.
5. All existing invert levels are to be confirmed by contractor prior to construction. Connection subject to approval.

- Site Red Line Boundary
- Clean Surface Water Sewer
- Clean Surface Water Chamber
- Clean Surface Water Headwall
- Clean Surface Water Drainage Channel
- Clean Surface Water Rainwater Pipe
- Clean Surface Water Rising Main
- Contaminated Surface Water Sewer
- Contaminated Surface Water Chamber
- Contaminated Surface Water Drainage Channel
- Contaminated Surface Water Rising Main
- Bund Surface Water Sewer
- Bund Surface Water Chamber
- Bund Surface Water Channel Drain
- Foul Water Sewer
- Foul Water Chamber
- Soil Vent Pipe

All pipes to be encased in concrete.

All Clean manholes to be double sealed

Rev	Date	Description	DR	CH
C3	16/02/24	Construction Issue	WS	JHC
C2	03/02/24	Construction Issue	WS	JHC
C1	18/12/23	ISSUED FOR COMMENT	WS	JHC

GGP CONSULT
CONSULTING ENGINEERS
ARCHITECTS
PROJECT MANAGEMENT
2 Hallam Road
Priory Park East
HULL HU4 7DY
United Kingdom
Telephone (+44) 01482 627963
Fax (+44) 01482 641736
Email info@ggpconsult.co.uk

Client: acorn

Job Title
AD Plant.
Three Maids

Drawing Title
Proposed Drainage Layout

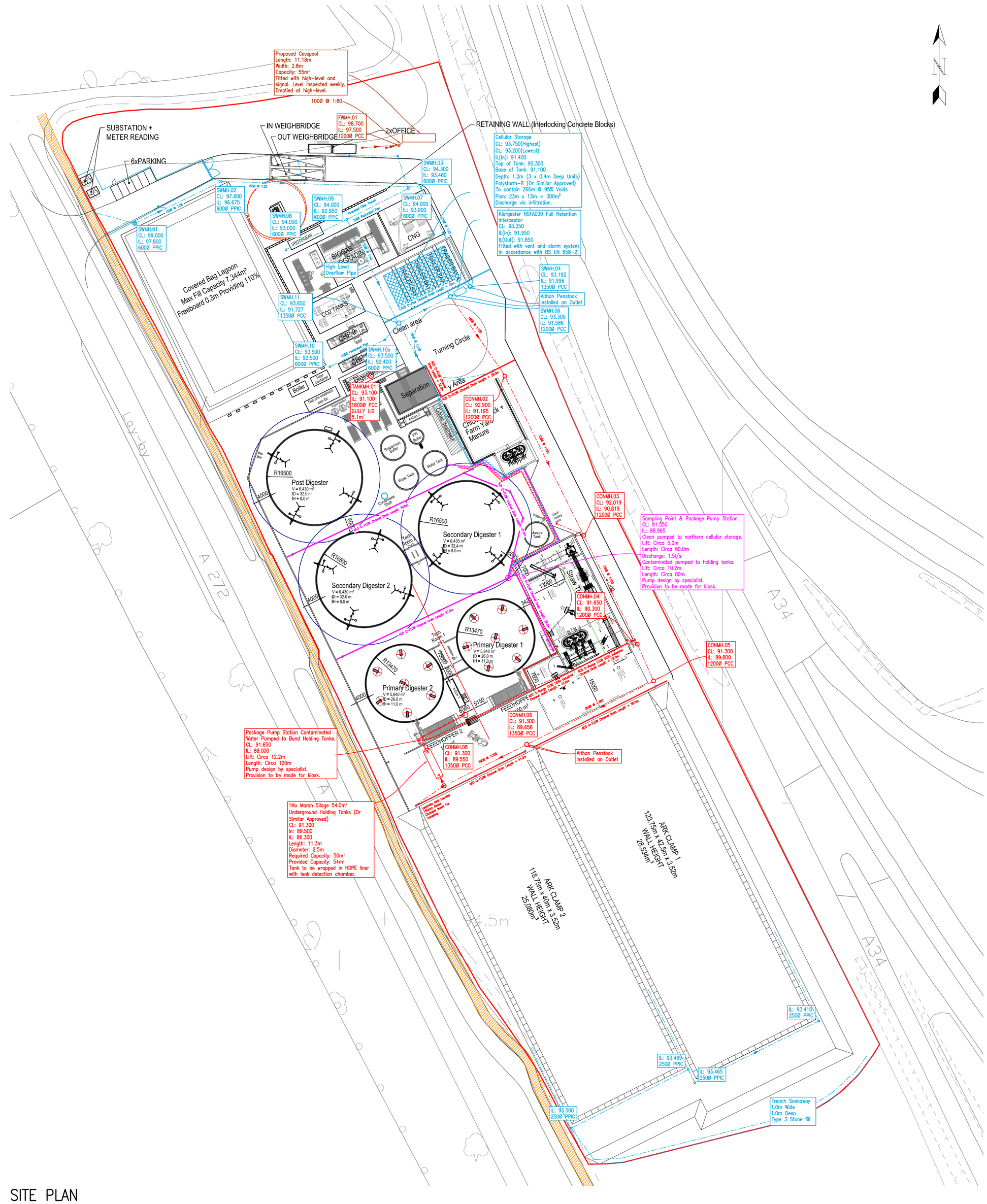
Status: For Comment

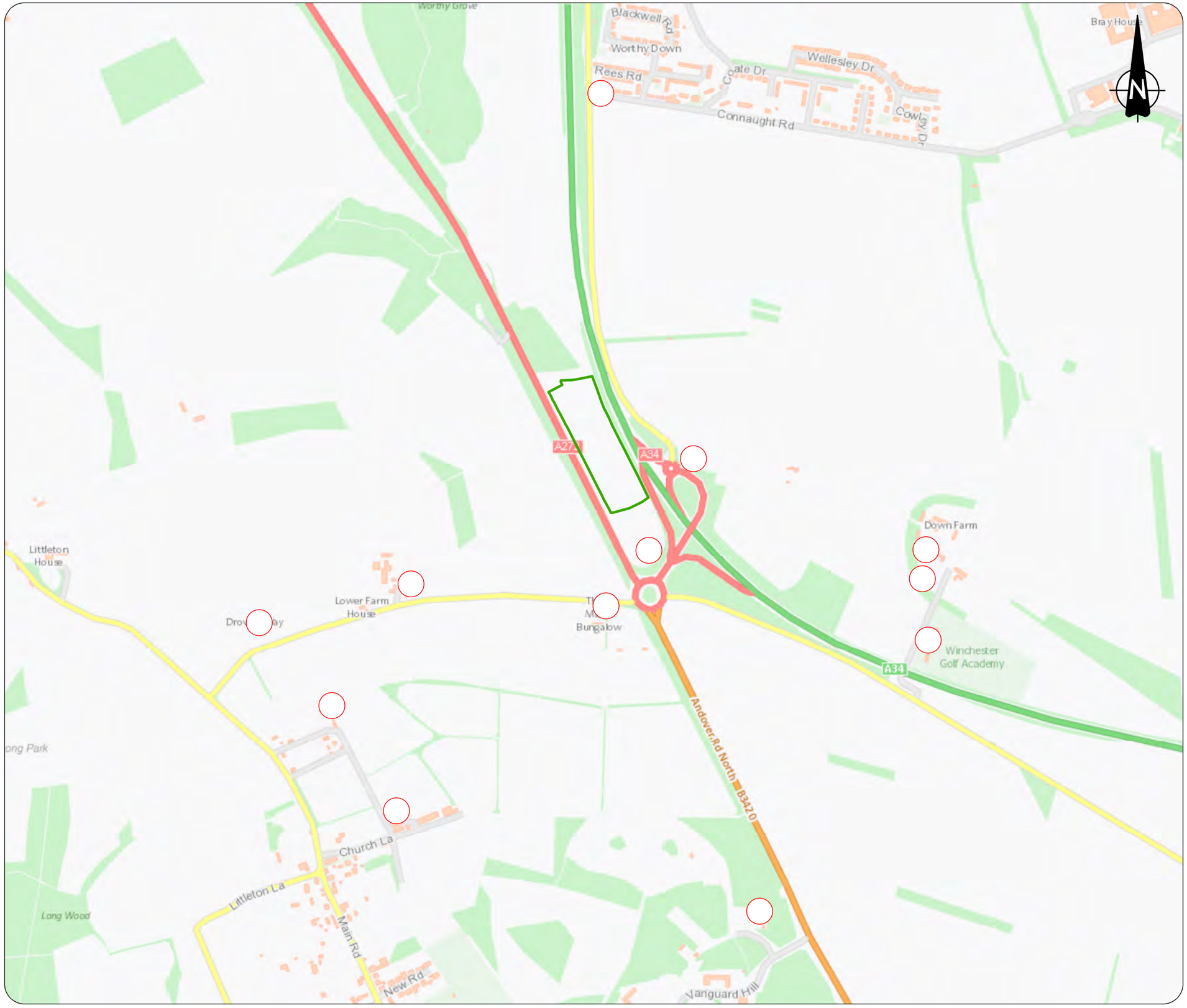
Scale: 1:750 @ A0
Date: DEC' '23

Drawn By: W.GRANT
Checked: JHC
Approved: JHC

Drg. No.: 29348/C/110
Rev: C3

DRAWN AT 1:1 ON A1 FRAME


Proposed Cesspool
Length: 11.18m
Width: 2.8m
Capacity: 55m³
Fitted with high-level and signal. Level inspected weekly. Emptied at high-level.
1000Ø @ 1:80
SUBSTATION + METER READING
IN WEIGHBRIDGE
OUT WEIGHBRIDGE
2xOFFICE
6xPARKING
RETAINING WALL (Interlocking Concrete Blocks)
FWMH.01 CL: 98.700 IL: 97.500 1200Ø PCC
SWMH.01 CL: 99.000 IL: 97.800 6000 PPIC
SWMH.02 CL: 97.600 IL: 96.675 6000 PPIC
SWMH.03 CL: 94.300 IL: 93.460 6000 PPIC
SWMH.04 CL: 93.192 IL: 91.996 1350Ø PCC
SWMH.06 CL: 93.305 IL: 91.586 1200Ø PCC
SWMH.07 CL: 94.000 IL: 93.000 6000 PPIC
SWMH.08 CL: 94.000 IL: 93.000 6000 PPIC
SWMH.09 CL: 94.000 IL: 92.950 6000 PPIC
SWMH.10 CL: 93.500 IL: 92.500 6000 PPIC
SWMH.10a CL: 93.500 IL: 92.400 6000 PPIC
SWMH.11 CL: 93.650 IL: 91.727 1350Ø PCC
Cellular Storage
CL: 93.750(Highest)
CL: 93.200(Lowest)
IL(In): 91.400
Top of Tank: 92.300
Base of Tank: 91.100
Depth: 1.2m (3 x 0.4m Deep Units)
Polystorm-R (Or Similar Approved)
To contain 266m³ @ 95% Voids
Plan: 23m x 13m = 300m²
Discharge via infiltration.
Klargester NSFA030 Full Retention Interceptor
CL: 93.250
IL(In): 91.950
IL(Out): 91.850
Fitted with vent and alarm system in accordance with BS EN 858-2
Althon Penstock Installed on Outlet
Covered Bag Lagoon
Max Fill Capacity 7,344m³
Freeboard 0.3m Providing 110%
BIOGAS UPGRADER
High Level Overflow Pipe
CHP
CO2 TANKS
ROTHERHAM
ONG
Process Area
Clean area
Turning Circle
Digested Area
Separation
Digested Farm Manure
Weighbridge
Scalehouse
Scalehouse Office
Toilet
Water Tank
Liquor Tank
Manure Tank
Boiler
Gas Treatment
Gas Upgrading
Gas Storage
Gas Flare
Gas Entry Point
Gas Vent
Gas Vent Stack
Gas Vent Stack 2
Gas Vent Stack 3
Gas Vent Stack 4
Gas Vent Stack 5
Gas Vent Stack 6
Gas Vent Stack 7
Gas Vent Stack 8
Gas Vent Stack 9
Gas Vent Stack 10
Gas Vent Stack 11
Gas Vent Stack



Earthcare
TECHNICAL

Appendix A: Enviro Geo Insight Report (2023)

Groundsure LOCATION INTELLIGENCE

Enviro+Geo Insight

Three Maids Green Power AD Plant, Three Maids Hill, Winchester , SO21 2QG

Order Details

Date: 30/05/2023

Your ref: ETL724

Our Ref: GS-VSW-VVH-A1T-LAL

Site Details

Location: 446060 133987

Area: 5.54 ha

Authority: Winchester City Council ↗

Contact us with any questions at:
info@groundsure.com ↗
01273 257 755

Summary of findings

Page	Section	Past land use >	On site	0-50m	50-250m	250-500m	500-2000m
14 >	1.1 >	Historical industrial land uses >	0	0	4	14	-
15 >	1.2 >	Historical tanks >	0	0	0	0	-
16 >	1.3 >	Historical energy features >	0	0	0	0	-
16 >	1.4 >	Historical petrol stations >	0	0	0	0	-
16 >	1.5 >	Historical garages >	0	0	0	0	-
16 >	1.6 >	Historical military land >	0	0	0	0	-
Page	Section	Past land use - un-grouped >	On site	0-50m	50-250m	250-500m	500-2000m
17 >	2.1 >	Historical industrial land uses >	0	0	4	17	-
18 >	2.2 >	Historical tanks >	0	0	0	0	-
19 >	2.3 >	Historical energy features >	0	0	0	0	-
19 >	2.4 >	Historical petrol stations >	0	0	0	0	-
19 >	2.5 >	Historical garages >	0	0	0	0	-
Page	Section	Waste and landfill >	On site	0-50m	50-250m	250-500m	500-2000m
20 >	3.1 >	Active or recent landfill >	0	0	0	0	-
20 >	3.2 >	Historical landfill (BGS records) >	0	0	0	0	-
21 >	3.3 >	Historical landfill (LA/mapping records) >	0	0	0	0	-
21 >	3.4 >	Historical landfill (EA/NRW records) >	0	0	0	0	-
21 >	3.5 >	Historical waste sites >	0	1	0	0	-
21 >	3.6 >	Licensed waste sites >	0	1	1	0	-
22 >	3.7 >	Waste exemptions >	0	0	2	5	-
Page	Section	Current industrial land use >	On site	0-50m	50-250m	250-500m	500-2000m
24 >	4.1 >	Recent industrial land uses >	0	0	1	-	-
25 >	4.2 >	Current or recent petrol stations >	0	0	0	0	-
25 >	4.3 >	Electricity cables >	0	0	0	0	-
25 >	4.4 >	Gas pipelines >	0	0	0	0	-
25 >	4.5 >	Sites determined as Contaminated Land >	0	0	0	0	-

25 >	4.6 >	Control of Major Accident Hazards (COMAH) >	0	0	0	0	-
26 >	4.7 >	Regulated explosive sites >	0	0	0	0	-
26 >	4.8 >	Hazardous substance storage/usage >	0	0	0	0	-
26 >	4.9 >	Historical licensed industrial activities (IPC) >	0	0	0	0	-
26 >	4.10 >	Licensed industrial activities (Part A(1)) >	0	0	0	0	-
26 >	4.11 >	Licensed pollutant release (Part A(2)/B) >	0	0	0	0	-
27 >	4.12 >	Radioactive Substance Authorisations >	0	0	0	0	-
27 >	4.13 >	Licensed Discharges to controlled waters >	0	0	0	1	-
27 >	4.14 >	Pollutant release to surface waters (Red List) >	0	0	0	0	-
27 >	4.15 >	Pollutant release to public sewer >	0	0	0	0	-
28 >	4.16 >	List 1 Dangerous Substances >	0	0	0	0	-
28 >	4.17 >	List 2 Dangerous Substances >	0	0	0	0	-
28 >	4.18 >	Pollution Incidents (EA/NRW) >	0	0	0	1	-
28 >	4.19 >	Pollution inventory substances >	0	0	0	0	-
29 >	4.20 >	Pollution inventory waste transfers >	0	0	0	0	-
29 >	4.21 >	Pollution inventory radioactive waste >	0	0	0	0	-

Page	Section	Hydrogeology >	On site	0-50m	50-250m	250-500m	500-2000m
30 >	5.1 >	Superficial aquifer >	Identified (within 500m)				
31 >	5.2 >	Bedrock aquifer >	Identified (within 500m)				
32 >	5.3 >	Groundwater vulnerability >	Identified (within 50m)				
34 >	5.4 >	Groundwater vulnerability- soluble rock risk >	Identified (within 0m)				
35 >	5.5 >	Groundwater vulnerability- local information >	None (within 0m)				
36 >	5.6 >	Groundwater abstractions >	0	0	0	0	2
37 >	5.7 >	Surface water abstractions >	0	0	0	0	0
37 >	5.8 >	Potable abstractions >	0	0	0	0	0
38 >	5.9 >	Source Protection Zones >	0	0	0	0	-
38 >	5.10 >	Source Protection Zones (confined aquifer) >	0	0	0	0	-

Page	Section	Hydrology >	On site	0-50m	50-250m	250-500m	500-2000m
39 >	6.1 >	Water Network (OS MasterMap) >	0	0	0	-	-

39 >	6.2 >	Surface water features >	0	0	0	-	-
40 >	6.3 >	WFD Surface water body catchments >	1	-	-	-	-
40 >	6.4 >	WFD Surface water bodies >	0	0	0	-	-
40 >	6.5 >	WFD Groundwater bodies >	2	-	-	-	-
Page	Section	**River and coastal flooding >**	On site	0-50m	50-250m	250-500m	500-2000m
42 >	7.1 >	Risk of flooding from rivers and the sea >	None (within 50m)				
42 >	7.2 >	Historical Flood Events >	0	0	0	-	-
42 >	7.3 >	Flood Defences >	0	0	0	-	-
43 >	7.4 >	Areas Benefiting from Flood Defences >	0	0	0	-	-
43 >	7.5 >	Flood Storage Areas >	0	0	0	-	-
44 >	7.6 >	Flood Zone 2 >	None (within 50m)				
44 >	7.7 >	Flood Zone 3 >	None (within 50m)				
Page	Section	**Surface water flooding >**					
45 >	8.1 >	Surface water flooding >	1 in 30 year, 0.3m - 1.0m (within 50m)				
Page	Section	**Groundwater flooding >**					
47 >	9.1 >	Groundwater flooding >	Low (within 50m)				
Page	Section	**Environmental designations >**	On site	0-50m	50-250m	250-500m	500-2000m
48 >	10.1 >	Sites of Special Scientific Interest (SSSI) >	0	0	0	0	0
49 >	10.2 >	Conserved wetland sites (Ramsar sites) >	0	0	0	0	0
49 >	10.3 >	Special Areas of Conservation (SAC) >	0	0	0	0	0
49 >	10.4 >	Special Protection Areas (SPA) >	0	0	0	0	0
49 >	10.5 >	National Nature Reserves (NNR) >	0	0	0	0	0
50 >	10.6 >	Local Nature Reserves (LNR) >	0	0	0	0	0
50 >	10.7 >	Designated Ancient Woodland >	0	0	1	0	5
50 >	10.8 >	Biosphere Reserves >	0	0	0	0	0
51 >	10.9 >	Forest Parks >	0	0	0	0	0
51 >	10.10 >	Marine Conservation Zones >	0	0	0	0	0
51 >	10.11 >	Green Belt >	0	0	0	0	0
51 >	10.12 >	Proposed Ramsar sites >	0	0	0	0	0

51 >	10.13 >	Possible Special Areas of Conservation (pSAC) >	0	0	0	0	0
52 >	10.14 >	Potential Special Protection Areas (pSPA) >	0	0	0	0	0
52 >	10.15 >	Nitrate Sensitive Areas >	0	0	0	0	0
52 >	10.16 >	Nitrate Vulnerable Zones >	3	0	0	0	5
54 >	10.17 >	SSSI Impact Risk Zones >	1	-	-	-	-
55 >	10.18 >	SSSI Units >	0	0	0	0	0
Page	Section	**Visual and cultural designations >**	On site	0-50m	50-250m	250-500m	500-2000m
56 >	11.1 >	World Heritage Sites >	0	0	0	-	-
56 >	11.2 >	Area of Outstanding Natural Beauty >	0	0	0	-	-
56 >	11.3 >	National Parks >	0	0	0	-	-
56 >	11.4 >	Listed Buildings >	0	0	0	-	-
57 >	11.5 >	Conservation Areas >	0	0	0	-	-
57 >	11.6 >	Scheduled Ancient Monuments >	0	0	0	-	-
57 >	11.7 >	Registered Parks and Gardens >	0	0	0	-	-
Page	Section	**Agricultural designations >**	On site	0-50m	50-250m	250-500m	500-2000m
58 >	12.1 >	Agricultural Land Classification >	Grade 3 (within 250m)				
59 >	12.2 >	Open Access Land >	0	0	0	-	-
59 >	12.3 >	Tree Felling Licences >	1	6	8	-	-
60 >	12.4 >	Environmental Stewardship Schemes >	0	0	0	-	-
60 >	12.5 >	Countryside Stewardship Schemes >	0	1	0	-	-
Page	Section	**Habitat designations >**	On site	0-50m	50-250m	250-500m	500-2000m
61 >	13.1 >	Priority Habitat Inventory >	1	1	6	-	-
62 >	13.2 >	Habitat Networks >	0	0	0	-	-
62 >	13.3 >	Open Mosaic Habitat >	0	0	0	-	-
62 >	13.4 >	Limestone Pavement Orders >	0	0	0	-	-
Page	Section	**Geology 1:10,000 scale >**	On site	0-50m	50-250m	250-500m	500-2000m
63 >	14.1 >	10k Availability >	Identified (within 500m)				
64 >	14.2 >	Artificial and made ground (10k) >	0	2	2	2	-
66 >	14.3 >	Superficial geology (10k) >	1	0	0	0	-

67 >	14.4 >	Landslip (10k) >	0	0	0	0	-
68 >	14.5 >	Bedrock geology (10k) >	2	1	0	0	-
69 >	14.6 >	Bedrock faults and other linear features (10k) >	0	0	0	0	-
Page	Section	Geology 1:50,000 scale >	On site	0-50m	50-250m	250-500m	500-2000m
70 >	15.1 >	50k Availability >	Identified (within 500m)				
71 >	15.2 >	Artificial and made ground (50k) >	0	0	0	1	-
72 >	15.3 >	Artificial ground permeability (50k) >	0	0	-	-	-
73 >	15.4 >	Superficial geology (50k) >	1	0	0	0	-
74 >	15.5 >	Superficial permeability (50k) >	Identified (within 50m)				
74 >	15.6 >	Landslip (50k) >	0	0	0	0	-
74 >	15.7 >	Landslip permeability (50k) >	None (within 50m)				
75 >	15.8 >	Bedrock geology (50k) >	2	1	0	0	-
76 >	15.9 >	Bedrock permeability (50k) >	Identified (within 50m)				
76 >	15.10 >	Bedrock faults and other linear features (50k) >	0	0	0	0	-
Page	Section	Boreholes >	On site	0-50m	50-250m	250-500m	500-2000m
77 >	16.1 >	BGS Boreholes >	0	0	0	-	-
Page	Section	Natural ground subsidence >					
78 >	17.1 >	Shrink swell clays >	Very low (within 50m)				
79 >	17.2 >	Running sands >	Very low (within 50m)				
81 >	17.3 >	Compressible deposits >	Negligible (within 50m)				
82 >	17.4 >	Collapsible deposits >	Very low (within 50m)				
83 >	17.5 >	Landslides >	Moderate (within 50m)				
85 >	17.6 >	Ground dissolution of soluble rocks >	Low (within 50m)				
Page	Section	Mining, ground workings and natural cavities >	On site	0-50m	50-250m	250-500m	500-2000m
87 >	18.1 >	Natural cavities >	0	0	0	0	-
88 >	18.2 >	BritPits >	0	0	0	1	-
88 >	18.3 >	Surface ground workings >	0	0	2	-	-
88 >	18.4 >	Underground workings >	0	0	0	0	0
89 >	18.5 >	Historical Mineral Planning Areas >	0	0	0	0	-

89 >	18.6 >	Non-coal mining >	1	0	0	0	2
89 >	18.7 >	Mining cavities >	0	0	0	0	0
90 >	18.8 >	JPB mining areas >	None (within 0m)				
90 >	18.9 >	Coal mining >	None (within 0m)				
90 >	18.10 >	Brine areas >	None (within 0m)				
90 >	18.11 >	Gypsum areas >	None (within 0m)				
90 >	18.12 >	Tin mining >	None (within 0m)				
91 >	18.13 >	Clay mining >	None (within 0m)				
Page	Section	**Radon** >					
92 >	19.1 >	Radon >	Less than 1% (within 0m)				
Page	Section	**Soil chemistry** >	On site	0-50m	50-250m	250-500m	500-2000m
94 >	20.1 >	BGS Estimated Background Soil Chemistry >	12	6	-	-	-
95 >	20.2 >	BGS Estimated Urban Soil Chemistry >	0	0	-	-	-
95 >	20.3 >	BGS Measured Urban Soil Chemistry >	0	0	-	-	-
Page	Section	**Railway infrastructure and projects** >	On site	0-50m	50-250m	250-500m	500-2000m
96 >	21.1 >	Underground railways (London) >	0	0	0	-	-
96 >	21.2 >	Underground railways (Non-London) >	0	0	0	-	-
96 >	21.3 >	Railway tunnels >	0	0	0	-	-
96 >	21.4 >	Historical railway and tunnel features >	0	0	0	-	-
96 >	21.5 >	Royal Mail tunnels >	0	0	0	-	-
97 >	21.6 >	Historical railways >	0	0	0	-	-
97 >	21.7 >	Railways >	0	0	0	-	-
97 >	21.8 >	Crossrail 1 >	0	0	0	0	-
97 >	21.9 >	Crossrail 2 >	0	0	0	0	-
97 >	21.10 >	HS2 >	0	0	0	0	-

Recent aerial photograph

Capture Date: 05/04/2020

Site Area: 5.54ha

Recent site history - 2017 aerial photograph

Capture Date: 20/06/2017

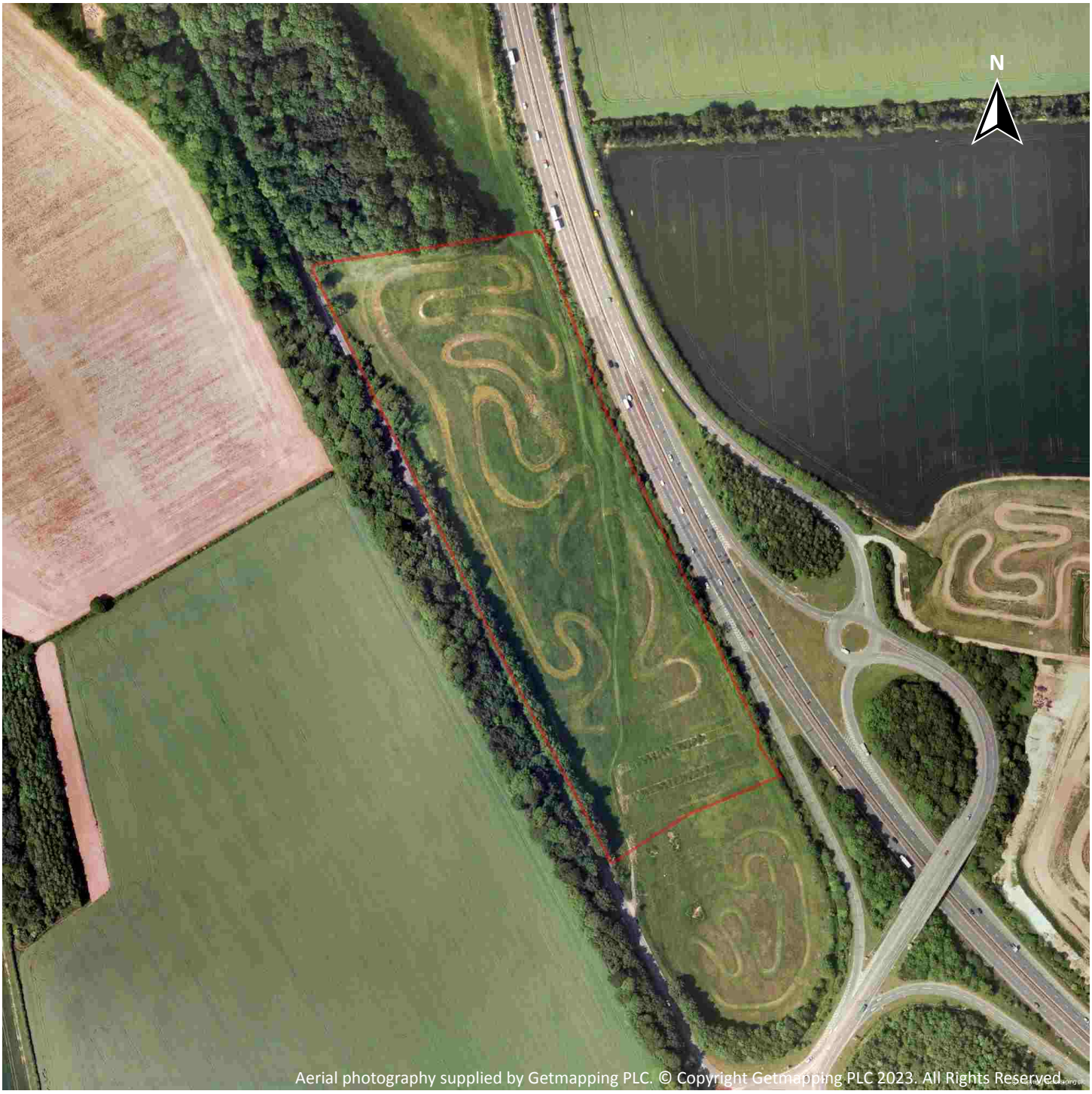
Site Area: 5.54ha

Recent site history - 2013 aerial photograph

Capture Date: 03/06/2013

Site Area: 5.54ha

Recent site history - 2005 aerial photograph



Capture Date: 07/06/2005

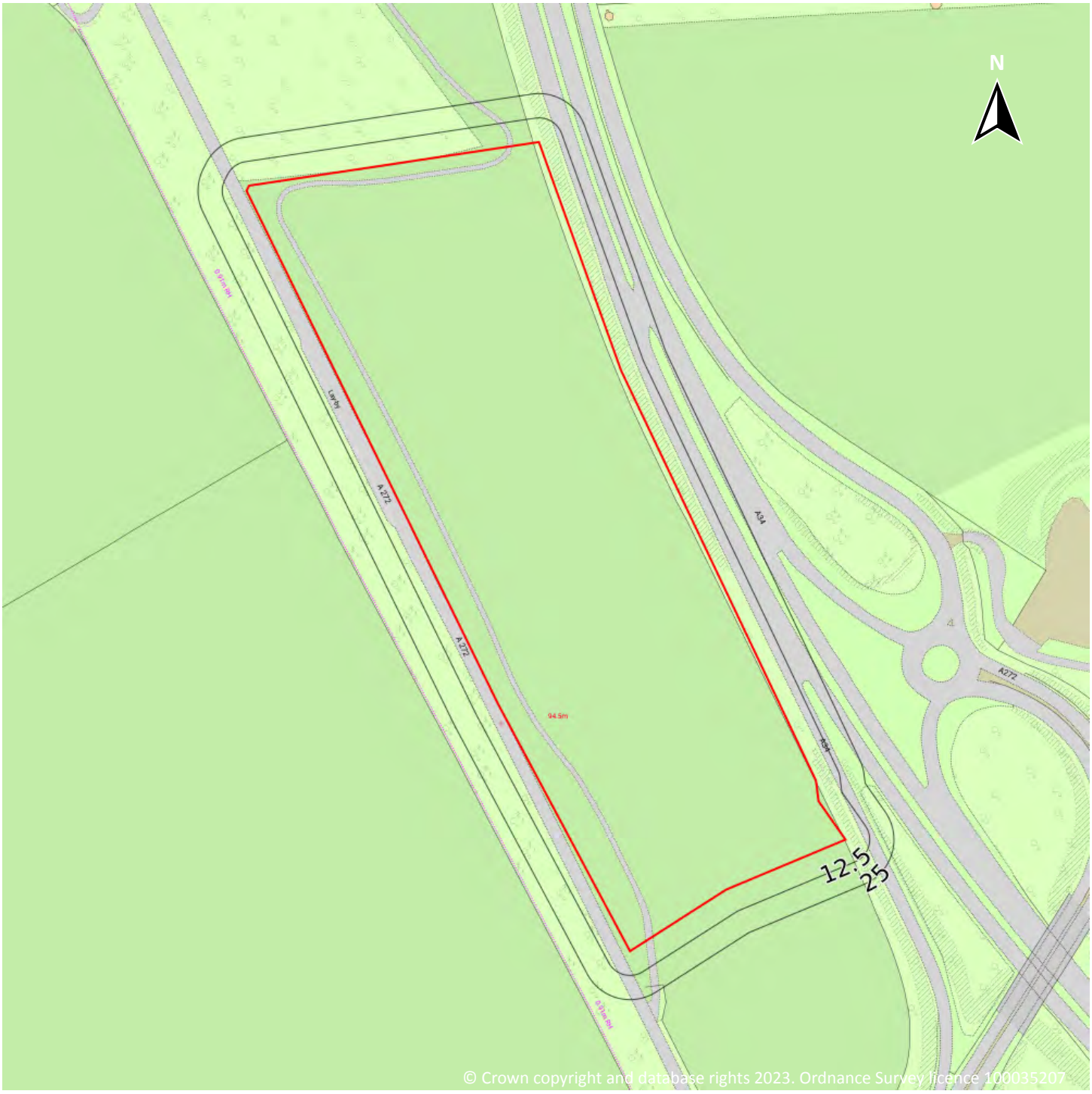
Site Area: 5.54ha

Recent site history - 1999 aerial photograph

Capture Date: 04/09/1999

Site Area: 5.54ha

OS MasterMap site plan



Site Area: 5.54ha

1 Past land use

Site Outline

Search buffers in metres (m)

Historical industrial land uses

1.1 Historical industrial land uses

Records within 500m	18

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

Features are displayed on the Past land use map on **page 14 >**

ID	Location	Land use	Dates present	Group ID
A	137m SE	Cuttings	1987	1939714

ID	Location	Land use	Dates present	Group ID
A	137m SE	Cuttings	1975	1941591
B	200m NW	Gas Valve Compound	1975	1904155
B	200m NW	Gas Valve Compound	1987	1936851
C	326m SW	Chalk Pit	1895 - 1897	1966983
C	332m SW	Unspecified Pit	1932	1956945
C	334m SW	Unspecified Pit	1966	1940527
C	335m SW	Unspecified Pit	1969 - 1975	1895644
C	335m SW	Unspecified Pit	1987	1946480
C	335m SW	Unspecified Pit	1961	1952729
C	336m SW	Old Chalk Pit	1908	1856396
C	340m SW	Unspecified Pit	1871	1968302
D	384m NW	Unspecified Pit	1975	1877126
D	399m NW	Unspecified Ground Workings	1961	1852354
1	413m NW	Unspecified Ground Workings	1961	1852355
2	443m N	Unspecified Ground Workings	1961	1852356
E	475m SW	Unspecified Pit	1969 - 1975	1915621
E	475m SW	Unspecified Pit	1987	1959650

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m	**0**

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

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m	0

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

This data is sourced from Ordnance Survey / Groundsure.

1.4 Historical petrol stations

Records within 500m	0

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

This data is sourced from Ordnance Survey / Groundsure.

1.5 Historical garages

Records within 500m	0

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

This data is sourced from Ordnance Survey / Groundsure.

1.6 Historical military land

Records within 500m	0

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

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

2 Past land use - un-grouped

Site Outline

Search buffers in metres (m)

Historical industrial land uses

2.1 Historical industrial land uses

Records within 500m	21

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

Features are displayed on the Past land use - un-grouped map on **page 17 >**

ID	Location	Land Use	Date	Group ID
A	137m SE	Cuttings	1987	1939714
A	137m SE	Cuttings	1975	1941591
B	200m NW	Gas Valve Compound	1987	1936851

ID	Location	Land Use	Date	Group ID
B	200m NW	Gas Valve Compound	1975	1904155
C	326m SW	Chalk Pit	1897	1966983
C	327m SW	Chalk Pit	1895	1966983
C	332m SW	Unspecified Pit	1932	1956945
C	334m SW	Unspecified Pit	1966	1940527
C	335m SW	Unspecified Pit	1987	1946480
C	335m SW	Unspecified Pit	1961	1952729
C	335m SW	Unspecified Pit	1969	1895644
C	335m SW	Unspecified Pit	1975	1895644
C	336m SW	Old Chalk Pit	1908	1856396
C	340m SW	Unspecified Pit	1871	1968302
D	384m NW	Unspecified Pit	1975	1877126
D	399m NW	Unspecified Ground Workings	1961	1852354
1	413m NW	Unspecified Ground Workings	1961	1852355
2	443m N	Unspecified Ground Workings	1961	1852356
E	475m SW	Unspecified Pit	1987	1959650
E	475m SW	Unspecified Pit	1969	1915621
E	475m SW	Unspecified Pit	1975	1915621

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m	**0**

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

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m	0

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

This data is sourced from Ordnance Survey / Groundsure.

2.4 Historical petrol stations

Records within 500m	0

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

This data is sourced from Ordnance Survey / Groundsure.

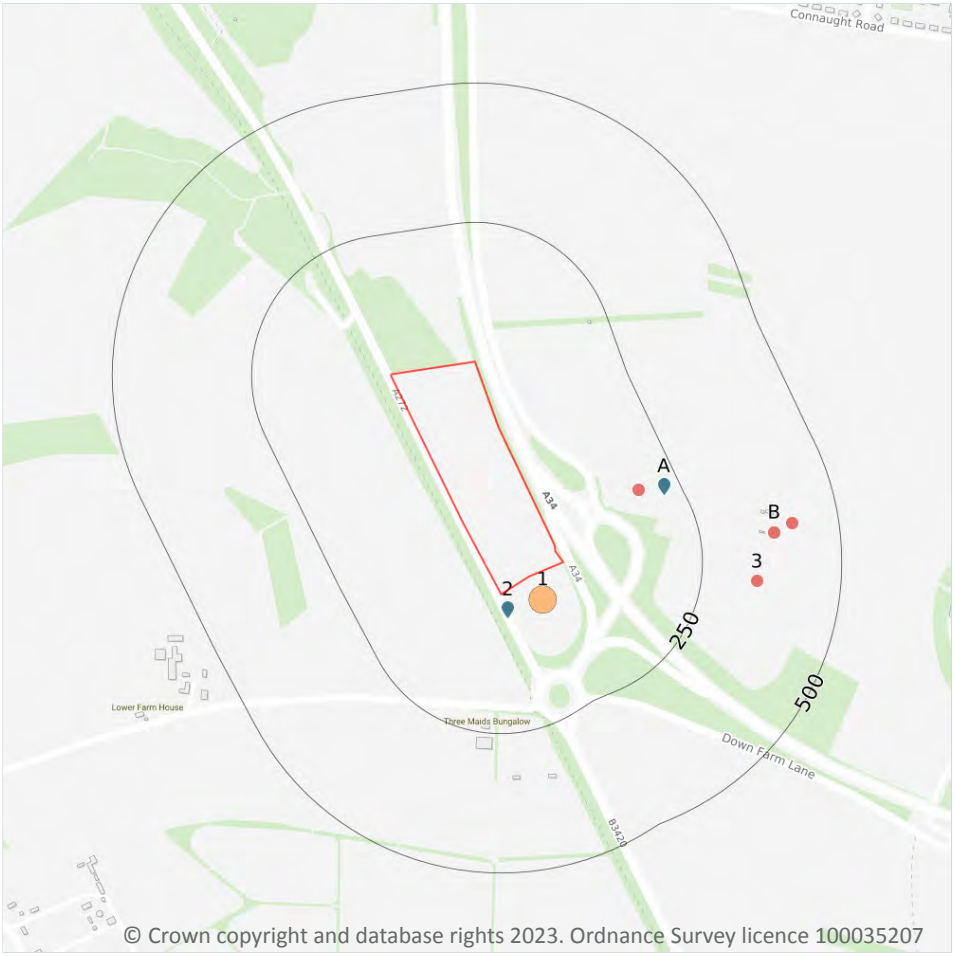
2.5 Historical garages

Records within 500m	0

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

This data is sourced from Ordnance Survey / Groundsure.

3 Waste and landfill



Site Outline

Search buffers in metres (m)

Historical waste sites

Licensed waste sites

Waste exemptions

3.1 Active or recent landfill

Records within 500m	0

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

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

3.2 Historical landfill (BGS records)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

3.3 Historical landfill (LA/mapping records)

Records within 500m	0

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

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

3.4 Historical landfill (EA/NRW records)

Records within 500m	0

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

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

3.5 Historical waste sites

Records within 500m	1

Waste site records derived from Local Authority planning records and high detail historical mapping.

Features are displayed on the Waste and landfill map on **page 20 >**

ID	Location	Address	Further Details	Date
1	22m SE	Site Address: Land at Three Maids Hill, Off A272, Winchester, Hampshire, SO21 2QU	Type of Site: Waste Recycling Facility Planning application reference: HCC/2020/0428 Description: Scheme comprises development of an inert waste recycling facility . This project also includes associated infrastructure works and access roads. Data source: Historic Planning Application Data Type: Point	14/08/2020

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

3.6 Licensed waste sites

Records within 500m	2

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

Features are displayed on the Waste and landfill map on **page 20 >**

ID	Location	Details		
2	29m S	Site Name: Inert Waste Recycling Facility Site Address: TMR RECYCLING LTD, Inert Waste Recycling Facility, Three Maids Hill, Winchester, SO21 2QG Correspondence Address: -	Type of Site: Physical Treatment Facility Size: Unknown Environmental Permitting Regulations (Waste) Licence Number: - EPR reference: EA/EPR/WE0609AB/A001 Operator: TMR RECYCLING LTD Waste Management licence No: 120366 Annual Tonnage: -	Issue Date: 13/08/2021 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued
A	222m E	Site Name: Pringle Reclaim Site Address: PRINGLE RECLAIM LTD, Pringle Reclaim Ltd, Christmas Hill, Winchester, SO22 6RG Correspondence Address: -	Type of Site: Treatment of waste to produce soil 75,000 tpy Size: Unknown Environmental Permitting Regulations (Waste) Licence Number: - EPR reference: EA/EPR/WE6248AB/A001 Operator: PRINGLE RECLAIM LTD Waste Management licence No: 120672 Annual Tonnage: -	Issue Date: 01/07/2022 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued

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

3.7 Waste exemptions

Records within 500m **7**

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

Features are displayed on the Waste and landfill map on **page 20 >**

ID	Location	Site	Reference	Category	Sub-Category	Description
A	178m E	-	WEX276390	Using waste exemption	Not on a farm	Use of waste in construction
A	178m E	-	WEX276390	Treating waste exemption	Not on a farm	Screening and blending of waste
3	349m E	-	WEX252634	Using waste exemption	On a Farm	Use of waste in construction

ID	Location	Site	Reference	Category	Sub-Category	Description
B	382m E	Down Farm WINCHESTER Hampshire SO22 6RG	EPR/JF0603WG/A001	Using waste exemption	Agricultural Waste Only	Use of waste in construction
B	382m E	Down Farm WINCHESTER Hampshire SO22 6RG	EPR/JF0603WG/A001	Using waste exemption	Agricultural Waste Only	Spreading waste on non-agricultural land to confer benefit
B	382m E	Down Farm WINCHESTER Hampshire SO22 6RG	EPR/JF0603WG/A001	Using waste exemption	Agricultural Waste Only	Use of waste for a specified purpose
B	415m E	-	WEX252486	Using waste exemption	On a Farm	Use of waste in construction

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

4 Current industrial land use

Site Outline

Search buffers in metres (m)

Recent industrial land uses

Licensed Discharges to controlled waters

Pollution Incidents (EA/NRW)

4.1 Recent industrial land uses

Records within 250m	1

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on **page 24 >**

ID	Location	Company	Address	Activity	Category
1	228m NW	Gas Valve Compound	Hampshire, SO21	Gas Features	Infrastructure and Facilities

This data is sourced from Ordnance Survey.

4.2 Current or recent petrol stations

Records within 500m	0

Open, closed, under development and obsolete petrol stations.

This data is sourced from Experian.

4.3 Electricity cables

Records within 500m	0

High voltage underground electricity transmission cables.

This data is sourced from National Grid.

4.4 Gas pipelines

Records within 500m	0

High pressure underground gas transmission pipelines.

This data is sourced from National Grid.

4.5 Sites determined as Contaminated Land

Records within 500m	0

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

This data is sourced from Local Authority records.

4.6 Control of Major Accident Hazards (COMAH)

Records within 500m	0

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

This data is sourced from the Health and Safety Executive.

4.7 Regulated explosive sites

Records within 500m	0

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

This data is sourced from the Health and Safety Executive.

4.8 Hazardous substance storage/usage

Records within 500m	0

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

This data is sourced from Local Authority records.

4.9 Historical licensed industrial activities (IPC)

Records within 500m	0

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

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

4.10 Licensed industrial activities (Part A(1))

Records within 500m	0

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

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

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

Records within 500m	0

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

This data is sourced from Local Authority records.

4.12 Radioactive Substance Authorisations

Records within 500m	0

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

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

4.13 Licensed Discharges to controlled waters

Records within 500m	1

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

Features are displayed on the Current industrial land use map on **page 24 >**

ID	Location	Address	Details	
2	266m S	J.SMITH ESQ., J.SMITH ESQ., STAFF COTTAGE, LITTLETON STUD LITTLETON, WINCHESTER HAMPSHIRE	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: P01377 Permit Version: 1 Receiving Water: INTO LAND	Status: LAPSED UNDER SCHEDULE 23 ENVIRONMENT ACT 1995 Issue date: 01/03/1989 Effective Date: 01/03/1989 Revocation Date: 31/03/1997

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

4.14 Pollutant release to surface waters (Red List)

Records within 500m	0

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

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

4.15 Pollutant release to public sewer

Records within 500m	0

Discharges of Special Category Effluents to the public sewer.

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

4.16 List 1 Dangerous Substances

Records within 500m	0

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

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

4.17 List 2 Dangerous Substances

Records within 500m	0

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

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

4.18 Pollution Incidents (EA/NRW)

Records within 500m	1

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

Features are displayed on the Current industrial land use map on **page 24 >**

ID	Location	Details	
3	386m N	Incident Date: 11/11/2003 Incident Identification: 200890 Pollutant: Oils and Fuel Pollutant Description: Diesel	Water Impact: Category 3 (Minor) Land Impact: Category 3 (Minor) Air Impact: Category 3 (Minor)

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

4.19 Pollution inventory substances

Records within 500m	0

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

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

4.20 Pollution inventory waste transfers

Records within 500m	0

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

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

4.21 Pollution inventory radioactive waste

Records within 500m	0

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

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

5 Hydrogeology - Superficial aquifer

Site Outline

Search buffers in metres (m)

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

5.1 Superficial aquifer

Records within 500m	1

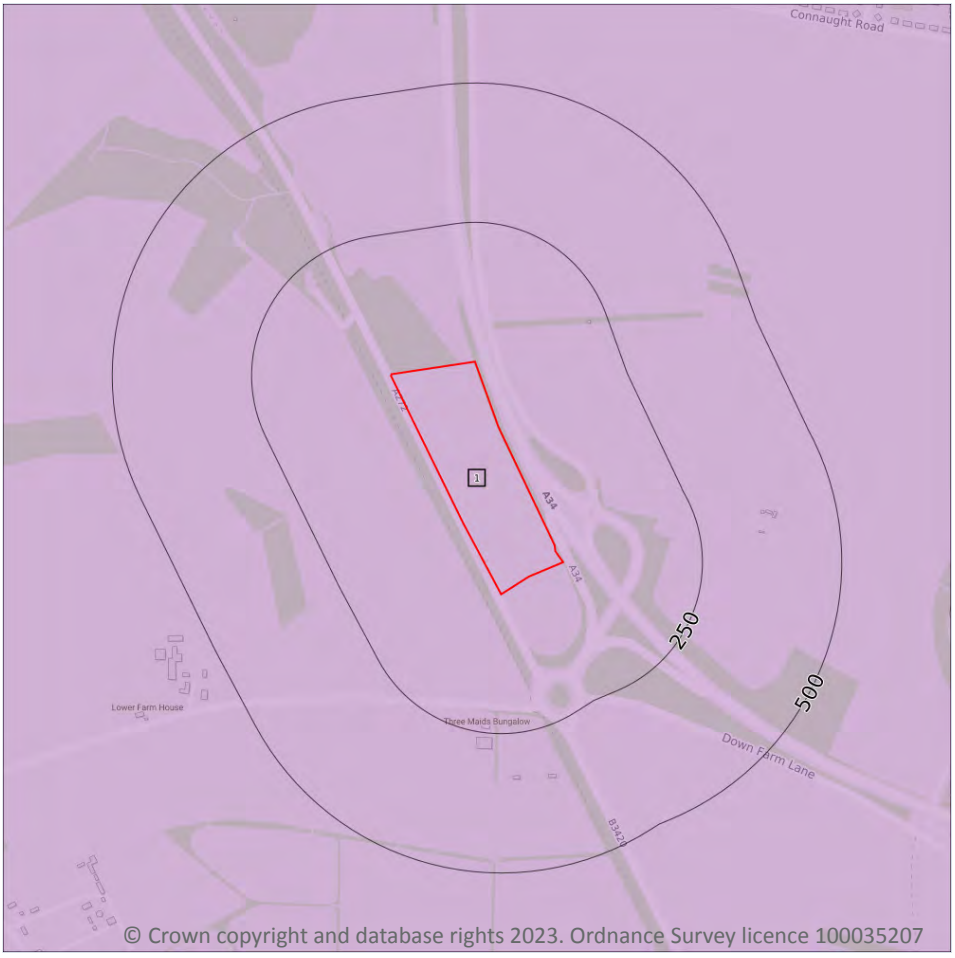
Aquifer status of groundwater held within superficial geology.

Features are displayed on the Hydrogeology map on **page 30 >**

ID	Location	Designation	Description
1	**On site**	**Secondary Undifferentiated**	**Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type**

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

Bedrock aquifer



Site Outline

Search buffers in metres (m)

- Principal
- Secondary A
- Secondary B
- Secondary Undifferentiated
- Unproductive

5.2 Bedrock aquifer

Records within 500m	1

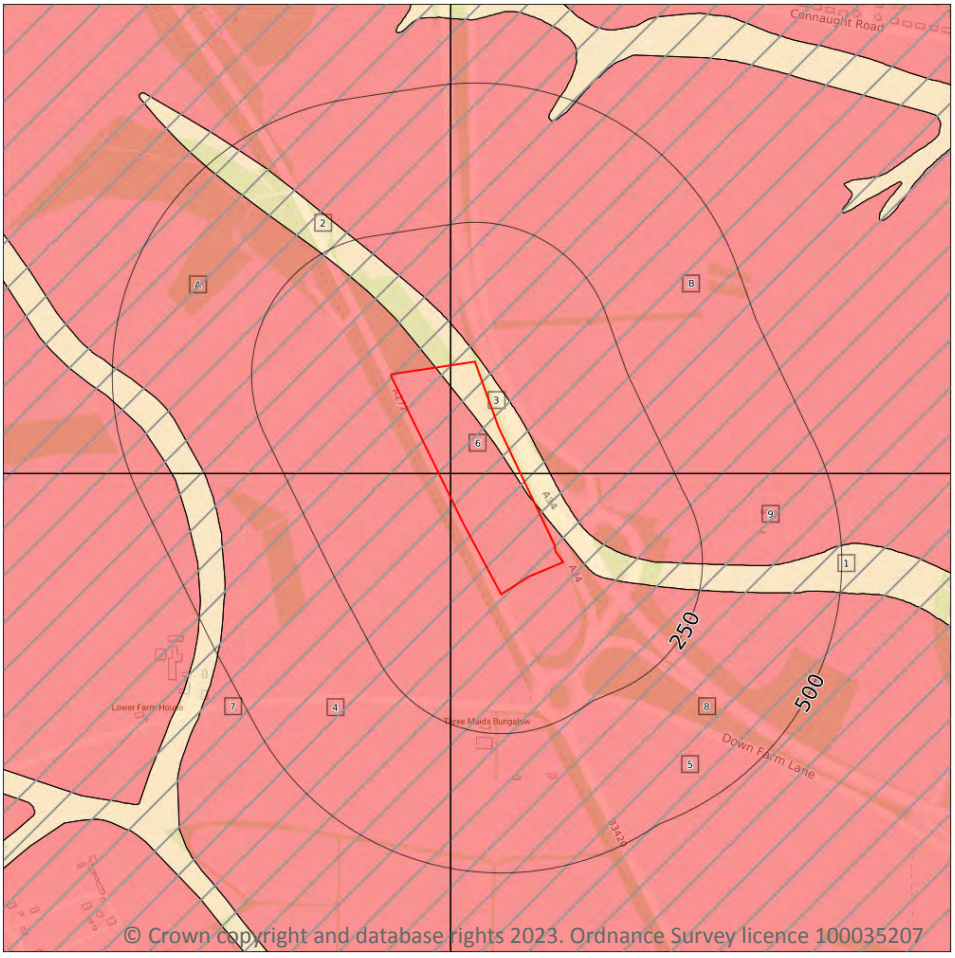
Aquifer status of groundwater held within bedrock geology.

Features are displayed on the Bedrock aquifer map on **page 31 >**

ID	Location	Designation	Description
1	On site	Principal	Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers

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

Groundwater vulnerability



Site Outline

Search buffers in metres (m)

Superficial vulnerability
- Principal superficial aquifer, high vulnerability
- Secondary superficial aquifer, high vulnerability
- Principal superficial aquifer, medium vulnerability
- Secondary superficial aquifer, medium vulnerability
- Principal superficial aquifer, low vulnerability
- Secondary superficial aquifer, low vulnerability

Bedrock vulnerability
- Principal bedrock aquifer, high vulnerability
- Secondary bedrock aquifer, high vulnerability
- Principal bedrock aquifer, medium vulnerability
- Secondary bedrock aquifer, medium vulnerability
- Principal bedrock aquifer, low vulnerability
- Secondary bedrock aquifer, low vulnerability

Other information
- Unproductive aquifer
- Soluble rock risk
- Local information

5.3 Groundwater vulnerability

Records within 50m	9

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

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

Features are displayed on the Groundwater vulnerability map on **page 32 >**

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	On site	Summary Classification: Secondary superficial aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: High Infiltration value: >70% Dilution value: 300-550mm/year	Vulnerability: High Aquifer type: Secondary Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Principal Flow mechanism: Well connected fractures
2	On site	Summary Classification: Secondary superficial aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: High Infiltration value: >70% Dilution value: 300-550mm/year	Vulnerability: High Aquifer type: Secondary Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Principal Flow mechanism: Well connected fractures
3	On site	Summary Classification: Secondary superficial aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: High Infiltration value: >70% Dilution value: 300-550mm/year	Vulnerability: High Aquifer type: Secondary Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Principal Flow mechanism: Well connected fractures
4	On site	Summary Classification: Principal bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: High Infiltration value: >70% Dilution value: 300-550mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Principal Flow mechanism: Well connected fractures
5	On site	Summary Classification: Principal bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: High Infiltration value: >70% Dilution value: 300-550mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Principal Flow mechanism: Well connected fractures
6	On site	Summary Classification: Principal bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: High Infiltration value: >70% Dilution value: 300-550mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Principal Flow mechanism: Well connected fractures
A	On site	Summary Classification: Principal bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: High Infiltration value: >70% Dilution value: 300-550mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Principal Flow mechanism: Well connected fractures

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
B	9m N	Summary Classification: Principal bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: High Infiltration value: >70% Dilution value: 300-550mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Principal Flow mechanism: Well connected fractures
9	48m E	Summary Classification: Principal bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: High Infiltration value: >70% Dilution value: 300-550mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Principal Flow mechanism: Well connected fractures

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

5.4 Groundwater vulnerability- soluble rock risk

Records on site	**4**

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

ID	Maximum soluble risk category	Percentage of grid square covered by maximum risk
7	**Significant soluble rocks are likely to be present. Low possibility of localised subsidence or dissolution-related degradation of bedrock occurring naturally, but may be possible in adverse conditions such as high surface or subsurface water flow.**	**8.0%**
8	**Significant soluble rocks are likely to be present. Low possibility of localised subsidence or dissolution-related degradation of bedrock occurring naturally, but may be possible in adverse conditions such as high surface or subsurface water flow.**	**6.0%**
A	**Significant soluble rocks are likely to be present. Low possibility of localised subsidence or dissolution-related degradation of bedrock occurring naturally, but may be possible in adverse conditions such as high surface or subsurface water flow.**	**9.0%**
B	**Significant soluble rocks are likely to be present. Low possibility of localised subsidence or dissolution-related degradation of bedrock occurring naturally, but may be possible in adverse conditions such as high surface or subsurface water flow.**	**11.0%**

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

5.5 Groundwater vulnerability- local information

Records on site	0

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

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

Abstractions and Source Protection Zones

Site Outline

Search buffers in metres (m)

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

5.6 Groundwater abstractions

Records within 2000m	2

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

Features are displayed on the Abstractions and Source Protection Zones map on **page 36 >**

ID	Location	Details	
-	792m E	Status: Active Licence No: 11/42/22.5/73 Details: General Farming & Domestic Direct Source: Southern Region Groundwater Point: UPPER & DOWN FARMS POINT A, HEADBOURNE WORTHY Data Type: Point Name: Trustees Of The Late Mrs E G Brown Easting: 446980 Northing: 133690	Annual Volume (m^3): 2682 Max Daily Volume (m^3): 36.4 Original Application No: WR.4058 Original Start Date: 23/12/1965 Expiry Date: - Issue No: 100 Version Start Date: 01/04/2008 Version End Date: -
-	1578m NW	Status: Historical Licence No: 33/240 Details: General Washing/Process Washing Direct Source: Southern Region Groundwater Point: POINT B AT LARKWHISTLE FARM Data Type: Point Name: Pentex Oil UK Ltd Easting: 445150 Northing: 135570	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 11/04/2001 Expiry Date: 31/03/2013 Issue No: 2 Version Start Date: 24/06/2003 Version End Date: -

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

5.7 Surface water abstractions

Records within 2000m	0

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

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

5.8 Potable abstractions

Records within 2000m	0

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

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

5.9 Source Protection Zones

Records within 500m	0

Source Protection Zones define the sensitivity of an area around a potable abstraction site to contamination.

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

5.10 Source Protection Zones (confined aquifer)

Records within 500m	0

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

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

6 Hydrology

Site Outline

Search buffers in metres (m)

Water Network (OS MasterMap)

Surface water features (wider than 5m)

Surface water features (narrower than 5m)

WFD River, canal and surface water transfer water bodies

WFD Lake water bodies

WFD Transitional and coastal water bodies

WFD Surface water body catchments boundaries

WFD Groundwater body boundaries

6.1 Water Network (OS MasterMap)

Records within 250m	0

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

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m	0

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

This data is sourced from the Ordnance Survey.

6.3 WFD Surface water body catchments

Records on site	1

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

Features are displayed on the Hydrology map on **page 39 >**

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
1	**On site**	**River**	**Nun's Walk Stream**	**GB107042022730**	**Itchen**	**Test and Itchen**

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

6.4 WFD Surface water bodies

Records identified	1

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

Features are displayed on the Hydrology map on **page 39 >**

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
-	2830m SE	River	Nun's Walk Stream	GB107042022730 ↗	Moderate	Fail	Good	2019

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

6.5 WFD Groundwater bodies

Records on site	2

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

Features are displayed on the Hydrology map on **page 39 >**

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
2	**On site**	**River Test Chalk**	**GB40701G501200** ↗	**Poor**	**Poor**	**Good**	**2019**
3	**On site**	**River Itchen Chalk**	**GB40701G505000** ↗	**Poor**	**Poor**	**Poor**	**2019**

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

7 River and coastal flooding

7.1 Risk of flooding from rivers and the sea

Records within 50m	0

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

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

7.2 Historical Flood Events

Records within 250m	0

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

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

7.3 Flood Defences

Records within 250m	0

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

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

7.4 Areas Benefiting from Flood Defences

Records within 250m	0

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

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

7.5 Flood Storage Areas

Records within 250m	0

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

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

River and coastal flooding - Flood Zones

7.6 Flood Zone 2

Records within 50m	0

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

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

7.7 Flood Zone 3

Records within 50m	0

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

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

8 Surface water flooding

Site Outline
Search buffers in metres (m)

1 in 1000 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 250 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 100 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 30 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

8.1 Surface water flooding

Highest risk on site	**1 in 30 year, 0.3m - 1.0m**
Highest risk within 50m	**1 in 30 year, 0.3m - 1.0m**

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

Features are displayed on the Surface water flooding map on **page 45 >**

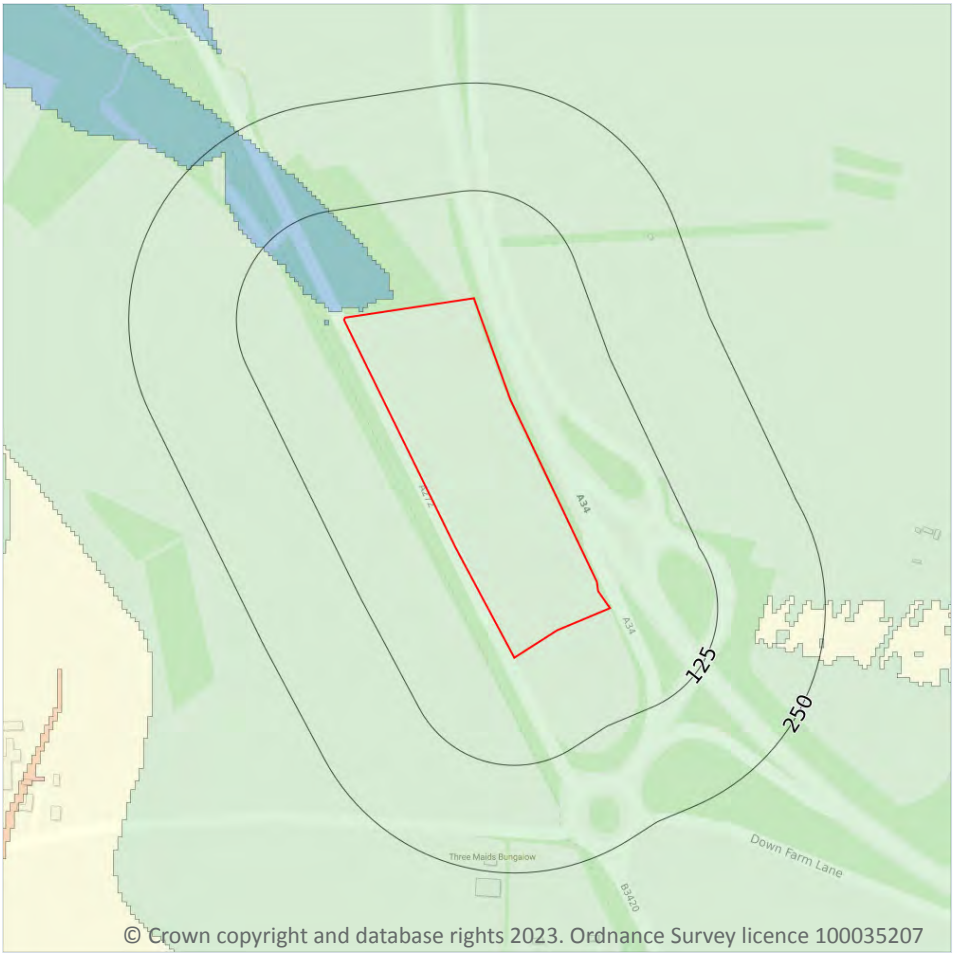
The data shown on the map and in the table above shows the highest likelihood of flood events happening at the site. Lower likelihood events may have greater flood depths and hence a greater potential impact on a site.

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

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

This data is sourced from Ambiental Risk Analytics.

9 Groundwater flooding



Site Outline

Search buffers in metres (m)

High

Moderate - High

Moderate

Low

Negligible

9.1 Groundwater flooding

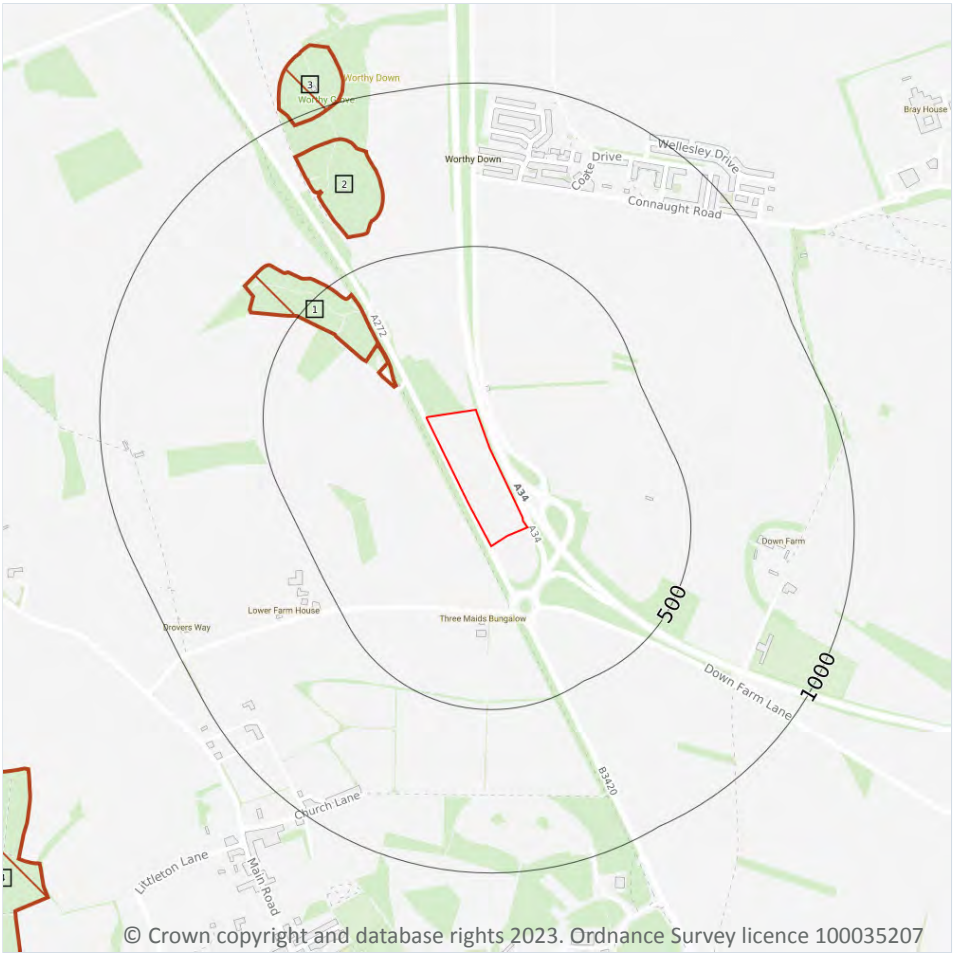
Highest risk on site	**Low**
Highest risk within 50m	**Low**

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

Features are displayed on the Groundwater flooding map on **page 47 >**

This data is sourced from Ambiental Risk Analytics.

10 Environmental designations



Site Outline

Search buffers in metres (m)

Designated Ancient Woodland

10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m	0

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

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

10.2 Conserved wetland sites (Ramsar sites)

Records within 2000m	0

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

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

10.3 Special Areas of Conservation (SAC)

Records within 2000m	0

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

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

10.4 Special Protection Areas (SPA)

Records within 2000m	0

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

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

10.5 National Nature Reserves (NNR)

Records within 2000m	0

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

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

10.6 Local Nature Reserves (LNR)

Records within 2000m	0

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

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

10.7 Designated Ancient Woodland

Records within 2000m	6

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

Features are displayed on the Environmental designations map on **page 48 >**

ID	Location	Name	Woodland Type
1	135m NW	Worthy Copse	Ancient & Semi-Natural Woodland
2	592m NW	South Worthy Grove	Ancient & Semi-Natural Woodland
3	978m NW	Unknown	Ancient & Semi-Natural Woodland
4	1571m SW	Long Wood	Ancient & Semi-Natural Woodland
-	1900m SW	Unknown	Ancient Replanted Woodland
-	1981m SW	Unknown	Ancient Replanted Woodland

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

10.8 Biosphere Reserves

Records within 2000m	0

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

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

10.9 Forest Parks

Records within 2000m	0

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

This data is sourced from the Forestry Commission.

10.10 Marine Conservation Zones

Records within 2000m	0

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

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

10.11 Green Belt

Records within 2000m	0

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

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

10.12 Proposed Ramsar sites

Records within 2000m	0

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

This data is sourced from Natural England.

10.13 Possible Special Areas of Conservation (pSAC)

Records within 2000m	0

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

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

10.14 Potential Special Protection Areas (pSPA)

Records within 2000m	0

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

This data is sourced from Natural England.

10.15 Nitrate Sensitive Areas

Records within 2000m	0

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

This data is sourced from Natural England.

10.16 Nitrate Vulnerable Zones

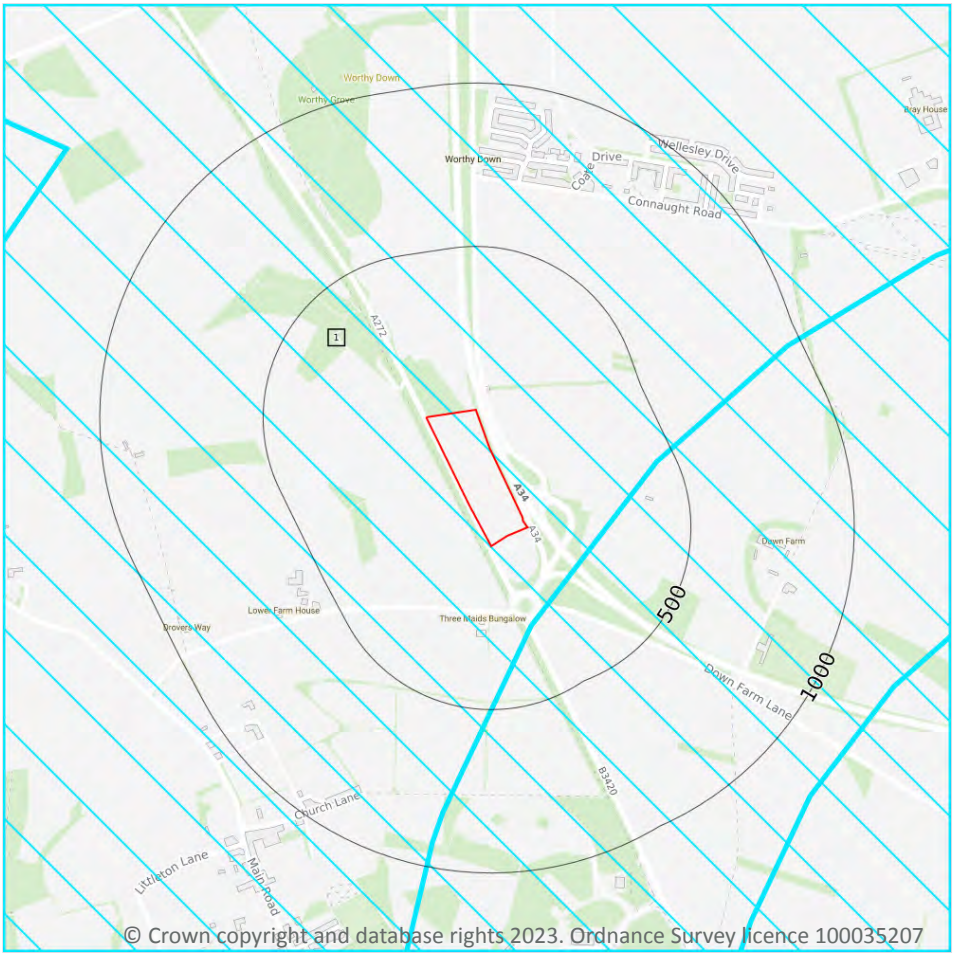
Records within 2000m	8

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

Location	Name	Type	NVZ ID	Status
On site	**Nun's Walk Stream NVZ**	**Surface Water**	**812**	**Existing**
On site	**Hampshire Chalk**	**Groundwater**	**143**	**Existing**
On site	**Hamble Estuary Eutrophic NVZ (TraC)**	**Eutrophic Water**	**3**	**Existing**
1781m N	Hampshire Chalk	Groundwater	143	Existing
1781m N	Hamble Estuary Eutrophic NVZ (TraC)	Eutrophic Water	3	Existing
1801m W	Hampshire Chalk	Groundwater	143	Existing
1801m W	Hamble Estuary Eutrophic NVZ (TraC)	Eutrophic Water	3	Existing
1981m NE	Nun's Walk Stream NVZ	Surface Water	812	Existing

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

SSSI Impact Zones and Units



Site Outline

Search buffers in metres (m)

SSSI Impact Risk Zones

SSSI Units

- Not recorded
- Favourable
- Unfavourable - Recovering
- Unfavourable - No change
- Unfavourable - Declining
- Partially destroyed
- Destroyed

10.17 SSSI Impact Risk Zones

Records on site	1

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

Features are displayed on the SSSI Impact Zones and Units map on **page 54 >**

ID	Location	Type of developments requiring consultation
1	**On site**	**Infrastructure - Airports, helipads and other aviation proposals.** **Air pollution - Any industrial/agricultural development that could cause air pollution (incl: industrial processes, livestock & poultry units with floorspace > 500m², slurry lagoons & digestate stores > 750m², manure stores > 3500t).** **Combustion - General combustion processes >50mw energy input. incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion.** **Discharges - Any discharge of water or liquid waste that is discharged to ground (ie to seep away) or to surface water, such as a beck or stream.** **Notes: Nutrient impact area. for new development with overnight accommodation reg 63 of the conservation of habitats and species regulations 2017 must be applied and additional measures required. lpa to refer to natural england's nutrient neutrality advice.**

This data is sourced from Natural England.

10.18 SSSI Units

Records within 2000m	**0**

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

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

11 Visual and cultural designations

11.1 World Heritage Sites

Records within 250m	0

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

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

11.2 Area of Outstanding Natural Beauty

Records within 250m	0

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

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

11.3 National Parks

Records within 250m	0

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

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

11.4 Listed Buildings

Records within 250m	0

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

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

11.5 Conservation Areas

Records within 250m	0

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

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

11.6 Scheduled Ancient Monuments

Records within 250m	0

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

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

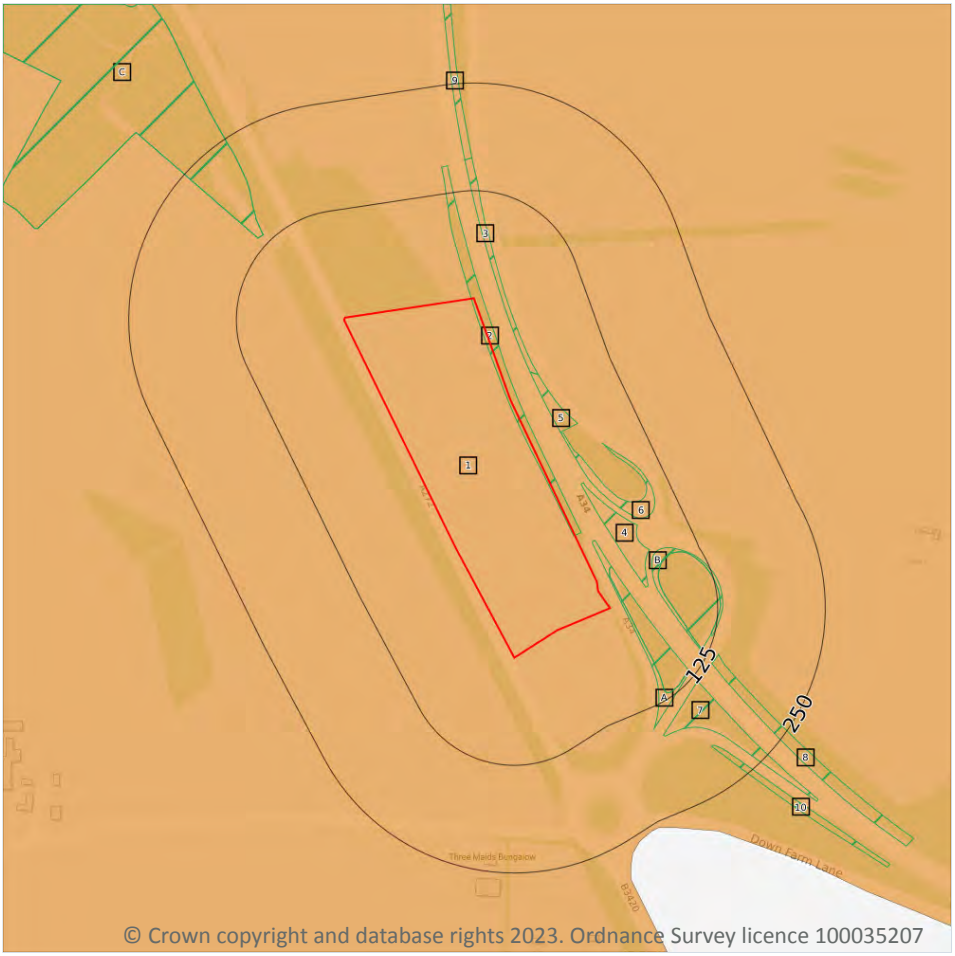
11.7 Registered Parks and Gardens

Records within 250m	0

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

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

12 Agricultural designations



Site Outline

Search buffers in metres (m)

- Grade 1 - excellent quality
- Grade 2 - very good quality
- Grade 3 - good to moderate quality
- Grade 3a - good quality
- Grade 3b - moderate quality
- Grade 4 - poor quality
- Grade 5 - very poor quality
- Non-agricultural land
- Urban land
- Exclusion land
- Tree felling licences
- Open Access land

12.1 Agricultural Land Classification

Records within 250m	1

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

Features are displayed on the Agricultural designations map on **page 58 >**

ID	Location	Classification	Description
1	On site	Grade 3	**Good to moderate quality agricultural land. Land with moderate limitations which affect the choice of crops, timing and type of cultivation, harvesting or the level of yield. Where more demanding crops are grown yields are generally lower or more variable than on land in Grades 1 and 2.**

This data is sourced from Natural England.

12.2 Open Access Land

Records within 250m	0

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

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

12.3 Tree Felling Licences

Records within 250m	15

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

Features are displayed on the Agricultural designations map on **page 58 >**

ID	Location	Description	Reference	Application date
2	**On site**	**Selective Fell/Thin (Unconditional)**	**018/366/15-16**	**-**
A	15m SE	Selective Fell/Thin (Unconditional)	018/366/15-16	-
A	16m SE	Selective Fell/Thin (Unconditional)	018/366/15-16	-
3	30m N	Selective Fell/Thin (Unconditional)	018/366/15-16	-
4	32m E	Selective Fell/Thin (Unconditional)	018/366/15-16	-
5	32m NE	Selective Fell/Thin (Unconditional)	018/366/15-16	-
6	37m NE	Selective Fell/Thin (Unconditional)	018/366/15-16	-
B	59m SE	Selective Fell/Thin (Unconditional)	018/366/15-16	-
B	64m SE	Selective Fell/Thin (Unconditional)	018/366/15-16	-
7	133m SE	Selective Fell/Thin (Unconditional)	018/366/15-16	-
8	135m SE	Selective Fell/Thin (Unconditional)	018/366/15-16	-
C	135m NW	Selective Fell/Thin (Unconditional)	019/295/07-08	15/01/2008
C	135m NW	Selective Fell/Thin (Unconditional)	019/582/11-12	10/05/2012
9	161m N	Selective Fell/Thin (Unconditional)	018/366/15-16	-
10	199m SE	Selective Fell/Thin (Unconditional)	018/366/15-16	-

This data is sourced from the Forestry Commission.

12.4 Environmental Stewardship Schemes

Records within 250m	0

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

This data is sourced from Natural England.

12.5 Countryside Stewardship Schemes

Records within 250m	1

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

Location	Reference	Scheme	Start Date	End Date
32m S	1050938	Countryside Stewardship (Middle Tier)	01/01/2021	31/12/2025

This data is sourced from Natural England.

13 Habitat designations

Site Outline

Search buffers in metres (m)

Priority Habitat Inventory
Open Mosaic Habitat
Limestone Pavement Orders

Habitat Networks
Primary Habitat
Restorable Habitat
Associated Habitats
Habitat Restoration-Creation
Network Enhancement Zone 1
Network Enhancement Zone 2

13.1 Priority Habitat Inventory

Records within 250m	8

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

Features are displayed on the Habitat designations map on **page 61 >**

ID	Location	Main Habitat	Other habitats
1	**On site**	**Deciduous woodland**	**Main habitat: DWOOD (INV > 50%)**
2	6m S	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
3	64m SE	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
4	135m NW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)

ID	Location	Main Habitat	Other habitats
5	164m N	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
6	175m SE	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
7	184m NW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
8	235m S	Deciduous woodland	Main habitat: DWOOD (INV > 50%)

This data is sourced from Natural England.

13.2 Habitat Networks

Records within 250m	**0**

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

This data is sourced from Natural England.

13.3 Open Mosaic Habitat

Records within 250m	**0**

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

This data is sourced from Natural England.

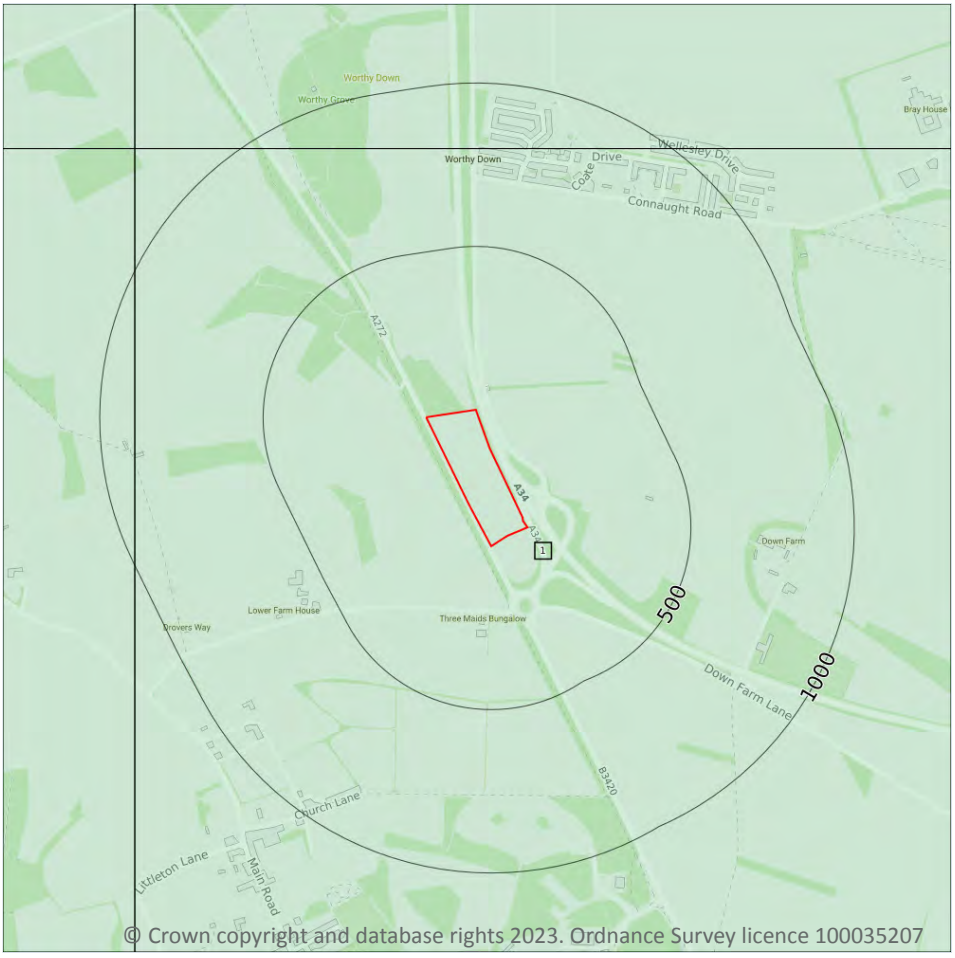
13.4 Limestone Pavement Orders

Records within 250m	**0**

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

This data is sourced from Natural England.

14 Geology 1:10,000 scale - Availability



Site Outline

Search buffers in metres (m)

Full coverage

Partial coverage

No coverage

14.1 10k Availability

Records within 500m	1

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

Features are displayed on the Geology 1:10,000 scale - Availability map on **page 63 >**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	**On site**	**Full**	**Full**	**Full**	**No coverage**	**SU43SE**

This data is sourced from the British Geological Survey.

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

Site Outline

Search buffers in metres (m)

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

14.2 Artificial and made ground (10k)

Records within 500m	6

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

Features are displayed on the Geology 1:10,000 scale - Artificial and made ground map on **page 64 >**

ID	Location	LEX Code	Description	Rock description
1	4m SE	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
2	41m N	WGR-VOID	Worked Ground (Undivided)	Void
3	95m SE	WGR-VOID	Worked Ground (Undivided)	Void
4	108m SE	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit

ID	Location	LEX Code	Description	Rock description
5	333m SW	WMGR-ARTDP	Infilled Ground	Artificial Deposit
6	467m SW	LSGR-UKNOWN	Landscaped Ground (Undivided)	Unknown/unclassified Entry

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Superficial

Site Outline

Search buffers in metres (m)

Landslip (10k)

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

14.3 Superficial geology (10k)

Records within 500m	1

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

Features are displayed on the Geology 1:10,000 scale - Superficial map on **page 66 >**

ID	Location	LEX Code	Description	Rock description
1	**On site**	**HEAD-DMTN**	**Head - Diamicton**	**Diamicton**

This data is sourced from the British Geological Survey.

14.4 Landslip (10k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Bedrock

Site Outline

Search buffers in metres (m)

Bedrock faults and other linear features (10k)

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

14.5 Bedrock geology (10k)

Records within 500m	3

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

Features are displayed on the Geology 1:10,000 scale - Bedrock map on **page 68 >**

ID	Location	LEX Code	Description	Rock age
1	**On site**	**SECK-CHLK**	**Seaford Chalk Formation - Chalk**	**Santonian Age - Coniacian Age**
2	**On site**	**STRK-LMST**	**Stockbridge Rock Member - Limestone**	**Santonian Age**
3	48m NW	NCK-CHLK	Newhaven Chalk Formation - Chalk	Campanian Age - Santonian Age

This data is sourced from the British Geological Survey.

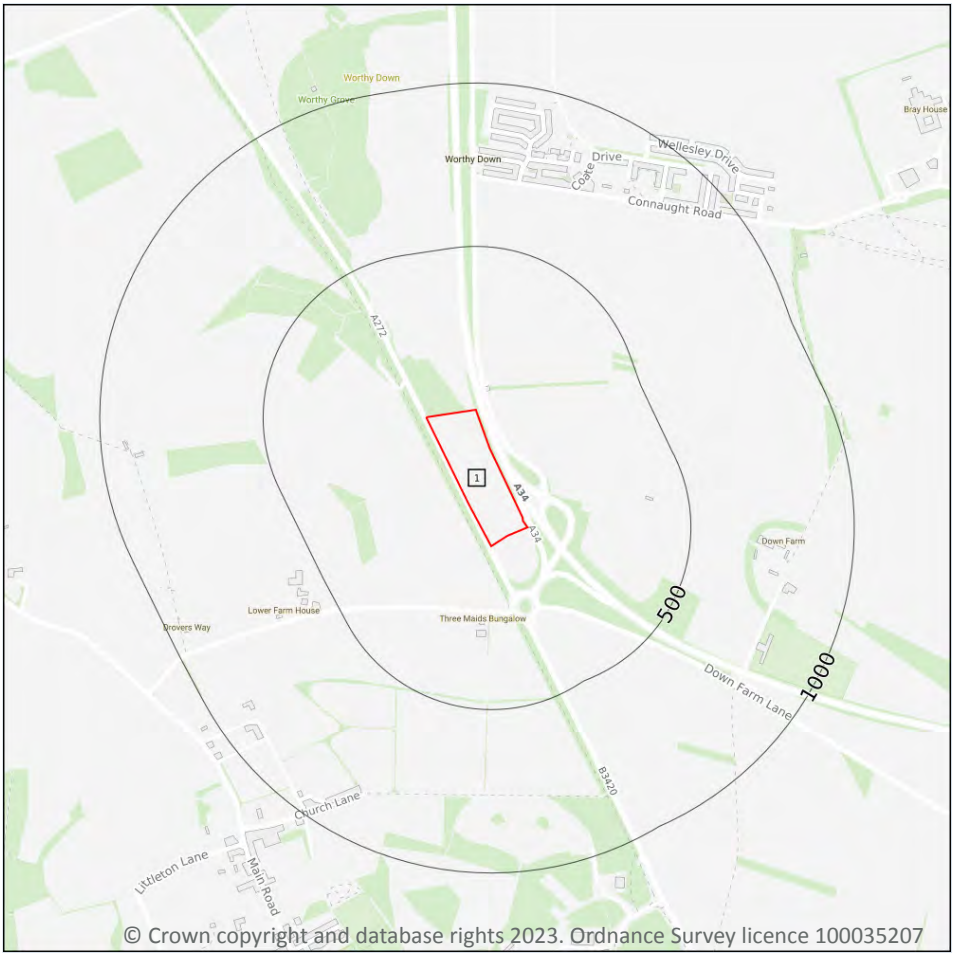
14.6 Bedrock faults and other linear features (10k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

15 Geology 1:50,000 scale - Availability



Site Outline

Search buffers in metres (m)

Geological map tile

15.1 50k Availability

Records within 500m	1

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

Features are displayed on the Geology 1:50,000 scale - Availability map on **page 70 >**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	**On site**	**Full**	**Full**	**Full**	**No coverage**	**EW299_winchester_v4**

This data is sourced from the British Geological Survey.

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

Site Outline

Search buffers in metres (m)

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

15.2 Artificial and made ground (50k)

Records within 500m	1

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

Features are displayed on the Geology 1:50,000 scale - Artificial and made ground map on **page 71 >**

ID	Location	LEX Code	Description	Rock description
1	467m SW	LSGR-ARTGR	LANDSCAPED GROUND (UNDIVIDED)	ARTIFICIALLY MODIFIED GROUND

This data is sourced from the British Geological Survey.

15.3 Artificial ground permeability (50k)

Records within 50m	0

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

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Superficial

Site Outline

Search buffers in metres (m)

Landslip (50k)

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

15.4 Superficial geology (50k)

Records within 500m	1

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

Features are displayed on the Geology 1:50,000 scale - Superficial map on **page 73 >**

ID	Location	LEX Code	Description	Rock description
1	**On site**	**HEAD-XCZSV**	**HEAD**	**CLAY, SILT, SAND AND GRAVEL**

This data is sourced from the British Geological Survey.

15.5 Superficial permeability (50k)

Records within 50m	1

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

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

This data is sourced from the British Geological Survey.

15.6 Landslip (50k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

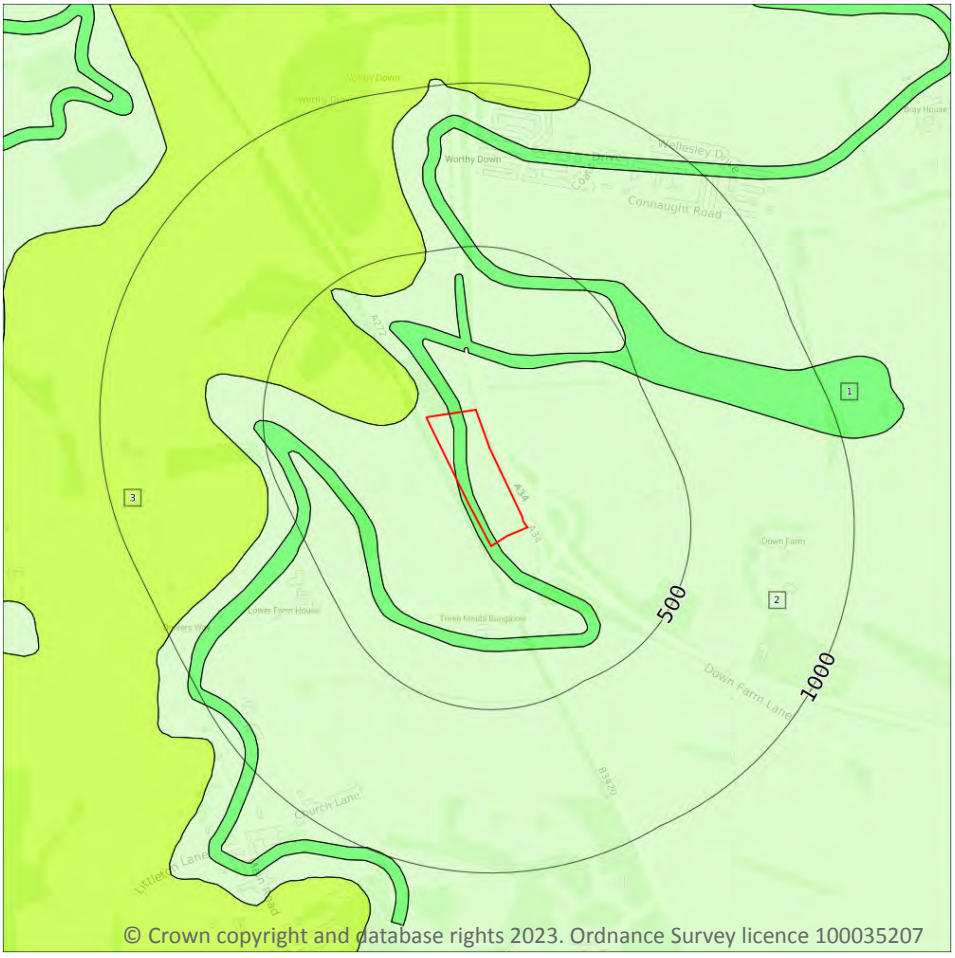
15.7 Landslip permeability (50k)

Records within 50m	0

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

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Bedrock



Site Outline

Search buffers in metres (m)

Bedrock faults and other linear features (50k)

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

15.8 Bedrock geology (50k)

Records within 500m **3**

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

Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 75 >**

ID	Location	LEX Code	Description	Rock age
1	**On site**	**STRK-LMST**	**STOCKBRIDGE ROCK MEMBER - LIMESTONE**	**SANTONIAN**
2	**On site**	**SECK-CHLK**	**SEAFORD CHALK FORMATION - CHALK**	**CONIACIAN**
3	48m NW	NCK-CHLK	NEWHAVEN CHALK FORMATION - CHALK	SANTONIAN

This data is sourced from the British Geological Survey.

15.9 Bedrock permeability (50k)

Records within 50m	3

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

Location	Flow type	Maximum permeability	Minimum permeability
On site	**Fracture**	**Very High**	**Very High**
On site	**Fracture**	**Very High**	**Very High**
48m NW	Fracture	Very High	Very High

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

16 Boreholes

16.1 BGS Boreholes

Records within 250m	0

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

This data is sourced from the British Geological Survey.

17 Natural ground subsidence - Shrink swell clays

Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.1 Shrink swell clays

Records within 50m	2

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

Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 78 >**

Location	Hazard rating	Details
On site	**Negligible**	**Ground conditions predominantly non-plastic.**
On site	**Very low**	**Ground conditions predominantly low plasticity.**

This data is sourced from the British Geological Survey.

Natural ground subsidence - Running sands

Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.2 Running sands

Records within 50m	2

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

Features are displayed on the Natural ground subsidence - Running sands map on **page 79 >**

Location	Hazard rating	Details
On site	**Negligible**	**Running sand conditions are not thought to occur whatever the position of the water table. No identified constraints on lands use due to running conditions.**

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

This data is sourced from the British Geological Survey.

Natural ground subsidence - Compressible deposits

Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.3 Compressible deposits

Records within 50m	1

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

Features are displayed on the Natural ground subsidence - Compressible deposits map on **page 81 >**

Location	Hazard rating	Details
On site	**Negligible**	**Compressible strata are not thought to occur.**

This data is sourced from the British Geological Survey.

Natural ground subsidence - Collapsible deposits

Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.4 Collapsible deposits

Records within 50m	1

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

Features are displayed on the Natural ground subsidence - Collapsible deposits map on **page 82 >**

Location	Hazard rating	Details
On site	**Very low**	**Deposits with potential to collapse when loaded and saturated are unlikely to be present.**

This data is sourced from the British Geological Survey.

Natural ground subsidence - Landslides

Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.5 Landslides

Records within 50m	5

The potential for landsliding (slope instability) to be a hazard assessed using 1:50,000 scale digital maps of superficial and bedrock deposits, combined with information from the BGS National Landslide Database and scientific and engineering reports.

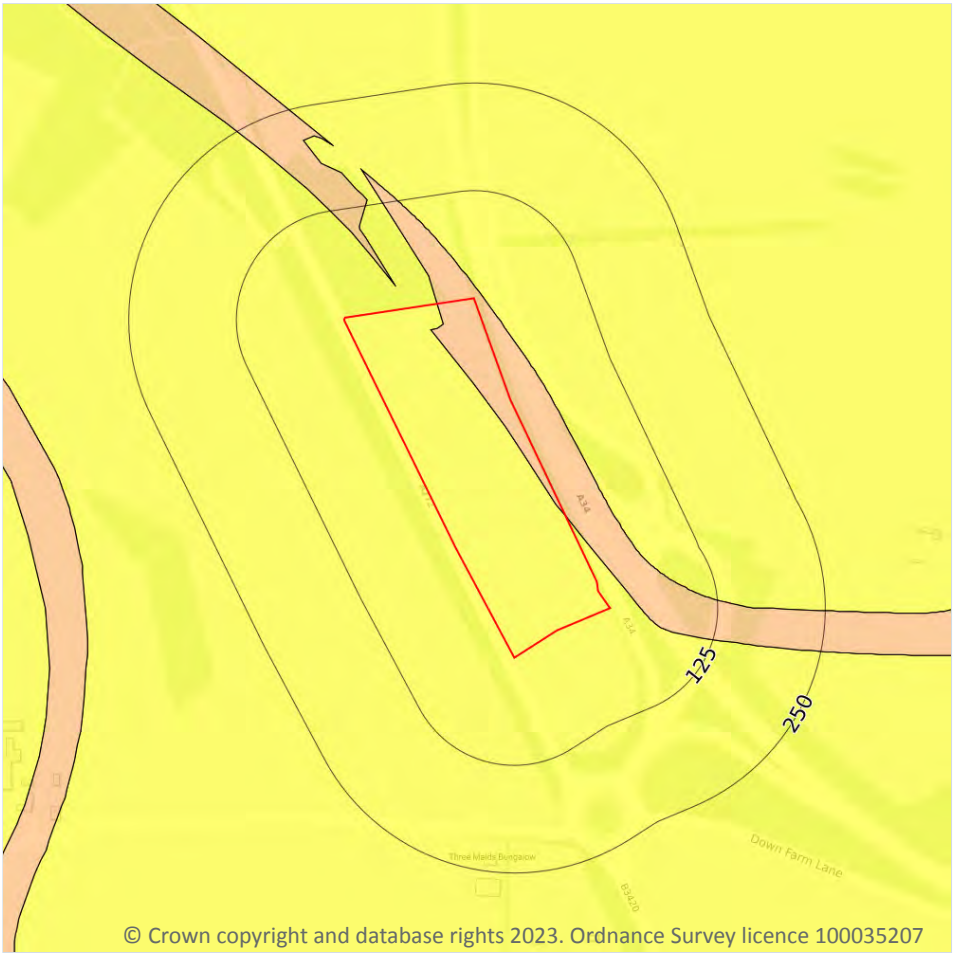
Features are displayed on the Natural ground subsidence - Landslides map on **page 83 >**

Location	Hazard rating	Details
On site	**Negligible**	**Slope instability problems are not thought to occur but consideration to potential problems of adjacent areas impacting on the site should always be considered.**

Location	Hazard rating	Details
On site	**Very low**	**Slope instability problems are not likely to occur but consideration to potential problems of adjacent areas impacting on the site should always be considered.**
On site	**Low**	**Slope instability problems may be present or anticipated. Site investigation should consider specifically the slope stability of the site.**
9m N	Negligible	Slope instability problems are not thought to occur but consideration to potential problems of adjacent areas impacting on the site should always be considered.
15m N	Moderate	Slope instability problems are probably present or have occurred in the past. Land use should consider specifically the stability of the site.

This data is sourced from the British Geological Survey.

Natural ground subsidence - Ground dissolution of soluble rocks



Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.6 Ground dissolution of soluble rocks

Records within 50m	3

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

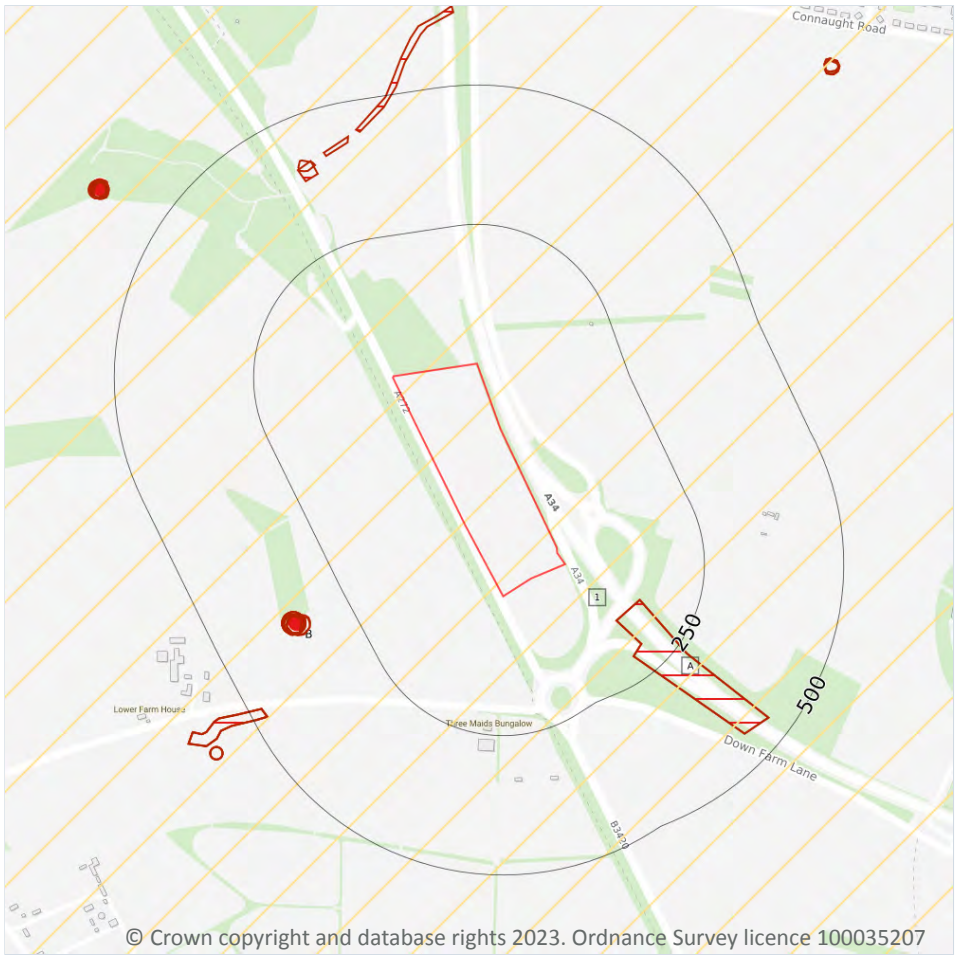
Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on **page 85 >**

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

Location	Hazard rating	Details
On site	**Low**	**Soluble rocks are present within the ground. Some dissolution features may be present. Potential for difficult ground conditions are at a level where they may be considered, localised subsidence need not be considered except in exceptional circumstances.**
29m NW	Low	Soluble rocks are present within the ground. Some dissolution features may be present. Potential for difficult ground conditions are at a level where they may be considered, localised subsidence need not be considered except in exceptional circumstances.

This data is sourced from the British Geological Survey.

18 Mining, ground workings and natural cavities



Site Outline

Search buffers in metres (m)

Natural cavities (Area)

Natural cavities (Point)

BritPits

Surface ground workings

Underground workings

Historical Mineral Planning Areas

Mining Cavities

Non Coal Mining

Sporadic underground mining of restricted extent possible

Localised small scale underground mining possible

Small scale mining possible

Underground mining known or likely within or in close proximity

Underground mining known within or in very close proximity

18.1 Natural cavities

Records within 500m	0

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

This data is sourced from Stantec UK Ltd.

18.2 BritPits

Records within 500m	1

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

Features are displayed on the Mining, ground workings and natural cavities map on **page 87 >**

ID	Location	Details	Description
B	347m SW	Name: Littleton Chalk Pit Address: Littleton, WINCHESTER, Hampshire Commodity: Limestone Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority

This data is sourced from the British Geological Survey.

18.3 Surface ground workings

Records within 250m	2

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

Features are displayed on the Mining, ground workings and natural cavities map on **page 87 >**

ID	Location	Land Use	Year of mapping	Mapping scale
A	137m SE	Cuttings	1987	1:10000
A	137m SE	Cuttings	1975	1:10000

This is data is sourced from Ordnance Survey/Groundsure.

18.4 Underground workings

Records within 1000m	0

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

This is data is sourced from Ordnance Survey/Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m	0

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

This data is sourced from the British Geological Survey.

18.6 Non-coal mining

Records within 1000m	3

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

Features are displayed on the Mining, ground workings and natural cavities map on **page 87 >**

ID	Location	Name	Commodity	Class	Likelihood
1	**On site**	**Not available**	**Chalk**	**A**	**Sporadic underground mining of restricted extent may have occurred. Potential for difficult ground conditions are unlikely and localised and are at a level where they need not be considered**
-	799m N	Not available	Chalk	A	Sporadic underground mining of restricted extent may have occurred. Potential for difficult ground conditions are unlikely and localised and are at a level where they need not be considered
-	893m W	Not available	Chalk	A	Sporadic underground mining of restricted extent may have occurred. Potential for difficult ground conditions are unlikely and localised and are at a level where they need not be considered

This data is sourced from the British Geological Survey.

18.7 Mining cavities

Records within 1000m	0

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

This data is sourced from Stantec UK Ltd.

18.8 JPB mining areas

Records on site	0

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

This data is sourced from Johnson Poole and Bloomer.

18.9 Coal mining

Records on site	0

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

This data is sourced from the Coal Authority.

18.10 Brine areas

Records on site	0

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

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

18.11 Gypsum areas

Records on site	0

Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.12 Tin mining

Records on site	0

Generalised areas that may be affected by historical tin mining.

This data is sourced from Groundsure.

18.13 Clay mining

Records on site	0

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

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

19 Radon

Site Outline

Search buffers in metres (m)

- Greater than 30%
- Between 10% and 30%
- Between 5% and 10%
- Between 3% and 5%
- Between 1% and 3%
- Less than 1%

19.1 Radon

Records on site	1

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

Features are displayed on the Radon map on **page 92 >**

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

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

20 Soil chemistry

20.1 BGS Estimated Background Soil Chemistry

Records within 50m	18

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

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**90 - 120 mg/kg**	**15 - 30 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**90 - 120 mg/kg**	**15 - 30 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**90 - 120 mg/kg**	**15 - 30 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**90 - 120 mg/kg**	**15 - 30 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**90 - 120 mg/kg**	**15 - 30 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**90 - 120 mg/kg**	**15 - 30 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**90 - 120 mg/kg**	**15 - 30 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**90 - 120 mg/kg**	**15 - 30 mg/kg**
3m N	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
9m N	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	90 - 120 mg/kg	15 - 30 mg/kg
14m SW	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	90 - 120 mg/kg	15 - 30 mg/kg
29m NW	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
48m NW	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	90 - 120 mg/kg	15 - 30 mg/kg
48m E	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	90 - 120 mg/kg	15 - 30 mg/kg

This data is sourced from the British Geological Survey.

20.2 BGS Estimated Urban Soil Chemistry

Records within 50m	0

Estimated topsoil chemistry of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc and bioaccessible Arsenic and Lead in 23 urban centres across Great Britain. These estimates are derived from interpolation of the measured urban topsoil data referred to above and provide information across each city between the measured sample locations (4 per km^2).

This data is sourced from the British Geological Survey.

20.3 BGS Measured Urban Soil Chemistry

Records within 50m	0

The locations and measured total concentrations (mg/kg) of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc in urban topsoil samples from 23 urban centres across Great Britain. These are collected at a sample density of 4 per km^2.

This data is sourced from the British Geological Survey.

21 Railway infrastructure and projects

21.1 Underground railways (London)

Records within 250m	0

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

This data is sourced from publicly available information by Groundsure.

21.2 Underground railways (Non-London)

Records within 250m	0

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

This data is sourced from publicly available information by Groundsure.

21.3 Railway tunnels

Records within 250m	0

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

21.4 Historical railway and tunnel features

Records within 250m	0

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

This data is sourced from Ordnance Survey/Groundsure.

21.5 Royal Mail tunnels

Records within 250m	0

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

This data is sourced from Groundsure/the Postal Museum.

21.6 Historical railways

Records within 250m	0

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

This data is sourced from OpenStreetMap.

21.7 Railways

Records within 250m	0

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

This data is sourced from Ordnance Survey and OpenStreetMap.

21.8 Crossrail 1

Records within 500m	0

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

This data is sourced from publicly available information by Groundsure.

21.9 Crossrail 2

Records within 500m	0

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

This data is sourced from publicly available information by Groundsure.

21.10 HS2

Records within 500m	0

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

This data is sourced from HS2 ltd.

Data providers

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

Terms and conditions

Groundsure's Terms and Conditions can be accessed at this link: https://www.groundsure.com/terms-and-conditions-april-2023/ ↗.

Appendix B: Flood Risk Assessment and Surface Water Drainage Strategy and Technical Addendum SLR (2022)

PROPOSED ANAEROBIC DIGESTION FACILITY AT THREE MAIDS HILL, WINCHESTER

Flood Risk Assessment and

Surface Water Drainage Strategy

BASIS OF REPORT

CONTENTS

DOCUMENT REFERENCES

TABLES

FIGURES

DRAWINGS

APPENDICES

EXECUTIVE SUMMARY

Subject	Element	Findings
Site name		
	Date Inspected	
Existing Site	**Description**	
	Topography	
	Geology & Hydrogeology	*Medium to High*
	Hydrology	
	Drainage	
Proposals	**Description**	
	Lifetime	
	Vulnerability	*'waste treatment'* *'Less Vulnerable'*

	Fluvial	**Flood Zone 1**
	Tidal	
	Surface Water	*very low* *medium* *low*
	Groundwater	
	Sewers and Artificial Sources	
Planning Requirements	**Sequential Test and Exception Test**	
Summary	**Design Flood Event**	
	Development Levels/ Layout	
	Safe Access and Egress	
	Floodplain Compensation	
	Surface Water Drainage Strategy	
	Residual Risk	
	Conclusion	

1.0 INTRODUCTION

1.1 Terms of Reference

1.2 Administrative Context

1.3 Site Location

Figure 1-1

Figure 1-1
Site Location Plan

1.4 Background and Aims

Flood Map for Planning (Rivers and Sea)

Figure 1-2

Figure 1-2
Extract of the Flood Map for Planning

2.0 SITE DETAILS

2.1 Existing Site Description

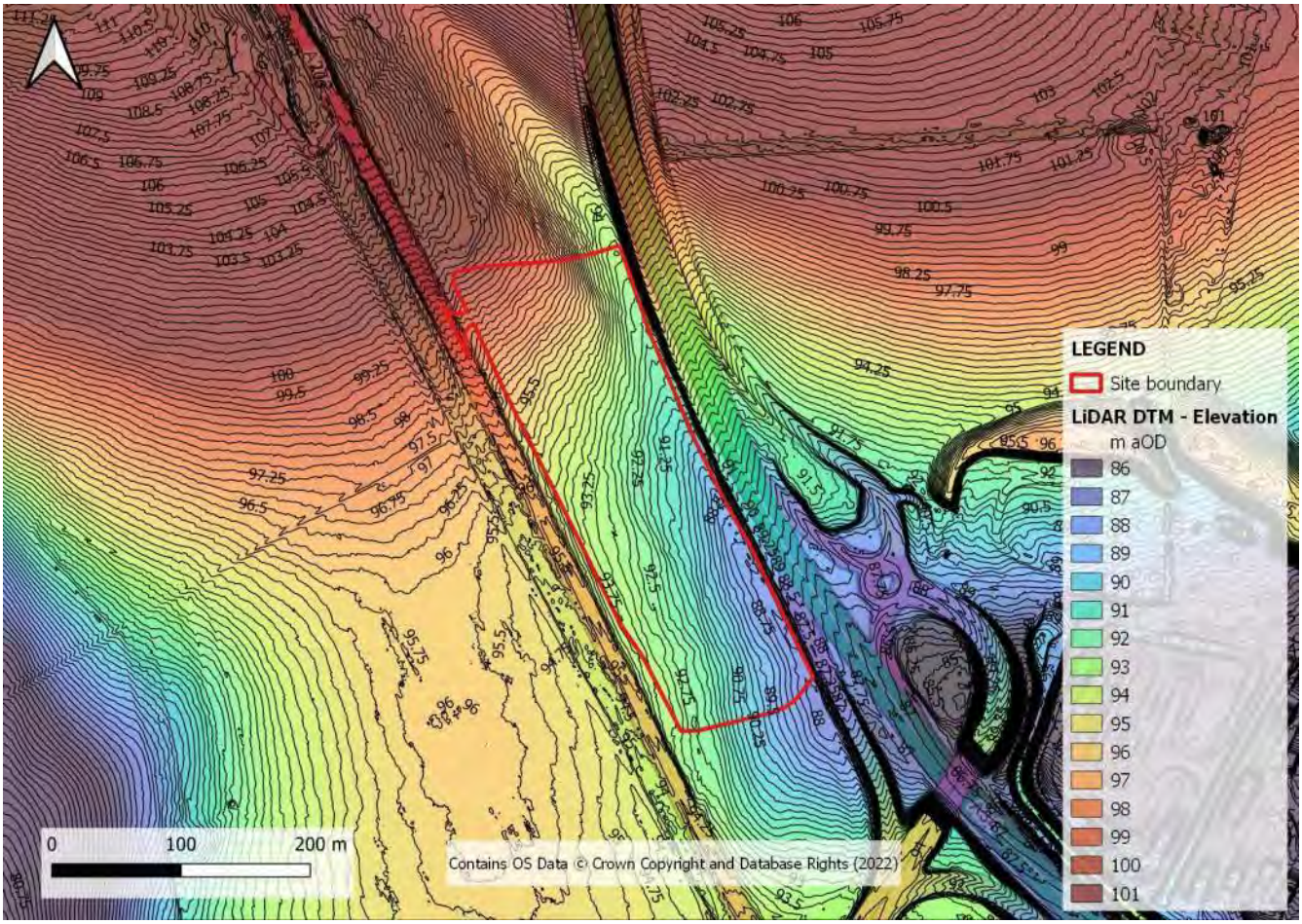
Figure 2-1

Figure 2-1
Satellite Imagery of the Site

2.2 Topography

Figure 2-2

Figure 2-2
Topographic Contours of the Site



2.3 Geological and Hydrogeological Context

2.3.1 Geology

Seaford Chalk Formation – Chalk *Stockbridge Rock Member – Limestone*

Head – Clay, silt, sand and gravel

'shallow lime-rich soils over chalk or limestone'

Appendix 01

2.3.2 Hydrogeology

Seaford Chalk Formation Stockbridge Rock Member Principal layers of rock or drift deposits that have high intergranular and/or fracture permeability – meaning they usually provide a high level of water storage. They may support water supply and/or river base flow on a strategic scale. In most cases, principal aquifers are aquifers previously designated as major aquifers'

Secondary (undifferentiated) 'assigned in cases where it has not been possible to attribute either category A or B to a rock type. In most cases this means that the layer in question has previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type'

Medium High

2.3.3 Infiltration Testing

Appendix 01 **Table 2-1**

Appendix 01

Table 2-1
Infiltration Testing Results

Test	TP01	TP02

2.4 Hydrological Context

2.4.1 Local Hydrology

2.4.2 Existing Site Drainage

3.0 DEVELOPMENT PROPOSAL

3.1 Proposed Development Summary

Appendix 02

3.2 Anticipated Lifetime of Development

3.3 Flood Risk Vulnerability

Table 2: Flood risk vulnerability classification *waste treatment*
Less Vulnerable'

3.4 Planning Context

3.4.1 National Planning Policy

3.4.2 County Planning Policy

'how local flood risks
will be managed in the county' *'approach in the form of a vision, a set of seven principles and*
tailored policies'

Promoting and encouraging the use of surface water SuDS techniques above the use of underground pipes or storage.
Ensuring that post development run off rates and volumes are equal to or less than pre-development amounts.
Ensuring sufficient attenuation of surface water flood water, up to a 1 in 100-year event plus the appropriate extra percentage for expected climate change is provided.
Ensuring that the drainage system consider the required water quality and is designed appropriately for the development use and the associated discharge point, including the wider sensitivity of those locations.
Ensuring Local Planning Authorities are aware of historic flood events in the area including surface water and groundwater events
Ensuring that responsibility and processes for ongoing maintenance of SuDS are considered in the planning process

3.4.3 Local Planning Policy

Policy CP17 – Flooding, Flood Risk and the Water Environment

'The Local Planning Authority will support development which meets all the following criteria:-

avoids flood risk to people and property by:-

- *applying a Sequential Test to the location, and the Exception Test if required, and applying the sequential approach at the site level[10];*
- *managing flood risk from new development to ensure risk is not increased elsewhere and that opportunities to reduce the causes and impacts of flooding within the District through development are taken;*
- *safeguarding land and designated structures and features from development that is required for current and future flood management;*

- *including sustainable water management systems such as Sustainable Drainage Systems (SuDS) which should be designed to meet the relevant standards so as to gain approval by the SuDS Approval Body;*

does not cause unacceptable deterioration to water quality or have an unacceptable impact on water quantity (including drinking water supplies) by:-

- *protecting surface water and groundwater through suitable pollution prevention measures;*
- *using opportunities to improve water quality where possible;*
- *optimising water efficiency;*

is located at a sufficient distance from existing wastewater treatment works to allow adequate odour dispersion, or takes appropriate odour control measures;

ensures that water supply, surface water drainage and wastewater infrastructure to service new development are provided and connect to the nearest point of adequate capacity.

The Local Planning Authority will support the development or expansion of water supply, surface water drainage and wastewater treatment facilities where they are needed to serve existing or new development or in the interests of securing long term supply, provided that the need for such facilities is consistent with other policies such as the development strategy, flood risk, contamination and protection of the natural and built environment.'

4.0 ASSESSMENT OF FLOOD RISK

4.1 Potential sources of flooding

4.1.1 Flooding from Rivers or Fluvial Flooding

Flood Map for Planning (Rivers and Sea)

4.1.2 Flooding from Sea or Tidal Flooding

4.1.3 Flooding from Surface Water or Pluvial Flooding

Long Term Flood Risk Information

Very Low:

Low:

Medium:

High:

Figure 4-1
Environment Agency Surface Water Flood Risk

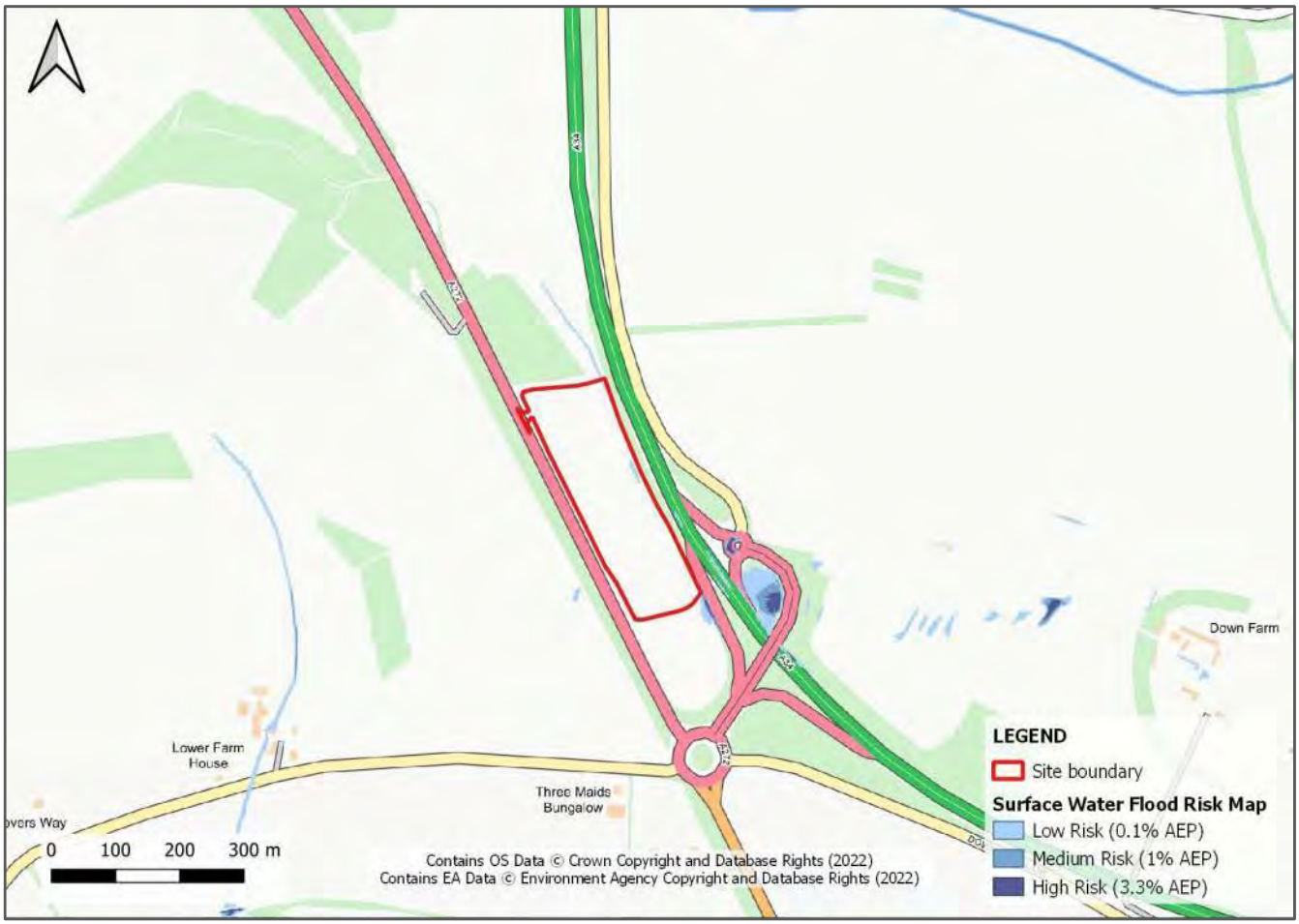


Figure 4-1 *very low*

medium *low*

very low

4.1.4 Flooding from Groundwater

	Seaford Chalk Formation	*Stockbridge Rock Member*
Principal	*Head*	*Secondary (undifferentiated)*

4.1.5 Flooding from Sewers

4.1.6 Flooding from Reservoirs, Canals and other Artificial Sources

Long Term Flood Risk Information

4.1.7 Flooding from Infrastructure Failure

4.2 Flood Risk Summary

Table 4-1

Table 4-1
Potential Sources of Flooding

Potential Source of flooding	Significant Flood Risk at the Site (Y/N)

4.3 Flood Zone

Table 1: Flood zones

Zone 1 - low probability

Zone 2 - medium probability

Zone 3a - high probability

Zone 3b - the functional floodplain

5.0 POLICY STATUS FOR PROPOSED DEVELOPMENT

5.1 Flood Risk Compatibility

Table 3: Flood risk vulnerability and flood zone 'compatibility'

Table 5-1 *'appropriate'*

Table 5-1
Flood Risk Vulnerability and Flood Zone 'Compatibility'

Flood Risk Vulnerability Classification (PPG Table 2)		Essential Infrastructure	Highly Vulnerable	More Vulnerable	Less Vulnerable	Water Compatible
		✓	✓	✓	✓	✓
		✓		✓	✓	✓
					✓	✓
						✓

✓

5.2 Sequential Test

steer new development to areas with the lowest risk of flooding from any source

Development should not be allocated or permitted if there are reasonably available sites appropriate for the proposed development in areas with a lower risk of flooding

Flood Map for Planning (Rivers and Sea) **Figure 1-2**

5.3 Exception Test

Less Vulnerable

6.0 CLIMATE CHANGE

6.1 Peak River Flow & Sea Level Allowances

Climate change allowances for peak river flow in England

Table 6-1 *Test and Itchen Management Catchment*

Table 6-1
Peak River Flow Climate Change Allowances in the Test and Itchen Management Catchment (1981-2000 baseline)

Management Catchment	Allowance Category	Total potential change anticipated for the '2020s' (2015 to 2039)	Total potential change anticipated for the '2050s' (2040 to 2069)	Total potential change anticipated for the '2080s' (2070 to 2125)

Higher Central

Higher Central

Flood Map for Planning (Rivers and Sea)

Flood Map for Planning (Rivers and Sea)

6.2 Peak Rainfall Intensity Allowance

Combined

Test and Itchen Management Catchment peak rainfall allowances **Table 6-2**

Table 6-2
Peak River Rainfall Climate Change Allowances in the Test and Itchen Management Catchment

Management Catchment	Annual Exceedance Probability (%)	Allowance Category	Total potential change anticipated for the 2050s	Total potential change anticipated for the 2070s

Table 6-2

7.0 DRAINAGE PHILOSOPHY

7.1 Summary

7.1.1 Contaminated Water

Appendix 03

7.1.2 Clean Water

8.0 SURFACE WATER DRAINAGE STRATEGY

8.1 Context

8.2 Sustainable Drainage Systems

Figure 8-1

Figure 8-1
Four Pillars of SuDS (after CIRIA Report C753)

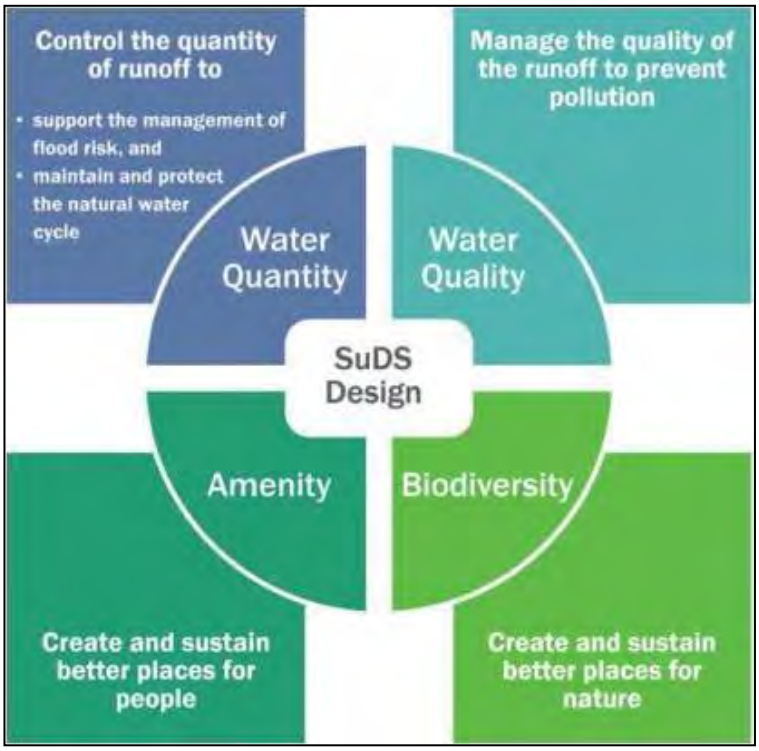


Figure 8-2

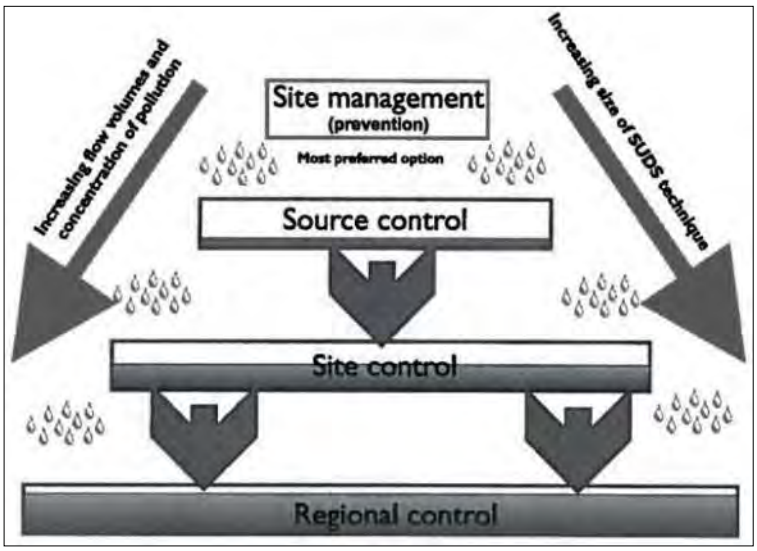
Prevention

Source Control

Site Control

Regional Control

Figure 8-2
SuDS Management Train



8.3 Proposed Drained Area

'impermeability of the contributing catchment through the design life of the drainage system should (…) be taken into account.'

'any increase in impervious area that is drained to an existing drainage system without planning permission being required, and therefore without any consideration of whether the capacity of the receiving sewerage system can accommodate the increased flow.'

Drawing SW1

8.4 Proposed Discharge Arrangement

Table 8-1

Table 8-1
Suitability of Surface Water Disposal Methods

Surface Water Disposal Method (in Order of Preference)	Suitability Description	Method Suitable? (Y / N)
	Appendix 01	

8.5 Proposed Outline SuDS Strategy

Table 8-2

Drawing SW2.

Table 8-2
Summary of Surface Water Management Strategy SuDS Options

SuDS Management Train Mechanism	Application	Potential Suitable SuDS Features

8.5.1 Site Control

Drawing SW1

Drawing SW2

8.6 Water Quantity Design Standard

8.6.1 Control of Runoff Volume

Frequent rainfall events

'the prevention of runoff from the [Site] for the majority of small (frequent) rainfall events (or for the initial depth of rainfall for larger events)' *Interception*

Inception can be delivered using one or a combination of process:

Rainwater harvesting

Infiltration

Evapotranspiration using temporary shallow ponding or storage within the soil or upper aggregate layers.

Table 8-1

Extreme rainfall events

the volume of runoff from the Site (or development) area [does] not exceed the volume of runoff from the equivalent area in its natural undeveloped or "greenfield" state

Table 8-1

8.6.2 Control of Peak Rate of Runoff

Events likely to impact on morphology, ecology or capacity of the receiving surface waters, or the capacity of receiving sewers

morphology, ecology or capacity of the receiving surface waters

Extreme events

should be designed so that peak runoff rates for extreme rainfall events (…) are constrained to the greenfield rates of runoff for the same event

Table 8-1

8.7 Water Quality Design Standard

'Pollution hazard level'

Pollution Hazard Levels

Medium' Pollution Hazard level.

'High' Pollution Hazard Level

'Low' Pollution Hazard Level

Table 8-3
Pollution Hazard Potential for Proposed Development

Land Use	Pollution Hazard Level	Pollution Hazard Indices		
		Total Suspended Solids (TSS)	Metals	Hydro-Carbons

Table 8-1

Table 8-4

Table 8-4
Indicative SuDS Mitigation Indices for Discharges to Groundwater[1]

Characteristics of the material overlying the proposed infiltration surface, through which the runoff percolates	Indicative SuDS Mitigation Indices		
	Total Suspended Solids (TSS)	Metals	Hydro-Carbons

Pollution hazard indices *Mitigation indices* *Site Control*

Table 8-5

Table 8-5
SuDS Performance: Water Quality Indices Assessment (Discharge to Groundwater)

Land Use	Index	SuDS Mitigation Indices Comparison		
		Total Suspended Solids (TSS)	Metals	Hydro-Carbons
	Water Quality Requirement Met? (Y/N)	*Y*	*Y*	*Y*
	Water Quality Requirement Met? (Y/N)	*Y*	*Y*	*Y*

Table 8-5 *Mitigation indices* *Pollution Hazard Indices,*

8.8 Attenuation Volume Estimate

8.8.1 Northern Catchment

Drawing SW1

Drawing SW2

Table 8-6
Northern Catchment: Drainage Performance and Sizing
A. Bioretention System

AEP (%)	Maximum Water Depth (m)	Maximum Attenuation Storage Required (m^3)	Half Drain Time (minutes)

B. Below Ground Crate System

AEP (%)	Maximum Water Depth (m)	Maximum Attenuation Storage Required (m^3)	Half Drain Time (minutes)

60m^3

Medium sand, very well sorted[18]

446m^3

8.8.2 Southern Catchment

Drawing SW1

Drawing SW2

Table 8-7
Southern Catchment: Drainage Performance and Sizing
A. Bioretention System

AEP (%)	Maximum Water Depth (m)	Maximum Attenuation Storage Required (m^3)	Half Drain Time (minutes)

B. Below Ground Crate System

AEP (%)	Maximum Water Depth (m)	Maximum Attenuation Storage Required (m^3)	Half Drain Time (minutes)

63m^3

Medium sand, very well sorted

470m^3

Appendix 04

'Drainage systems must be designed so that (…) flooding from the drainage system does not occur:

a) On any part of the site for a 1 in 30 year [3.33% AEP] rainfall event; and

b) During a 1 in 100 year [1% AEP] rainfall event in any part of:

a building (including a basement); or

utility plant susceptible to water (e.g. pumping station or electricity substation); or

c) On neighbouring sites during a 1 in 100 year [1% AEP] rainfall event.'

8.9 Design Exceedance Arrangement

9.0 PRINCIPAL OPERATION AND MAINTENANCE REQUIREMENTS

9.1 Bioretention System

Table 9-1

Table 9-1
Typical Bioretention System Operation and Maintenance Requirements

Maintenance Schedule	Required Action	Typical Frequency

9.2 Below Ground Crate System

Table 9-2

Table 9-2
Typical Below Ground Crate System Operation and Maintenance Requirements

Maintenance Schedule	Required Action	Minimum Frequency

9.3 Underground Piped Systems

Table 9-3.

Table 9-3
Typical Pipe System Operation and Maintenance Requirements

Maintenance Schedule	Required Action	Minimum Frequency

10.0 CONCLUSIONS

10.1 Flood Risk

10.2 Drainage Philosophy

10.3 Surface Water Drainage Strategy

DRAWINGS

acorn BIOENERGY

SLR

SUBSTATION + METER READING

6 x PARKING

WEIGHBRIDGE

Buried Propane

GAS FLARE

GRID ENTRY UNIT

Covered Lagoon 10'000m³

CNG COMPRESSOR 1 & 2

BOILER

STORAGE

CHILLER

EXTRACTION STATION

TRAILER BAY 1

TRAILER BAY 2

TRAILER BAY 3

TRAILER BAY 4

TRAILER BAY 5

CO2 TANKS

Turning Circle

CHP

CHP

HEAT EXCHANGER

TECH CONTAINER

TANK 04

TANK 01

TANK 05

TANK 01

TANK 03

DIRTY TANK

DIRTY TANK

TANK 08

TANK 06

TANK 07

TANK 08

SLURRY TANK

SLURRY TANK

PUMP CONTAINER

ARK CLAMP 1
123.75m x 42.5m x 3.52m
WALL HEIGHT
28,534m³

ARK CLAMP 1
118.75m x 42.5m x 3.52m
WALL HEIGHT
27,384m³

Grp 4

A34

A272

Lay-by

RH

acorn BIOENERGY

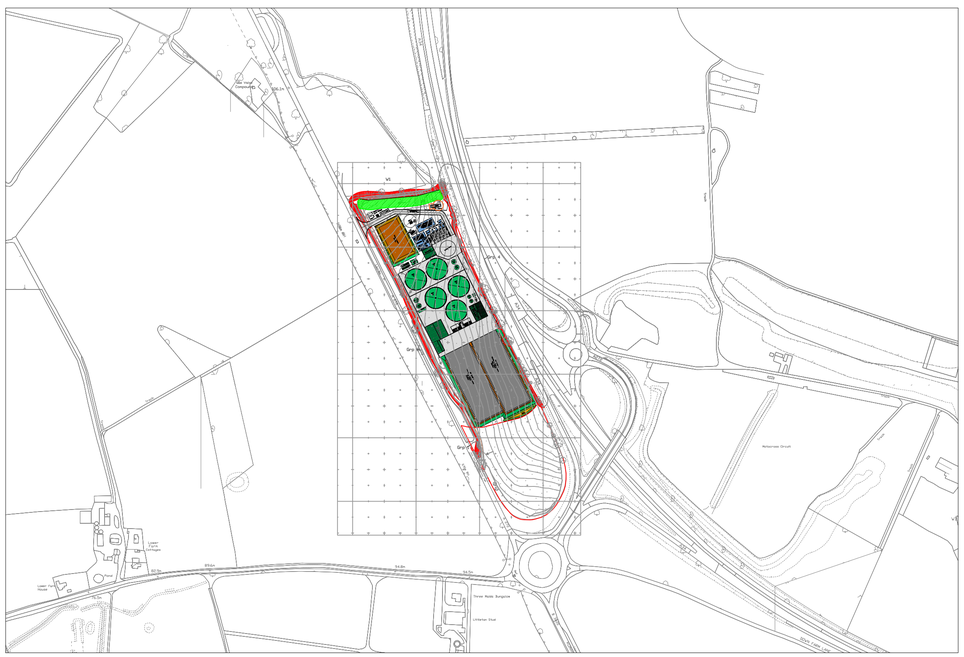
SLR

APPENDIX 01

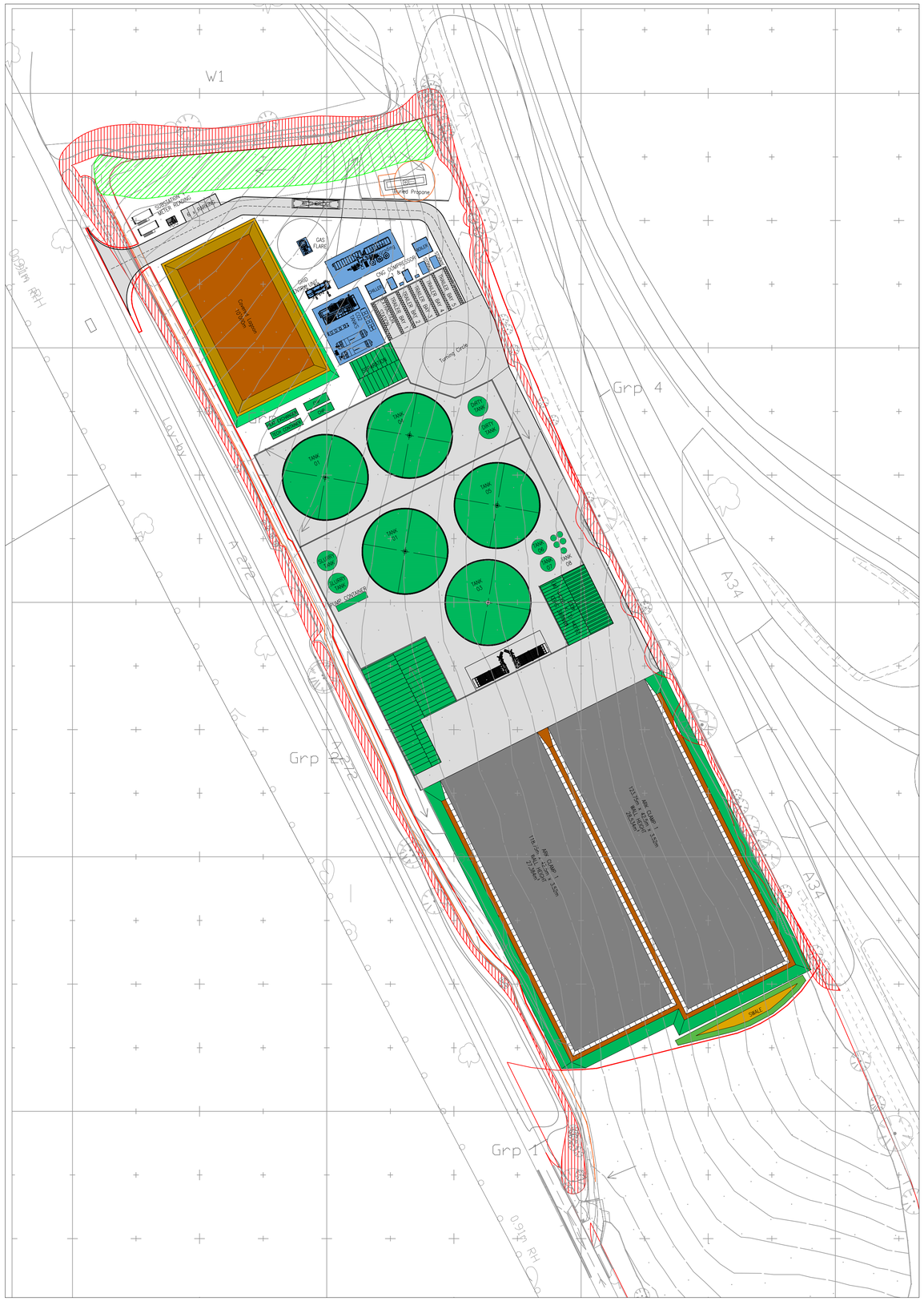
AS NOTED ON A1 FRAME

0 10m 20m 30m 40m 50m
Scale 1:1000 @ A1

0 50m 100m 150m 200m 250m
Scale 1:5000 @ A1



SITE LOCATION PLAN
Scale: 1:5000 @ A1



SITE PLAN
Scale: 1:1000 @ A1

NOT FOR CONSTRUCTION

NOTES:-

1. All dimensions must be checked on site and not scaled from this drawing.
2. The Contractor shall make a survey of the site and shall be responsible for obtaining all dimensions and levels necessary for the proper fabrication of the structure as indicated.
3. All levels shown on this drawing are relative to Agreed Topographic survey
4. This drawing is to be read in conjunction with 29348/100 Series Drawings.
5. All existing invert levels are to be confirmed by contractor prior to construction. Connection subject to approval.

🟥	Site Red Line Boundary (4.52ha)
▨	15m Woodland Easement
▨	Tree Easement

Rev	Date	Description	DR	CH
E	07/09/22	Notes Revised	JH	JHC
D	25/08/22	Notes Revised	DJC	JHC
C	27/07/22	Layout Revised	DJC	JHC
B	13/06/22	Issued For Approval	DJC	JHC
A	24/03/22	Issued For Planning	DJC	JHC

UVDB empowered by Achilles Registered

Link-up empowered by Achilles Qualified via Audit

GGP CONSULT
CONSULTING ENGINEERS
PROJECT MANAGEMENT

2 Hallam Road
Priory Park East
HULL HU4 7DY
United Kingdom

Telephone (+44) 01482 627963
Fax (+44) 01482 641736
Email info@ggpconsult.co.uk

Client
acorn

Job Title
AD Plant.
Three Maids

Drawing Title
Site Layout Plan

Status
Approval

Scale
As Noted

Date
Feb' '22

Drawn By
Daniel Cook

Checked
JHC

Approved
JHC

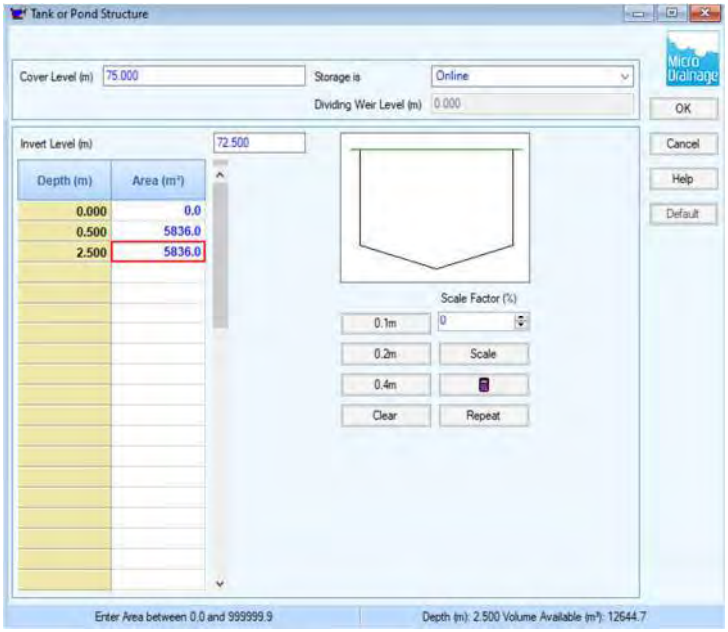
Drg. No.
29348/101A

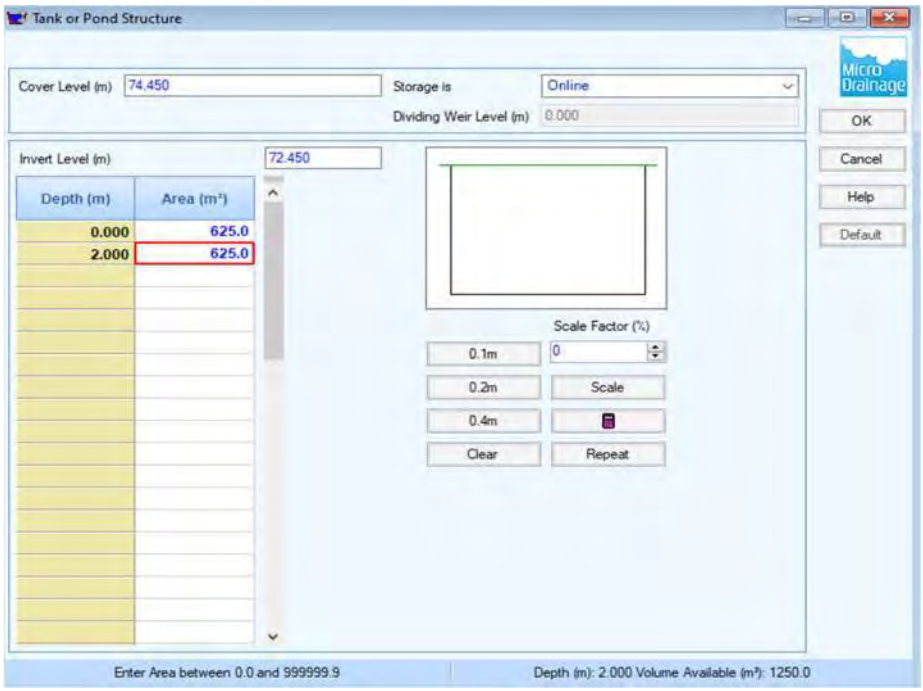
Rev
E

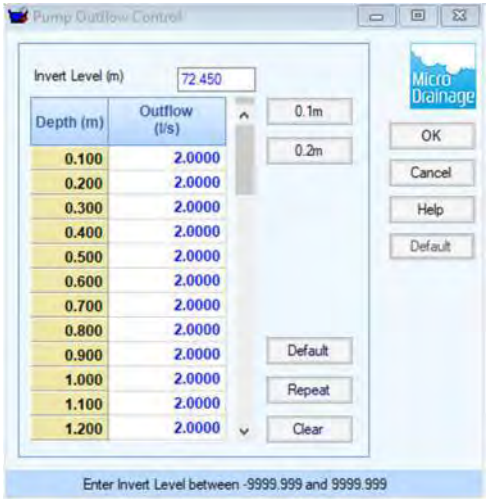
APPENDIX 02

GGP CONSULT

acorn BIOENERGY


Tank or Pond Structure
Cover Level (m)
75.000
Storage is
Online
Dividing Weir Level (m)
0.000
Invert Level (m)
72.500
Depth (m)
Area (m²)
0.000
0.0
0.500
5836.0
2.500
5836.0
Scale Factor (%)
0
0.1m
0.2m
0.4m
Clear
Scale
Repeat
OK
Cancel
Help
Default
Micro Drainage
Enter Area between 0.0 and 999999.9
Depth (m): 2.500 Volume Available (m³): 12644.7


Tank or Pond Structure
Cover Level (m) 74.450
Storage is Online
Dividing Weir Level (m) 0.000
Invert Level (m) 72.450
Depth (m) Area (m²)
0.000 625.0
2.000 625.0
Scale Factor (%)
0.1m
0.2m
0.4m
Clear
Scale
Repeat
OK
Cancel
Help
Default
Micro Drainage
Enter Area between 0.0 and 999999.9
Depth (m): 2.000 Volume Available (m³): 1250.0


Pump Outflow Control
Invert Level (m) 72.450
Depth (m) Outflow (l/s)
0.100 2.0000
0.200 2.0000
0.300 2.0000
0.400 2.0000
0.500 2.0000
0.600 2.0000
0.700 2.0000
0.800 2.0000
0.900 2.0000
1.000 2.0000
1.100 2.0000
1.200 2.0000
0.1m
0.2m
Default
Repeat
Clear
OK
Cancel
Help
Default
Micro Drainage
Enter Invert Level between -9999.999 and 9999.999

Summary of Results for 1 year Return Period (+40%)

Outflow is too low. Design is unsatisfactory.

Storm Event	Max Level (m)	Max Depth (m)	Max Volume (m³)	Status
15 min Summer	72.718	0.218	80.1	O K
30 min Summer	72.738	0.238	104.5	O K
60 min Summer	72.757	0.257	132.4	O K
120 min Summer	72.776	0.276	164.3	O K
180 min Summer	72.788	0.288	185.5	O K
240 min Summer	72.796	0.296	202.0	O K
360 min Summer	72.808	0.308	226.3	O K
480 min Summer	72.816	0.316	244.6	O K
600 min Summer	72.822	0.322	259.8	O K
720 min Summer	72.827	0.327	272.9	O K
960 min Summer	72.836	0.336	294.9	O K
1440 min Summer	72.848	0.348	329.2	O K
2160 min Summer	72.862	0.362	367.7	O K
2880 min Summer	72.871	0.371	397.3	O K
4320 min Summer	72.885	0.385	443.2	O K
5760 min Summer	72.895	0.395	479.2	O K
7200 min Summer	72.903	0.403	509.3	O K
8640 min Summer	72.910	0.410	535.4	O K
10080 min Summer	72.916	0.416	558.6	O K
15 min Winter	72.726	0.226	89.7	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	43.387	0.0	23
30 min Summer	28.301	0.0	38
60 min Summer	17.920	0.0	68
120 min Summer	11.119	0.0	128
180 min Summer	8.370	0.0	188
240 min Summer	6.835	0.0	248
360 min Summer	5.105	0.0	368
480 min Summer	4.138	0.0	488
600 min Summer	3.516	0.0	608
720 min Summer	3.078	0.0	728
960 min Summer	2.495	0.0	968
1440 min Summer	1.857	0.0	1448
2160 min Summer	1.383	0.0	2168
2880 min Summer	1.120	0.0	2888
4320 min Summer	0.833	0.0	4328
5760 min Summer	0.676	0.0	5768
7200 min Summer	0.574	0.0	7208
8640 min Summer	0.503	0.0	8648
10080 min Summer	0.450	0.0	10088
15 min Winter	43.387	0.0	23

Summary of Results for 1 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Volume (m³)	Status
30 min Winter	72.747	0.247	117.1	O K
60 min Winter	72.767	0.267	148.3	O K
120 min Winter	72.787	0.287	184.0	O K
180 min Winter	72.799	0.299	207.8	O K
240 min Winter	72.807	0.307	226.2	O K
360 min Winter	72.819	0.319	253.4	O K
480 min Winter	72.828	0.328	273.9	O K
600 min Winter	72.834	0.334	290.9	O K
720 min Winter	72.840	0.340	305.6	O K
960 min Winter	72.849	0.349	330.3	O K
1440 min Winter	72.862	0.362	368.7	O K
2160 min Winter	72.875	0.375	411.9	O K
2880 min Winter	72.885	0.385	445.0	O K
4320 min Winter	72.900	0.400	496.4	O K
5760 min Winter	72.910	0.410	536.7	O K
7200 min Winter	72.919	0.419	570.4	O K
8640 min Winter	72.926	0.426	599.7	O K
10080 min Winter	72.932	0.432	625.7	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	28.301	0.0	38
60 min Winter	17.920	0.0	68
120 min Winter	11.119	0.0	128
180 min Winter	8.370	0.0	188
240 min Winter	6.835	0.0	248
360 min Winter	5.105	0.0	368
480 min Winter	4.138	0.0	488
600 min Winter	3.516	0.0	608
720 min Winter	3.078	0.0	728
960 min Winter	2.495	0.0	968
1440 min Winter	1.857	0.0	1448
2160 min Winter	1.383	0.0	2168
2880 min Winter	1.120	0.0	2888
4320 min Winter	0.833	0.0	4328
5760 min Winter	0.676	0.0	5768
7200 min Winter	0.574	0.0	7208
8640 min Winter	0.503	0.0	8648
10080 min Winter	0.450	0.0	10088

Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	1	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	20.000	Shortest Storm (mins)	15
Ratio R	0.400	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.985

Time From:	(mins) To:	Area (ha)	Time From:	(mins) To:	Area (ha)
0	4	0.492	4	8	0.493

Time Area Diagram

Total Area (ha) 0.000

Time From:	(mins) To:	Area (ha)
0	4	0.000

Model Details

Storage is Online Cover Level (m) 75.000

Tank or Pond Structure

Invert Level (m) 72.500

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	0.0	0.500	5836.0	2.500	5836.0

Summary of Results for 2 year Return Period (+40%)

Outflow is too low. Design is unsatisfactory.

Storm Event	Max Level (m)	Max Depth (m)	Max Volume (m³)	Status
15 min Summer	72.737	0.237	103.6	O K
30 min Summer	72.758	0.258	134.3	O K
60 min Summer	72.778	0.278	167.5	O K
120 min Summer	72.797	0.297	204.7	O K
180 min Summer	72.809	0.309	228.9	O K
240 min Summer	72.817	0.317	247.5	O K
360 min Summer	72.828	0.328	275.2	O K
480 min Summer	72.836	0.336	296.3	O K
600 min Summer	72.843	0.343	313.7	O K
720 min Summer	72.848	0.348	328.6	O K
960 min Summer	72.857	0.357	353.5	O K
1440 min Summer	72.869	0.369	391.9	O K
2160 min Summer	72.882	0.382	434.5	O K
2880 min Summer	72.892	0.392	467.2	O K
4320 min Summer	72.905	0.405	517.7	O K
5760 min Summer	72.915	0.415	556.8	O K
7200 min Summer	72.923	0.423	589.3	O K
8640 min Summer	72.930	0.430	617.3	O K
10080 min Summer	72.935	0.435	642.1	O K
15 min Winter	72.746	0.246	116.0	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	56.082	0.0	23
30 min Summer	36.348	0.0	38
60 min Summer	22.680	0.0	68
120 min Summer	13.855	0.0	128
180 min Summer	10.330	0.0	188
240 min Summer	8.375	0.0	248
360 min Summer	6.209	0.0	368
480 min Summer	5.013	0.0	488
600 min Summer	4.246	0.0	608
720 min Summer	3.706	0.0	728
960 min Summer	2.991	0.0	968
1440 min Summer	2.210	0.0	1448
2160 min Summer	1.634	0.0	2168
2880 min Summer	1.318	0.0	2888
4320 min Summer	0.973	0.0	4328
5760 min Summer	0.785	0.0	5768
7200 min Summer	0.665	0.0	7208
8640 min Summer	0.580	0.0	8648
10080 min Summer	0.517	0.0	10088
15 min Winter	56.082	0.0	23

Summary of Results for 2 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Volume (m³)	Status
30 min Winter	72.768	0.268	150.4	O K
60 min Winter	72.789	0.289	187.7	O K
120 min Winter	72.809	0.309	229.3	O K
180 min Winter	72.821	0.321	256.4	O K
240 min Winter	72.829	0.329	277.2	O K
360 min Winter	72.841	0.341	308.2	O K
480 min Winter	72.849	0.349	331.8	O K
600 min Winter	72.856	0.356	351.3	O K
720 min Winter	72.862	0.362	368.0	O K
960 min Winter	72.871	0.371	395.9	O K
1440 min Winter	72.884	0.384	438.9	O K
2160 min Winter	72.897	0.397	486.6	O K
2880 min Winter	72.907	0.407	523.3	O K
4320 min Winter	72.921	0.421	579.8	O K
5760 min Winter	72.931	0.431	623.6	O K
7200 min Winter	72.939	0.439	660.0	O K
8640 min Winter	72.946	0.446	691.4	O K
10080 min Winter	72.952	0.452	719.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	36.348	0.0	38
60 min Winter	22.680	0.0	68
120 min Winter	13.855	0.0	128
180 min Winter	10.330	0.0	188
240 min Winter	8.375	0.0	248
360 min Winter	6.209	0.0	368
480 min Winter	5.013	0.0	488
600 min Winter	4.246	0.0	608
720 min Winter	3.706	0.0	728
960 min Winter	2.991	0.0	968
1440 min Winter	2.210	0.0	1448
2160 min Winter	1.634	0.0	2168
2880 min Winter	1.318	0.0	2888
4320 min Winter	0.973	0.0	4328
5760 min Winter	0.785	0.0	5768
7200 min Winter	0.665	0.0	7208
8640 min Winter	0.580	0.0	8648
10080 min Winter	0.517	0.0	10088

Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	2	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	20.000	Shortest Storm (mins)	15
Ratio R	0.400	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.985

Time From:	(mins) To:	Area (ha)	Time From:	(mins) To:	Area (ha)
0	4	0.492	4	8	0.493

Time Area Diagram

Total Area (ha) 0.000

Time From:	(mins) To:	Area (ha)
0	4	0.000

Model Details

Storage is Online Cover Level (m) 75.000

Tank or Pond Structure

Invert Level (m) 72.500

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	0.0	0.500	5836.0	2.500	5836.0

Summary of Results for 10 year Return Period (+40%)

Outflow is too low. Design is unsatisfactory.

Storm Event	Max Level (m)	Max Depth (m)	Max Volume (m³)	Status
15 min Summer	72.771	0.271	155.0	O K
30 min Summer	72.795	0.295	200.2	O K
60 min Summer	72.817	0.317	248.2	O K
120 min Summer	72.838	0.338	300.1	O K
180 min Summer	72.850	0.350	332.7	O K
240 min Summer	72.858	0.358	356.9	O K
360 min Summer	72.870	0.370	393.3	O K
480 min Summer	72.878	0.378	421.1	O K
600 min Summer	72.885	0.385	443.8	O K
720 min Summer	72.890	0.390	463.2	O K
960 min Summer	72.899	0.399	495.2	O K
1440 min Summer	72.912	0.412	543.8	O K
2160 min Summer	72.925	0.425	596.7	O K
2880 min Summer	72.934	0.434	637.1	O K
4320 min Summer	72.948	0.448	698.4	O K
5760 min Summer	72.958	0.458	745.2	O K
7200 min Summer	72.965	0.465	783.5	O K
8640 min Summer	72.972	0.472	816.2	O K
10080 min Summer	72.977	0.477	844.9	O K
15 min Winter	72.781	0.281	173.6	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	83.912	0.0	23
30 min Summer	54.206	0.0	38
60 min Summer	33.604	0.0	68
120 min Summer	20.311	0.0	128
180 min Summer	15.011	0.0	188
240 min Summer	12.078	0.0	248
360 min Summer	8.874	0.0	368
480 min Summer	7.126	0.0	488
600 min Summer	6.008	0.0	608
720 min Summer	5.225	0.0	728
960 min Summer	4.190	0.0	968
1440 min Summer	3.067	0.0	1448
2160 min Summer	2.244	0.0	2168
2880 min Summer	1.797	0.0	2888
4320 min Summer	1.313	0.0	4328
5760 min Summer	1.051	0.0	5768
7200 min Summer	0.884	0.0	7208
8640 min Summer	0.767	0.0	8648
10080 min Summer	0.681	0.0	10088
15 min Winter	83.912	0.0	23

Summary of Results for 10 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Volume (m³)	Status
30 min Winter	72.807	0.307	224.2	O K
60 min Winter	72.829	0.329	278.0	O K
120 min Winter	72.851	0.351	336.1	O K
180 min Winter	72.863	0.363	372.6	O K
240 min Winter	72.872	0.372	399.7	O K
360 min Winter	72.884	0.384	440.5	O K
480 min Winter	72.893	0.393	471.7	O K
600 min Winter	72.900	0.400	497.1	O K
720 min Winter	72.905	0.405	518.8	O K
960 min Winter	72.915	0.415	554.6	O K
1440 min Winter	72.928	0.428	609.0	O K
2160 min Winter	72.941	0.441	668.3	O K
2880 min Winter	72.951	0.451	713.5	O K
4320 min Winter	72.965	0.465	782.2	O K
5760 min Winter	72.975	0.475	834.6	O K
7200 min Winter	72.983	0.483	877.5	O K
8640 min Winter	72.990	0.490	914.2	O K
10080 min Winter	72.995	0.495	946.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	54.206	0.0	38
60 min Winter	33.604	0.0	68
120 min Winter	20.311	0.0	128
180 min Winter	15.011	0.0	188
240 min Winter	12.078	0.0	248
360 min Winter	8.874	0.0	368
480 min Winter	7.126	0.0	488
600 min Winter	6.008	0.0	608
720 min Winter	5.225	0.0	728
960 min Winter	4.190	0.0	968
1440 min Winter	3.067	0.0	1448
2160 min Winter	2.244	0.0	2168
2880 min Winter	1.797	0.0	2888
4320 min Winter	1.313	0.0	4328
5760 min Winter	1.051	0.0	5768
7200 min Winter	0.884	0.0	7208
8640 min Winter	0.767	0.0	8648
10080 min Winter	0.681	0.0	10088

Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	10	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	20.000	Shortest Storm (mins)	15
Ratio R	0.400	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.985

Time From:	(mins) To:	Area (ha)	Time From:	(mins) To:	Area (ha)
0	4	0.492	4	8	0.493

Time Area Diagram

Total Area (ha) 0.000

Time From:	(mins) To:	Area (ha)
0	4	0.000

Model Details

Storage is Online Cover Level (m) 75.000

Tank or Pond Structure

Invert Level (m) 72.500

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	0.0	0.500	5836.0	2.500	5836.0

Summary of Results for 30 year Return Period (+40%)

Outflow is too low. Design is unsatisfactory.

Storm Event	Max Level (m)	Max Depth (m)	Max Volume (m³)	Status
15 min Summer	72.793	0.293	196.6	O K
30 min Summer	72.820	0.320	256.0	O K
60 min Summer	72.845	0.345	318.7	O K
120 min Summer	72.867	0.367	385.0	O K
180 min Summer	72.880	0.380	425.6	O K
240 min Summer	72.888	0.388	454.8	O K
360 min Summer	72.900	0.400	498.6	O K
480 min Summer	72.909	0.409	531.9	O K
600 min Summer	72.916	0.416	558.9	O K
720 min Summer	72.921	0.421	581.8	O K
960 min Summer	72.930	0.430	619.4	O K
1440 min Summer	72.943	0.443	675.9	O K
2160 min Summer	72.956	0.456	736.8	O K
2880 min Summer	72.965	0.465	782.7	O K
4320 min Summer	72.978	0.478	851.5	O K
5760 min Summer	72.988	0.488	903.4	O K
7200 min Summer	72.995	0.495	945.5	O K
8640 min Summer	73.001	0.501	981.2	O K
10080 min Summer	73.007	0.507	1012.2	O K
15 min Winter	72.805	0.305	220.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	106.449	0.0	23
30 min Summer	69.298	0.0	38
60 min Summer	43.136	0.0	68
120 min Summer	26.061	0.0	128
180 min Summer	19.202	0.0	188
240 min Summer	15.393	0.0	248
360 min Summer	11.248	0.0	368
480 min Summer	8.999	0.0	488
600 min Summer	7.565	0.0	608
720 min Summer	6.562	0.0	728
960 min Summer	5.240	0.0	968
1440 min Summer	3.812	0.0	1448
2160 min Summer	2.770	0.0	2168
2880 min Summer	2.207	0.0	2888
4320 min Summer	1.601	0.0	4328
5760 min Summer	1.274	0.0	5768
7200 min Summer	1.067	0.0	7208
8640 min Summer	0.922	0.0	8648
10080 min Summer	0.816	0.0	10088
15 min Winter	106.449	0.0	23

Summary of Results for 30 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Volume (m³)	Status
30 min Winter	72.833	0.333	286.7	O K
60 min Winter	72.858	0.358	356.9	O K
120 min Winter	72.881	0.381	431.3	O K
180 min Winter	72.894	0.394	476.6	O K
240 min Winter	72.903	0.403	509.4	O K
360 min Winter	72.916	0.416	558.4	O K
480 min Winter	72.925	0.425	595.7	O K
600 min Winter	72.932	0.432	625.9	O K
720 min Winter	72.937	0.437	651.6	O K
960 min Winter	72.947	0.447	693.7	O K
1440 min Winter	72.960	0.460	757.1	O K
2160 min Winter	72.973	0.473	825.2	O K
2880 min Winter	72.983	0.483	876.6	O K
4320 min Winter	72.997	0.497	953.7	O K
5760 min Winter	73.007	0.507	1011.8	O K
7200 min Winter	73.015	0.515	1059.0	O K
8640 min Winter	73.022	0.522	1098.9	O K
10080 min Winter	73.028	0.528	1133.7	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	69.298	0.0	38
60 min Winter	43.136	0.0	68
120 min Winter	26.061	0.0	128
180 min Winter	19.202	0.0	188
240 min Winter	15.393	0.0	248
360 min Winter	11.248	0.0	368
480 min Winter	8.999	0.0	488
600 min Winter	7.565	0.0	608
720 min Winter	6.562	0.0	728
960 min Winter	5.240	0.0	968
1440 min Winter	3.812	0.0	1448
2160 min Winter	2.770	0.0	2168
2880 min Winter	2.207	0.0	2888
4320 min Winter	1.601	0.0	4328
5760 min Winter	1.274	0.0	5768
7200 min Winter	1.067	0.0	7208
8640 min Winter	0.922	0.0	8648
10080 min Winter	0.816	0.0	10088

Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	30	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	20.000	Shortest Storm (mins)	15
Ratio R	0.400	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.985

Time From:	(mins) To:	Area (ha)	Time From:	(mins) To:	Area (ha)
0	4	0.492	4	8	0.493

Time Area Diagram

Total Area (ha) 0.000

Time From:	(mins) To:	Area (ha)
0	4	0.000

Model Details

Storage is Online Cover Level (m) 75.000

Tank or Pond Structure

Invert Level (m) 72.500

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	0.0	0.500	5836.0	2.500	5836.0

Summary of Results for 100 year Return Period (+40%)

Outflow is too low. Design is unsatisfactory.

Storm Event	Max Level (m)	Max Depth (m)	Max Volume (m³)	Status
15 min Summer	72.820	0.320	255.2	O K
30 min Summer	72.850	0.350	335.0	O K
60 min Summer	72.878	0.378	419.0	O K
120 min Summer	72.902	0.402	506.0	O K
180 min Summer	72.915	0.415	557.4	O K
240 min Summer	72.924	0.424	593.3	O K
360 min Summer	72.936	0.436	646.5	O K
480 min Summer	72.945	0.445	686.9	O K
600 min Summer	72.952	0.452	719.4	O K
720 min Summer	72.958	0.458	746.8	O K
960 min Summer	72.967	0.467	791.6	O K
1440 min Summer	72.980	0.480	857.9	O K
2160 min Summer	72.992	0.492	928.3	O K
2880 min Summer	73.001	0.501	980.7	O K
4320 min Summer	73.015	0.515	1058.1	O K
5760 min Summer	73.025	0.525	1115.7	O K
7200 min Summer	73.032	0.532	1161.8	O K
8640 min Summer	73.039	0.539	1200.5	O K
10080 min Summer	73.045	0.545	1233.9	O K
15 min Winter	72.832	0.332	285.8	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	138.153	0.0	23
30 min Summer	90.705	0.0	38
60 min Summer	56.713	0.0	68
120 min Summer	34.246	0.0	128
180 min Summer	25.149	0.0	188
240 min Summer	20.078	0.0	248
360 min Summer	14.585	0.0	368
480 min Summer	11.622	0.0	488
600 min Summer	9.738	0.0	608
720 min Summer	8.424	0.0	728
960 min Summer	6.697	0.0	968
1440 min Summer	4.839	0.0	1448
2160 min Summer	3.490	0.0	2168
2880 min Summer	2.766	0.0	2888
4320 min Summer	1.989	0.0	4328
5760 min Summer	1.573	0.0	5768
7200 min Summer	1.311	0.0	7208
8640 min Summer	1.129	0.0	8648
10080 min Summer	0.994	0.0	10088
15 min Winter	138.153	0.0	23

Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Volume (m³)	Status
30 min Winter	72.864	0.364	375.2	O K
60 min Winter	72.892	0.392	469.2	O K
120 min Winter	72.918	0.418	566.7	O K
180 min Winter	72.931	0.431	624.2	O K
240 min Winter	72.940	0.440	664.5	O K
360 min Winter	72.953	0.453	724.1	O K
480 min Winter	72.962	0.462	769.3	O K
600 min Winter	72.970	0.470	805.8	O K
720 min Winter	72.975	0.475	836.4	O K
960 min Winter	72.985	0.485	886.6	O K
1440 min Winter	72.998	0.498	960.9	O K
2160 min Winter	73.011	0.511	1039.7	O K
2880 min Winter	73.022	0.522	1098.4	O K
4320 min Winter	73.036	0.536	1185.1	O K
5760 min Winter	73.047	0.547	1249.6	O K
7200 min Winter	73.056	0.556	1301.3	O K
8640 min Winter	73.064	0.564	1344.6	O K
10080 min Winter	73.070	0.570	1382.0	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	90.705	0.0	38
60 min Winter	56.713	0.0	68
120 min Winter	34.246	0.0	128
180 min Winter	25.149	0.0	188
240 min Winter	20.078	0.0	248
360 min Winter	14.585	0.0	368
480 min Winter	11.622	0.0	488
600 min Winter	9.738	0.0	608
720 min Winter	8.424	0.0	728
960 min Winter	6.697	0.0	968
1440 min Winter	4.839	0.0	1448
2160 min Winter	3.490	0.0	2168
2880 min Winter	2.766	0.0	2888
4320 min Winter	1.989	0.0	4328
5760 min Winter	1.573	0.0	5768
7200 min Winter	1.311	0.0	7208
8640 min Winter	1.129	0.0	8648
10080 min Winter	0.994	0.0	10088

Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	20.000	Shortest Storm (mins)	15
Ratio R	0.400	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.985

Time From:	(mins) To:	Area (ha)	Time From:	(mins) To:	Area (ha)
0	4	0.492	4	8	0.493

Time Area Diagram

Total Area (ha) 0.000

Time From:	(mins) To:	Area (ha)
0	4	0.000

Model Details

Storage is Online Cover Level (m) 75.000

Tank or Pond Structure

Invert Level (m) 72.500

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	0.0	0.500	5836.0	2.500	5836.0

Summary of Results for 1 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m³)	Status
15 min Summer	72.683	0.233	2.0	145.8	O K
30 min Summer	72.753	0.303	2.0	189.6	O K
60 min Summer	72.831	0.381	2.0	238.3	O K
120 min Summer	72.917	0.467	2.0	291.6	O K
180 min Summer	72.970	0.520	2.0	325.0	O K
240 min Summer	73.009	0.559	2.0	349.5	O K
360 min Summer	73.062	0.612	2.0	382.4	O K
480 min Summer	73.097	0.647	2.0	404.3	O K
600 min Summer	73.122	0.672	2.0	420.3	O K
720 min Summer	73.142	0.692	2.0	432.4	O K
960 min Summer	73.168	0.718	2.0	449.0	O K
1440 min Summer	73.193	0.743	2.0	464.2	O K
2160 min Summer	73.197	0.747	2.0	466.6	O K
2880 min Summer	73.191	0.741	2.0	463.0	O K
4320 min Summer	73.170	0.720	2.0	449.7	O K
5760 min Summer	73.143	0.693	2.0	433.1	O K
7200 min Summer	73.114	0.664	2.0	415.0	O K
8640 min Summer	73.084	0.634	2.0	396.4	O K
10080 min Summer	73.054	0.604	2.0	377.5	O K
15 min Winter	72.712	0.262	2.0	163.5	O K
30 min Winter	72.790	0.340	2.0	212.7	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
15 min Summer	43.387	0.0	132.2	27
30 min Summer	28.301	0.0	160.4	41
60 min Summer	17.920	0.0	239.6	70
120 min Summer	11.119	0.0	290.8	130
180 min Summer	8.370	0.0	318.6	190
240 min Summer	6.835	0.0	333.3	250
360 min Summer	5.105	0.0	336.5	368
480 min Summer	4.138	0.0	334.1	488
600 min Summer	3.516	0.0	331.7	606
720 min Summer	3.078	0.0	329.4	726
960 min Summer	2.495	0.0	324.8	964
1440 min Summer	1.857	0.0	315.5	1442
2160 min Summer	1.383	0.0	640.0	1888
2880 min Summer	1.120	0.0	629.4	2280
4320 min Summer	0.833	0.0	590.5	3068
5760 min Summer	0.676	0.0	884.1	3880
7200 min Summer	0.574	0.0	939.5	4696
8640 min Summer	0.503	0.0	986.0	5536
10080 min Summer	0.450	0.0	1020.3	6360
15 min Winter	43.387	0.0	144.8	26
30 min Winter	28.301	0.0	169.0	41

Summary of Results for 1 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m³)	Status
60 min Winter	72.878	0.428	2.0	267.5	O K
120 min Winter	72.975	0.525	2.0	327.8	O K
180 min Winter	73.035	0.585	2.0	365.9	O K
240 min Winter	73.081	0.631	2.0	394.1	O K
360 min Winter	73.142	0.692	2.0	432.4	O K
480 min Winter	73.183	0.733	2.0	458.3	O K
600 min Winter	73.214	0.764	2.0	477.7	O K
720 min Winter	73.238	0.788	2.0	492.7	O K
960 min Winter	73.273	0.823	2.0	514.2	O K
1440 min Winter	73.310	0.860	2.0	537.3	O K
2160 min Winter	73.324	0.874	2.0	546.5	O K
2880 min Winter	73.314	0.864	2.0	539.9	O K
4320 min Winter	73.282	0.832	2.0	520.2	O K
5760 min Winter	73.241	0.791	2.0	494.3	O K
7200 min Winter	73.194	0.744	2.0	465.0	O K
8640 min Winter	73.145	0.695	2.0	434.3	O K
10080 min Winter	73.095	0.645	2.0	403.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
60 min Winter	17.920	0.0	266.1	70
120 min Winter	11.119	0.0	317.4	128
180 min Winter	8.370	0.0	337.8	186
240 min Winter	6.835	0.0	339.4	246
360 min Winter	5.105	0.0	337.2	362
480 min Winter	4.138	0.0	334.9	480
600 min Winter	3.516	0.0	332.8	596
720 min Winter	3.078	0.0	330.7	714
960 min Winter	2.495	0.0	326.5	944
1440 min Winter	1.857	0.0	318.1	1400
2160 min Winter	1.383	0.0	650.7	2060
2880 min Winter	1.120	0.0	636.7	2656
4320 min Winter	0.833	0.0	604.8	3324
5760 min Winter	0.676	0.0	990.2	4224
7200 min Winter	0.574	0.0	1051.1	5128
8640 min Winter	0.503	0.0	1098.9	6048
10080 min Winter	0.450	0.0	1118.7	6864

Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	1	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	20.000	Shortest Storm (mins)	15
Ratio R	0.400	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 1.818

Time From:	(mins) To:	Area (ha)	Time From:	(mins) To:	Area (ha)	Time From:	(mins) To:	Area (ha)
0	4	0.606	4	8	0.606	8	12	0.606

Time Area Diagram

Total Area (ha) 0.000

Time From:	(mins) To:	Area (ha)
0	4	0.000

Time Area Diagram

Total Area (ha) 0.000

Time From:	(mins) To:	Area (ha)
0	4	0.000

Model Details

Storage is Online Cover Level (m) 74.450

Tank or Pond Structure

Invert Level (m) 72.450

Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	625.0	2.000	625.0

Pump Outflow Control

Invert Level (m) 72.450

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	2.0000	0.900	2.0000	1.700	2.0000	2.500	2.0000
0.200	2.0000	1.000	2.0000	1.800	2.0000	2.600	2.0000
0.300	2.0000	1.100	2.0000	1.900	2.0000	2.700	2.0000
0.400	2.0000	1.200	2.0000	2.000	2.0000	2.800	2.0000
0.500	2.0000	1.300	2.0000	2.100	2.0000	2.900	2.0000
0.600	2.0000	1.400	2.0000	2.200	2.0000	3.000	2.0000
0.700	2.0000	1.500	2.0000	2.300	2.0000		
0.800	2.0000	1.600	2.0000	2.400	2.0000		

Summary of Results for 2 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m³)	Status
15 min Summer	72.752	0.302	2.0	188.9	O K
30 min Summer	72.841	0.391	2.0	244.3	O K
60 min Summer	72.935	0.485	2.0	302.9	O K
120 min Summer	73.035	0.585	2.0	365.7	O K
180 min Summer	73.097	0.647	2.0	404.4	O K
240 min Summer	73.142	0.692	2.0	432.6	O K
360 min Summer	73.204	0.754	2.0	471.5	O K
480 min Summer	73.247	0.797	2.0	498.1	O K
600 min Summer	73.278	0.828	2.0	517.8	O K
720 min Summer	73.303	0.853	2.0	532.9	O K
960 min Summer	73.337	0.887	2.0	554.1	O K
1440 min Summer	73.371	0.921	2.0	575.4	O K
2160 min Summer	73.379	0.929	2.0	580.5	O K
2880 min Summer	73.369	0.919	2.0	574.3	O K
4320 min Summer	73.342	0.892	2.0	557.3	O K
5760 min Summer	73.311	0.861	2.0	538.1	O K
7200 min Summer	73.278	0.828	2.0	517.8	O K
8640 min Summer	73.245	0.795	2.0	496.9	O K
10080 min Summer	73.212	0.762	2.0	476.0	O K
15 min Winter	72.789	0.339	2.0	211.8	O K
30 min Winter	72.888	0.438	2.0	274.0	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
15 min Summer	56.082	0.0	159.8	27
30 min Summer	36.348	0.0	171.3	41
60 min Summer	22.680	0.0	295.9	72
120 min Summer	13.855	0.0	337.1	130
180 min Summer	10.330	0.0	340.9	190
240 min Summer	8.375	0.0	339.8	250
360 min Summer	6.209	0.0	337.7	368
480 min Summer	5.013	0.0	335.7	488
600 min Summer	4.246	0.0	333.7	608
720 min Summer	3.706	0.0	331.7	726
960 min Summer	2.991	0.0	327.8	966
1440 min Summer	2.210	0.0	319.9	1444
2160 min Summer	1.634	0.0	653.0	2148
2880 min Summer	1.318	0.0	638.7	2460
4320 min Summer	0.973	0.0	604.7	3208
5760 min Summer	0.785	0.0	1027.1	4032
7200 min Summer	0.665	0.0	1084.4	4832
8640 min Summer	0.580	0.0	1122.5	5696
10080 min Summer	0.517	0.0	1105.7	6464
15 min Winter	56.082	0.0	168.9	27
30 min Winter	36.348	0.0	171.4	41

Summary of Results for 2 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m³)	Status
60 min Winter	72.994	0.544	2.0	340.0	O K
120 min Winter	73.108	0.658	2.0	411.0	O K
180 min Winter	73.178	0.728	2.0	455.1	O K
240 min Winter	73.230	0.780	2.0	487.4	O K
360 min Winter	73.302	0.852	2.0	532.5	O K
480 min Winter	73.352	0.902	2.0	563.8	O K
600 min Winter	73.390	0.940	2.0	587.4	O K
720 min Winter	73.419	0.969	2.0	605.9	O K
960 min Winter	73.462	1.012	2.0	632.7	O K
1440 min Winter	73.510	1.060	2.0	662.8	O K
2160 min Winter	73.535	1.085	2.0	678.1	O K
2880 min Winter	73.530	1.080	2.0	674.9	O K
4320 min Winter	73.489	1.039	2.0	649.5	O K
5760 min Winter	73.446	0.996	2.0	622.5	O K
7200 min Winter	73.396	0.946	2.0	591.5	O K
8640 min Winter	73.344	0.894	2.0	558.6	O K
10080 min Winter	73.290	0.840	2.0	525.0	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
60 min Winter	22.680	0.0	322.3	70
120 min Winter	13.855	0.0	342.3	128
180 min Winter	10.330	0.0	341.2	188
240 min Winter	8.375	0.0	340.2	246
360 min Winter	6.209	0.0	338.2	364
480 min Winter	5.013	0.0	336.3	480
600 min Winter	4.246	0.0	334.4	598
720 min Winter	3.706	0.0	332.6	716
960 min Winter	2.991	0.0	328.9	948
1440 min Winter	2.210	0.0	321.7	1408
2160 min Winter	1.634	0.0	656.2	2080
2880 min Winter	1.318	0.0	644.1	2736
4320 min Winter	0.973	0.0	616.3	3460
5760 min Winter	0.785	0.0	1147.9	4376
7200 min Winter	0.665	0.0	1201.3	5264
8640 min Winter	0.580	0.0	1196.1	6216
10080 min Winter	0.517	0.0	1151.8	7064

Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	2	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	20.000	Shortest Storm (mins)	15
Ratio R	0.400	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 1.818

Time From:	(mins) To:	Area (ha)	Time From:	(mins) To:	Area (ha)	Time From:	(mins) To:	Area (ha)
0	4	0.606	4	8	0.606	8	12	0.606

Time Area Diagram

Total Area (ha) 0.000

Time From:	(mins) To:	Area (ha)
0	4	0.000

Time Area Diagram

Total Area (ha) 0.000

Time From:	(mins) To:	Area (ha)
0	4	0.000

Model Details

Storage is Online Cover Level (m) 74.450

Tank or Pond Structure

Invert Level (m) 72.450

Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	625.0	2.000	625.0

Pump Outflow Control

Invert Level (m) 72.450

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	2.0000	0.900	2.0000	1.700	2.0000	2.500	2.0000
0.200	2.0000	1.000	2.0000	1.800	2.0000	2.600	2.0000
0.300	2.0000	1.100	2.0000	1.900	2.0000	2.700	2.0000
0.400	2.0000	1.200	2.0000	2.000	2.0000	2.800	2.0000
0.500	2.0000	1.300	2.0000	2.100	2.0000	2.900	2.0000
0.600	2.0000	1.400	2.0000	2.200	2.0000	3.000	2.0000
0.700	2.0000	1.500	2.0000	2.300	2.0000		
0.800	2.0000	1.600	2.0000	2.400	2.0000		

Summary of Results for 10 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m³)	Status
15 min Summer	72.904	0.454	2.0	283.7	O K
30 min Summer	73.035	0.585	2.0	365.8	O K
60 min Summer	73.172	0.722	2.0	451.5	O K
120 min Summer	73.316	0.866	2.0	540.9	O K
180 min Summer	73.402	0.952	2.0	594.8	O K
240 min Summer	73.463	1.013	2.0	633.1	O K
360 min Summer	73.550	1.100	2.0	687.6	O K
480 min Summer	73.612	1.162	2.0	726.0	O K
600 min Summer	73.658	1.208	2.0	754.9	O K
720 min Summer	73.694	1.244	2.0	777.7	O K
960 min Summer	73.747	1.297	2.0	810.8	O K
1440 min Summer	73.808	1.358	2.0	848.5	O K
2160 min Summer	73.840	1.390	2.0	868.7	O K
2880 min Summer	73.837	1.387	2.0	866.7	O K
4320 min Summer	73.793	1.343	2.0	839.2	O K
5760 min Summer	73.747	1.297	2.0	810.8	O K
7200 min Summer	73.704	1.254	2.0	783.9	O K
8640 min Summer	73.663	1.213	2.0	757.8	O K
10080 min Summer	73.621	1.171	2.0	732.2	O K
15 min Winter	72.959	0.509	2.0	318.0	O K
30 min Winter	73.106	0.656	2.0	410.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
15 min Summer	83.912	0.0	172.0	27
30 min Summer	54.206	0.0	171.5	42
60 min Summer	33.604	0.0	343.8	72
120 min Summer	20.311	0.0	342.8	132
180 min Summer	15.011	0.0	342.0	190
240 min Summer	12.078	0.0	341.2	250
360 min Summer	8.874	0.0	339.6	370
480 min Summer	7.126	0.0	338.2	490
600 min Summer	6.008	0.0	336.7	608
720 min Summer	5.225	0.0	335.3	728
960 min Summer	4.190	0.0	332.5	968
1440 min Summer	3.067	0.0	327.0	1446
2160 min Summer	2.244	0.0	663.9	2164
2880 min Summer	1.797	0.0	654.2	2880
4320 min Summer	1.313	0.0	630.7	3680
5760 min Summer	1.051	0.0	1291.3	4440
7200 min Summer	0.884	0.0	1253.6	5192
8640 min Summer	0.767	0.0	1210.6	5976
10080 min Summer	0.681	0.0	1163.6	6856
15 min Winter	83.912	0.0	172.0	27
30 min Winter	54.206	0.0	171.6	41

Summary of Results for 10 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m³)	Status
60 min Winter	73.260	0.810	2.0	506.4	O K
120 min Winter	73.422	0.972	2.0	607.5	O K
180 min Winter	73.520	1.070	2.0	668.6	O K
240 min Winter	73.590	1.140	2.0	712.3	O K
360 min Winter	73.690	1.240	2.0	775.0	O K
480 min Winter	73.761	1.311	2.0	819.7	O K
600 min Winter	73.816	1.366	2.0	853.8	O K
720 min Winter	73.859	1.409	2.0	880.9	O K
960 min Winter	73.924	1.474	2.0	921.4	O K
1440 min Winter	74.003	1.553	2.0	970.5	O K
2160 min Winter	74.055	1.605	2.0	1003.4	O K
2880 min Winter	74.068	1.618	2.0	1011.4	O K
4320 min Winter	74.036	1.586	2.0	991.4	O K
5760 min Winter	73.971	1.521	2.0	950.8	O K
7200 min Winter	73.915	1.465	2.0	915.8	O K
8640 min Winter	73.857	1.407	2.0	879.2	O K
10080 min Winter	73.796	1.346	2.0	841.3	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
60 min Winter	33.604	0.0	343.9	70
120 min Winter	20.311	0.0	343.0	130
180 min Winter	15.011	0.0	342.1	188
240 min Winter	12.078	0.0	341.3	246
360 min Winter	8.874	0.0	339.8	364
480 min Winter	7.126	0.0	338.3	482
600 min Winter	6.008	0.0	336.9	600
720 min Winter	5.225	0.0	335.5	718
960 min Winter	4.190	0.0	332.8	952
1440 min Winter	3.067	0.0	327.3	1420
2160 min Winter	2.244	0.0	664.8	2108
2880 min Winter	1.797	0.0	656.1	2796
4320 min Winter	1.313	0.0	636.6	4104
5760 min Winter	1.051	0.0	1303.8	4792
7200 min Winter	0.884	0.0	1274.4	5616
8640 min Winter	0.767	0.0	1240.4	6488
10080 min Winter	0.681	0.0	1202.5	7456

Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	10	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	20.000	Shortest Storm (mins)	15
Ratio R	0.400	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 1.818

Time From:	(mins) To:	Area (ha)	Time From:	(mins) To:	Area (ha)	Time From:	(mins) To:	Area (ha)
0	4	0.606	4	8	0.606	8	12	0.606

Time Area Diagram

Total Area (ha) 0.000

Time From:	(mins) To:	Area (ha)
0	4	0.000

Time Area Diagram

Total Area (ha) 0.000

Time From:	(mins) To:	Area (ha)
0	4	0.000

Model Details

Storage is Online Cover Level (m) 74.450

Tank or Pond Structure

Invert Level (m) 72.450

Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	625.0	2.000	625.0

Pump Outflow Control

Invert Level (m) 72.450

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	2.0000	0.900	2.0000	1.700	2.0000	2.500	2.0000
0.200	2.0000	1.000	2.0000	1.800	2.0000	2.600	2.0000
0.300	2.0000	1.100	2.0000	1.900	2.0000	2.700	2.0000
0.400	2.0000	1.200	2.0000	2.000	2.0000	2.800	2.0000
0.500	2.0000	1.300	2.0000	2.100	2.0000	2.900	2.0000
0.600	2.0000	1.400	2.0000	2.200	2.0000	3.000	2.0000
0.700	2.0000	1.500	2.0000	2.300	2.0000		
0.800	2.0000	1.600	2.0000	2.400	2.0000		

Summary of Results for 30 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m³)	Status
15 min Summer	73.027	0.577	2.0	360.4	O K
30 min Summer	73.200	0.750	2.0	468.6	O K
60 min Summer	73.380	0.930	2.0	581.2	O K
120 min Summer	73.566	1.116	2.0	697.3	O K
180 min Summer	73.675	1.225	2.0	765.6	O K
240 min Summer	73.751	1.301	2.0	813.1	O K
360 min Summer	73.859	1.409	2.0	880.7	O K
480 min Summer	73.936	1.486	2.0	928.9	O K
600 min Summer	73.995	1.545	2.0	965.6	O K
720 min Summer	74.041	1.591	2.0	994.5	O K
960 min Summer	74.110	1.660	2.0	1037.5	O K
1440 min Summer	74.192	1.742	2.0	1088.7	O K
2160 min Summer	74.244	1.794	2.0	1121.5	O K
2880 min Summer	74.254	1.804	2.0	1127.3	O K
4320 min Summer	74.209	1.759	2.0	1099.3	O K
5760 min Summer	74.145	1.695	2.0	1059.4	O K
7200 min Summer	74.086	1.636	2.0	1022.8	O K
8640 min Summer	74.033	1.583	2.0	989.4	O K
10080 min Summer	73.983	1.533	2.0	958.2	O K
15 min Winter	73.096	0.646	2.0	403.9	O K
30 min Winter	73.290	0.840	2.0	525.3	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
15 min Summer	106.449	0.0	172.0	27
30 min Summer	69.298	0.0	171.7	42
60 min Summer	43.136	0.0	344.0	72
120 min Summer	26.061	0.0	343.3	132
180 min Summer	19.202	0.0	342.6	190
240 min Summer	15.393	0.0	341.9	250
360 min Summer	11.248	0.0	340.7	370
480 min Summer	8.999	0.0	339.5	490
600 min Summer	7.565	0.0	338.4	610
720 min Summer	6.562	0.0	337.2	728
960 min Summer	5.240	0.0	335.0	968
1440 min Summer	3.812	0.0	330.6	1446
2160 min Summer	2.770	0.0	669.5	2164
2880 min Summer	2.207	0.0	662.2	2884
4320 min Summer	1.601	0.0	644.8	4276
5760 min Summer	1.274	0.0	1313.2	4848
7200 min Summer	1.067	0.0	1283.0	5552
8640 min Summer	0.922	0.0	1246.1	6312
10080 min Summer	0.816	0.0	1204.1	7064
15 min Winter	106.449	0.0	172.1	27
30 min Winter	69.298	0.0	171.7	41

Summary of Results for 30 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m³)	Status
60 min Winter	73.493	1.043	2.0	651.7	O K
120 min Winter	73.702	1.252	2.0	782.7	O K
180 min Winter	73.826	1.376	2.0	860.0	O K
240 min Winter	73.913	1.463	2.0	914.1	O K
360 min Winter	74.037	1.587	2.0	991.6	O K
480 min Winter	74.126	1.676	2.0	1047.4	O K
600 min Winter	74.194	1.744	2.0	1090.1	O K
720 min Winter	74.249	1.799	2.0	1124.4	O K
960 min Winter	74.332	1.882	2.0	1176.1	Flood Risk
1440 min Winter	74.435	1.985	2.0	1240.6	Flood Risk
2160 min Winter	74.511	2.061	2.0	1288.2	FLOOD
2880 min Winter	74.539	2.089	2.0	1305.6	FLOOD
4320 min Winter	74.523	2.073	2.0	1295.4	FLOOD
5760 min Winter	74.458	2.008	2.0	1255.0	FLOOD
7200 min Winter	74.375	1.925	2.0	1202.9	Flood Risk
8640 min Winter	74.306	1.856	2.0	1160.0	Flood Risk
10080 min Winter	74.239	1.789	2.0	1117.9	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
60 min Winter	43.136	0.0	344.1	72
120 min Winter	26.061	0.0	343.3	130
180 min Winter	19.202	0.0	342.6	188
240 min Winter	15.393	0.0	341.9	248
360 min Winter	11.248	0.0	340.7	366
480 min Winter	8.999	0.0	339.4	484
600 min Winter	7.565	0.0	338.2	602
720 min Winter	6.562	0.0	337.0	720
960 min Winter	5.240	0.0	334.7	956
1440 min Winter	3.812	0.0	330.1	1426
2160 min Winter	2.770	38.2	668.9	2124
2880 min Winter	2.207	55.6	661.9	2804
4320 min Winter	1.601	45.4	646.6	4152
5760 min Winter	1.274	5.0	1320.1	5424
7200 min Winter	1.067	0.0	1297.5	6480
8640 min Winter	0.922	0.0	1269.3	6752
10080 min Winter	0.816	0.0	1236.4	7672

Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	30	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	20.000	Shortest Storm (mins)	15
Ratio R	0.400	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 1.818

Time From:	(mins) To:	Area (ha)	Time From:	(mins) To:	Area (ha)	Time From:	(mins) To:	Area (ha)
0	4	0.606	4	8	0.606	8	12	0.606

Time Area Diagram

Total Area (ha) 0.000

Time From:	(mins) To:	Area (ha)
0	4	0.000

Time Area Diagram

Total Area (ha) 0.000

Time From:	(mins) To:	Area (ha)
0	4	0.000

Model Details

Storage is Online Cover Level (m) 74.450

Tank or Pond Structure

Invert Level (m) 72.450

Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	625.0	2.000	625.0

Pump Outflow Control

Invert Level (m) 72.450

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	2.0000	0.900	2.0000	1.700	2.0000	2.500	2.0000
0.200	2.0000	1.000	2.0000	1.800	2.0000	2.600	2.0000
0.300	2.0000	1.100	2.0000	1.900	2.0000	2.700	2.0000
0.400	2.0000	1.200	2.0000	2.000	2.0000	2.800	2.0000
0.500	2.0000	1.300	2.0000	2.100	2.0000	2.900	2.0000
0.600	2.0000	1.400	2.0000	2.200	2.0000	3.000	2.0000
0.700	2.0000	1.500	2.0000	2.300	2.0000		
0.800	2.0000	1.600	2.0000	2.400	2.0000		

Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m³)	Status
15 min Summer	73.200	0.750	2.0	468.5	O K
30 min Summer	73.433	0.983	2.0	614.4	O K
60 min Summer	73.676	1.226	2.0	766.1	O K
120 min Summer	73.922	1.472	2.0	920.1	O K
180 min Summer	74.063	1.613	2.0	1008.3	O K
240 min Summer	74.159	1.709	2.0	1068.0	O K
360 min Summer	74.294	1.844	2.0	1152.7	O K
480 min Summer	74.392	1.942	2.0	1213.9	Flood Risk
600 min Summer	74.467	2.017	2.0	1260.4	FLOOD
720 min Summer	74.526	2.076	2.0	1297.5	FLOOD
960 min Summer	74.615	2.165	2.0	1353.0	FLOOD
1440 min Summer	74.724	2.274	2.0	1421.4	FLOOD
2160 min Summer	74.802	2.352	2.0	1470.1	FLOOD
2880 min Summer	74.828	2.378	2.0	1486.0	FLOOD
4320 min Summer	74.800	2.350	2.0	1468.7	FLOOD
5760 min Summer	74.720	2.270	2.0	1418.4	FLOOD
7200 min Summer	74.635	2.185	2.0	1365.6	FLOOD
8640 min Summer	74.560	2.110	2.0	1318.5	FLOOD
10080 min Summer	74.492	2.042	2.0	1276.0	FLOOD
15 min Winter	73.290	0.840	2.0	524.9	O K
30 min Winter	73.552	1.102	2.0	688.6	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
15 min Summer	138.153	0.0	172.1	27
30 min Summer	90.705	0.0	171.8	42
60 min Summer	56.713	0.0	344.3	72
120 min Summer	34.246	0.0	343.7	132
180 min Summer	25.149	0.0	343.1	192
240 min Summer	20.078	0.0	342.6	252
360 min Summer	14.585	0.0	341.6	370
480 min Summer	11.622	0.0	340.7	490
600 min Summer	9.738	10.4	339.8	610
720 min Summer	8.424	47.5	338.9	730
960 min Summer	6.697	103.0	337.2	970
1440 min Summer	4.839	171.4	333.8	1448
2160 min Summer	3.490	220.1	674.3	2168
2880 min Summer	2.766	236.0	668.9	2884
4320 min Summer	1.989	218.7	656.5	4324
5760 min Summer	1.573	168.4	1332.2	5592
7200 min Summer	1.311	115.6	1311.3	6128
8640 min Summer	1.129	68.5	1283.5	6832
10080 min Summer	0.994	26.0	1249.0	7568
15 min Winter	138.153	0.0	172.1	27
30 min Winter	90.705	0.0	171.8	42

Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m³)	Status
60 min Winter	73.824	1.374	2.0	858.9	O K
120 min Winter	74.102	1.652	2.0	1032.3	O K
180 min Winter	74.261	1.811	2.0	1132.0	O K
240 min Winter	74.370	1.920	2.0	1199.8	Flood Risk
360 min Winter	74.524	2.074	2.0	1296.5	FLOOD
480 min Winter	74.637	2.187	2.0	1366.8	FLOOD
600 min Winter	74.723	2.273	2.0	1420.8	FLOOD
720 min Winter	74.793	2.343	2.0	1464.2	FLOOD
960 min Winter	74.898	2.448	2.0	1530.1	FLOOD
1440 min Winter	75.033	2.583	2.0	1614.2	FLOOD
2160 min Winter	75.138	2.688	2.0	1680.1	FLOOD
2880 min Winter	75.185	2.735	2.0	1709.4	FLOOD
4320 min Winter	75.191	2.741	2.0	1712.9	FLOOD
5760 min Winter	75.135	2.685	2.0	1677.9	FLOOD
7200 min Winter	75.047	2.597	2.0	1623.1	FLOOD
8640 min Winter	74.945	2.495	2.0	1559.2	FLOOD
10080 min Winter	74.852	2.402	2.0	1501.3	FLOOD

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
60 min Winter	56.713	0.0	344.3	72
120 min Winter	34.246	0.0	343.6	130
180 min Winter	25.149	0.0	343.0	190
240 min Winter	20.078	0.0	342.5	248
360 min Winter	14.585	46.5	341.4	366
480 min Winter	11.622	116.8	340.4	484
600 min Winter	9.738	170.8	339.3	604
720 min Winter	8.424	214.2	338.3	722
960 min Winter	6.697	280.1	336.4	958
1440 min Winter	4.839	364.2	332.5	1430
2160 min Winter	3.490	430.1	672.4	2128
2880 min Winter	2.766	459.4	666.5	2828
4320 min Winter	1.989	462.9	654.2	4196
5760 min Winter	1.573	427.9	1332.1	5536
7200 min Winter	1.311	373.1	1316.8	6840
8640 min Winter	1.129	309.2	1297.7	7960
10080 min Winter	0.994	251.3	1272.5	8080

Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	20.000	Shortest Storm (mins)	15
Ratio R	0.400	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 1.818

Time From:	(mins) To:	Area (ha)	Time From:	(mins) To:	Area (ha)	Time From:	(mins) To:	Area (ha)
0	4	0.606	4	8	0.606	8	12	0.606

Time Area Diagram

Total Area (ha) 0.000

Time From:	(mins) To:	Area (ha)
0	4	0.000

Time Area Diagram

Total Area (ha) 0.000

Time From:	(mins) To:	Area (ha)
0	4	0.000

Model Details

Storage is Online Cover Level (m) 74.450

Tank or Pond Structure

Invert Level (m) 72.450

Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	625.0	2.000	625.0

Pump Outflow Control

Invert Level (m) 72.450

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	2.0000	0.900	2.0000	1.700	2.0000	2.500	2.0000
0.200	2.0000	1.000	2.0000	1.800	2.0000	2.600	2.0000
0.300	2.0000	1.100	2.0000	1.900	2.0000	2.700	2.0000
0.400	2.0000	1.200	2.0000	2.000	2.0000	2.800	2.0000
0.500	2.0000	1.300	2.0000	2.100	2.0000	2.900	2.0000
0.600	2.0000	1.400	2.0000	2.200	2.0000	3.000	2.0000
0.700	2.0000	1.500	2.0000	2.300	2.0000		
0.800	2.0000	1.600	2.0000	2.400	2.0000		

Summary of Results for 30 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m³)	Status
15 min Summer	73.026	0.576	2.5	359.8	O K
30 min Summer	73.198	0.748	2.5	467.6	O K
60 min Summer	73.377	0.927	2.5	579.5	O K
120 min Summer	73.560	1.110	2.5	694.0	O K
180 min Summer	73.667	1.217	2.5	760.7	O K
240 min Summer	73.741	1.291	2.5	806.6	O K
360 min Summer	73.843	1.393	2.5	870.9	O K
480 min Summer	73.915	1.465	2.5	915.9	O K
600 min Summer	73.969	1.519	2.5	949.3	O K
720 min Summer	74.010	1.560	2.5	975.0	O K
960 min Summer	74.068	1.618	2.5	1011.5	O K
1440 min Summer	74.130	1.680	2.5	1049.8	O K
2160 min Summer	74.152	1.702	2.5	1063.7	O K
2880 min Summer	74.132	1.682	2.5	1051.5	O K
4320 min Summer	74.055	1.605	2.5	1003.4	O K
5760 min Summer	73.985	1.535	2.5	959.1	O K
7200 min Summer	73.921	1.471	2.5	919.4	O K
8640 min Summer	73.861	1.411	2.5	881.9	O K
10080 min Summer	73.803	1.353	2.5	845.7	O K
15 min Winter	73.095	0.645	2.5	403.3	O K
30 min Winter	73.289	0.839	2.5	524.3	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
15 min Summer	106.449	0.0	215.0	27
30 min Summer	69.298	0.0	214.6	42
60 min Summer	43.136	0.0	430.0	72
120 min Summer	26.061	0.0	429.1	132
180 min Summer	19.202	0.0	428.2	190
240 min Summer	15.393	0.0	427.4	250
360 min Summer	11.248	0.0	425.8	370
480 min Summer	8.999	0.0	424.3	490
600 min Summer	7.565	0.0	422.8	608
720 min Summer	6.562	0.0	421.4	728
960 min Summer	5.240	0.0	418.5	968
1440 min Summer	3.812	0.0	412.6	1446
2160 min Summer	2.770	0.0	835.2	2164
2880 min Summer	2.207	0.0	824.4	2880
4320 min Summer	1.601	0.0	796.5	3640
5760 min Summer	1.274	0.0	1619.5	4376
7200 min Summer	1.067	0.0	1572.4	5120
8640 min Summer	0.922	0.0	1516.3	5960
10080 min Summer	0.816	0.0	1455.2	6760
15 min Winter	106.449	0.0	215.1	27
30 min Winter	69.298	0.0	214.6	41

Summary of Results for 30 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m³)	Status
60 min Winter	73.490	1.040	2.5	650.0	O K
120 min Winter	73.697	1.247	2.5	779.4	O K
180 min Winter	73.818	1.368	2.5	855.2	O K
240 min Winter	73.902	1.452	2.5	907.7	O K
360 min Winter	74.021	1.571	2.5	981.9	O K
480 min Winter	74.105	1.655	2.5	1034.5	O K
600 min Winter	74.169	1.719	2.5	1074.1	O K
720 min Winter	74.218	1.768	2.5	1105.1	O K
960 min Winter	74.291	1.841	2.5	1150.4	O K
1440 min Winter	74.374	1.924	2.5	1202.3	Flood Risk
2160 min Winter	74.420	1.970	2.5	1231.2	Flood Risk
2880 min Winter	74.419	1.969	2.5	1230.7	Flood Risk
4320 min Winter	74.351	1.901	2.5	1187.9	Flood Risk
5760 min Winter	74.252	1.802	2.5	1126.3	O K
7200 min Winter	74.169	1.719	2.5	1074.4	O K
8640 min Winter	74.085	1.635	2.5	1021.8	O K
10080 min Winter	74.000	1.550	2.5	968.8	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
60 min Winter	43.136	0.0	430.1	70
120 min Winter	26.061	0.0	429.1	130
180 min Winter	19.202	0.0	428.2	188
240 min Winter	15.393	0.0	427.4	248
360 min Winter	11.248	0.0	425.8	364
480 min Winter	8.999	0.0	424.2	482
600 min Winter	7.565	0.0	422.7	600
720 min Winter	6.562	0.0	421.2	718
960 min Winter	5.240	0.0	418.2	952
1440 min Winter	3.812	0.0	412.2	1420
2160 min Winter	2.770	0.0	835.3	2108
2880 min Winter	2.207	0.0	825.6	2792
4320 min Winter	1.601	0.0	803.2	4072
5760 min Winter	1.274	0.0	1637.7	4680
7200 min Winter	1.067	0.0	1599.6	5552
8640 min Winter	0.922	0.0	1555.0	6480
10080 min Winter	0.816	0.0	1505.7	7368

Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	30	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	20.000	Shortest Storm (mins)	15
Ratio R	0.400	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 1.818

Time From:	(mins) To:	Area (ha)	Time From:	(mins) To:	Area (ha)	Time From:	(mins) To:	Area (ha)
0	4	0.606	4	8	0.606	8	12	0.606

Time Area Diagram

Total Area (ha) 0.000

Time From:	(mins) To:	Area (ha)
0	4	0.000

Time Area Diagram

Total Area (ha) 0.000

Time From:	(mins) To:	Area (ha)
0	4	0.000

Model Details

Storage is Online Cover Level (m) 74.450

Tank or Pond Structure

Invert Level (m) 72.450

Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	625.0	2.000	625.0

Pump Outflow Control

Invert Level (m) 72.450

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	2.5000	0.900	2.5000	1.700	2.5000	2.500	2.5000
0.200	2.5000	1.000	2.5000	1.800	2.5000	2.600	2.5000
0.300	2.5000	1.100	2.5000	1.900	2.5000	2.700	2.5000
0.400	2.5000	1.200	2.5000	2.000	2.5000	2.800	2.5000
0.500	2.5000	1.300	2.5000	2.100	2.5000	2.900	2.5000
0.600	2.5000	1.400	2.5000	2.200	2.5000	3.000	2.5000
0.700	2.5000	1.500	2.5000	2.300	2.5000		
0.800	2.5000	1.600	2.5000	2.400	2.5000		

Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m³)	Status
15 min Summer	73.188	0.738	7.6	461.6	O K
30 min Summer	73.416	0.966	7.6	603.5	O K
60 min Summer	73.644	1.194	7.6	746.3	O K
120 min Summer	73.862	1.412	7.6	882.3	O K
180 min Summer	73.973	1.523	7.6	952.1	O K
240 min Summer	74.040	1.590	7.6	993.5	O K
360 min Summer	74.117	1.667	7.6	1041.6	O K
480 min Summer	74.156	1.706	7.6	1066.3	O K
600 min Summer	74.172	1.722	7.6	1076.5	O K
720 min Summer	74.174	1.724	7.6	1077.5	O K
960 min Summer	74.149	1.699	7.6	1062.2	O K
1440 min Summer	74.063	1.613	7.6	1008.1	O K
2160 min Summer	73.949	1.499	7.6	936.9	O K
2880 min Summer	73.850	1.400	7.6	874.8	O K
4320 min Summer	73.666	1.216	7.6	760.3	O K
5760 min Summer	73.497	1.047	7.6	654.3	O K
7200 min Summer	73.340	0.890	7.6	556.5	O K
8640 min Summer	73.198	0.748	7.6	467.6	O K
10080 min Summer	73.070	0.620	7.6	387.6	O K
15 min Winter	73.279	0.829	7.6	518.0	O K
30 min Winter	73.534	1.084	7.6	677.7	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
15 min Summer	138.153	0.0	469.7	26
30 min Summer	90.705	0.0	605.1	41
60 min Summer	56.713	0.0	773.3	70
120 min Summer	34.246	0.0	933.8	130
180 min Summer	25.149	0.0	1028.4	190
240 min Summer	20.078	0.0	1094.2	248
360 min Summer	14.585	0.0	1188.8	366
480 min Summer	11.622	0.0	1252.3	486
600 min Summer	9.738	0.0	1284.2	604
720 min Summer	8.424	0.0	1282.8	724
960 min Summer	6.697	0.0	1271.9	960
1440 min Summer	4.839	0.0	1243.2	1216
2160 min Summer	3.490	0.0	1713.3	1580
2880 min Summer	2.766	0.0	1810.1	1972
4320 min Summer	1.989	0.0	1952.6	2776
5760 min Summer	1.573	0.0	2058.9	3584
7200 min Summer	1.311	0.0	2144.1	4336
8640 min Summer	1.129	0.0	2215.5	5104
10080 min Summer	0.994	0.0	2277.1	5848
15 min Winter	138.153	0.0	524.4	26
30 min Winter	90.705	0.0	649.2	41

Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m³)	Status
60 min Winter	73.793	1.343	7.6	839.4	O K
120 min Winter	74.042	1.592	7.6	995.1	O K
180 min Winter	74.173	1.723	7.6	1076.8	O K
240 min Winter	74.253	1.803	7.6	1126.6	O K
360 min Winter	74.350	1.900	7.6	1187.4	Flood Risk
480 min Winter	74.405	1.955	7.6	1221.7	Flood Risk
600 min Winter	74.434	1.984	7.6	1240.0	Flood Risk
720 min Winter	74.446	1.996	7.6	1247.8	Flood Risk
960 min Winter	74.440	1.990	7.6	1243.6	Flood Risk
1440 min Winter	74.360	1.910	7.6	1193.5	Flood Risk
2160 min Winter	74.207	1.757	7.6	1097.8	O K
2880 min Winter	74.070	1.620	7.6	1012.4	O K
4320 min Winter	73.799	1.349	7.6	842.9	O K
5760 min Winter	73.541	1.091	7.6	681.8	O K
7200 min Winter	73.305	0.855	7.6	534.2	O K
8640 min Winter	73.094	0.644	7.6	402.4	O K
10080 min Winter	72.912	0.462	7.6	288.6	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
60 min Winter	56.713	0.0	866.1	70
120 min Winter	34.246	0.0	1045.6	128
180 min Winter	25.149	0.0	1150.1	186
240 min Winter	20.078	0.0	1219.5	244
360 min Winter	14.585	0.0	1292.9	360
480 min Winter	11.622	0.0	1292.0	476
600 min Winter	9.738	0.0	1287.4	592
720 min Winter	8.424	0.0	1282.8	708
960 min Winter	6.697	0.0	1273.0	932
1440 min Winter	4.839	0.0	1250.2	1362
2160 min Winter	3.490	0.0	1918.9	1696
2880 min Winter	2.766	0.0	2027.3	2160
4320 min Winter	1.989	0.0	2182.5	3032
5760 min Winter	1.573	0.0	2306.3	3872
7200 min Winter	1.311	0.0	2401.4	4680
8640 min Winter	1.129	0.0	2481.7	5376
10080 min Winter	0.994	0.0	2550.7	6056

Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	20.000	Shortest Storm (mins)	15
Ratio R	0.400	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 1.818

Time From:	(mins) To:	Area (ha)	Time From:	(mins) To:	Area (ha)	Time From:	(mins) To:	Area (ha)
0	4	0.606	4	8	0.606	8	12	0.606

Time Area Diagram

Total Area (ha) 0.000

Time From:	(mins) To:	Area (ha)
0	4	0.000

Time Area Diagram

Total Area (ha) 0.000

Time From:	(mins) To:	Area (ha)
0	4	0.000

Model Details

Storage is Online Cover Level (m) 74.450

Tank or Pond Structure

Invert Level (m) 72.450

Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	625.0	2.000	625.0

Pump Outflow Control

Invert Level (m) 72.450

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	7.6000	1.200	7.6000	3.000	7.6000	7.000	7.6000
0.200	7.6000	1.400	7.6000	3.500	7.6000	7.500	7.6000
0.300	7.6000	1.600	7.6000	4.000	7.6000	8.000	7.6000
0.400	7.6000	1.800	7.6000	4.500	7.6000	8.500	7.6000
0.500	7.6000	2.000	7.6000	5.000	7.6000	9.000	7.6000
0.600	7.6000	2.200	7.6000	5.500	7.6000	9.500	7.6000
0.800	7.6000	2.400	7.6000	6.000	7.6000		
1.000	7.6000	2.600	7.6000	6.500	7.6000		

APPENDIX 03

Marriott GEOTECHNICAL DRILLING

Soil/Rock Field Description Sheet

432*5 Project: Three Maids (SLR)	**Project No.: 16259 - TM**	**Trial Pit No.: TP01**
Date: 29/04/2022	**Logger: B.Gee**	**Sheet No 1 of 1**

Strata Depth (m below ground level)		Soil/Rock Description
Top	Bottom	
GL	0.30	Dark brown gravelly slightly silty CLAY. Gravel is angular fine to coarse flint and chalk. (*Topsoil*)
0.30	1.60	White with light orangish brown WEATHERED CHALK
1.60	2.60	White CHALK with cobble size flints
		END of Trial Pit at 2.6m (excavator unable to progress further)

Remarks
Trial Pit Dimensions: 2.10m x 0.7m.
Trial pit remained stable before commencement of test.
Soakaway test carried out (see separate sheet).
Logging not carried out for geotechnical purposes.
Trial Pit backfilled on completion of soakaway test.

Marriott GEOTECHNICAL DRILLING

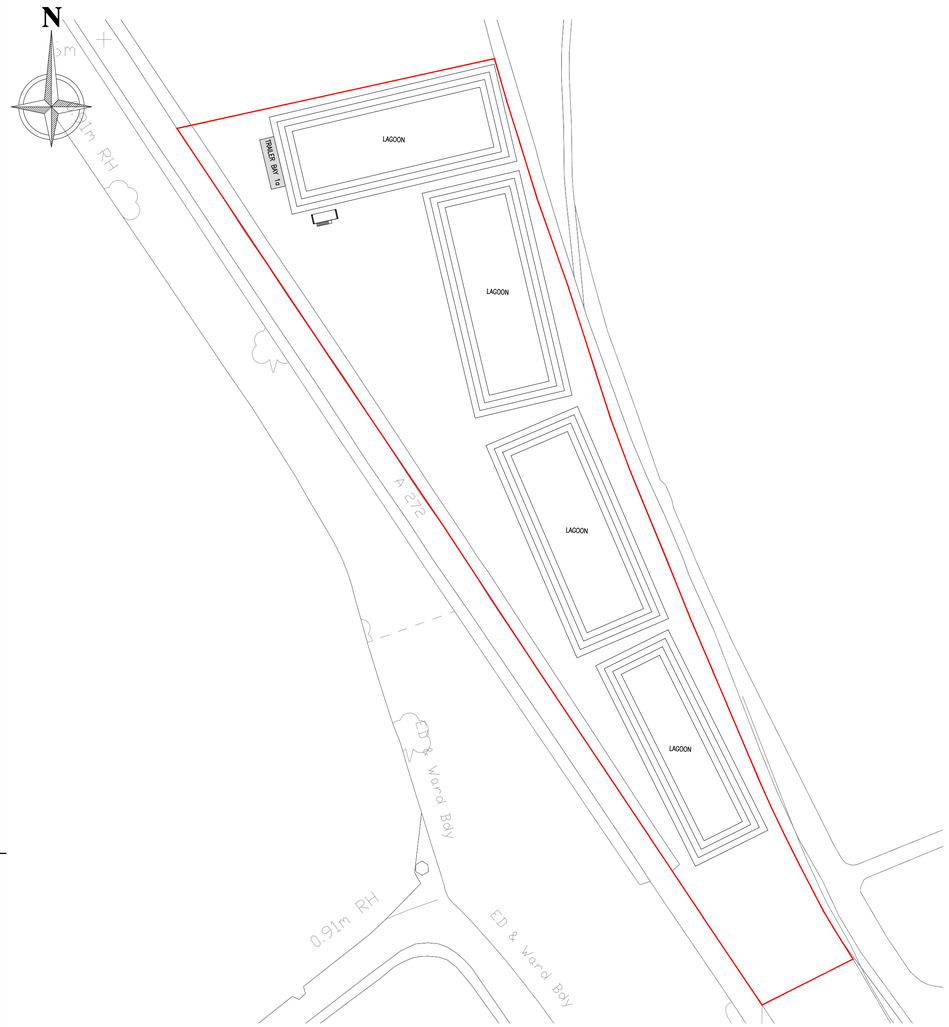
Soil/Rock Field Description Sheet

Project: Three Maids (SLR)	**Project No.: 16259 - TM**	**Trial Pit No.: TP02**
Date: 29/04/2022	**Logger: B.Gee**	**Sheet No 1 of 1**

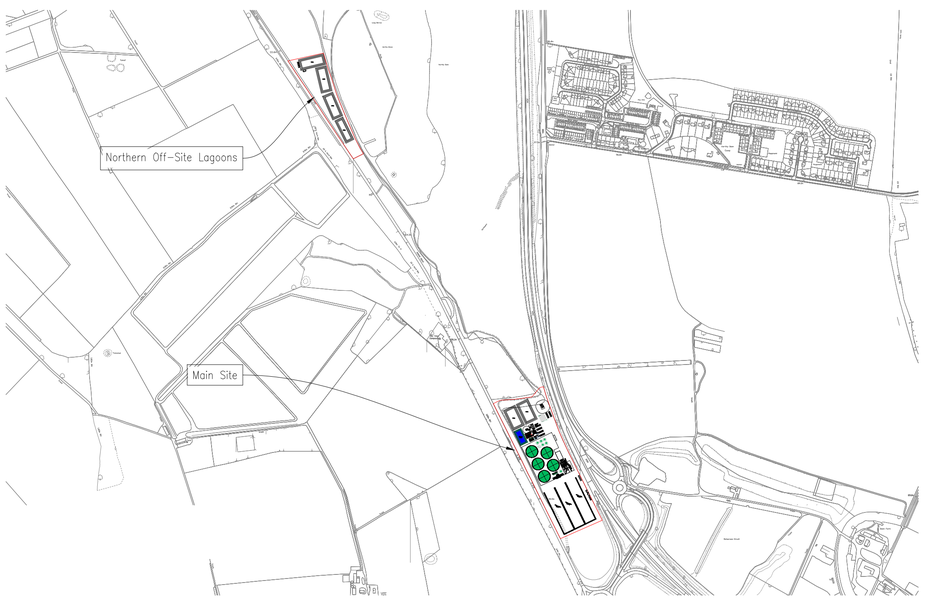
Strata Depth (m below ground level)		Soil/Rock Description
Top	Bottom	
GL	0.30	Dark brown gravelly slightly silty CLAY. Gravel is angular fine to coarse flint and chalk. (*Topsoil*)
0.30	0.50	Dark brown and white very gravelly silty CLAY. Gravel is fine to coarse chalk and occasional flint.
0.5	1.80	White with light orangish brown mottling CHALK with abundant cobbles of flint
1.80	2.60	White with light orangish brown mottling CHALK with occasional flint cobbles
		END of Trial Pit at 2.6m (excavator unable to progress further)

Remarks
Trial Pit Dimensions: 2.30m x 0.7m.
Trial pit remained stable before commencement of test.
Soakaway test carried out (see separate sheet).
Logging not carried out for geotechnical purposes.
Trial Pit backfilled on completion of soakaway test.

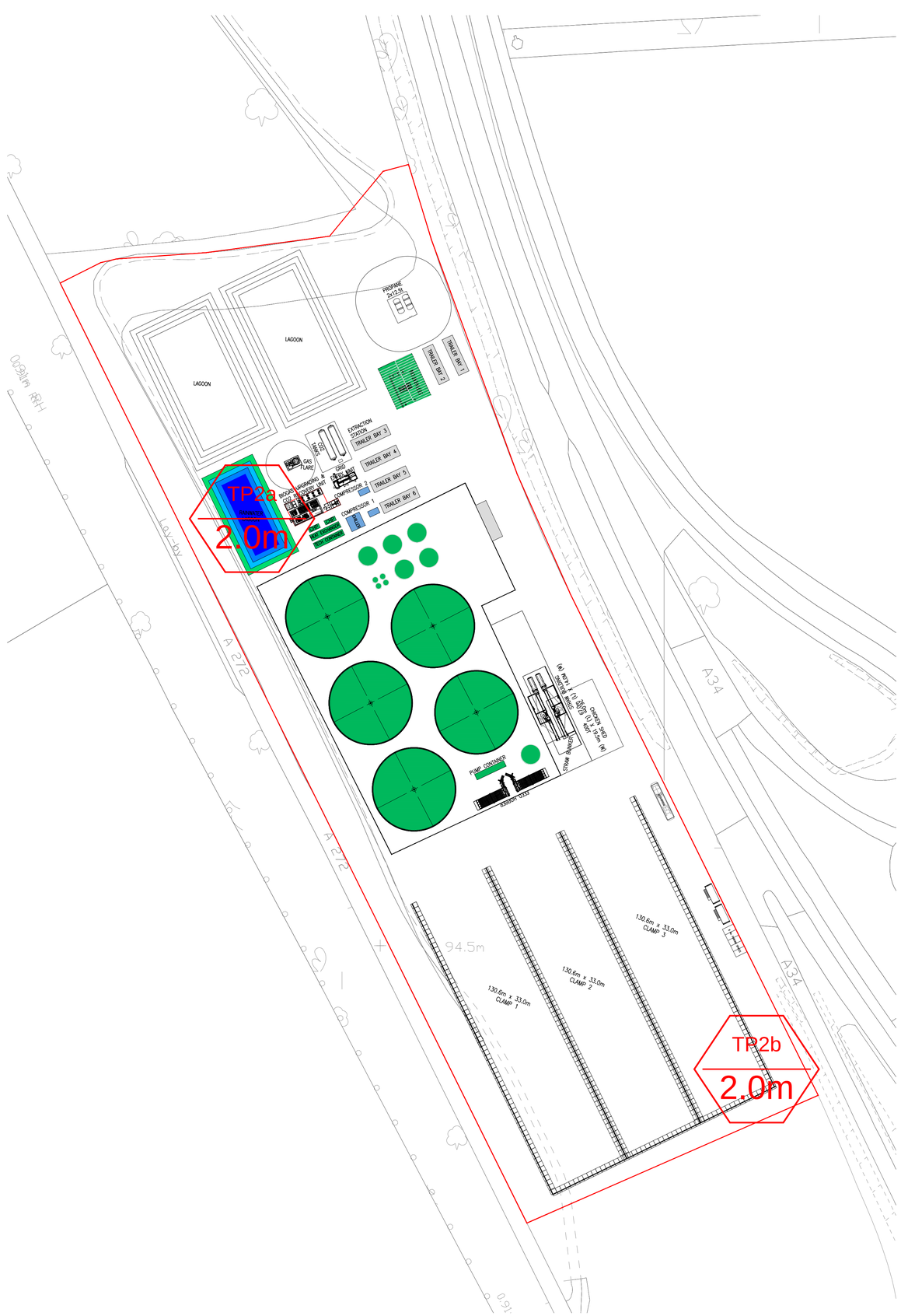
DRAWN AT 1:1000 ON A1 FRAME



Northern Off-Site Lagoons
Scale: 1:1000 @ A1



Site Location Plan
Scale: NTS @ A1



Site General Arrangement
Scale: 1:1000 @ A1

NOTES:-

1. All dimensions must be checked on site and not scaled from this drawing.
2. The Contractor shall make a survey of the site and shall be responsible for obtaining all dimensions and levels necessary for the proper fabrication of the structure as indicated.
3. All levels shown on this drawing are relative to Agreed Topographic survey
4. This drawing is to be read in conjunction with P92506/100 Series Drawings.
5. All existing invert levels are to be confirmed by contractor prior to construction. Connection subject to approval.

Site Red Line Boundary (6.6ha)

Rev	Date	Description	DR	CH
B	07/03/22	ISSUED FOR APPROVAL	DJC	JHC
A	24/02/22	ISSUED FOR APPROVAL	DJC	JHC

UVDB Registered
Link-up Qualified via Audit
GGP CONSULT
CONSULTING ENGINEERS
PROJECT MANAGEMENT
2 Hallam Road
Priory Park East
HULL HU4 7DY
United Kingdom
Telephone (+44) 01482 627963
Fax (+44) 01482 641736
Email info@ggpconsult.co.uk

Client: acorn

Job Title: Three Maids AD Plant

Drawing Title: General Arrangement

Status: APPROVAL

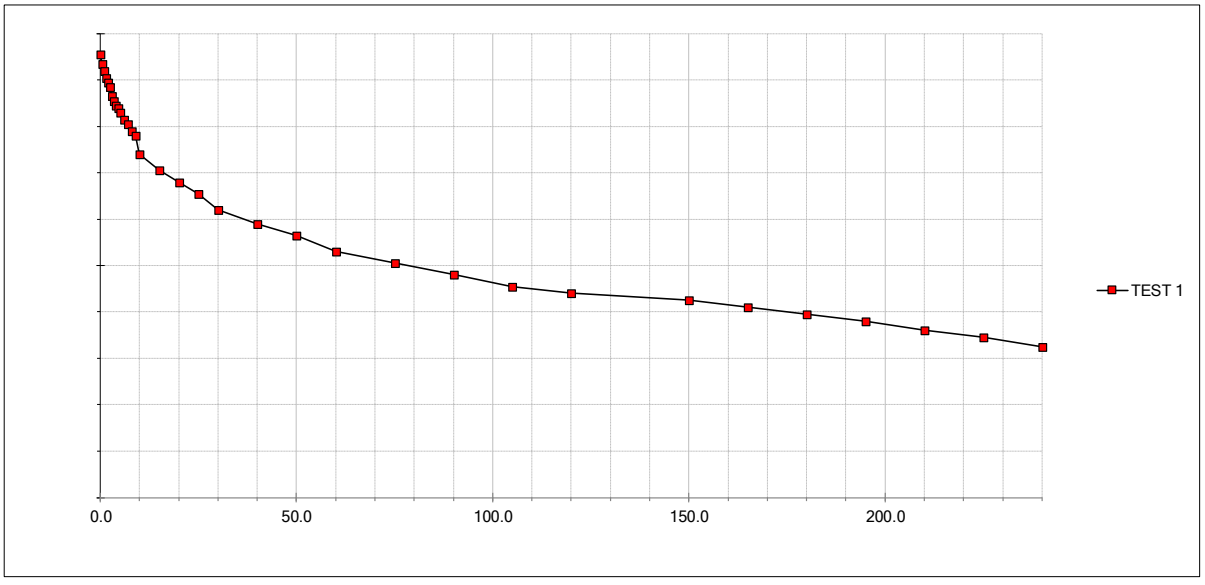
Scale: 1:1000 @ A1 | Date: Feb' '22

Drawn By: Daniel Cook | Checked: JHC | Approved: JHC

Drg. No. P92506/100 | Rev B

General Arrangement
Scale: 1:1000 @ A1

NOT FOR CONSTRUCTION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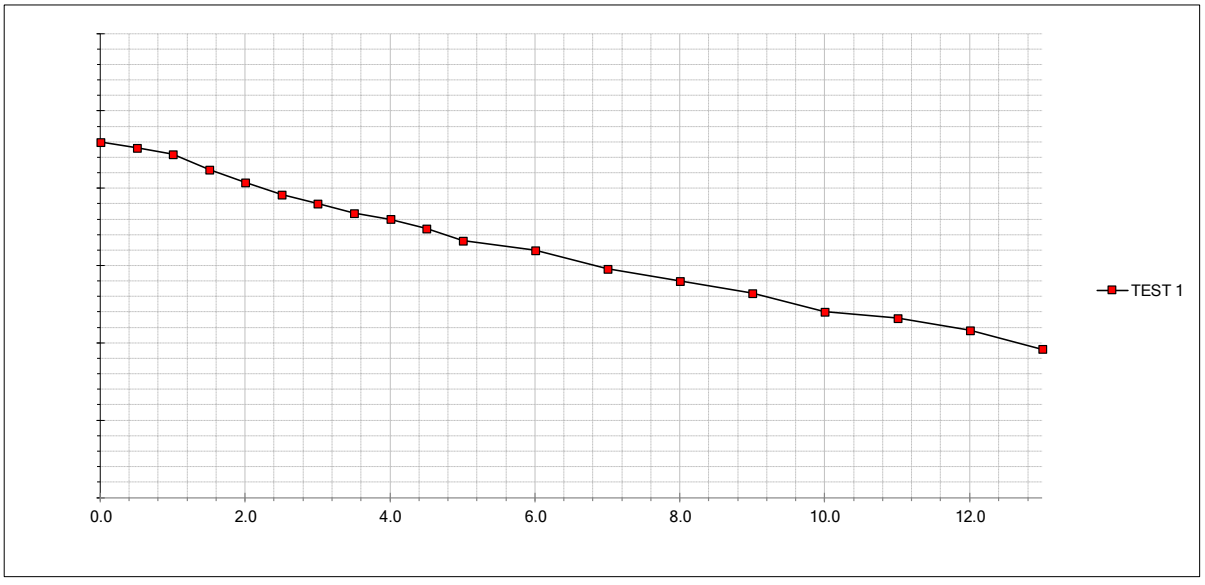
100.0
150.0
200.0
TEST 1


0.0
2.0
4.0
6.0
8.0
10.0
12.0
TEST 1

EUROPEAN OFFICES

United Kingdom

AYLESBURY
T: +44 (0)1844 337380

BELFAST
T: +44 (0)28 9073 2493

BRADFORD-ON-AVON
T: +44 (0)1225 309400

BRISTOL
T: +44 (0)117 906 4280

CAMBRIDGE
T: + 44 (0)1223 813805

CARDIFF
T: +44 (0)29 2049 1010

CHELMSFORD
T: +44 (0)1245 392170

EDINBURGH
T: +44 (0)131 335 6830

EXETER
T: + 44 (0)1392 490152

GLASGOW
T: +44 (0)141 353 5037

GUILDFORD
T: +44 (0)1483 889800

LEEDS
T: +44 (0)113 258 0650

LONDON
T: +44 (0)203 691 5810

MAIDSTONE
T: +44 (0)1622 609242

MANCHESTER
T: +44 (0)161 872 7564

NEWCASTLE UPON TYNE
T: +44 (0)191 261 1966

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T: +44 (0)115 964 7280

SHEFFIELD
T: +44 (0)114 245 5153

SHREWSBURY
T: +44 (0)1743 23 9250

STAFFORD
T: +44 (0)1785 241755

STIRLING
T: +44 (0)1786 239900

WORCESTER
T: +44 (0)1905 751310

Ireland

DUBLIN
T: + 353 (0)1 296 4667

France

GRENOBLE
T: +33 (0)4 76 70 93 41

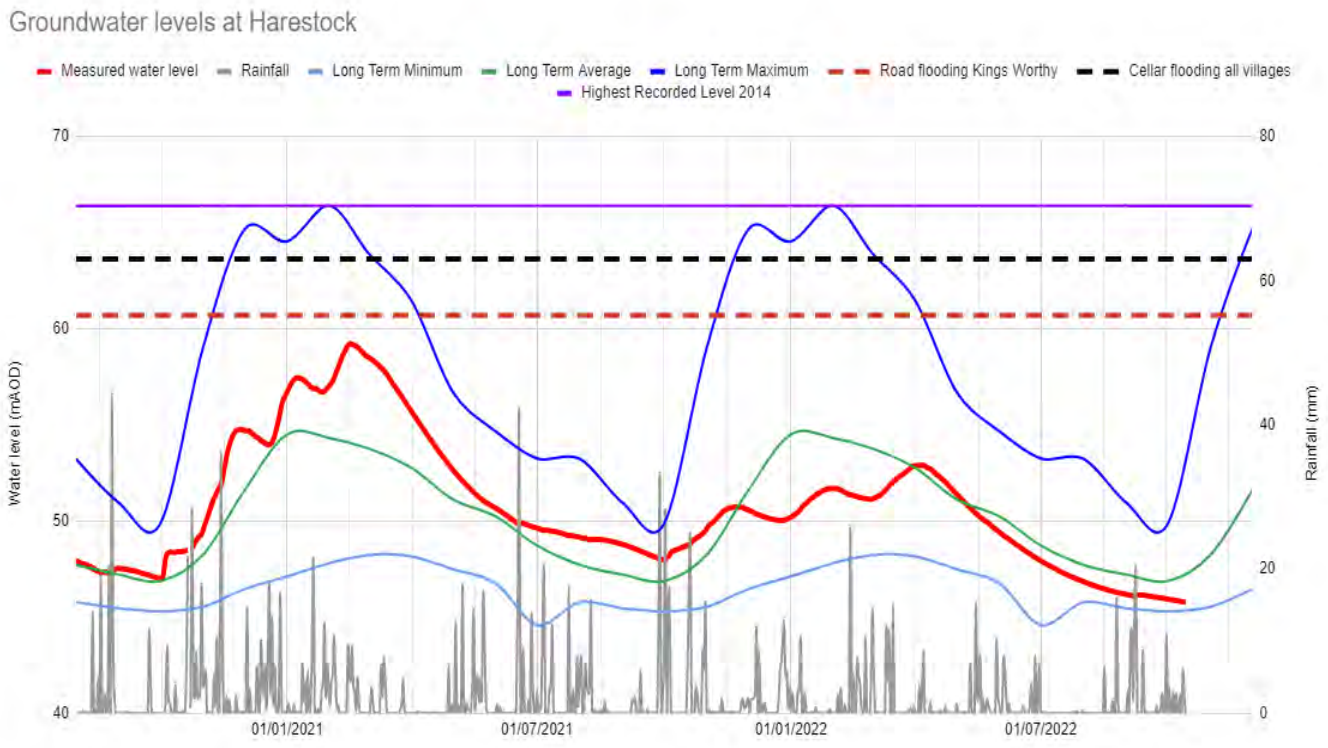
To:	**At:**
From:	**At:**
Date:	**Ref:**
Subject:	

2.1 Maximum Historical Groundwater Levels

Figure 2-1 *2014*

Appendix 01

Figure 2-1
Harestock Groundwater Levels
Environment Agency Borehole Logs



Littleton, Worthys, Easton (Harestock),

2.2 Groundwater Flood Risk

Figure 2-2 -

Figure 2-2
Extract from GWMP – Hampshire

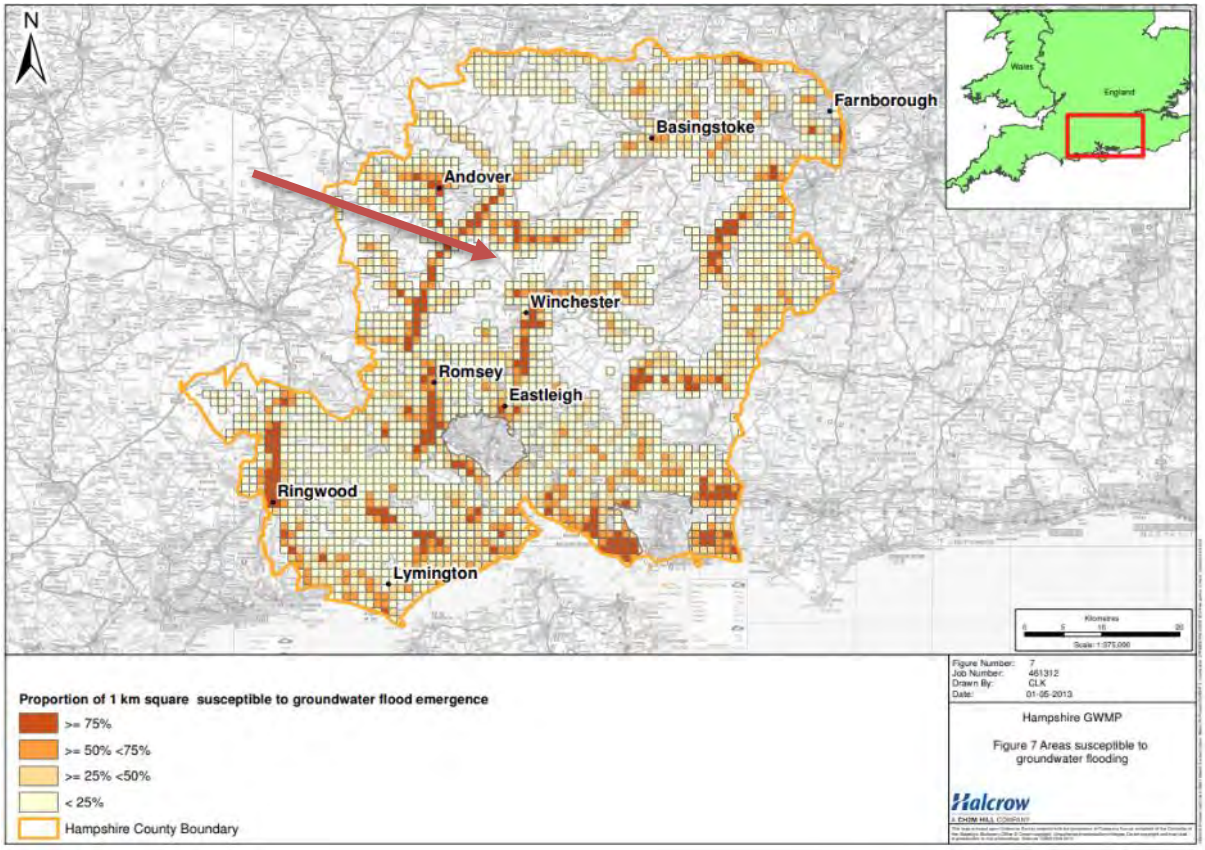


Figure 2-3

Hampshire Groundwater Management Plan': Figure 7.

Figure 2-3
Extract from Groundsure Report – Groundwater Aquifer Designation

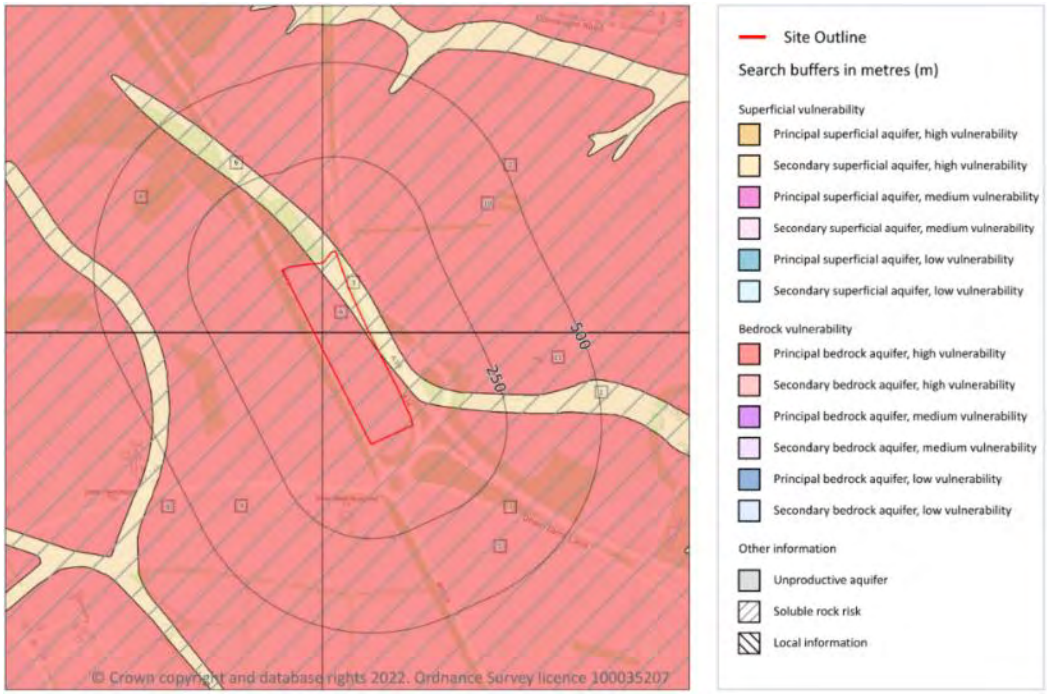
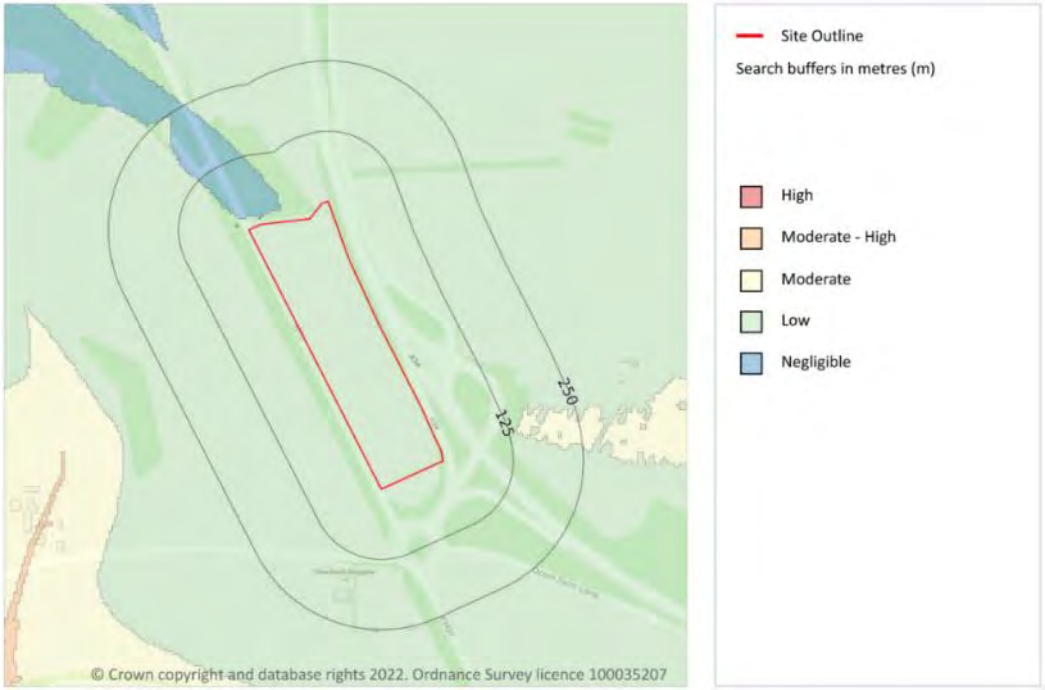


Figure 2-4
Extract from Groundsure Report – Groundwater Vulnerability Map



3.0 SITE INVESTIGATION

Figure 3-1

.

Figure 3-1
Three Maids Borehole Locations

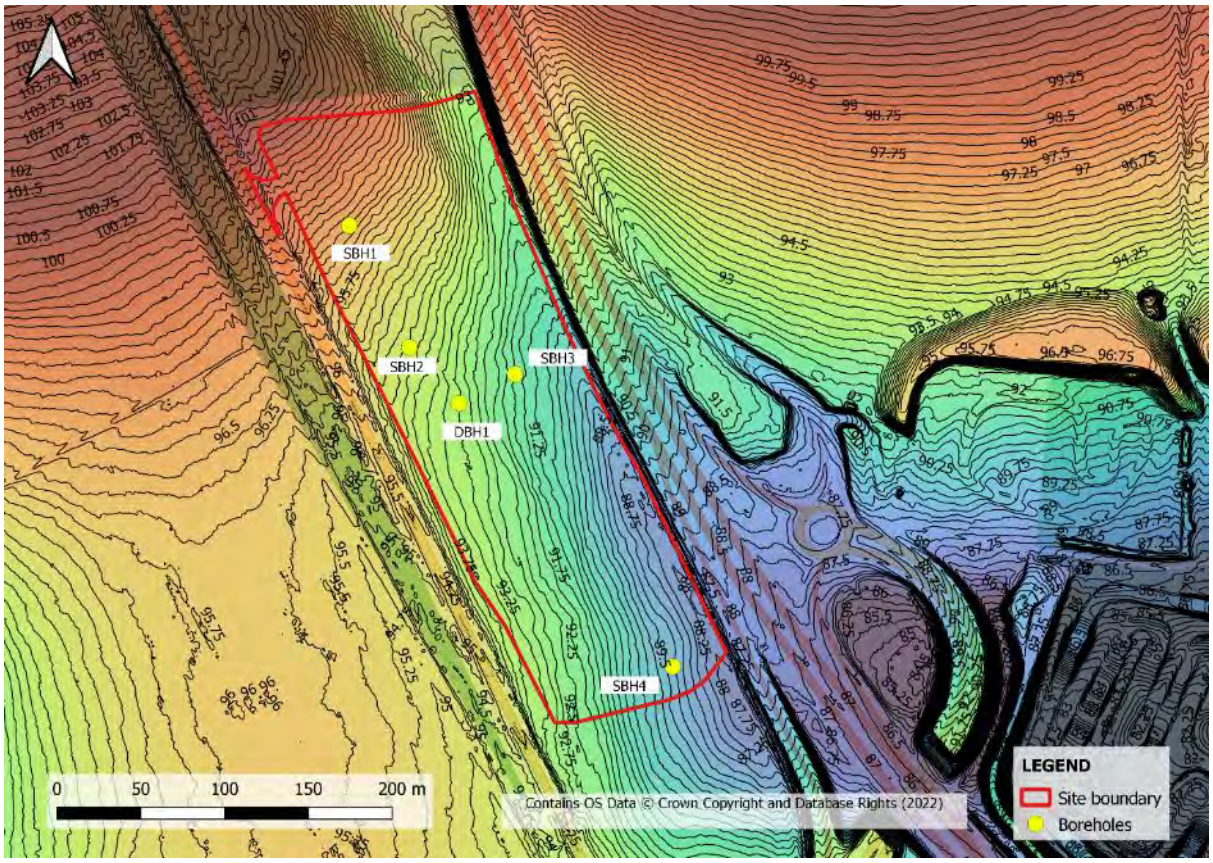


Table 3-1

Appendix 02 **Appendix 03.**

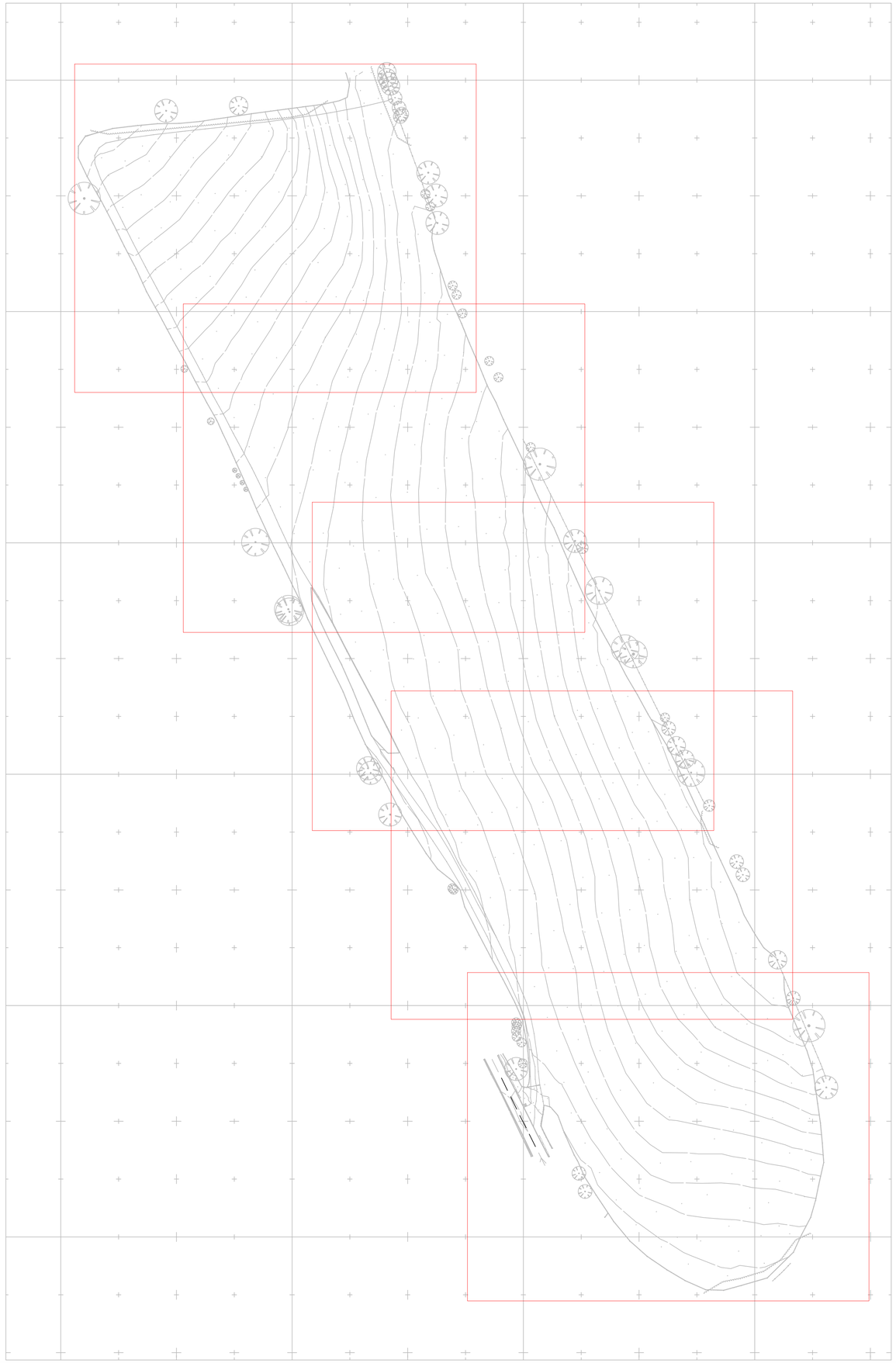
Table 3-1
Borehole Monitoring Data Summary

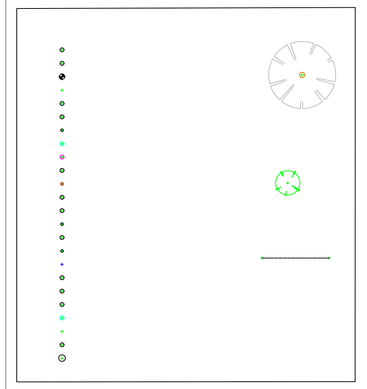
4.0 INFILTRATION TESTING

Appendix 04.

5.0 SUMMARY

APPENDIX 01

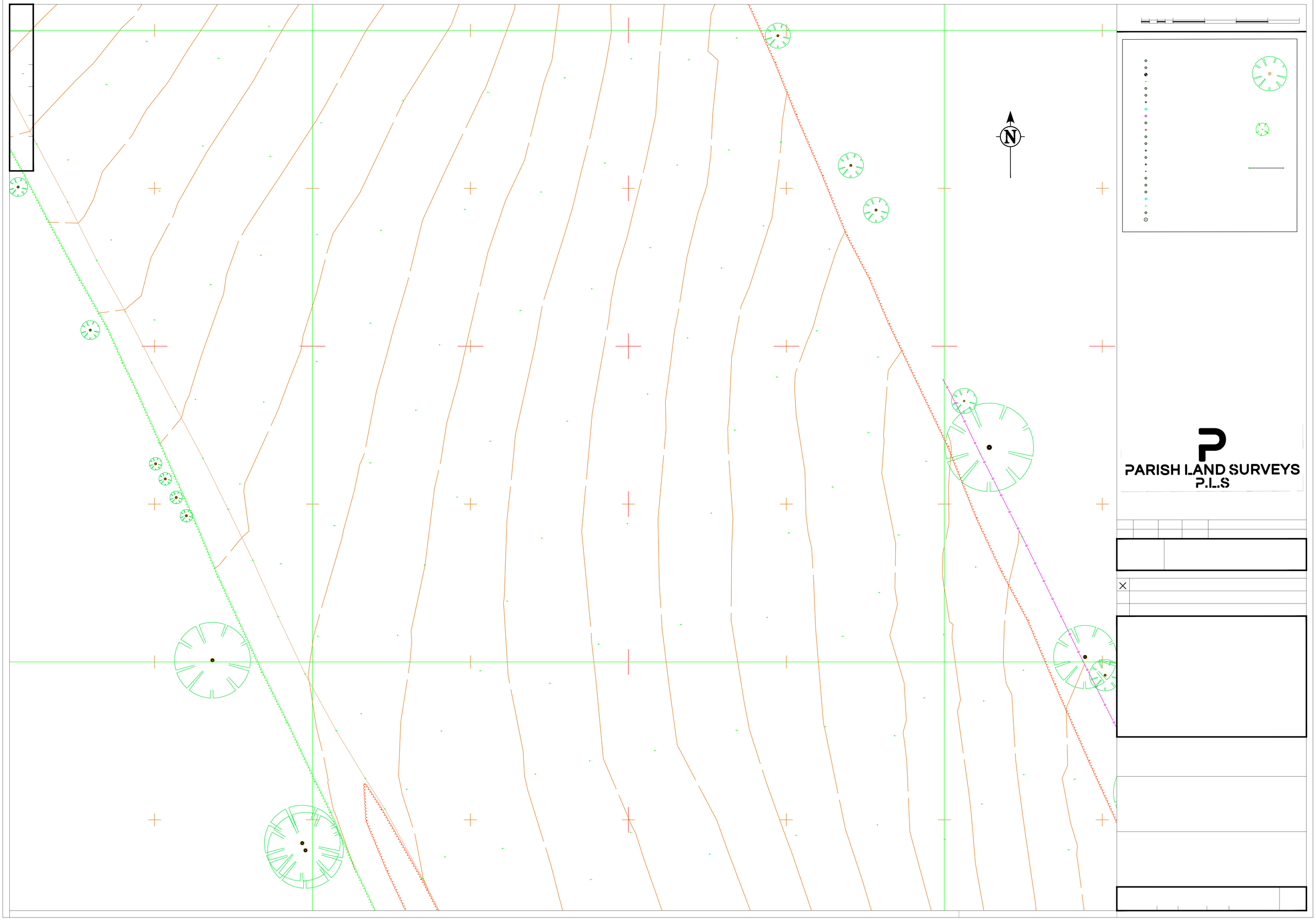




PARISH LAND SURVEYS
P.L.S

N

PARISH LAND SURVEYS
P.L.S



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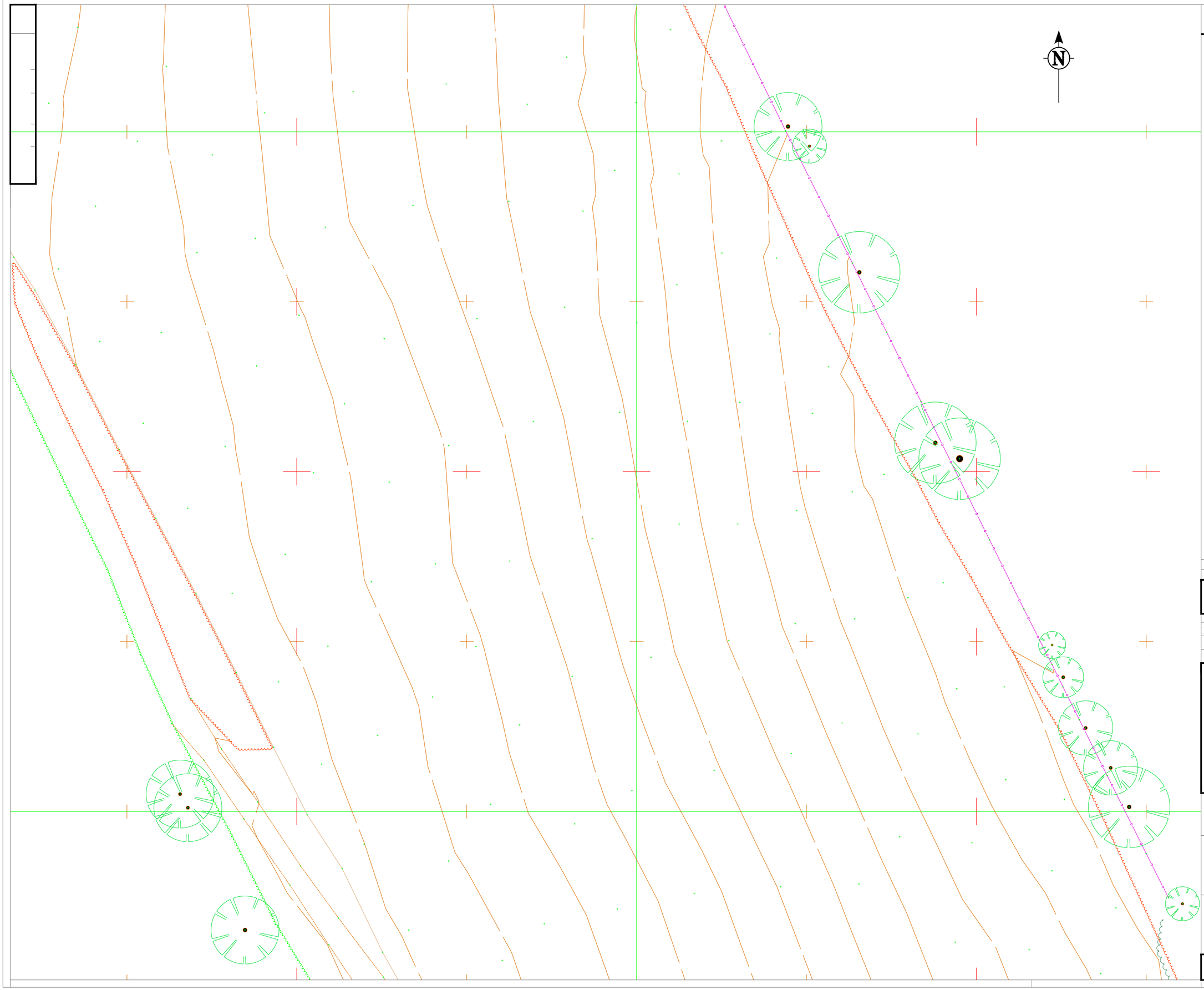
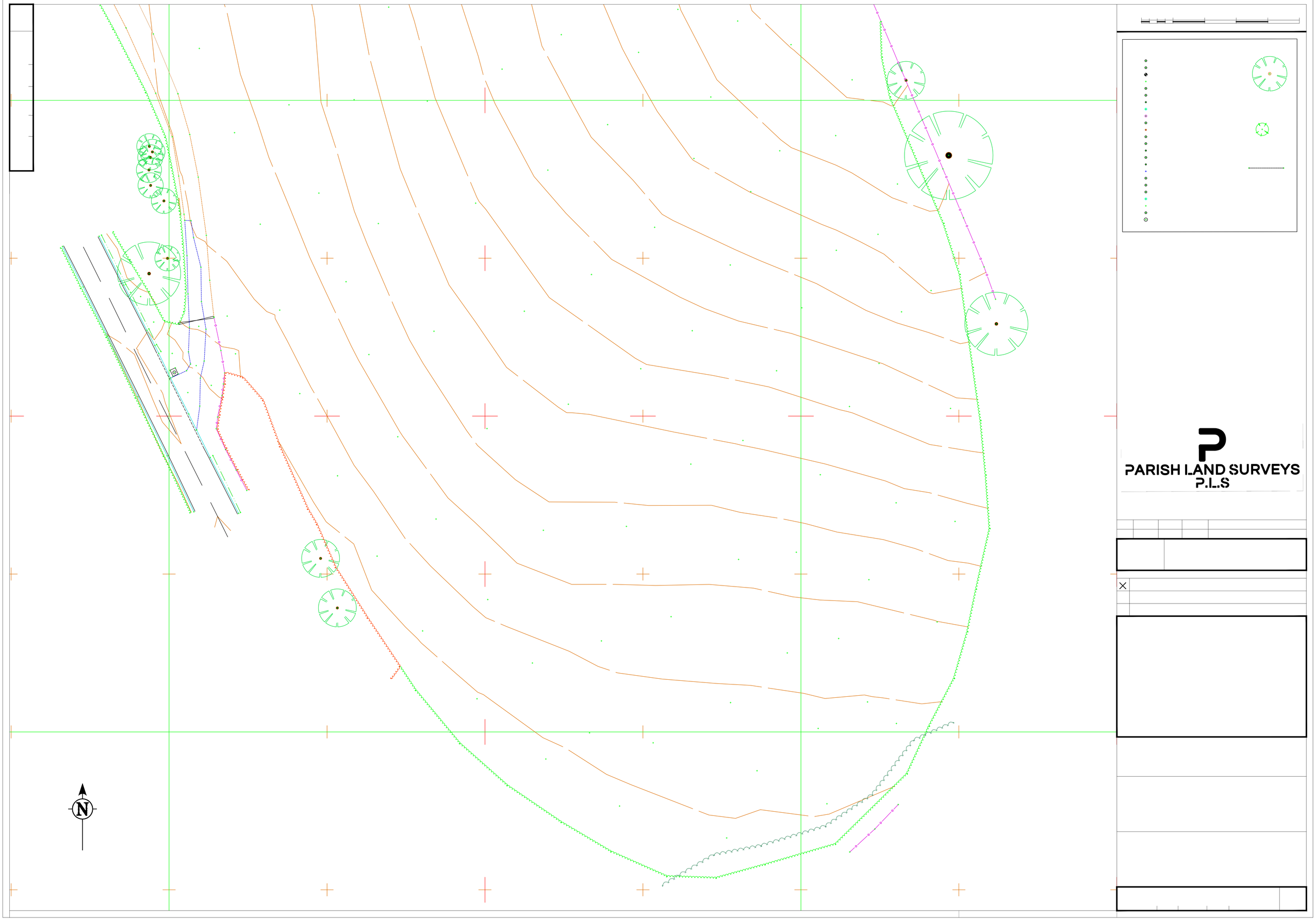
P.L.S



PARISH LAND SURVEYS
P.L.S

N

PARISH LAND SURVEYS
P.L.S



PARISH LAND SURVEYS
P.L.S

APPENDIX 02


A 272
Lay-by
A34
A272
94.5m
0.91m RH

APPENDIX 03

BOREHOLE LOG

BOREHOLE No **DBH1**

Client: **Acorn Bioenergy**

Project No:	Date:	Ground Level:	Co-ordinates:
404.11923.00004.00 20	21/09/2022		E446031 N134020

Project: **Three Maids**

Sheet 1 of 1

Depth	Type No	Test Type	Test Result	SPT N Value 10 20 30 40	Water	Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION	Instrument Backfill
0.20	ES							0.30	Soft dark brown slightly gravelly, slightly clayey SAND. Sand is fine to coarse. Gravel is angular to sub-rounded, fine to coarse of flint and ocassional chalk (TOPSOIL).	
		HS	0ppm							
1.00 - 1.50 1	B	HS	0ppm							
1.20 - 1.65	SPTLS	SPT	N=35	35					High density white CHALK recovered as sandy clayey gravelly cobbles. Gravel is angular to sub-rounded, fine to coarse of medium weak chalk and frequent flint (Grade Dc).	
1.50	ES	HS	0ppm						*1.25 - 1.30 Flint band.*	
2		HS	0ppm						*1.40 - 1.45 Flint band.*	
2.20 - 2.65	SPTLS	SPT	N=13	13				(3.90)		
		HS	0ppm							
3		HS	0ppm							
3.20 - 3.65	SPTLS	SPT	N=13	13						
3.50 - 4.00	B	HS	0ppm							
4		HS	0ppm							
4.20 - 4.65	SPTLS	SPT	N=11	11				4.20		
		HS	0ppm						Low to medium density white CHALK recovered as sandy clayey gravelly cobbles. Gravel is angular to sub-rounded, fine to coarse of weak chalk and ocassional flint (Grade Dc).	
5.00 5	ES	HS	0ppm							
5.20 - 5.65	SPTLS	SPT	N=12	12						
		HS	0ppm							
6.00 - 6.50 6	B	HS	0ppm							
		HS	0ppm							
6.70 - 7.15	SPTLS	SPT	N=22	22						
7		HS	0ppm					(5.80)		
7.50	ES	HS	0ppm						*7.40 - 7.45 Flint band.*	
8		HS	0ppm							
8.15 - 8.60	SPTLS	SPT	N=23	23						
		HS	0ppm							
9.00 - 10.00 9	B	HS	0ppm							
		HS	0ppm							
9.60 - 10.05	SPTLS	SPT	N=23	23						
10.00	ES	HS	0ppm					10.00		
									Borehole Complete at 10.00m	

Boring Progress and Water Observations

Date	Time	Depth	Casing Dpt	Casing Dia	Water Dpt

Chiselling

From	To	Hours

Water Added

From	To

General Remarks

Service traced and CAT scanned. Hand pit to 1.2m. Installed with 50mm monitoring well with top hat cover.

All dimensions in metres	Contractor: Geotechnical Engineering Ltd	Method: Rotary cored	Logged By:	Approved By:
Scale 1:66	Plant: Commachio 305	Hole Size: 150mm	DG-J	

SLR Consulting, Mill Barn 28 Hollingworth Court Turkey Mill, Maidstone ME14 5PP

LOGGING HAS BEEN CARRIED OUT IN ACCORDANCE WITH BS5930:2015

BOREHOLE LOG

BOREHOLE No **SBH1**

Client: **Acorn Bioenergy**

Project No:	Date:	Ground Level:	Co-ordinates:
404.11923.00004.00 20	21/09/2022		E445968 N134112

Project: **Three Maids**

Sheet 1 of 1

SAMPLES & TESTS					Water	STRATA				
Depth	Type No	Test Type	Test Result	SPT N Value 10 20 30 40		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION	Instrument Backfill
0.00 - 0.20	B							0.25	Soft dark brown slightly gravelly, slightly clayey SAND. Sand is fine to coarse. Gravel is angular to sub-rounded, fine to coarse of flint and ocassional chalk (TOPSOIL).	
0.15	ES									
		HS	0ppm							
1		HS	0ppm							
1.10	ES	SPT	N=11	11					High density white CHALK recovered as sandy clayey gravelly cobbles. Gravel is angular to sub-rounded, fine to coarse of medium weak chalk and frequent flint (Grade Dc).	
1.20 - 1.65	SPTLS									
		HS	0ppm					(3.05)		
2.00 - 2.45 2	SPTLS	SPT	N=21	21						
		HS	0ppm							
		HS	0ppm						*2.65 - 2.72 Flint band.*	
3.00 - 3.45 3	SPTLS	SPT	N=24	24				3.30		
		HS	0ppm							
		HS	0ppm						Low to medium density white CHALK recovered as sandy clayey gravelly cobbles. Gravel is angular to sub-rounded, fine to coarse of weak chalk and ocassional flint (Grade Dc).	
4.00 - 4.45 4	SPTLS	SPT	N=27	27						
		HS	0ppm							
4.50	D	HS	0ppm					(2.70)		
4.50 - 5.00	ES									
5.00 - 5.45 5	SPTLS	SPT	N=20	20						
		HS	0ppm							
		HS	0ppm							
6.00 - 6.45 6	SPTLS	SPT	N=26	26				6.00		
		HS	0ppm						Borehole Complete at 6.00m	
7										
8										
9										

Boring Progress and Water Observations					
Date	Time	Depth	Casing Dpt	Casing Dia	Water Dpt

Chiselling			Water Added	
From	To	Hours	From	To

General Remarks

Service traced and CAT scanned. Hand pit to 1.2m. Installed with 50mm monitoring well with top hat cover.

All dimensions in metres	Contractor: Geotechnical Engineering Ltd	Method: Rotary cored	Logged By:	Approved By:
Scale 1:66	Plant: Commachio 305	Hole Size: 150mm	DG-J	

SLR Consulting, Mill Barn 28 Hollingworth Court Turkey Mill, Maidstone ME14 5PP

LOGGING HAS BEEN CARRIED OUT IN ACCORDANCE WITH BS5930:2015

BOREHOLE LOG

BOREHOLE No **SBH2**

Client: **Acorn Bioenergy**

Project No:	Date:	Ground Level:	Co-ordinates:
404.11923.00004.00 20	22/09/2022		E445999 N134049

Project: **Three Maids**

Sheet 1 of 1

SAMPLES & TESTS						STRATA				
Depth	Type No	Test Type	Test Result	SPT N Value 10 20 30 40	Water	Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION	Instrument Backfill
0.30	ES	HS	0ppm					0.40	Soft dark brown slightly gravelly, slightly clayey SAND. Sand is fine to coarse. Gravel is angular to sub-rounded, fine to coarse of flint and ocassional chalk (TOPSOIL).	
		HS	0ppm						High density white CHALK recovered as sandy clayey gravelly cobbles. Gravel is angular to sub-rounded, fine to coarse of medium weak chalk and frequent flint (Grade Dc). *1.20 - 1.30 Flint band.*	
1.20 - 1.65	SPTLS	SPT	N=21	21				(3.70)		
		HS	0ppm							
2.00 - 2.45	SPTLS	SPT	N=32	32						
		HS	0ppm							
		HS	0ppm							
2.90	ES									
3.00 - 3.45	SPTLS	SPT	N=16	16						
		HS	0ppm							
		HS	0ppm							
4.00 - 4.45	SPTLS	SPT	N=21	21				4.10		
		HS	0ppm						Low to medium density white CHALK recovered as sandy clayey gravelly cobbles. Gravel is angular to sub-rounded, fine to coarse of weak chalk and ocassional flint (Grade Dc). *4.35 - 4.40 Flint band.*	
		HS	0ppm							
5.00 - 5.45	SPTLS	SPT	0ppm					(1.90)		
		HS								
		HS	0ppm							
5.80	ES									
6.00 - 6.45	SPTLS	SPT	N=46	46				6.00		
		HS	0ppm						Borehole Complete at 6.00m	

Boring Progress and Water Observations					
Date	Time	Depth	Casing Dpt	Casing Dia	Water Dpt

Chiselling			Water Added	
From	To	Hours	From	To

General Remarks

Service traced and CAT scanned. Hand pit to 1.2m. Installed with 50mm monitoring well with top hat cover.

All dimensions in metres	Contractor: Geotechnical Engineering Ltd	Method: Rotary cored	Logged By:	Approved By:
Scale 1:66	Plant: Commachio 305	Hole Size: 150mm	DG-J	

SLR Consulting, Mill Barn 28 Hollingworth Court Turkey Mill, Maidstone ME14 5PP

LOGGING HAS BEEN CARRIED OUT IN ACCORDANCE WITH BS5930:2015

BOREHOLE LOG

BOREHOLE No **SBH3**

Client: **Acorn Bioenergy**

Project No:	Date:	Ground Level:	Co-ordinates:
404.11923.00004.00 20	23/09/2022		E446155 N133862

Project: **Three Maids**

Sheet 1 of 1

SAMPLES & TESTS					Water	STRATA				
Depth	Type No	Test Type	Test Result	SPT N Value 10 20 30 40		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION	Instrument Backfill
0.20	ES							0.40	Soft dark brown slightly gravelly, slightly clayey SAND. Sand is fine to coarse. Gravel is angular to sub-rounded, fine to coarse of flint and ocassional chalk (TOPSOIL).	
		HS	0ppm							
		HS	0ppm							
1.20 - 1.65	SPTLS	SPT	N=24	24					High density white CHALK recovered as sandy clayey gravelly cobbles. Gravel is angular to sub-rounded, fine to coarse of medium weak chalk and frequent flint (Grade Dc).	
1.40	ES	HS	0ppm						*1.20 - 1.25 Flint band.*	
2.00 - 2.45	SPTLS	SPT	N=23	23				(3.30)		
		HS	0ppm							
		HS	0ppm							
3.00 - 3.45	SPTLS	SPT	N=21	21						
		HS	0ppm							
3.50	ES	HS	0ppm					3.70		
4.00 - 4.45	SPTLS	SPT	N=14	14					Low to medium density white CHALK recovered as sandy clayey gravelly cobbles. Gravel is angular to sub-rounded, fine to coarse of weak chalk and ocassional flint (Grade Dc).	
		HS	0ppm							
		HS	0ppm							
5.00 - 5.45	SPTLS	SPT	N=38	38				(2.30)		
		HS	0ppm							
		HS	0ppm							
6.00 - 6.45	SPTLS	SPT	N=30	30				6.00	*5.90 - 5.95 Flint band.*	
		HS	0ppm						Borehole Complete at 6.00m	

Boring Progress and Water Observations					
Date	Time	Depth	Casing Dpt	Casing Dia	Water Dpt

Chiselling			Water Added	
From	To	Hours	From	To

General Remarks

Service traced and CAT scanned. Hand pit to 1.2m. Installed with 50mm monitoring well with top hat cover.

All dimensions in metres	Contractor: Geotechnical Engineering Ltd	Method: Rotary cored	Logged By:	Approved By:
Scale 1:66	Plant: Commachio 305	Hole Size: 150mm	DG-J	

SLR Consulting, Mill Barn 28 Hollingworth Court Turkey Mill, Maidstone ME14 5PP

LOGGING HAS BEEN CARRIED OUT IN ACCORDANCE WITH BS5930:2015

BOREHOLE LOG

BOREHOLE No **SBH4**

Client: **Acorn Bioenergy**

Project No:	Date:	Ground Level:	Co-ordinates:
404.11923.00004.00 20	23/09/2022		E446067 N134038

Project: **Three Maids**

Sheet 1 of 1

SAMPLES & TESTS					Water	STRATA				
Depth	Type No	Test Type	Test Result	SPT N Value 10 20 30 40		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION	Instrument Backfill
0.15	ES							0.30	Soft dark brown slightly gravelly, slightly clayey SAND. Sand is fine to coarse. Gravel is angular to sub-rounded, fine to coarse of flint and ocassional chalk (TOPSOIL).	
		HS	0ppm							
0.90	ES								High density white CHALK recovered as sandy clayey gravelly cobbles. Gravel is angular to sub-rounded, fine to coarse of medium weak chalk and frequent flint (Grade Dc).	
1		HS	0ppm							
1.20 - 1.65	SPTLS	SPT	N=14	14						
		HS	0ppm					(3.20)		
2.00 - 2.45	2 SPTLS	SPT	N=21	21						
		HS	0ppm							
		HS	0ppm							
3.00 - 3.45	3 SPTLS	SPT	N=15	15						
		HS	0ppm							
		HS	0ppm					3.50		
4.00 - 4.45	4 SPTLS	SPT	N=18	18					Low to medium density white CHALK recovered as sandy clayey gravelly cobbles. Gravel is angular to sub-rounded, fine to coarse of weak chalk and ocassional flint (Grade Dc).	
		HS	0ppm							
		HS	0ppm						*4.40 - 4.50 Flint band.*	
								(2.50)		
5.00 - 5.45	5 SPTLS	SPT	N=30	30						
		HS	0ppm							
		HS	0ppm							
6.00	6 ES	SPT	N=13	13				6.00		
6.00 - 6.45	SPTLS	HS	0ppm						Borehole Complete at 6.00m	
	7									
	8									
	9									

Boring Progress and Water Observations					
Date	Time	Depth	Casing Dpt	Casing Dia	Water Dpt

Chiselling			Water Added	
From	To	Hours	From	To

General Remarks

Service traced and CAT scanned. Hand pit to 1.2m. Installed with 50mm monitoring well with top hat cover.

All dimensions in metres	Contractor: Geotechnical Engineering Ltd	Method: Rotary cored	Logged By:	Approved By:
Scale 1:66	Plant: Commachio 305	Hole Size: 150mm	DG-J	

SLR Consulting, Mill Barn 28 Hollingworth Court Turkey Mill, Maidstone ME14 5PP

LOGGING HAS BEEN CARRIED OUT IN ACCORDANCE WITH BS5930:2015

APPENDIX 04

SUBSTATION + METER READING

6 x PARKING

WEIGHBRIDGE

Buried Propane

GAS FLARE

GRID ENTRY UNIT

CNG COMPRESSOR 1 & 2

BOILER

STORAGE

CHILLER

EXTRACTION STATION

TRAILER BAY 1

TRAILER BAY 2

TRAILER BAY 3

TRAILER BAY 4

TRAILER BAY 5

CO2 TANKS

Covered Lagoon 10'000m³

TP4 Turning Circle 2.5m

CHP

CHP

HEAT EXCHANGER

TECH CONTAINER

TANK 04

DIRTY TANK

DIRTY TANK

TANK 01

TANK 05

TANK 01

TANK 08

TANK 06

TANK 07

TANK 08

SLURRY TANK

SLURRY TANK

PUMP CONTAINER

TANK 03

ARK CLAMP 1
123.75m x 42.5m x 3.52m
WALL HEIGHT
28,534m³

ARK CLAMP 1
118.75m x 42.5m x 3.52m
WALL HEIGHT
27,384m³

TP3 2.5m

Grp 4

A34

A272

Lay-by

RH

acorn BIOENERGY

SLR

Appendix C: Preliminary Land Quality Risk Assessment, SLR (2022)

PROPOSED ANAEROBIC DIGESTION FACILITY AT THREE MAIDS HILL, WINCHESTER

Preliminary Land Quality Risk Assessment

BASIS OF REPORT

CONTENTS

DOCUMENT REFERENCES

TABLES

FIGURES

APPENDICES

1.0 Introduction

1.1 Appointment

1.2 Proposed Development

"The construction and operation of an anaerobic digestion facility, ancillary infrastructure and the construction of a new access road and access from the A272

1.3 Background and Objectives

Figure 1-1 Site Boundary Plan

1.4 Scope of Works

- o
- o
- o

1.5 Sources of Information

2.0 Site Description

2.1 Summary Site Details

Table 2-1 – Site Details

2.2 Site Walkover

Figure 2-1 Site looking northwest

Figure 2-2 Site looking southeast

Figure 2-3 Crushed brick and concrete gravel

Figure 2-4 Evidence of fly tipped material

3.0 Site History

3.1 Review of Historical Maps and Photographs

3.2 Previous Planning Permissions

3.3 Summary

4.0 Site Environmental Setting

4.1 Geography and Geology

Table 4-1 – Site Setting

4.2 Regulatory Searches

5.0 Conceptual Site Model and Preliminary Qualitative Risk Assessment

5.1 Conceptual Site Model

5.1.1 Sources

"a substance which is in, on or under the land and which has the potential to cause significant harm to a relevant receptor, or to cause significant pollution of Controlled Waters".

5.1.2 Receptors

"something that could be adversely affected by a contaminant, for example a person, an organism, an ecosystem, property, or Controlled Waters."

5.1.3 Pathways

"a route by which a receptor is or might be affected by a contaminant".

1

5.2 Qualitative Risk Assessment

2

3

2

3

6.0 Conclusions

6.1 Conclusions

6.2 Recommendations

6.2.1 Land Quality

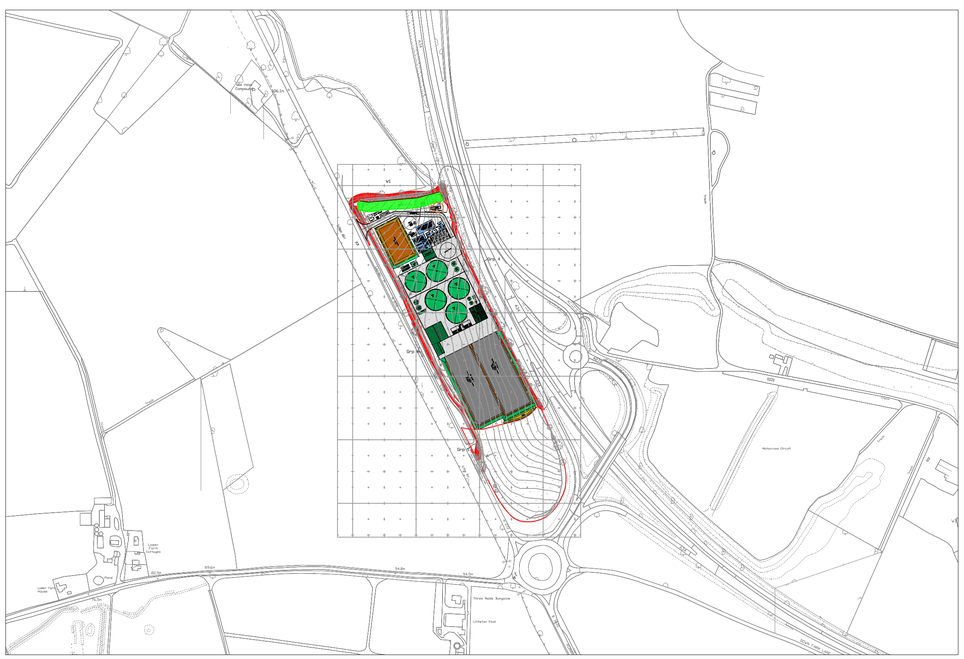
6.2.2 Soil Materials Management

APPENDIX 01

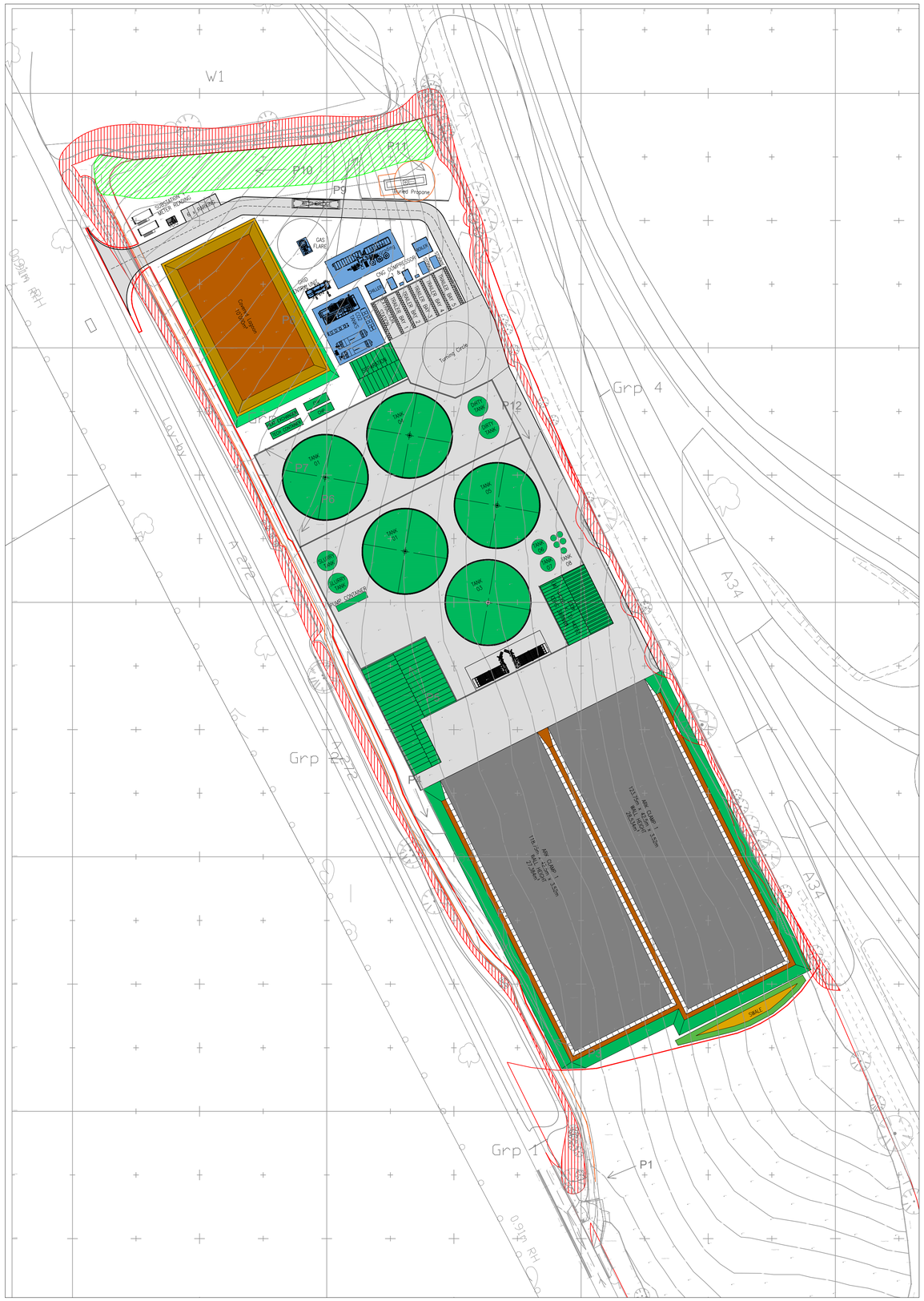
AS NOTED ON A1 FRAME

0 10m 20m 30m 40m 50m
Scale 1:1000 @ A1

0 50m 100m 150m 200m 250m
Scale 1:5000 @ A1



SITE LOCATION PLAN
Scale: 1:5000 @ A1



SITE PLAN
Scale: 1:1000 @ A1

NOT FOR CONSTRUCTION

NOTES:-

1. All dimensions must be checked on site and not scaled from this drawing.
2. The Contractor shall make a survey of the site and shall be responsible for obtaining all dimensions and levels necessary for the proper fabrication of the structure as indicated.
3. All levels shown on this drawing are relative to Agreed Topographic survey
4. This drawing is to be read in conjunction with 29348/100 Series Drawings.
5. All existing invert levels are to be confirmed by contractor prior to construction. Connection subject to approval.

🟥	Site Red Line Boundary (4.52ha)
▨	15m Woodland Easement
▨	Tree Easement

Rev	Date	Description	DR	CH
E	07/09/22	Notes Revised	JH	JHC
D	25/08/22	Notes Revised	DJC	JHC
C	27/07/22	Layout Revised	DJC	JHC
B	13/06/22	Issued For Approval	DJC	JHC
A	24/03/22	Issued For Planning	DJC	JHC

UVDB empowered by Achilles Registered

Link-up empowered by Achilles Qualified via Audit

GGP CONSULT
CONSULTING ENGINEERS
PROJECT MANAGEMENT

2 Hallam Road
Priory Park East
HULL HU4 7DY
United Kingdom

Telephone (+44) 01482 627963
Fax (+44) 01482 641736
Email info@ggpconsult.co.uk

Client
acorn

Job Title
AD Plant.
Three Maids

Drawing Title
Site Layout Plan

Status
Approval

Scale	As Noted	Date	Feb' '22

Drawn By: Daniel Cook	Checked: JHC	Approved: JHC

Drg. No. 29348/101A	Rev E

APPENDIX 02

Groundsure
LOCATION INTELLIGENCE

Enviro+Geo
Insight

Order Details

Date:

Your ref:

Our Ref:

Client:

Site Details

Location:

Area:

Authority:

Summary of findings

OS MasterMap site plan

Aerial image

groundsure.com/insightuserguide

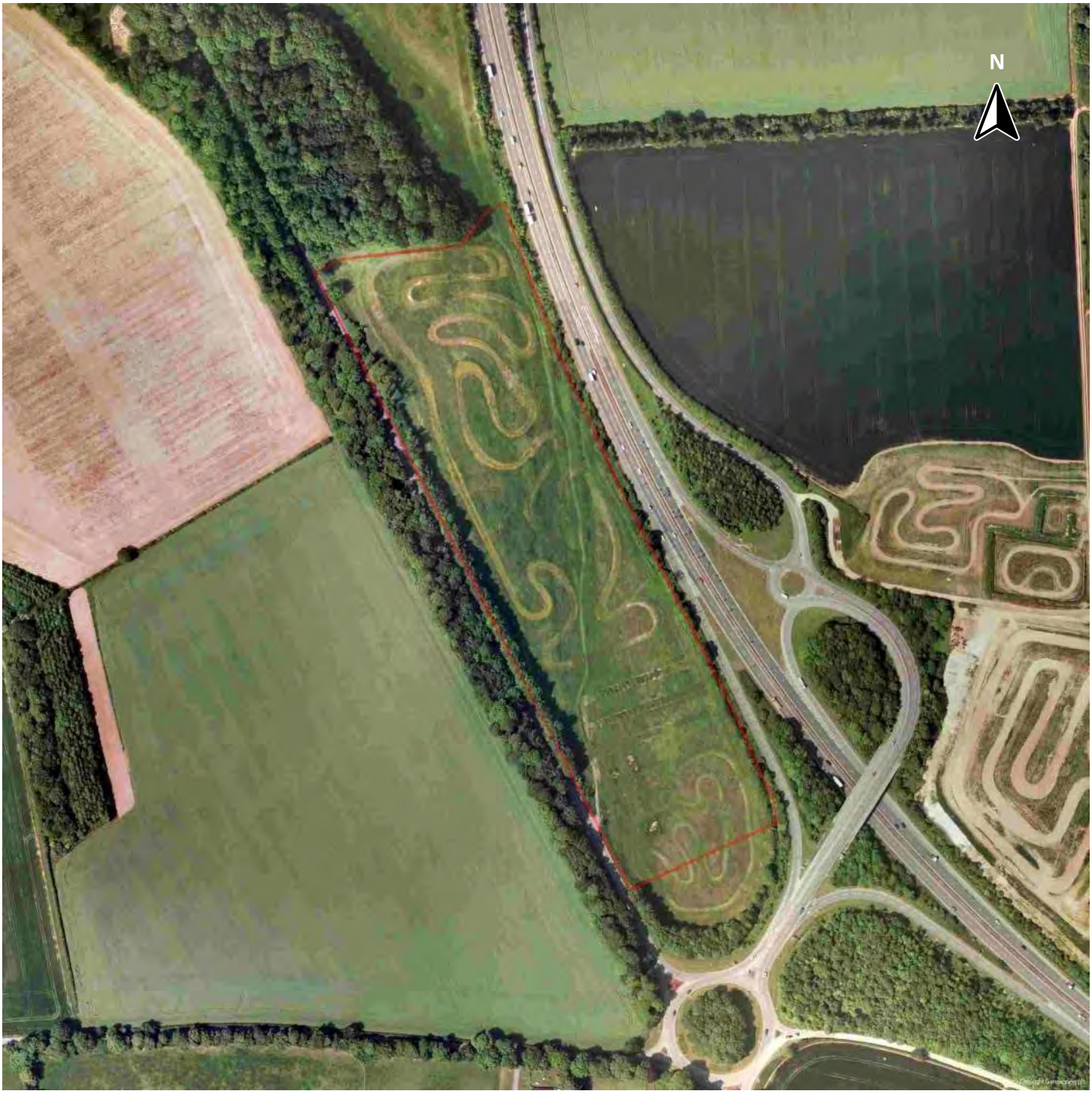
Summary of findings

Recent aerial photograph

Recent site history - 2017 aerial photograph

Recent site history - 2013 aerial photograph

Recent site history - 2005 aerial photograph



Recent site history - 1999 aerial photograph

OS MasterMap site plan

1 Past land use

1.1 Historical industrial land uses

Records within 500m	**18**

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m	**0**

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m	**0**

This data is sourced from Ordnance Survey / Groundsure.

1.4 Historical petrol stations

Records within 500m	**0**

This data is sourced from Ordnance Survey / Groundsure.

1.5 Historical garages

Records within 500m	**0**

This data is sourced from Ordnance Survey / Groundsure.

1.6 Historical military land

Records within 500m	**0**

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

2 Past land use - un-grouped

2.1 Historical industrial land uses

Records within 500m	21

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m	**0**

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m	0

This data is sourced from Ordnance Survey / Groundsure.

2.4 Historical petrol stations

Records within 500m	0

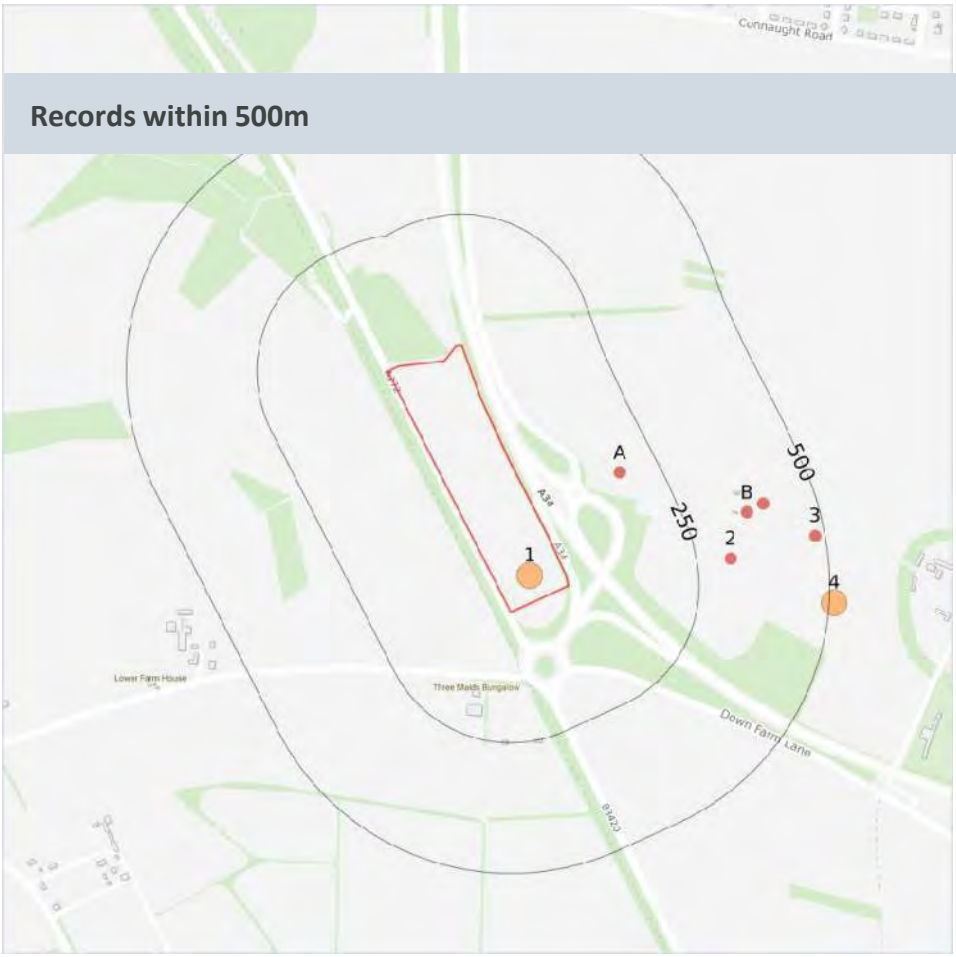
This data is sourced from Ordnance Survey / Groundsure.

2.5 Historical garages

Records within 500m	0

This data is sourced from Ordnance Survey / Groundsure.

3 Waste and landfill



Records within 500m	0

3.1 Active or recent landfill

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

3.2 Historical landfill (BGS records)

Records within 500m	0

This data is sourced from the British Geological Survey.

3.3 Historical landfill (LA/mapping records)

Records within 500m	0

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

3.4 Historical landfill (EA/NRW records)

Records within 500m	0

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

3.5 Historical waste sites

Records within 500m	2

1	On site	Site Address: Land at Three Maids Hill, Off A272, Winchester, Hampshire, SO21 2QU	Type of Site: Waste Recycling Facility Planning application reference: HCC/2020/0428 Description: Scheme comprises development of an inert waste recycling facility . This project also includes associated infrastructure works and access roads. Data source: Historic Planning Application Data Type: Point	14/08/2020

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

3.6 Licensed waste sites

Records within 500m	**0**

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

3.7 Waste exemptions

Records within 500m	**8**

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

4 Current industrial land use

Records within 250m	1

4.1 Recent industrial land uses

This data is sourced from Ordnance Survey.

4.2 Current or recent petrol stations

Records within 500m	**0**

This data is sourced from Experian.

4.3 Electricity cables

Records within 500m	**0**

This data is sourced from National Grid.

4.4 Gas pipelines

Records within 500m	**0**

This data is sourced from National Grid.

4.5 Sites determined as Contaminated Land

Records within 500m	**0**

This data is sourced from Local Authority records.

4.6 Control of Major Accident Hazards (COMAH)

Records within 500m	**0**

This data is sourced from the Health and Safety Executive.

4.7 Regulated explosive sites

Records within 500m	**0**

This data is sourced from the Health and Safety Executive.

4.8 Hazardous substance storage/usage

Records within 500m	**0**

This data is sourced from Local Authority records.

4.9 Historical licensed industrial activities (IPC)

Records within 500m	**0**

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

4.10 Licensed industrial activities (Part A(1))

Records within 500m	**0**

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

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

Records within 500m	**0**

This data is sourced from Local Authority records.

4.12 Radioactive Substance Authorisations

Records within 500m	0

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

4.13 Licensed Discharges to controlled waters

Records within 500m	1

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

4.14 Pollutant release to surface waters (Red List)

Records within 500m	0

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

4.15 Pollutant release to public sewer

Records within 500m	0

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

4.16 List 1 Dangerous Substances

Records within 500m	**0**

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

4.17 List 2 Dangerous Substances

Records within 500m	**0**

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

4.18 Pollution Incidents (EA/NRW)

Records within 500m	**1**

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

4.19 Pollution inventory substances

Records within 500m	**0**

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

4.20 Pollution inventory waste transfers

Records within 500m	**0**

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

4.21 Pollution inventory radioactive waste

Records within 500m	**0**

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

5 Hydrogeology - Superficial aquifer

5.1 Superficial aquifer

Records within 500m	1

1	On site	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type

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

Bedrock aquifer

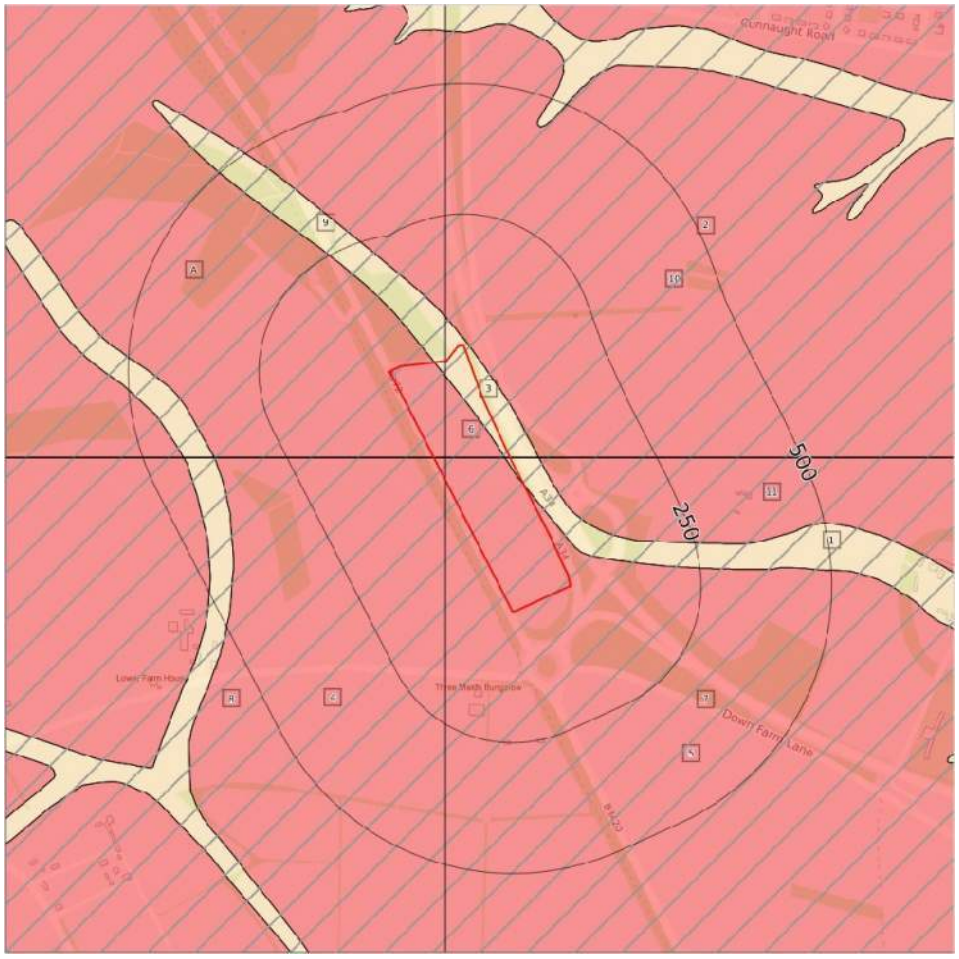
5.2 Bedrock aquifer

Records within 500m	1

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

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

Groundwater vulnerability



Superficial vulnerability
- Principal superficial aquifer, high vulnerability
- Secondary superficial aquifer, high vulnerability
- Principal superficial aquifer, medium vulnerability
- Principal superficial aquifer, low vulnerability
- Secondary superficial aquifer, low vulnerability

Bedrock vulnerability
- Principal bedrock aquifer, high vulnerability
- Secondary bedrock aquifer, high vulnerability
- Principal bedrock aquifer, medium vulnerability
- Secondary bedrock aquifer, medium vulnerability
- Principal bedrock aquifer, low vulnerability
- Secondary bedrock aquifer, low vulnerability

Other information
- Unproductive aquifer
- Soluble rock risk
- Local information

5.3 Groundwater vulnerability

Records within 50m	9

1	On site	Summary Classification: Secondary superficial aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: High Infiltration value: >70% Dilution value: 300-550mm/year	Vulnerability: High Aquifer type: Secondary Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Principal Flow mechanism: Well connected fractures
3	On site	Summary Classification: Secondary superficial aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: High Infiltration value: >70% Dilution value: 300-550mm/year	Vulnerability: High Aquifer type: Secondary Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Principal Flow mechanism: Well connected fractures
4	On site	Summary Classification: Principal bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: High Infiltration value: >70% Dilution value: 300-550mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Principal Flow mechanism: Well connected fractures
5	On site	Summary Classification: Principal bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: High Infiltration value: >70% Dilution value: 300-550mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Principal Flow mechanism: Well connected fractures
6	On site	Summary Classification: Principal bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: High Infiltration value: >70% Dilution value: 300-550mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Principal Flow mechanism: Well connected fractures
9	On site	Summary Classification: Secondary superficial aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: High Infiltration value: >70% Dilution value: 300-550mm/year	Vulnerability: High Aquifer type: Secondary Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Principal Flow mechanism: Well connected fractures
A	On site	Summary Classification: Principal bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: High Infiltration value: >70% Dilution value: 300-550mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Principal Flow mechanism: Well connected fractures

10					
11					

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

5.4 Groundwater vulnerability- soluble rock risk

Records on site	4

2	Significant soluble rocks are likely to be present. Low possibility of localised subsidence or dissolution-related degradation of bedrock occurring naturally, but may be possible in adverse conditions such as high surface or subsurface water flow.	11.0%
7	Significant soluble rocks are likely to be present. Low possibility of localised subsidence or dissolution-related degradation of bedrock occurring naturally, but may be possible in adverse conditions such as high surface or subsurface water flow.	6.0%
8	Significant soluble rocks are likely to be present. Low possibility of localised subsidence or dissolution-related degradation of bedrock occurring naturally, but may be possible in adverse conditions such as high surface or subsurface water flow.	8.0%
A	Significant soluble rocks are likely to be present. Low possibility of localised subsidence or dissolution-related degradation of bedrock occurring naturally, but may be possible in adverse conditions such as high surface or subsurface water flow.	9.0%

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

5.5 Groundwater vulnerability- local information

Records on site	**0**

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

Abstractions and Source Protection Zones

Records within 2000m	2

Site Outline

Inner catchment

Source Protection Zone 2
Outer catchment

Source Protection Zone 3
Total catchment

Source Protection Zone 4
Zone of Special Interest

Source Protection Zone 1c
Inner catchment - confined aquifer

Source Protection Zone 2c
Outer catchment - confined aquifer

Source Protection Zone 3c
Total catchment - confined aquifer

Drinking water abstraction licences

Drinking water abstraction licences
Polygon features

Drinking water abstraction licences
Linear features

Groundwater abstraction licence (area)

Surface Water Abstractions (point)

Surface Water Abstractions (area)

Surface Water Abstractions (linear)

5.6 Groundwater abstractions

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

5.7 Surface water abstractions

Records within 2000m	**0**

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

5.8 Potable abstractions

Records within 2000m	**0**

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

5.9 Source Protection Zones

Records within 500m	**0**

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

5.10 Source Protection Zones (confined aquifer)

Records within 500m	**0**

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

6 Hydrology

Records within 250m	0

6.1 Water Network (OS MasterMap)

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m	0

This data is sourced from the Ordnance Survey.

6.3 WFD Surface water body catchments

Records on site	1

1	On site	River	Nun's Walk Stream	GB107042022730	Itchen	Test and Itchen

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

6.4 WFD Surface water bodies

Records identified	1

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

6.5 WFD Groundwater bodies

Records on site	2

2	On site	River Itchen Chalk	GB40701G505000	Poor	Poor	Poor	2019
3	On site	River Test Chalk	GB40701G501200	Poor	Poor	Good	2019

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

7 River and coastal flooding

7.1 Risk of flooding from rivers and the sea

Records within 50m	**0**

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

7.2 Historical Flood Events

Records within 250m	**0**

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

7.3 Flood Defences

Records within 250m	**0**

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

7.4 Areas Benefiting from Flood Defences

Records within 250m	**0**

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

7.5 Flood Storage Areas

Records within 250m	**0**

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

River and coastal flooding - Flood Zones

7.6 Flood Zone 2

Records within 50m	**0**

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

7.7 Flood Zone 3

Records within 50m	**0**

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

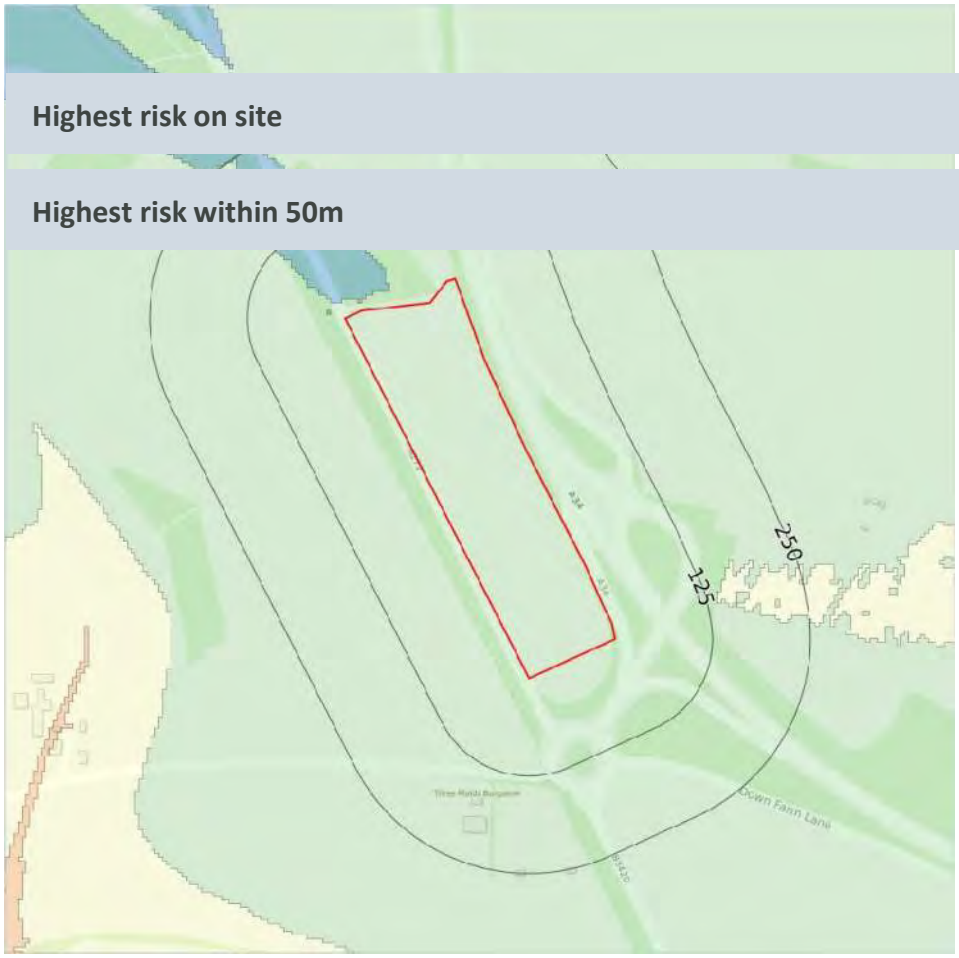
8 Surface water flooding

Highest risk on site	1 in 30 year, 0.3m - 1.0m
Highest risk within 50m	1 in 30 year, 0.3m - 1.0m

8.1 Surface water flooding

This data is sourced from Ambiental Risk Analytics.

9 Groundwater flooding



Highest risk on site	Low
Highest risk within 50m	Low

9.1 Groundwater flooding

This data is sourced from Ambiental Risk Analytics.

10 Environmental designations

10.1 Sites of Special Scientific Interest (SSSI)

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

10.2 Conserved wetland sites (Ramsar sites)

Records within 2000m	**0**

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

10.3 Special Areas of Conservation (SAC)

Records within 2000m	**0**

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

10.4 Special Protection Areas (SPA)

Records within 2000m	**0**

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

10.5 National Nature Reserves (NNR)

Records within 2000m	**0**

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

10.6 Local Nature Reserves (LNR)

Records within 2000m	0

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

10.7 Designated Ancient Woodland

Records within 2000m	7

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

10.8 Biosphere Reserves

Records within 2000m	0

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

10.9 Forest Parks

Records within 2000m	**0**

This data is sourced from the Forestry Commission.

10.10 Marine Conservation Zones

Records within 2000m	**0**

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

10.11 Green Belt

Records within 2000m	**0**

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

10.12 Proposed Ramsar sites

Records within 2000m	**0**

This data is sourced from Natural England.

10.13 Possible Special Areas of Conservation (pSAC)

Records within 2000m	**0**

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

10.14 Potential Special Protection Areas (pSPA)

Records within 2000m	0

This data is sourced from Natural England.

10.15 Nitrate Sensitive Areas

Records within 2000m	0

This data is sourced from Natural England.

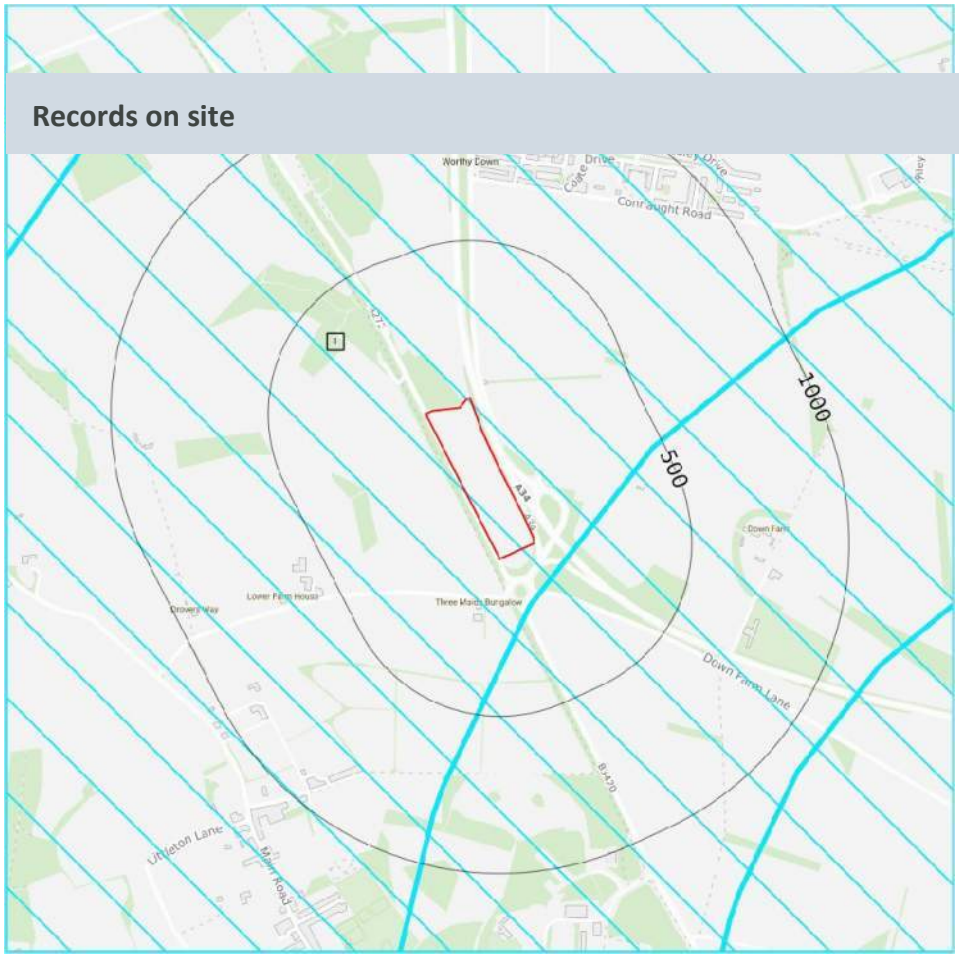
10.16 Nitrate Vulnerable Zones

Records within 2000m	8

On site	Nun's Walk Stream NVZ	Surface Water	812	Existing
On site	Hamble Estuary Eutrophic NVZ (TraC)	Eutrophic Water	3	Existing
On site	Hampshire Chalk	Groundwater	143	Existing

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

SSSI Impact Zones and Units



Records on site	1

10.17 SSSI Impact Risk Zones

1	On site	Infrastructure - Airports, helipads and other aviation proposals. Air pollution - Any industrial/agricultural development that could cause air pollution (incl: industrial processes, livestock & poultry units with floorspace > 500m², slurry lagoons & digestate stores > 750m², manure stores > 3500t). Combustion - General combustion processes >50mw energy input. incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion. Discharges - Any discharge of water or liquid waste that is discharged to ground (ie to seep away) or to surface water, such as a beck or stream. Notes: Solent nutrient impact area. for new development with overnight accommodation reg 63 of the conservation of habitats and species regulations 2017 must be applied. lpa to refer to natural england's solent nutrient neutrality advice note june 2019.

This data is sourced from Natural England.

10.18 SSSI Units

Records within 2000m	**0**

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

11 Visual and cultural designations

11.1 World Heritage Sites

Records within 250m	**0**

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

11.2 Area of Outstanding Natural Beauty

Records within 250m	**0**

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

11.3 National Parks

Records within 250m	**0**

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

11.4 Listed Buildings

Records within 250m	**0**

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

11.5 Conservation Areas

Records within 250m	**0**

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

11.6 Scheduled Ancient Monuments

Records within 250m	**0**

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

11.7 Registered Parks and Gardens

Records within 250m	**0**

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

12 Agricultural designations

12.1 Agricultural Land Classification

Records within 250m	2

1	On site	Grade 3	Good to moderate quality agricultural land. Land with moderate limitations which affect the choice of crops, timing and type of cultivation, harvesting or the level of yield. Where more demanding crops are grown yields are generally lower or more variable than on land in Grades 1 and 2.

This data is sourced from Natural England.

12.2 Open Access Land

Records within 250m	0

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

12.3 Tree Felling Licences

Records within 250m	15

2	On site	Selective Fell/Thin (Unconditional)	018/366/15-16	-

This data is sourced from the Forestry Commission.

12.4 Environmental Stewardship Schemes

Records within 250m	**0**

This data is sourced from Natural England.

12.5 Countryside Stewardship Schemes

Records within 250m	**1**

This data is sourced from Natural England.

13 Habitat designations

Records within 250m	8

13.1 Priority Habitat Inventory

1	On site	Deciduous woodland	Main habitat: DWOOD (INV > 50%)

This data is sourced from Natural England.

13.2 Habitat Networks

Records within 250m	**0**

This data is sourced from Natural England.

13.3 Open Mosaic Habitat

Records within 250m	**0**

This data is sourced from Natural England.

13.4 Limestone Pavement Orders

Records within 250m	**0**

This data is sourced from Natural England.

14 Geology 1:10,000 scale - Availability

Records within 500m	1

14.1 10k Availability

1	On site	Full	Full	Full	No coverage	SU43SE

This data is sourced from the British Geological Survey.

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

14.2 Artificial and made ground (10k)

Records within 500m	6

1	On site	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Superficial

Records within 500m	1

14.3 Superficial geology (10k)

1	On site	HEAD-DMTN	Head - Diamicton	Diamicton

This data is sourced from the British Geological Survey.

14.4 Landslip (10k)

Records within 500m	0

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Bedrock

14.5 Bedrock geology (10k)

Records within 500m	3

1	On site	SECK-CHLK	Seaford Chalk Formation - Chalk	Santonian Age - Coniacian Age
2	On site	STRK-LMST	Stockbridge Rock Member - Limestone	Santonian Age

This data is sourced from the British Geological Survey.

14.6 Bedrock faults and other linear features (10k)

Records within 500m	0

This data is sourced from the British Geological Survey.

15 Geology 1:50,000 scale - Availability

Records within 500m	1

15.1 50k Availability

1	On site	Full	Full	Full	No coverage	EW299_winchester_v4

This data is sourced from the British Geological Survey.

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

Records within 500m	1

15.2 Artificial and made ground (50k)

This data is sourced from the British Geological Survey.

15.3 Artificial ground permeability (50k)

Records within 50m	0

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Superficial

Records within 500m	1

15.4 Superficial geology (50k)

1	On site	HEAD-XCZSV	HEAD	CLAY, SILT, SAND AND GRAVEL

This data is sourced from the British Geological Survey.

15.5 Superficial permeability (50k)

Records within 50m	1

On site	Mixed	High	Very Low

This data is sourced from the British Geological Survey.

15.6 Landslip (50k)

Records within 500m	0

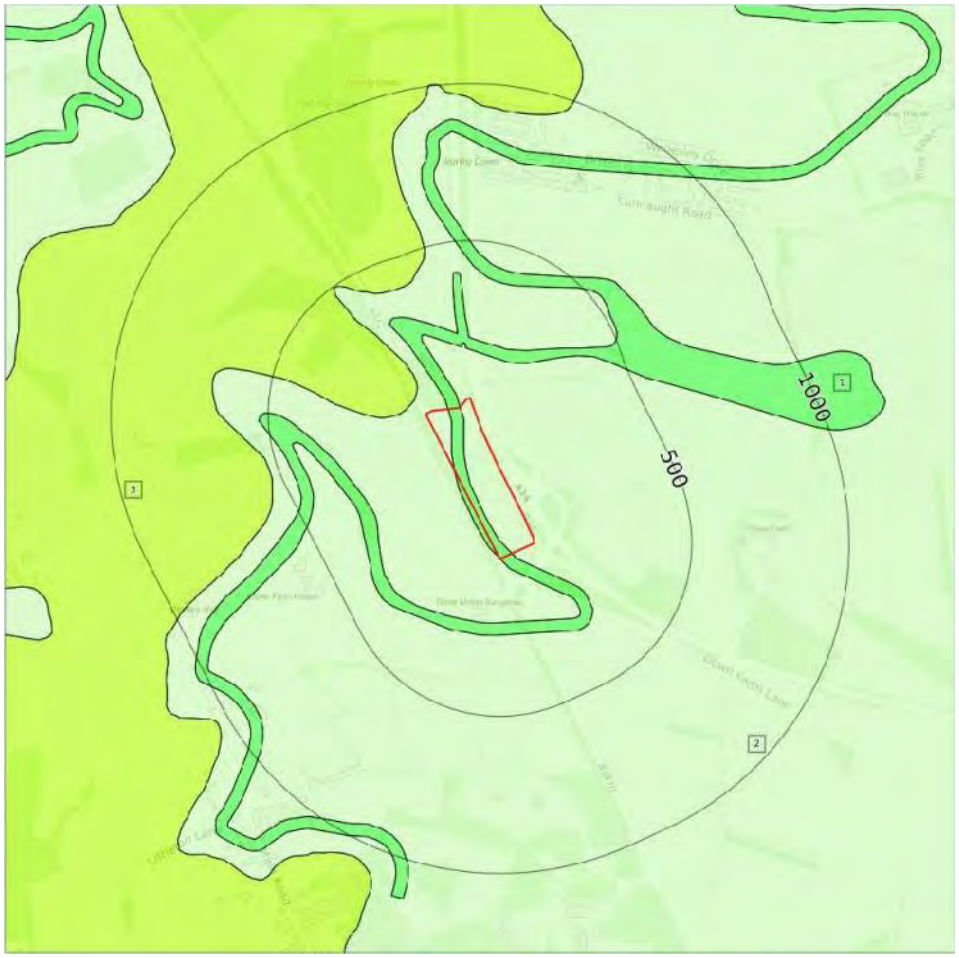
This data is sourced from the British Geological Survey.

15.7 Landslip permeability (50k)

Records within 50m	0

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Bedrock



15.8 Bedrock geology (50k)

Records within 500m	3

1	On site	STRK-LMST	STOCKBRIDGE ROCK MEMBER - LIMESTONE	SANTONIAN
2	On site	SECK-CHLK	SEAFORD CHALK FORMATION - CHALK	CONIACIAN

This data is sourced from the British Geological Survey.

15.9 Bedrock permeability (50k)

Records within 50m	2

On site	Fracture	Very High	Very High
On site	Fracture	Very High	Very High

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

Records within 500m	0

This data is sourced from the British Geological Survey.

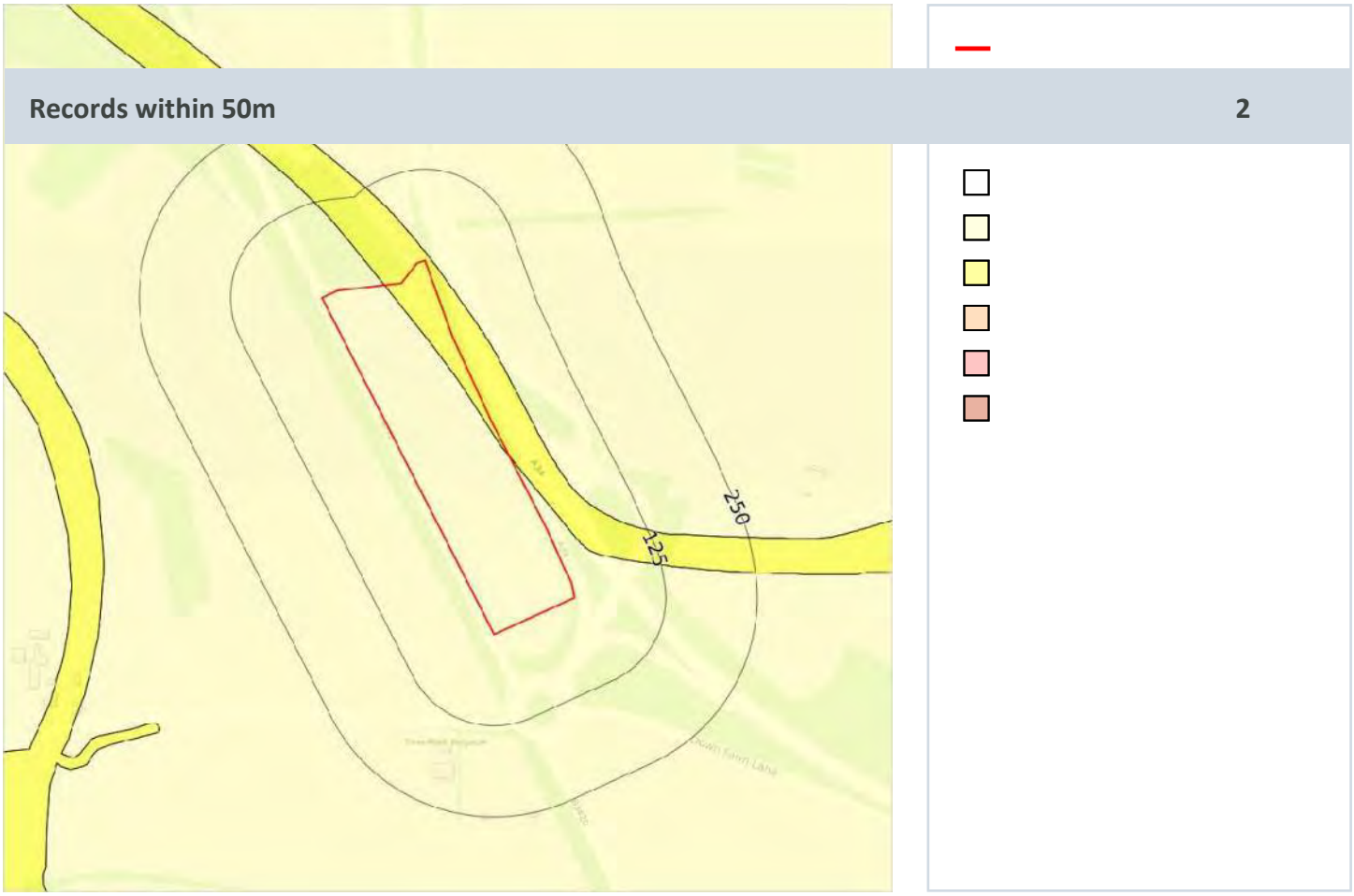
16 Boreholes

16.1 BGS Boreholes

Records within 250m	**0**

This data is sourced from the British Geological Survey.

17 Natural ground subsidence - Shrink swell clays

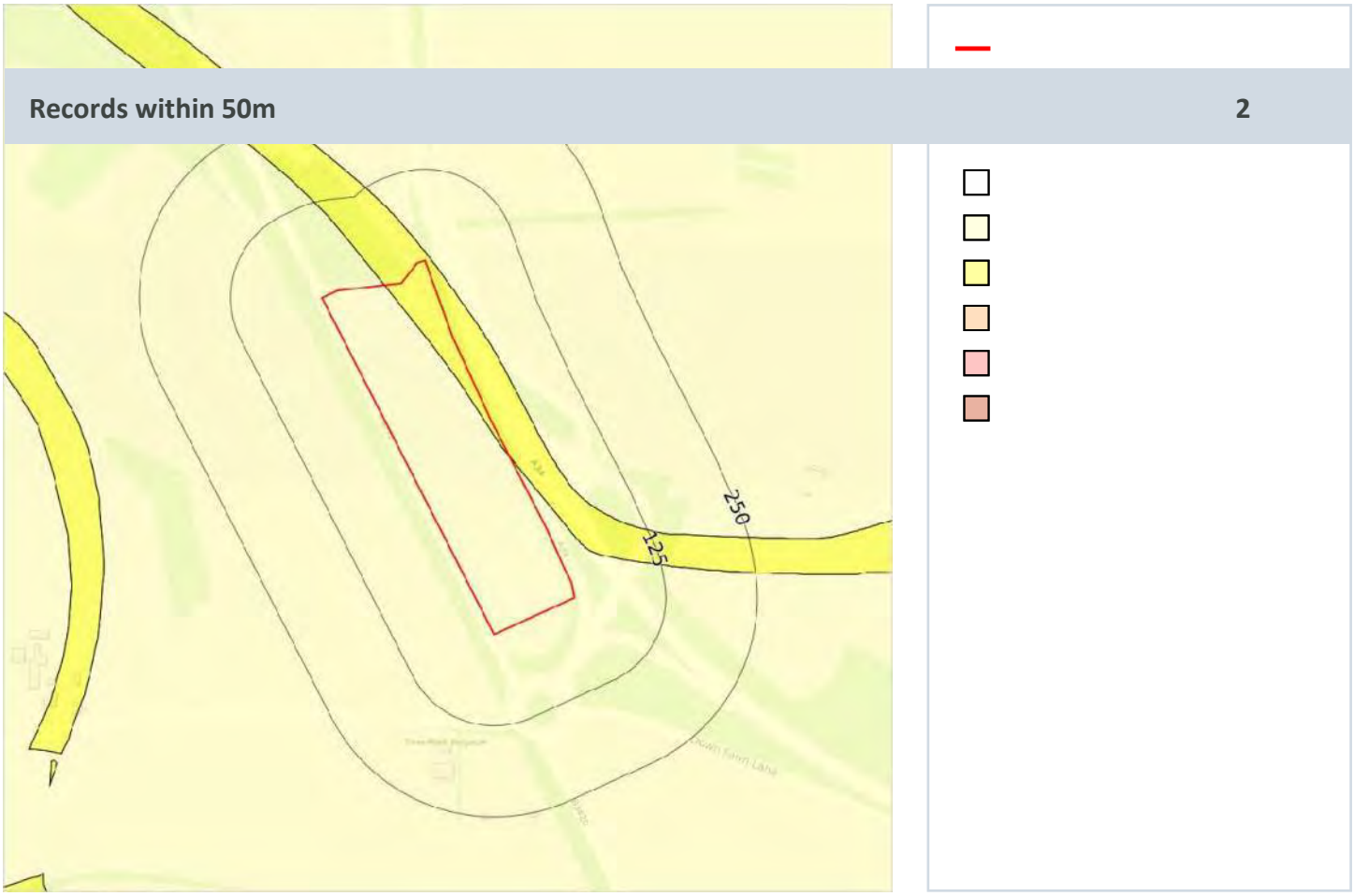


17.1 Shrink swell clays

On site	Negligible	Ground conditions predominantly non-plastic.
On site	Very low	Ground conditions predominantly low plasticity.

This data is sourced from the British Geological Survey.

Natural ground subsidence - Running sands



17.2 Running sands

On site	Negligible	Running sand conditions are not thought to occur whatever the position of the water table. No identified constraints on lands use due to running conditions.

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

This data is sourced from the British Geological Survey.

Natural ground subsidence - Compressible deposits

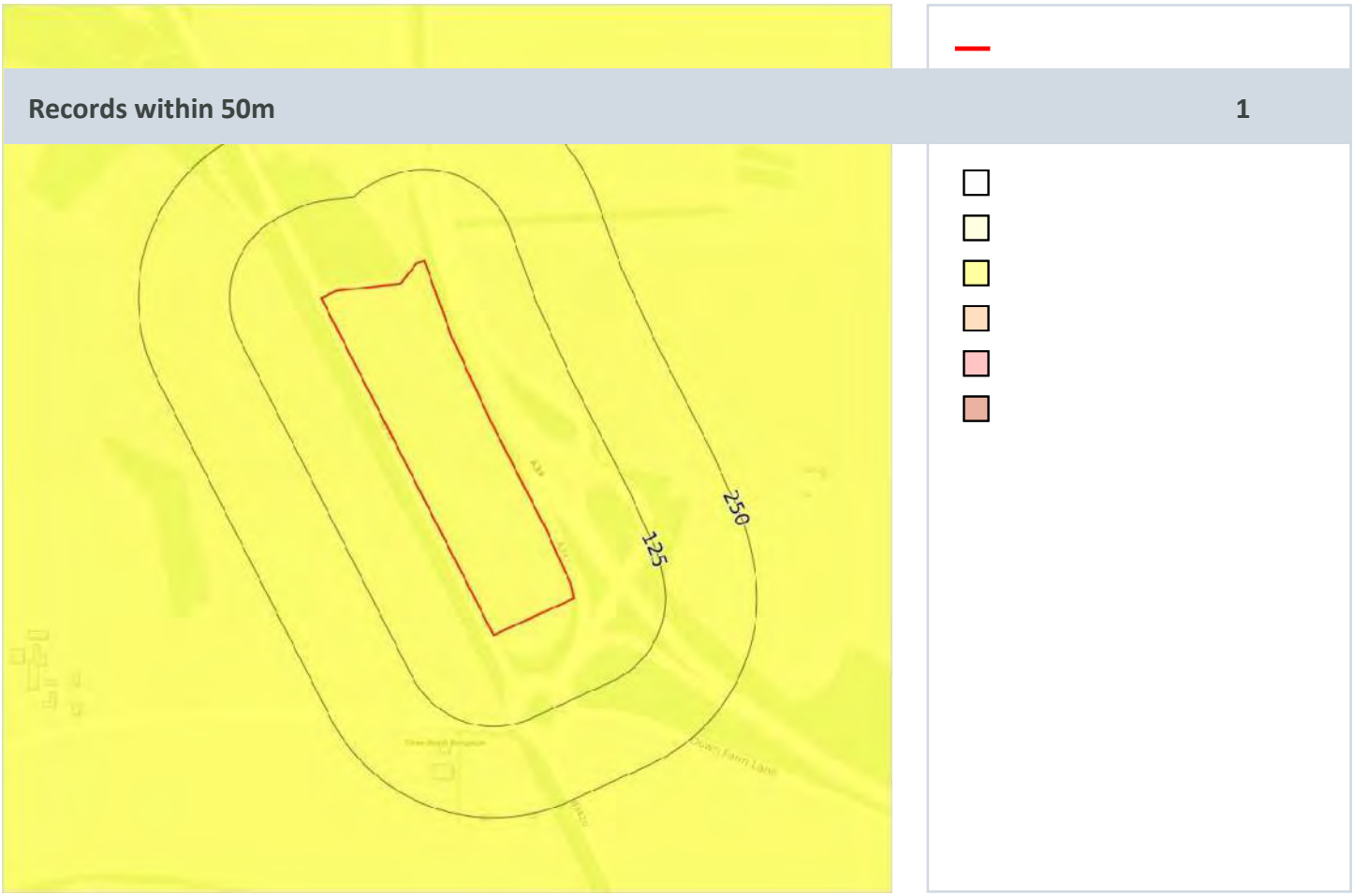
Records within 50m	1

17.3 Compressible deposits

On site	Negligible	Compressible strata are not thought to occur.

This data is sourced from the British Geological Survey.

Natural ground subsidence - Collapsible deposits



17.4 Collapsible deposits

On site	Very low	Deposits with potential to collapse when loaded and saturated are unlikely to be present.

This data is sourced from the British Geological Survey.

Natural ground subsidence - Landslides

Records within 50m	5

17.5 Landslides

On site	Negligible	Slope instability problems are not thought to occur but consideration to potential problems of adjacent areas impacting on the site should always be considered.

On site	Very low	Slope instability problems are not likely to occur but consideration to potential problems of adjacent areas impacting on the site should always be considered.
On site	Low	Slope instability problems may be present or anticipated. Site investigation should consider specifically the slope stability of the site.

This data is sourced from the British Geological Survey.

Natural ground subsidence - Ground dissolution of soluble rocks

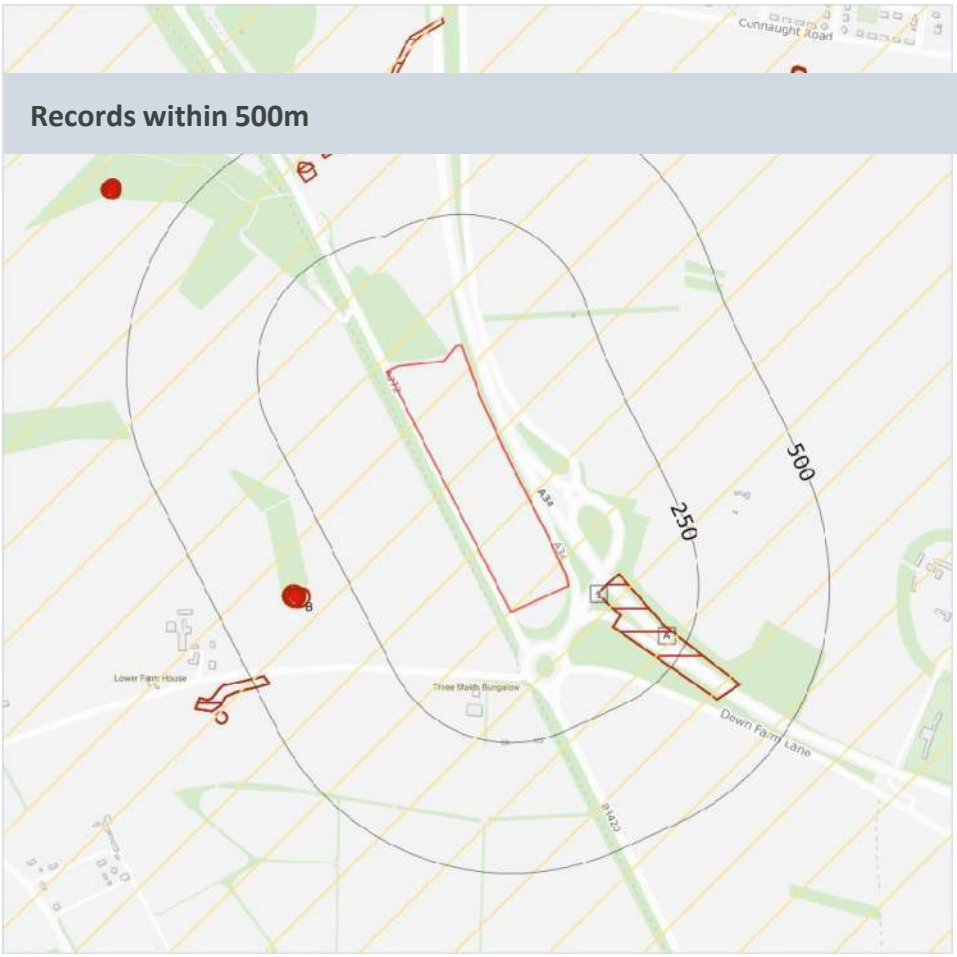
17.6 Ground dissolution of soluble rocks

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

On site	Low	Soluble rocks are present within the ground. Some dissolution features may be present. Potential for difficult ground conditions are at a level where they may be considered, localised subsidence need not be considered except in exceptional circumstances.

This data is sourced from the British Geological Survey.

18 Mining, ground workings and natural cavities



Records within 500m	0

18.1 Natural cavities

This data is sourced from Stantec UK Ltd.

18.2 BritPits

Records within 500m	1

page 86

This data is sourced from the British Geological Survey.

18.3 Surface ground workings

Records within 250m	2

page 86

This is data is sourced from Ordnance Survey/Groundsure.

18.4 Underground workings

Records within 1000m	0

This is data is sourced from Ordnance Survey/Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m	0

This data is sourced from the British Geological Survey.

18.6 Non-coal mining

Records within 1000m	3

1	On site	Not available	Chalk	A	Sporadic underground mining of restricted extent may have occurred. Potential for difficult ground conditions are unlikely and localised and are at a level where they need not be considered

This data is sourced from the British Geological Survey.

18.7 Mining cavities

Records within 1000m	0

This data is sourced from Stantec UK Ltd.

18.8 JPB mining areas

Records on site	0

This data is sourced from Johnson Poole and Bloomer.

18.9 Coal mining

Records on site	0

This data is sourced from the Coal Authority.

18.10 Brine areas

Records on site	0

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

18.11 Gypsum areas

Records on site	0

This data is sourced from British Gypsum.

18.12 Tin mining

Records on site	0

This data is sourced from Groundsure.

18.13 Clay mining

Records on site	0

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

19 Radon

Records on site	1

19.1 Radon

On site	Less than 1%	None**

This data is sourced from the British Geological Survey and Public Health England.

20 Soil chemistry

20.1 BGS Estimated Background Soil Chemistry

Records within 50m	17

On site	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	90 - 120 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	90 - 120 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	90 - 120 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	90 - 120 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	90 - 120 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	90 - 120 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	90 - 120 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	90 - 120 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	90 - 120 mg/kg	15 - 30 mg/kg

This data is sourced from the British Geological Survey.

20.2 BGS Estimated Urban Soil Chemistry

Records within 50m	**0**

This data is sourced from the British Geological Survey.

20.3 BGS Measured Urban Soil Chemistry

Records within 50m	**0**

This data is sourced from the British Geological Survey.

21 Railway infrastructure and projects

21.1 Underground railways (London)

Records within 250m	**0**

This data is sourced from publicly available information by Groundsure.

21.2 Underground railways (Non-London)

Records within 250m	**0**

This data is sourced from publicly available information by Groundsure.

21.3 Railway tunnels

Records within 250m	**0**

This data is sourced from the Ordnance Survey.

21.4 Historical railway and tunnel features

Records within 250m	**0**

This data is sourced from Ordnance Survey/Groundsure.

21.5 Royal Mail tunnels

Records within 250m	**0**

This data is sourced from Groundsure/the Postal Museum.

21.6 Historical railways

Records within 250m	**0**

This data is sourced from OpenStreetMap.

21.7 Railways

Records within 250m	**0**

This data is sourced from Ordnance Survey and OpenStreetMap.

21.8 Crossrail 1

Records within 500m	**0**

This data is sourced from publicly available information by Groundsure.

21.9 Crossrail 2

Records within 500m	**0**

This data is sourced from publicly available information by Groundsure.

21.10 HS2

Records within 500m	**0**

This data is sourced from HS2 ltd.

Data providers

Terms and conditions

United Kingdom

AYLESBURY
T: +44 (0)1844 337380

BELFAST
T: +44 (0)28 9073 2493

BRADFORD-ON-AVON
T: +44 (0)1225 309400

BRISTOL
T: +44 (0)117 906 4280

CARDIFF
T: +44 (0)29 2049 1010

CHELMSFORD
T: +44 (0)1245 392170

EDINBURGH
T: +44 (0)131 335 6830

EXETER
T: + 44 (0)1392 490152

GLASGOW
T: +44 (0)141 353 5037

GUILDFORD
T: +44 (0)1483 889800

LONDON
T: +44 (0)203 805 6418

MAIDSTONE
T: +44 (0)1622 609242

MANCHESTER
T: +44 (0)161 872 7564

NEWCASTLE UPON TYNE
T: +44 (0)191 261 1966

NOTTINGHAM
T: +44 (0)115 964 7280

SHEFFIELD
T: +44 (0)114 245 5153

SHREWSBURY
T: +44 (0)1743 23 9250

STIRLING
T: +44 (0)1786 239900

WORCESTER
T: +44 (0)1905 751310

Ireland

DUBLIN
T: + 353 (0)1 296 4667

France

GRENOBLE
T: +33 (0)6 23 37 14 14

Appendix D: Site Walkover Photographs 22 September 2022 (Earthcare Technical limited)

Photo 1 View from current site entrance north. Field area in maize crop

Photo 2 Brick and rubble in site gateway

Photo 3 PHI deciduous woodland to northern boundary of the site shown.

Photo 4 Gulley - ditch to eastern site boundary bordered by A34

Photo 5 Site view north from southern corner showing site topography falling to the south east

Appendix D: Google Earth Images of the site

Google Earth Image 1 January 2022

Google Earth Image 2 March 2021

Google Earth Image 3 July 2020

Google Earth Image 4 September 2019

Google Earth Image 5 April 2017

Google Earth Image 6 September 2008

Google Earth Image 7 December 2005

Google Earth Image 8 December 2000

Google Earth Image 9 December 1999